Submitted to:

New Jersey Department of Transportation

Camp Meeting Avenue over CSX-Trenton Line

Montgomery Township, Somerset County

CONCEPT DEVELOPMENT REPORT

Submitted by:

Gannett Fleming

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November 2013

CAMP MEETING AVENUE OVER CSX-WEST TRENTON LINE BRIDGE

CONCEPT DEVELOPMENT REPORT

TABLE OF CONTENTS

I. INTRODUCTION 1

A. FOREWORD 1
B. ORIGINAL AND SUCCESSOR PROJECTS 2
C. DATA REVIEWED 2
D. DESIGN STANDARDS 3
E. CHARACTERISTICS OF THE ROADWAYS AND SURROUNDING AREA 3
F. CONCEPT DEVELOPMENT SCOPE STATEMENT 4
G. CD PUBLIC INVOLVEMENT ACTION PLAN 4

II. PURPOSE AND NEED 8

A. BRIDGE NEEDS 8
B. SCOUR NEEDS 8
C. MAINTENANCE NEEDS 8
D. ROADWAY NEEDS 9
E. GOALS AND OBJECTIVES 10

III. EXISTING INVENTORY AND CONDITION 11

A. EXISTING BRIDGE INVENTORY AND CONDITION 11
B. SCOUR 12
C. MAINTENANCE ISSUES 12
D. EXISTING ROADWAY INVENTORY AND CONDITION 12
E. SUMMARY OF EXISTING DEFICIENCIES 17
F. LIST OF SUBSTANDARD DESIGN ELEMENTS 17
G. MANAGEMENT SYSTEMS INPUT 18
H. AS-BUILT PLANS, RIGHT OF WAY MAPS AND JURISDICTION MAP 19

IV. TRAFFIC AND CRASH SUMMARY 20

A. TRAFFIC OPERATIONS 20
B. TRAFFIC DATA 20
C. TRAFFIC VOLUME FORECASTS 21
D. CRASH DATA ANALYSIS AND CRASH DIAGRAM 22

V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING 24

A. COMMUNITY OUTREACH 24
B. NOISE AND AIR QUALITY 25
C. SOCIOECONOMICS 25
D. CULTURAL RESOURCES 25
E. SECTION 4(F) PROPERTIES 25
F. HIGHLANDS/PINELANDS 26
G. WETLANDS 26
H. REFORESTATION 26
I. FLOODPLAIN 26
J. SOLE SOURCE AQUIFER 26
K. THREATENED/ENDANGERED SPECIES 26
L. CATEGORY 1 WATERS 27
M. VERNAL POOLS 27

N. STORMWATER 27
O. HAZARDOUS WASTE 27
P. ANTICIPATED ENVIRONMENTAL PERMITS OR APPROVALS 27
Q. COMPLETE STREETS POLICY 27
R. ENVIRONMENTAL SUMMARY WITH PROBABLE NEPA DOCUMENT REQUIRED 28

VI. EVALUATION OF CONCEPTUAL ALTERNATIVES 29

A. BRIDGE REHABILITATION VERSUS BRIDGE REPLACEMENT 29
B. TEMPORARY BRIDGE LOCATION AND WIDENING CONSTRAINTS 29
C. CONCEPTUAL ALTERNATIVES 29
D. TRAFFIC ANALYSIS 33
E. HYDROLOGY & HYDRAULICS ANALYSIS 36
F. RIGHT OF WAY IMPACTS AND REVIEW 36
G. ITS FACILITIES 38
H. ACCESS IMPACTS AND REVIEW 38
I. CONSTRUCTABILITY AND STAGING PLANS AND DETOUR PLAN 38
J. CONTROLLING SUBSTANDARD DESIGN ELEMENTS AND REASONABLE ASSURANCE 39
K. CONSTRUCTION COST ESTIMATE 39
L. VALUE ENGINEERING STUDY AND REPORT 41
M. LIFE CYCLE COST ANALYSIS 41
N. ALTERNATIVES MATRIX 41
O. DISCUSSIONS WITH SUBJECT MATTER EXPERTS 41
P. PRELIMINARY PREFERRED ALTERNATIVE (PPA) 42
Q. PRELIMINARY ENGINEERING SCOPE STATEMENT 42

VII. CONCEPT DEVELOPMENT RECOMMENDATION 43

A. FEDERAL HIGHWAY ADMINISTRATION (FHWA) APPROVAL OF REPORT 43
B. CAPITAL PROGRAM SCREENING COMMITTEE (CPSC) RECOMMENDATION 43
C. CAPITAL PROGRAM COMMITTEE (CPC) APPROVAL 43

APPENDICES

A. Statewide Transportation Improvement Program
B. Bridge Re-evaluation Survey Report (latest cycle)
C. Bridge Scour Evaluation Report (latest cycle)
D. As-Built Plans, ROW Maps, and Jurisdiction Map
E. Tax Maps
F. Crash Data
G. Traffic Counts
H. Aerial Plan and Photographs
I. Straight Line Diagrams
J. Traffic Volumes (VPH) Graph
K. Collision Diagrams
L. Environmental Screening and Constraint Map
M. Conceptual Alignments and Local Detour
N. Public Communications
O. Design Communications Report (DCR)
P. Resolutions of Support
Q. NJDOT Communications
R. Cost Estimates
S. Alternative Comparison Matrices
T. Life Cycle Cost Analyses
U. Systems Engineering Review Form
V. Project Management Plan
W. Preliminary Engineering Public Involvement Action Plan
X. Preliminary Engineering Scope Statement

I. INTRODUCTION

A. Foreword

This report documents the results of the Concept Development Phase for the rehabilitation/replacement of the Camp Meeting Avenue Bridge at milepost 0.00 on County Route 602 (Structure No. 1850-160) over the CSX-West Trenton Line located in Montgomery Township in Somerset County.

This site is located in a rural area. **Figure 1** is an aerial map of the specific Camp Meeting Avenue Bridge project study area.

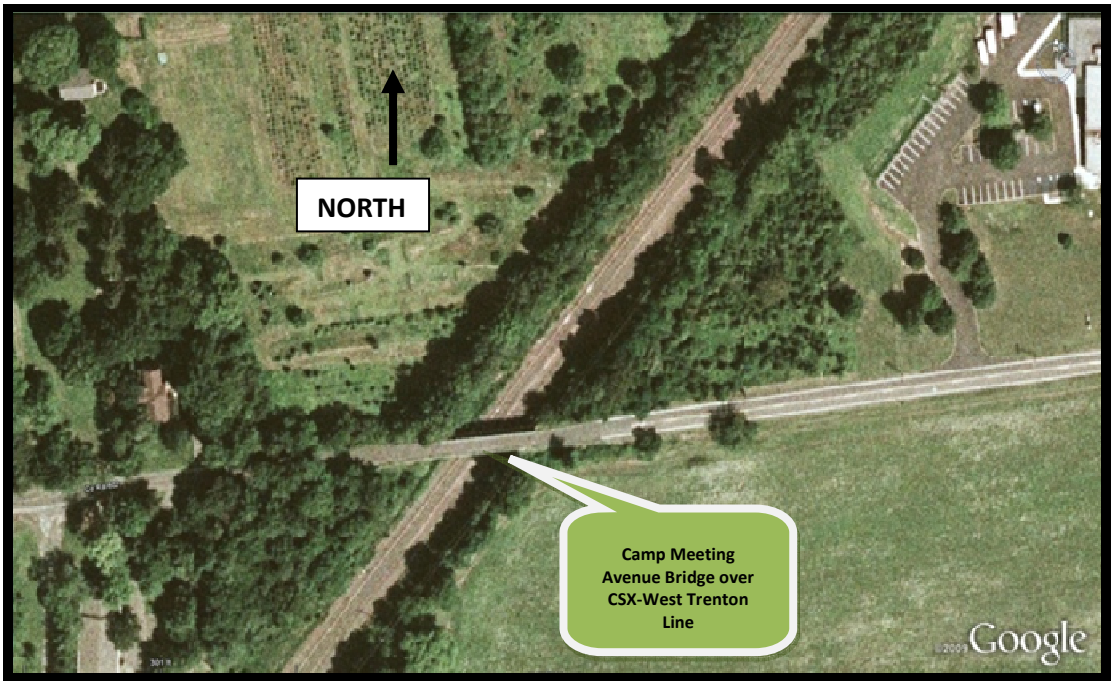

Figure 1 – Camp Meeting Avenue over CSX-West Trenton Line Bridge

The overall purpose of this project is to address deficiencies and meet current functional characteristics/requirements to provide a safe and efficient vehicular and pedestrian crossing of the CSX-West Trenton Line Railroad. It is also desired to provide for an adequate future service life expectancy for the structure.

In 2006, the NJDOT-Division of Project Development (NJDOT-DPD) completed a bridge screening with appropriate Subject Matter Experts and reviewed the structural evaluation report, Structure Inventory and Appraisal (SI & A) sheet, and as-built plans. The NJDOT-DPD team concluded that the bridge was structurally deficient due to deterioration of the superstructure and functionally obsolete due to the inadequate deck geometry and lateral underclearance and expressed the need to address these structural deficiencies. In order to initiate the Concept Development phase of the Camp Meeting Avenue over CSX-West Trenton Line

Bridge project, in 2010 NJDOT-DPD contracted with Gannett Fleming to begin the data collection, needs assessment and general planning activities.

B. Original and Successor Projects

The existing Camp Meeting Avenue Bridge over CSX-West Trenton Line is a 104-foot long rivet-connected skewed Howe pony truss bridge with one main span and two approach spans, supported by built-up bent type piers and is overlaid with a bituminous concrete wearing surface. The original bridge was built in 1889 and was widened or rehabilitated four times in 1922, 1950, 2008 and 2010. The work completed in 2008 and 2010 were emergency interim repairs as recommended in the 2008, 12th Cycle, Bridge Re-Evaluation Survey Report.

C. Data Reviewed

During the data collection phase of this project, specific sources were consulted to obtain information on the existing conditions of the study area. The following information was evaluated to determine areas of nonconformance with current design standards and will form the base data for use during the development of improvement alternatives:

- Fiscal Year 2014-2023 Draft Statewide Transportation Improvement Program (**Appendix A**);
- Bridge Re-evaluation Survey Report, Structure No. 1850-160, Camp Meeting Avenue (CR 602) over West Trenton Line (CSX), Montgomery Township, Somerset County, 12th Cycle Inspection, August 27, 2008 prepared by Pickering, Corts & Summerson, Inc. (**Appendix B**);
- Bridge Re-evaluation Survey Report, Structure No. 1850-160, Camp Meeting Avenue (CR602) over West Trenton Line (CSX), Montgomery Township, Somerset County, 13th Cycle Inspection, August 19, 2010 prepared by Pickering, Corts & Summerson, Inc. (**Appendix B**);
- Bridge Interim Inspection Letter, Structure No. 1850-160, Camp Meeting Avenue (CR602) over West Trenton Line (CSX), Montgomery Township, Somerset County, Interim Inspection, August 11, 2011 prepared by Pickering, Corts & Summerson, Inc. (**Appendix B**);Preliminary Design Submission Report – Bridge Rehabilitation Report and SHPO Documentation, Structure No. 1850-160, Camp Meeting Avenue over West Trenton Line (CSX), Montgomery Township, Somerset County, October 2006 prepared by The Louis Berger Group, Inc. (**Appendix C**);
- As-Built Plans dated March 1889 (**Appendix D**);
- Bridge Repair Plans dated September 1914, August 1922, and October & November 1950 **(Appendix D)**;
- Tax Maps (**Appendix E**);

- Accident Data/Reports within the study area for a 6-year period between 2007 and 2012 (***Appendix F***);
- Traffic Count Data (***Appendix G***).

D. Design Standards

The following design standards were used to assess the structure and project area conditions and to develop the project alternatives:

AASHTO

- A Policy on Geometric Design of Highways and Streets, AASHTO, 2004;
- Roadside Design Guide, AASHTO, 2006;
- Standard Specifications for Highway Bridges, 17TH Edition;
- LRFD Bridge Design Specifications, 5TH Edition, 2010.

FHWA

- Manual on Uniform Traffic Control Devices, FHWA, 2009 Edition.

NJDOT Design Manuals

- New Jersey Department of Transportation Bridges and Structures Design Manual;
- New Jersey Department of Transportation Design Manual – Roadway;
- Capital Program Management Construction Scheduling Standard Coding and Procedures for Designers and Contractors Manual, 2001
- Construction Cost Estimation Preparation Manual for Preliminary Design, 2002;

CSX Transportation

- Public Project Information for Construction and Improvement Projects That May Involve the Railroad, 2012

E. Characteristics of the Roadways and Surrounding Area

Camp Meeting

Camp Meeting Avenue is a Rural Collector roadway running east-west in Somerset County. The roadway in the general area of the bridge consists of one 10-foot travel lane with no shoulders or sidewalks in either direction; this cross section reduces to only one, “yield-controlled” 14-foot lane with no shoulders or sidewalks on the bridge. The existing cable and W-beam guide rail approaching the bridge on all approaches are currently substandard.

Two-directional Average Daily Traffic (ADT) on Camp Meeting Avenue is 1,050 vehicles per day and the posted speed limit is 30 mph with an advisory speed limit of 15 mph on the single-lane bridge.

Aerial electric and cable utility lines run along the northern side of Camp Meeting Avenue throughout the project limits.

CSX-West Trenton Line Railroad

The CSX-West Trenton Line Railroad consists of a mainline and siding track at this location. There are railroad drainage ditches that run parallel to the railroad tracks along the east and west edges of their ROW which may be regulated as wetlands or state open waters by NJDEP. CSX maintains an aerial electric line along the east side of their ROW that crosses perpendicular to Camp Meeting Avenue at the east end of the bridge.

Land Use

The surrounding area is generally comprised of farmland and residential use. Immediately to the east along Camp Meeting Avenue on the westbound side is the Otto Kaufman Senior Center. Further east along Camp Meeting Avenue's eastbound side is Montgomery Township High School. Both the Otto Kaufman Senior Center and the Montgomery Township High School are bussing facilities.

Appendix H includes various photographs of the bridge and its immediate vicinity.

F. Concept Development Scope Statement

In order to complete the Camp Meeting Avenue over CSX-West Trenton Line Bridge Concept Development (CD) project phase in accordance with the NJDOT CD Project Delivery Process, activities associated with the Alternatives Analysis, selection of the Preliminary Preferred Alternative, and preparation of the Concept Development Report were performed.

G. CD Public Involvement Action Plan

Introduction

The New Jersey Department of Transportation conducted this Concept Development Study to perform the Alternatives Analysis, select the Preliminary Preferred Alternative, and prepare the Concept Development Report for the Camp Meeting Avenue structure over the CSX-West Trenton Line in Montgomery Township, Somerset County. The intent of the Public Involvement Action Plan (PIAP) was to ensure effective consideration of the public's viewpoint throughout the study process by actively involving the public in the planning and decision making process. This process ensured that solutions were developed within the context of the community that will be affected by the outcome of the study. The

details of the PIAP are provided below, however the PIAP process was and will continue to be dynamic and will be modified, if needed, as the study progresses.

Goals

Goals of the PIAP include:

- Obtain public input on issues and potential opportunities for the study area;
- Obtain public input and establish short-term and long-term community visions and improvements;
- Provide effective education of the public about the purpose, need and goals of the study and obtain input on Preliminary Preferred Alternative;
- Fulfill state and federal requirements for public comment.

Strategies

Getting the local community involved in the study process can be a challenge. Engaging the public throughout the process requires outreach to elicit their input and ideas, maintaining regular communication with stakeholders, including listening and responding, and making a commitment to an open process during the entire study period. To encourage participation and interest throughout the planning process, the PIAP incorporated multiple strategies described below.

Prior to meeting with the public, the project team facilitated meetings with local officials, and regional and state agencies that are responsible for implementing transportation policies. Coordination efforts included meetings with officials to present the developed alternatives and obtain support of the Preliminary Preferred Alternative. It was crucial to develop a partnership with the municipality and pertinent county and state agencies as the study moved forward. The objective of community partnering was to elicit support and ensure cooperation during the Concept Development study process and beyond.

The following meetings were anticipated and ultimately took place for this project:

Public Officials' Briefing Meeting

The public officials' briefing meeting was held with the Montgomery Township Administrator, Engineer, and Public Works representative. In addition, the Township's police department and the School Transportation Advisory Committee attended.

The purpose of the meeting was to present the findings of the data collection effort, solicit input from the public officials to identify major concerns related to the study, and discuss the purpose, need, and goals of the project. The project team discussed the possibility of a full detour, and all Montgomery Township officials were in support of the detour.

Public Officials' Meeting

The public officials' meeting was held with the Montgomery Township Administrator, Engineer, and Public Works representative. In addition, the Township's police department attended.

The purpose of the meeting was to present the developed alternatives and obtain support of the Preliminary Preferred Alternative. The NJDOT presented developed alternatives and solicited input from the public officials to identify major concerns related to the Preliminary Preferred Alternative. A follow up meeting was held with Somerset County's Traffic and Structural Engineering staff to also solicit input related to the Preliminary Preferred Alternative.

Public Information Center

The Public Information Center was held to inform and involve the public on the needs and the Preliminary Preferred Alternative. It was imperative for the project team to obtain feedback on the Preliminary Preferred Alternative from a local perspective. The project team described the Preliminary Preferred Alternative. Feedback, issues and ideas were gathered from the public.

Environmental Justice

To ensure fair involvement of all people in the decision-making process, the PIAP included an environmental justice component. This included an evaluation of the study area to determine the presence of minority and low-income populations and an assessment of any potential adverse impacts on these communities.

Demographic data for Montgomery Township, NJ, collected from the US Census (2000) indicated the following:

- a majority of the residents in the area are white (84.6 percent) and 11.5 per are Asian;
- median age is 36.8 years;
- 87 percent of housing is owner-occupied;
- median income for a household is $118,850 and the median income for a family is $129,150; and
- over 84 percent of those commuting to work drove alone.

Additional demographic data will be included as more information is obtained, however, there does not appear to be a significant minority population that would require an extensive environmental justice effort on this project.

Media Outreach, Announcements and Mailings

The following tools were and should continue to be used to encourage participation and interest in the study and the project:

- Local newspaper advertisements in the Courier News and cable television notices on the local access channel announcing public workshops;
- Public notices will be displayed in Montgomery Township High School, school district offices, Otto Kaufman Senior Center, Montgomery Township Hall, and any local public libraries.
- Press release prior to public workshops summarizing information to be presented and describing the overall planning process;
- Meeting agenda and other distribution material for public workshops;
- Display boards at public workshops; and
- Other public outreach materials that may be desired or appropriate.

II. PURPOSE AND NEED

The overall purpose of this project is to address structural deficiencies and meet current functional characteristics/requirements to provide a safe and efficient vehicular and pedestrian crossing of the CSX-West Trenton Line. It is also desired to provide for an adequate future service life expectancy for the structure.

A. Bridge Needs

The Camp Meeting Avenue bridge was determined to be structurally deficient in the latest Bridge Re-evaluation Report (Cycle No. 13, dated August 19, 2010), due to its poor overall condition and low load ratings for both inventory and operating levels. The report states that the bridge is "deficient and functionally obsolete, requiring high-priority replacement." The truss and steel stringers exhibit extensive section loss, rust, impact damage, and bent members. The west abutment exhibits 14-inch deep bridge seat voids beneath some of the stringers. The steel bents also exhibit extensive section loss, moderate to severe rust, and local buckling of some members. Currently, the bridge is posted for a weight limit of 10 tons for Type 3 trucks. The HS-20 truck type inventory rating for this bridge is 6 tons, much less than 36 ton rating that is required.

Additionally, the substandard conditions of the deck geometry, the lateral clearance and vertical underclearance to the tracks make this bridge functionally obsolete. The approach roadways are 20 feet wide and striped for two lanes of traffic, whereas the curb-to-curb width on the bridge is 14 feet. The bridge is posted as a "One Lane Bridge" with "Yield to Oncoming Traffic" signs. The existing vertical underclearance over the tracks is 21 feet 2 inches, and existing lateral clearance between the tracks and the piers is 6 feet 2 inches. Current NJDOT standards require 23 feet minimum vertical and 18 feet minimum lateral clearance for non-electrified tracks.

According to NJDOT's priority rankings, the Camp Meeting Avenue structure over the CSX-West Trenton Line superstructure ranking is 4 and the deck ranking is 7. The ranking system scores for structures range from 1 to 10, with 1 being the highest priority.

B. Scour Needs

Not applicable.

C. Maintenance Needs

The 13th Cycle Bridge Re-evaluation Survey Report recommends that the following repairs be performed:

- Restore the north and south knee bracing to the original section by bolting two steel plates over the deteriorated area.
- Inspect Superstructure (Truss) after 12 months.

D. Roadway Needs

The following Controlling Substandard Design Elements (CSDE), physical deficiencies, and undesirable features were identified within the study limits:

- Stopping Sight Distance

  The required minimum stopping sight distance is 250 feet. The Camp Meeting Avenue eastbound and westbound directions on the structure have an existing sight distance of approximately 200 feet controlled by the roadway vertical profile.

- Intersection/Driveway Stopping Sight Distance

  The required minimum sight distance is 390 feet for left turns onto Camp Meeting Avenue. The driveway located at Block 14001, Lot 15 has existing sight distance of approximately 380 feet controlled by the profile high point that occurs on the bridge.

- Shoulder Widths

  The Camp Meeting Avenue bridge and roadway approaches have no existing paved right shoulders. The functional classification of the approach roadway is municipal/county rural local roadway. NJDOT design requirements of an 8-foot minimum paved shoulder do not apply to this low volume roadway. AASHTO only requires a minimum of a 2-foot graded/usable shoulder, but recommends 6 feet to 8 feet as preferable.

- Lane Widths

  The existing Camp Meeting Avenue bridge is reduced to one 14-foot travel lane over the structure. The minimum width for a two-lane bridge is 22 feet.

- Lack of Sidewalks

  No sidewalks exist on the bridge. The project is located approximately 1000 feet west of the Montgomery Township High School. Although a majority of the surrounding area is rural, several residential land uses to the west are potentially within walking distance of the school. The lack of sidewalks on the bridge is inconsistent with the NJDOT's Complete Streets policy.

- Guiderail

  Although not a CSDE, the approach guiderail lengths are currently substandard. Required guiderail length-of-need is 165 feet. The existing guiderail lengths around the structure range from only 55 feet to 145 feet.

E. Goals and Objectives

The NJDOT has expressed the desire to address design deficiencies of the Camp Meeting Avenue Bridge over the CSX-West Trenton Line. During Concept Development, a number of potential options were assessed and evaluated for effectiveness in correcting the bridge's design, safety, and functional deficiencies.

Improvement concepts that were developed for the bridge were coordinated with Montgomery Township and Somerset County officials. On November 19, 2010, the NJDOT-DPD Study Team met with Montgomery Township to present findings, problems and issues determined from the data collection efforts to date, and solicited their input on the Project Objectives. Montgomery Township representatives indicated that they were in favor of a two-lane solution and would be opposed to any one-lane option, including the no-build option (keeping the current one-lane bridge). Montgomery Township also requested that sidewalks be included on the bridge and in the project limits for consistency with the Township's Pedestrian and Bikeway Corridor Plan. This would also ensure consistency with NJDOT's Complete Streets Policy.

Montgomery Township acknowledged that detours will likely be unavoidable during construction but expressed concerns related to the impact of detour routes on their school busing system routes and schedules. The Township recommended that bridge work and detours should be completed during the summer.

Minimization of environmental impacts should be a project goal. Initial NJDOT environmental screening found the project improvement alternatives have the potential to impact wetlands. Ditches located adjacent to the CSX railroad tracks may be regulated as wetlands or state open waters by NJDEP. The surrounding area is generally comprised of preserved farmland and residential uses. Immediately to the east along Camp Meeting Avenue on the westbound side is the Otto Kaufman Senior Center. Further east along Camp Meeting Avenue's eastbound side is Montgomery Township High School. Since the Camp Meeting Avenue Bridge is listed as a historical structure in the Blawenburg Historic District and eligible for the Register of Historic Places per SHPO opinion, coordination with the Township Landmarks Commission and the Harlingen Historical Society will need to be undertaken as the project progresses.

III. EXISTING INVENTORY AND CONDITION

A. Existing Bridge Inventory and Condition

The existing Camp Meeting Avenue Bridge over CSX-West Trenton Line is 104 feet long by 15.9 feet wide. The superstructure consists of a rivet-connected steel Howe pony truss with one main span and two approach spans. The bridge is supported by two built-up bent type steel piers on concrete pedestals and ashlar abutments. Two railroad tracks owned by CSX Transportation, Inc. lie beneath the main span of the structure. The concrete deck is overlaid with a bituminous concrete wearing surface. The thru-truss superstructure is approximately 24 inches deep. Piers and abutments are parallel and are skewed at approximately 46 degrees to the roadway baseline above. The original bridge was built in 1889 and was rehabilitated in 1914, 1922, 1950, 2008 and 2010. The work completed in 2008 and 2010 included emergency interim repairs as recommended in the 2008, 12th Cycle, Bridge Re-Evaluation Survey Report.

The bridge was determined to be structurally deficient in the latest Bridge Re-evaluation Report (Cycle No. 13, dated August 19, 2010), due to its poor overall condition and low load ratings for both inventory and operating levels. The report states that the bridge is “deficient and functionally obsolete, requiring high-priority replacement.” The report also states that existing steel members exhibit extensive section loss, moderate to severe rusting, impact damage, and local buckling.

An interim inspection was completed on August 11, 2011 as recommended in the Cycle 13 Report. No significant changes were observed during the inspection. The recommendation was to re-inspect the structure at the next regularly scheduled period.

The bridge is currently posted for weight limits of 10 tons, 16 tons, and 20 tons for Type 3, Type 3S2, and Type 3-3 trucks respectively. The HS-20 truck type inventory rating for this bridge is 6 tons, much less than 36 ton rating that is required.

Additionally, the substandard conditions of the deck geometry, the lateral clearance and vertical underclearance to the tracks make this bridge functionally obsolete. Approach roadways are 20 feet wide and striped for two lanes of traffic, whereas the curb-to-curb width on the bridge is only 14 feet. The bridge is posted as a “One Lane Bridge” with “Yield to Oncoming Traffic” signs. The existing vertical underclearance over the tracks is 21 feet 2 inches, and existing lateral clearance is 6 feet 2 inches. Current NJDOT standards require 23 feet minimum vertical and 18 feet minimum lateral clearance for non-electrified tracks.

No utilities are supported on the existing structure. Aerial electric (13KV) and cable television lines running parallel to Camp Meeting Avenue are located off the northern side of the bridge. High-voltage aerial electric lines (26 KV) also run parallel with the CSX rail line and cross over Camp Meeting Avenue’s eastern abutment. Aerial telephone lines are also located along the north side of Camp

Meeting Avenue, but terminate a few hundred feet both east and west of the bridge. The telephone lines will not be impacted by the project.

According to NJDOT's priority rankings, the Camp Meeting Avenue structure over the CSX-West Trenton Line superstructure ranking is 4 and the deck ranking is 7. The ranking system scores for structures range from 1 to 10, with 1 being the highest priority.

B. Scour

Not applicable.

C. Maintenance Issues

The Camp Meeting Avenue Bridge has undergone emergency maintenance repairs in 2008 and 2010. These repairs were recommended in the 12th Cycle Bridge Re-evaluation Survey Report.

The 13th Cycle Bridge Re-evaluation Survey Report recommends that the following repairs be performed:

- Restore the north and south knee bracing to the original section by bolting two steel plates over the deteriorated area.
- Inspect Superstructure (Truss) after 12 months.

D. Existing Roadway Inventory and Condition

Camp Meeting Avenue is a local roadway that is approximately 0.5 mile in length and is located to the west of the bridge. The majority of land uses along the roadway consist of residential properties.

County Route 602, also known as Skillman Road, is located to the east of the bridge and is under Somerset County jurisdiction. Skillman Road serves as an alternative access to Montgomery High School and also as access to the Otto Kaufman Senior Center.

Both roadways have an east/west orientation and have a posted speed limit of 30 mph in the vicinity of the subject bridge. Each roadway provides one 10-foot travel lane with no shoulders or sidewalks in either direction; this cross section reduces to only one, "yield-controlled" 14-foot lane with no shoulders or sidewalks on the bridge.

The functional classification of both Camp Meeting Avenue and Skillman Road is Rural Local roadway as published in the NJDOT Straight Line Diagrams (***Appendix I***).

1. Roadway Cross Section Elements

Cross sectional data for the Camp Meeting Avenue project area was developed through a review of the As-Built plans, Bridge Re-Evaluation Survey Report, and field observations. The existing data and the minimum and desirable widths for low volume rural roads as set forth in NJDOT's Roadway Design Manual and AASHTO's A Policy on Geometric Design of Highways and Streets are shown below.

LANE WIDTH				
Location	**Lane(s)**	**Existing Width**	**Required Width***	**Substandard**
Skillman Road (East of Structure)	EB	10'	14'	**Yes**
Skillman Road (East of Structure)	WB	10'	14'	**Yes**
(Structure No. 1850-160)	EB/WB	14'	22'	**Yes**
Camp Meeting Avenue (West of Structure)	EB	10'	14'	**Yes**
Camp Meeting Avenue (West of Structure)	WB	10'	14'	**Yes**

* Required Width includes provision for a Shared Lane in compliance with NJDOT's Bicycle Compatible Roadways Guidelines.

SHOULDER WIDTH				
Location	**Left or Right Shoulder**	**Existing Width**	**Required Width**	**Substandard**
Skillman Road (East of Structure) EB	Right	0'	2' **	**Yes**
Skillman Road (East of Structure) WB	Right	0'	2' **	**Yes**
(Structure No. 1515-150) EB/WB	Right	0'	2' **	**Yes**
Camp Meeting Ave (West of Structure) EB	Right	0'	2' **	**Yes**
Camp Meeting Ave (East of Structure) WB	Right	0'	2' **	**Yes**

** AASHTO requires a minimum 2' wide graded and useable shoulder area. This shoulder does not need to be paved.

2. Right of Way / Border Widths

Right of Way information was gathered from As-Built drawings (***Appendix D***) and tax maps (***Appendix E***).

Skillman Road and Camp Meeting Avenue are centered within a 46.5-foot right-of-way.

Camp Meeting Avenue is under the jurisdiction of Montgomery Township. Skillman Road is under the jurisdiction of Somerset County.

3. Horizontal Alignment

The bridge is situated on a tangent horizontal alignment. The bridge crosses CSX-West Trenton Line approximately at its Station 20+00.

4. Vertical Alignment

The bridge is located at a high point in the roadway profile, however the bridge does not follow a vertical curve. The bridge appears to have been constructed with approximately 0.2% longitudinal grade. The roadway profile approaching the bridge consists of sag vertical curves that meet the bridge at profile angle points. The roadway grade at the bridge abutments is approximately 5.0% to 6.0% grade.

5. Sight Distance

Vertical stopping sight distance in both directions of travel is approximately 155 feet to 200 feet, adequate for 25 mph to 30 mph. There is an advisory speed warning sign for 15 mph approaching the bridge from either direction in part due to its one-lane cross section. Also, the available sight distance is insufficient to see cars approaching from opposite sides of the bridge. There is approximately 300 feet between yield signs for this single shared two-way lane on the bridge.

6. Existing Pavement

A visual inspection indicates asphalt pavement on both approaches and bridge deck.

7. Curbs and Sidewalks

Both roadway approaches have no sidewalks. There are no sidewalks on the bridge.

8. Highway Lighting

There is no lighting mounted on the bridge structure or on the surrounding road network.

9. Land Use

The surrounding area is generally comprised of residential uses. The Montgomery Township High School is located along the south side of Skillman Road approximately 1000 feet east of the subject bridge. The Otto Kaufman Senior Center is located in the northeast quadrant adjacent to the structure.

10. Posted/Design Speeds

The posted speed limit for Camp Meeting Avenue and Skillman Road in the project area is 30 mph. There is an advisory speed limit of 15 mph on the one-lane bridge over the CSX-West Trenton Line. The assumed design speed is 35 mph, which is 5 mph over the posted speed limit.

11. Storm Drainage System

The roadway approaches are umbrella section. Storm water runoff sheet-flows from the crowned roadway to the adjacent properties. There are no scuppers on the bridge. Short metal curbs are provided by the edge of the truss of the bridge. Storm water on the bridge collects against the metal curbs and gutter-flows to the bridge approaches where no curbs are provided. Once off the structure the storm water makes its way to the railroad ditches below the structure and eventually drains into the Millstone River (below/including Carnegie Lake) watershed (HUC-14 = 02030105110070).

12. Traffic Barriers

Beam guiderail is located on both the northern and southern side of the structure. Guiderail is provided on each quadrant approaching the structure ranging in distance from 55 to 145 feet. Bridge approaches to the west on Camp Meeting Avenue provide both cable and beam guiderail.

13. Utilities

A survey of the condition of the utilities was not performed. From record information obtained from the utility companies and site observations, the existing utilities in the area of the project include:

Cable:	Comcast
Telephone/Communications:	Verizon (not impacted by project)
Electric:	Public Service Electric and Gas
Gas:	None
Sewer:	None
Water:	None

14. Survey

Aerial photography was used during the Concept Development phase to evaluate the study area. This was supplemented later by topographic mapping and a digital terrain model (DTM) that was furnished by NJDOT for the project area. The DTM surface is based on NAD 88 vertical and NAD 83 horizontal datums. A review of the mapping revealed the following:

- Existing contours generated from the mapping indicated that the DTM did not properly map the area around the bridge. A supplemental field survey was completed to obtain the railroad tracks, and other existing features beneath the bridge. These features were merged into the DTM so that correct contours could be generated.
- Wetland shapes are incomplete. It is assumed that wetland delineation will be performed during Preliminary Engineering.
- More detailed field survey is recommended for the Preliminary Engineering phase to obtain a complete field edit of the mapping.

15. Access

Camp Meeting Avenue and Skillman Road are classified as two-way rural local roadways within the project limits. In the quadrant to the northeast of the structure (Block 14001, Lot 38) one access driveway exists for the Otto Kaufman Senior Center. The Montgomery Township High School is located in the quadrant to the southeast of the structure. An access driveway is located approximately 1000 feet to the east of the existing structure for the high school. Low volume residential and small-business land uses with driveways are located to the west of the structure.

16. Bicycle and Pedestrian Compatibility

Pedestrian traffic is not currently accommodated due to the lack of sidewalks on both Camp Meeting Avenue and Skillman Road within the study area. Bicycle traffic is not currently accommodated due to the lack of shoulders along each side of the roadways within the study area. The bridge replacement will be compatible with pedestrians. Accommodation for bicycles will be provided by the proposed shared use lanes on the structure. Montgomery Township officials requested sidewalks on both sides of the bridge.

17. Concurrent Projects

There are no ongoing construction projects in the vicinity of the project area and no known future projects are scheduled.

18. Landscaping

The study area has no formal landscaping areas.

19. Jurisdiction

The Camp Meeting Avenue bridge is currently an orphan bridge and thus is under the jurisdiction of the NJDOT. Camp Meeting Avenue is under Montgomery

Township jurisdiction and Skillman Avenue/County Route 602 is under Somerset County jurisdiction.

20. Geotechnical Information

As part of the Geotechnical Engineering Management System data request, a number of soil boring results were obtained within the immediate study area. The borings were collected in late 1970 as part of the Interstate 95 project. It is recommended that additional borings be collected during the design phase of the project.

E. Summary of Existing Roadway Deficiencies

Information gathered from available record plans, combined with data observed during field visits were used to identify areas which were noted to be deficient according to current design criteria.

The approach guiderail lengths are currently substandard. Required guiderail length of need is 165 feet. The existing guiderail lengths around the structure range from only 55 feet to 145 feet.

F. List of Substandard Roadway Design Elements

The following Controlling Substandard Design Elements (CSDE), physical deficiencies, and undesirable features were identified within the study limits:

- Stopping Sight Distance

  The required minimum stopping sight distance is 250 feet. The Camp Meeting Avenue eastbound and westbound directions on the structure have an existing sight distance of approximately 200 feet controlled by the roadway vertical profile.

- Intersection/Driveway Stopping Sight Distance

  The required minimum sight distance is 390 feet for left turns onto Camp Meeting Avenue. The driveway located at Block 14001, Lot 15 has existing sight distance of approximately 380 feet controlled by the profile high point that occurs on the bridge.

- Shoulder Widths

  The Camp Meeting Avenue bridge and roadway approaches have no existing paved right shoulders. The functional classification of the approach roadway is municipal/county rural local roadway. NJDOT design requirements of an 8-foot minimum paved shoulder do not apply to this low volume roadway. AASHTO only requires a minimum of a 2-foot graded/usable shoulder, but recommends 6 feet to 8 feet as preferable.

- Lane Widths

  The existing Camp Meeting Avenue bridge is reduced to one 14-foot travel lane over the structure. The minimum width for a two lane bridge is 22 feet.

- Lack of Sidewalks

  No sidewalks exist on the bridge. The project is located approximately 1000 feet west of the Montgomery Township High School. Although a majority of the surrounding area is rural, several residential land uses to the west are potentially within walking distance of the school. The lack of sidewalks on the bridge is inconsistent with the NJDOT's Complete Streets policy.

G. Management Systems Input

Unit and Management System	Data Requested	Rating/Input
Systems Development and Analysis ***Congestion Management System (CMS)***	Ranking on CMS (0-10; 10 is highest priority) Low < 5.00 Medium = 5.00-6.99 High = 7.00 +	No data on file at NJDOT. (Usually no data for County roads)
Pavement & Drainage Management & Technology ***Pavement Management System (PMS)***	ARAN and skid test results	No data on file at NJDOT. (Usually no data for County roads)
Pavement & Drainage Management & Technology ***Drainage Management System (DMS)***	Are there any drainage projects in area; Ranking on DMS	No data on file at NJDOT. (Usually no data for County roads)
Structural Engineering ***Bridge Management System (BMS)***	SIA input, recent repairs, etc.	Emergency interim repairs in 2008 and 2010.
Safety Programs ***NJDOT – Bureau of Safety Programs; Township Police***	Crash data, rates, summaries and details	Crash data was obtained for the period January 1, 2006 – December 31, 2012.
Traffic Engineering and Investigations	Recent, pending or active work orders in project area, etc.	No recent, pending, or active work in the project area.
Transportation Data Development	Functional classification; Existing traffic counts, truck %, etc.	No data on file at NJDOT

Geotechnical Engineering ***Rockfall Hazard Rating System***	Rockfall Hazard Rating Underground Strata Information	Soil boring results obtained.
Montgomery Township Planning Board	Any request/known plans under development pending access permit	A 58-unit residential project approximately 2 miles east on Burnt Hill Road Quarry on County Route 601 approximately 3 miles north will change ownership & possible reduce heavy vehicle traffic by utilizing rail transportation on CSX-West Trenton Line.
Operations Support ***Maintenance Management System (MMS)***	Ranking on MMS; recent, pending or active work, etc.	Emergency interim repairs in 2008 and 2010.

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

See ***Appendix D*** for As-Built Plans. Tax Maps are provided in ***Appendix E***.

IV. TRAFFIC AND CRASH SUMMARY

A. Traffic Operations

In order to assess the bridge's operational characteristics (Level of Service (LOS) and volume-to-capacity ratio "v/c") analyses of existing year (Year 2010) AM and PM weekday peak hours were performed. Operational analyses were performed using the 2000 Highway Capacity Manual (HCM) methodologies.

Operational analysis findings for the Camp Meeting Avenue roadway segment at the bridge during the morning and evening peak hours are at acceptable v/c ratios of 0.71 and 0.29, respectively.

B. Traffic Data

Existing traffic conditions and volumes were obtained through a traffic count program. Automatic Traffic Recorders (ATRs) were installed along Skillman Road between the intersection of Belle Mead-Blawenburg Road and the bridge to identify existing travel trends and determine current volumes traversing the Camp Meeting Avenue Bridge over CSX-West Trenton Line for a period from Tuesday, February 2, 2010, to Friday, February 5, 2010 and from Saturday, February 20, 2010, to Tuesday, February 23, 2010. Manual classification traffic counts were conducted at the ATR located approximately 300 feet east from the bridge on Friday, February 5, 2010 from 6:00 AM to 10:00 AM and from 2:00 PM to 7:00 PM. Traffic counts were recorded for each 15-minute period during the morning and evening counts to determine the following vehicle types using the bridge: pedestrian, bike, auto, light truck, heavy truck, and bus.

Following the field work, the data was compiled, analyzed and evaluated to determine the morning and evening peak hours and to obtain the existing volume condition data for the study bridge. The roadway weekday morning peak hour occurs from 7:15 AM to 8:15 AM and the evening peak hour occurs from 5:00 PM to 6:00 PM. The peak-hour factors (PHF) are consistent with typical commuter conditions in suburban areas where surges in traffic are less prevalent.

Existing Traffic Data – Camp Meeting Avenue Bridge over CSX-West Trenton Line

TRAFFIC DATA	Skillman Road EB	Skillman Road WB
YEAR 2010 EXISTING		
Estimated AADT (veh/day)	435	645
ADT (24-hour)	415	615
AM Peak Hour Volume	135	50
PM Peak Hour Volume	10	70
AM Peak Hour Heavy Vehicles	1%	1%
PM Peak Hour Heavy Vehicles	0%	1%
Posted Speed Limit (Advisory on Bridge)	30 mph (15 mph)	

C. Traffic Volume Forecasts

The following tables summarize the population, employment and household forecasts and population growth rates for the communities that are served by Camp Meeting Avenue.

Population Growth

Jurisdiction	Population		Change 1990-2000		Annual Growth Rate %
	1990	2000	#	%	
Somerset County	240,000	297,490	57,211	23.8%	**2.2%**
Montgomery Township	9,612	17,465	7,853	81.7%	**6.2%**

Source: U.S. Census Bureau

Population Forecast

Jurisdiction	Population		Change 2005-2035		Annual Growth Rate %
	2005	2035	#	%	
Somerset County	317,000	371,000	54,000	17.0%	**0.5%**
Montgomery Township	22,530	22,650	120	0.5%	**0.0%**

Source: NJTPA Approved Demographic and Employment Forecasts, 8/24/2009

Employment Forecast

Jurisdiction	Employment		Change 2005-2035		Annual Growth Rate %
	2005	2035	#	%	
Somerset County	175,400	247,900	72,500	41.3%	**1.2%**
Montgomery Township	10,200	17,980	7,780	76.3%	**1.9%**

Source: NJTPA Approved Demographic and Employment Forecasts, 8/24/2009

Household Forecast

Jurisdiction	Household		Change 2005-2035		Annual Growth Rate %
	2005	2035	#	%	
Somerset County	113,600	138,200	24,600	21.7%	**0.7%**
Montgomery Township	7,440	7,460	20	0.3%	**0.0%**

Source: NJTPA Approved Demographic and Employment Forecasts, 8/24/2009

Demographic projections indicate that over the next 30 years, population employment and household figures in the study area are expected to increase. Somerset County is projected to experience additions in residential populations (0.5 % per year) and in employment (1.2% per year). In Montgomery Township,

population is expected to slightly increase, and employment is projected to grow at a rate of 1.9% per annum.

Given the projection trends for the purposes of projecting future year traffic volumes for this study it was estimated that study area traffic would increase by 1% per year. NJDOT agreed with the conclusion to use an annual growth rate of 1% per year.

No major proposed site developments or improvements are currently planned in the immediate area. However, two small developments are planned several miles away from the Camp Meeting Avenue Bridge. A 58-unit residential project is approved for construction 2 miles east on Burnt Hill Road. Also, a quarry on County Route 601 located approximately 3 miles north will change ownership. Included in the proposal was a plan to reduce heavy vehicle traffic by utilizing rail transportation on a spur of the CSX-West Trenton Line. It was assumed neither of these two developments will cause a significant increase in traffic over the Camp Meeting Avenue Bridge.

Future Annual Daily Traffic (ADT) volumes have been prepared for Year 2034. To estimate future peak hour volumes, appropriate K factors and directional distribution were applied to future ADT volumes. See ***Appendix J*** for the future traffic volume diagrams.

Future Traffic Data – Camp Meeting Avenue Bridge over CSX-West Trenton Line

TRAFFIC DATA	Skillman Road EB	Skillman Road WB
YEAR 2034 FUTURE		
Estimated ADT (24-hour)	520	780
AM Peak Hour Volume	150	60
PM Peak Hour Volume	20	140

D. Crash Data Analysis and Crash Diagram

Crash data from January 1, 2007 to December 31, 2009 were obtained from the NJDOT-Bureau of Safety Programs for Camp Meeting Avenue from MP 0.00 to 0.56 and Skillman Road from MP 0.00 to 0.52. The Montgomery Township Police Department was also contacted to discuss the crash history in this area and to attempt to obtain more recent reported crash data. Police crash reports from January 1, 2007 to December 31, 2012 were provided for Camp Meeting Avenue from MP 0.00 to 0.56 and Skillman Road from MP 0.00 to 0.52. These reports were analyzed and the data provided from both the above mentioned sources was utilized to prepare the Crash Summary and Collision diagram.

The predominant accident types occurring at the roadway segment are Animal (3 total, or 25%), Opposite Direction/Sideswipe (2 total, or 17%), Head On (2 total, or 17%) and Fixed Object (2 total, or 17%). The collision diagrams indicate that 4 out of the 12 crashes occurred in the immediate vicinity of the study bridge. The

Police Crash Investigation Reports for these four crashes indicate the limited lane width and inadequate sight distance were direct factors in each of the crashes.

The study period data show that 1 of the 12 crashes, or 8% of the crashes, resulted in an injury to a motorist and that all of the crashes resulted in property damage.

When compared to the statewide average of total crashes between intersections for the municipal roadway system, Animal (2.4% average), Head On (3.29% average), and Fixed Object (13.05%) accident types exceed the statewide average.

The crash data and collision diagrams are presented in ***Appendices F*** and ***K***, respectively.

V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING

The environmental screening was prepared by NJDOT. Environmental-related correspondence is contained in **Appendix L**.

A. Community Outreach

The initial Public Officials Briefing Meeting was held on November 19, 2010 at the Montgomery Township Municipal Building to introduce the project and solicit input on the project objectives. Attendees included representatives from NJDOT, Gannett Fleming, and Montgomery Township.

A follow-up Public Officials Briefing Meeting was held on June 25, 2012 at the Montgomery Township Municipal Building. Attendees included representatives from NJDOT, Gannett Fleming, and Montgomery Township. During the meeting the following comments and concerns were noted:

- Gannett Fleming reviewed the Preliminary Preferred Alternative (PPA) and the recommended construction staging to provide a full detour. Montgomery Township was in support of the structure replacement and the full detour. Montgomery Township requested that sidewalks be included throughout the project limits.
- Gannett Fleming stated that the next step is to schedule a Public Information Center (PIC) to solicit input from the public. NJDOT encouraged that the municipality advertise the PIC on their website. NJDOT would be in touch with the Township with respect to scheduling a PIC.
- NJDOT indicated that they would need to obtain a Resolution of Support from Montgomery Township in order for the project to move forward.
- NJDOT stated that a meeting with Somerset County will be scheduled to discuss the project.

A meeting with Somerset County was held on July 25, 2012 at the Somerset County Administration Building. Attendees included representatives from NJDOT, Gannett Fleming, and Somerset County. Somerset County recognized that the bridge needs to be replaced and supports full replacement. A Resolution of Support (R12-512) dated August 28, 2012 was obtained from Somerset County. They stated that CSX has a speed restriction through the project area and may have an issue with maintaining the existing vertical clearance. At the time, the project team indicated this would be addressed in Preliminary Engineering.

A Public Information Center was held on November 20, 2012. The Local Officials and the general public were in support of the project.

B. Noise and Air Quality

There is not anticipated to be any change in noise or air quality as a result of the project. Potential noise and air quality issues during construction would be addressed during the project design phase.

C. Socioeconomics

The proposed project will not significantly affect farmland or community facilities and will not displace businesses or residences. During construction, access to and from the Otto Kaufman Senior Center and Montgomery Township High School will be an inconvenience to residents that live west of the structure due to the full detour that will be implemented. The project will not impact bus stops, playgrounds, parks or gardens; therefore, no impacts to socio-economics are anticipated.

The proposed project will not have a disproportionately high or adverse effect on low income and/or minority communities. The Preliminary Preferred Alternative concept is in compliance with the goals of Executive Order 12898 and the requirements of the Civil Rights Act of 1964.

D. Cultural Resources

The New Jersey Historic Preservation Office (NJHPO) issued an opinion in October 2005, that the Camp Meeting Avenue Bridge is eligible for listing on the National Register of Historic Places. Additionally, in a letter dated September 2005, the NJHPO issued an opinion that the Delaware and Bound Brook (Reading) Railroad Historic District is eligible for listing on the register, with the bridge identified as a contributing resource to the district. The bridge is considered eligible as one of the few examples of this bridge type (Howe pony truss) in NJ and the oldest remaining railroad bridge in Somerset County. The bridge is not currently listed on the New Jersey or National Registers of Historic Places.

Due to the historic standing of the bridge, a replacement structure has been discussed with a design incorporating the character defining features of the existing bridge. This would include a superstructure with prefabricated trusses of a similar configuration and appearance to those of the present Howe trusses. This will be addressed during the Preliminary Design phase of the project. Continued coordination with be required with the NJHPO, Montgomery Township Landmarks Commission and the Harlingen Historical Society. Section 106 consultation with the NJHPO has been initiated. This consultation is included in **Appendix L**.

E. Section 4(f) Properties

The property in the northeast quadrant of the bridge is the Otto Kaufman Senior Center, and the property in the southeast quadrant of the bridge is State-preserved

farmland. During the design phase of the project, coordination with Montgomery Township and state officials will be required to receive the necessary approvals.

F. Highlands/Pinelands

The project impact area does not fall within the Highlands or Pinelands protected areas.

G. Wetlands

There are flooded swales adjacent to the railroad tracks within the project corridor, which will be regulated as wetlands/State Open Waters by NJDEP. The wetland community at the railroad ditches is seasonal emergent vegetation, with a wetlands label of PEM (Palustrine Emergent). Information on the wetlands around the bridge was derived from maps and field investigation by the NJDOT Environmental Team. Wetlands have not been delineated and will need to be confirmed by NJDOT.

The project will cause minor permanent and/or temporary impacts to NJDEP mapped wetlands/State Open Waters and wetland transition areas associated with the proposed bridge replacement. Minimization of disturbance to wetlands and woody vegetation will be a goal of project design.

H. Reforestation

Any tree removal greater than ½ acre will be regulated under the NJ Reforestation Act. It does not appear that reforestation will be required for this project.

I. Floodplain

This project is not located within a floodplain.

J. Sole Source Aquifer

The project is located within the United States Environmental Protection Agency (USEPA)-designated Northwest New Jersey Sole Source Aquifer (SSA). However, according to the July 9, 1984 FHWA-USEPA Memorandum of Understanding, the proposed project does not require coordination with the USEPA.

K. Threatened/Endangered Species

An initial assessment has been completed by NJDOT Environmental Team staff, with no specific habitat identified. Further investigation is needed for some turtle

and avian species. Any tree removal will require a habitat tree survey for a consultation for endangered bat habitat with U.S. Fish & Wildlife (USFWS).

L. Category 1 Waters

There are no classified Category 1 waterways within the study area.

M. Vernal Pools

There are no vernal pools located within the study area.

N. Stormwater

It is anticipated that the land disturbance will not impact more than one acre and the additional net impervious surface that will occur as a result of this project will be less than 0.25 acres. Therefore, the proposed construction will not be required to comply with New Jersey Stormwater Management Rules.

O. Hazardous Waste

The project area includes a railroad corridor. Fill associated with railroads typically is generated from an unknown source, and therefore may contain contaminants. Further investigations will be required during the design phase.

P. Anticipated Environmental Permits or Approvals

A Freshwater Wetlands General Permit will need to be obtained due to the impacts to the flooded swales adjacent to the railroad corridor.

Q. Complete Streets Policy

Coordination with NJDOT – Office of Bicycle and Pedestrian Programs occurred during Concept Development. The Complete Streets policy was implemented for this project and all alternatives included the provision of a sidewalk on the southern side of the Camp Meeting Avenue Bridge and two bicycle-compatible 14-foot wide travel lanes.

Montgomery Township has a robust Pathways and Open Space Program. As part of this program, Camp Meeting Avenue is included in the Township's pathway master plan. The master plan indicates the Camp Meeting Avenue pathway as "Pedestrian-Bikeway Within Or Adjacent Street Rights-Of-Way"

R. Environmental Summary with Probable NEPA Document required

Based on the current Preliminary Preferred Alternative improvements, it is anticipated the project will result in minimal environmental impacts. The project is categorized as a Categorical Exclusion as defined in 23 CFR 771.117(d) (3)/Bridge rehabilitation, reconstruction or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

VI. EVALUATION OF CONCEPTUAL ALTERNATIVES

A. Bridge Rehabilitation versus Bridge Replacement

Rehabilitation of the existing structure is not feasible based on the existing conditions of the structure, low load ratings and substandard roadway geometry. Cost associated with repairs of the existing structure in order to increase the load capacity of the existing steel members in accordance with current design standards would be significant and difficult to determine. Additionally, widening the structure to satisfy current geometric requirements and to accommodate two shared-use travel lanes would be impossible for a thru-truss bridge system.

Replacement of the existing bridge superstructure in-kind was considered. However, this alternative would not address the substandard deck geometry issue and the local officials did not support a single-lane option. Therefore, this alternative was eliminated.

Widening of the existing bridge was considered; however, in order to widen the bridge, the piers would need to be replaced since the existing piers are steel frame with bracing members on concrete pedestals. The new piers, because of their location, would not meet the lateral clearance required for railroad tracks and would have to be designed for the railroad impact loads. Crash walls would also have to be incorporated. Additionally, CSX construction guidelines are very restrictive by not allowing construction immediately adjacent to the tracks. Therefore, this alternative was eliminated.

Another alternative considered was to provide a single-span replacement structure that can accommodate two shared-use travel lanes and a sidewalk. The existing piers would be removed while the existing abutments would remain in place. New wider abutments will be located in front of the existing abutments which would provide an 18-foot minimum lateral clearance to the railroad tracks. The existing abutments would then be abandoned. The various structure types and replacement alternatives for a single-span bridge were considered and are described below in Section C.

B. Temporary Bridge Location and Widening Constraints

During the initial Local Officials Briefing held on November 19, 2010, Montgomery Township officials were not opposed to a full detour during construction, therefore a temporary bridge was not considered.

C. Conceptual Alternatives

Structure Types

The proposed abutments for the single-span bridge will consist of abutment pile caps supported on drilled shafts. This allows the existing abutments to remain in place and serve as shoring during the construction of the new abutments. The

curtainwalls can be treated with formliner as necessary to incorporate any historic features of the existing structure. Other alternatives were evaluated such as demolishing the existing abutments and replacing them with reinforced concrete abutments or providing abutment pile caps on sheetpile walls. These alternatives were determined too costly or did not meet the aesthetic requirements. Therefore, all structure types that were considered are to be supported by abutment pile caps on drilled shafts.

Five superstructure types were investigated for the conceptual alternatives. All structure types will support two shared-use travel lanes and a sidewalk.

- Replacement with a Single-Span Precast Proprietary System
- Replacement with a Single-Span Inverset System (Accelerated Bridge Construction)
- Replacement with a Single-Span Steel Thru-Truss Bridge
- Replacement with a Single-Span Prestressed Concrete Adjacent Box Beam Bridge
- Replacement with a Single-Span Steel Multi-Girder Bridge

No Build

The No Build alternative would continue on-going maintenance repairs on the existing bridge and would not correct the bridge deficiencies. The No Build alternative is immediately eliminated from further discussion because it does not meet the project purpose and need.

Structure Option 1 - Replacement with a Single-Span Precast Proprietary System

The precast proprietary system is not feasible given the severe skew of the structure. This structure type was eliminated from further consideration.

Structure Option 2 - Replacement with a Single-Span Inverset System (Accelerated Bridge Construction)

A one-span Inverset System was considered for the replacement. This superstructure type would reduce the construction duration but the initial construction cost is high. The new superstructure would consist of 30-inch deep steel I-beams with an 8½-inch reinforced concrete deck similar to the steel multi-girder bridge. Since the depth of the existing structure is approximately 24 inches, this superstructure type would require raising the profile by about 18 inches. The high initial construction cost associated with an Inverset System without benefits of reducing superstructure depth, which would be comparable to a steel multi-girder bridge, eliminates this superstructure type from further consideration.

Structure Option 3 - Replacement with a Single-Span Steel Thru-Truss Bridge

In this structure option, the existing bridge would be replaced with a new single-span steel thru-truss structure. It would accommodate two shared-use travel lanes between the trusses, and a sidewalk would cantilever from the south side of the truss. The new superstructure would be 44½ inches deep and consist of steel trusses, floorbeams, stringers, and a concrete deck. The steel truss would have a similar configuration as the existing, in effort to retain the original character of the structure. This structure type would provide the best replica of the existing truss bridge, and would reduce the construction duration for superstructure erection over railroad tracks. However, the roadway profile would need to be raised by approximately 21 inches to accommodate the wider single-span structure.

The steel thru-truss structure type is feasible and was carried forward toward conceptual design.

Structure Option 4 - Replacement with a Single-Span Prestressed Concrete Adjacent Box Beam Bridge

In this bridge option, the existing structure would also be replaced with a new single-span bridge. The structure would carry two shared-use travel lanes with a sidewalk on the south side of the bridge. The new superstructure will consist of 27-inch deep prestressed concrete adjacent deck beams with a 5½-inch deep reinforced concrete deck. Since the depth of the existing structure is approximately 24 inches, the roadway profile will need to be raised by 10 inches.

The historical characteristics of the existing bridge could be preserved on the new structure by replicating the truss using formliners on concrete parapets or by providing a lightweight truss attached to the fascia beams or parapets. The NJDOT and the State Historic Preservation Officer (SHPO) will coordinate to determine the extent of how much of the original structure's existing characteristics will need to be retained. This coordination will occur during the design phase of the project.

The adjacent box beam structure type is feasible and was carried forward toward conceptual design.

Structure Option 5 - Replacement with a Single-Span Steel Multi-Girder Bridge

In this structure option, the existing structure would be replaced with a new single-span bridge. The structure will carry two shared-use travel lanes with a sidewalk on the south side of the bridge. The new superstructure will consist of 30-inch deep steel I-beams with an 8½-inch reinforced concrete deck. Since the depth of the existing structure is approximately 24 inches, the roadway profile will need to be raised by 18 inches.

The historical characteristics of the existing bridge could be preserved on the new structure by replicating the truss using formliners on concrete parapets or by

providing a lightweight truss attached to the fascia beams or parapets. The NJDOT and the State Historic Preservation Officer (SHPO) will coordinate to determine the extent of how much of the original structure's existing characteristics will need to be retained. This coordination will occur during the design phase of the project.

The steel multi-girder structure type is feasible and was carried forward toward conceptual design.

Profile Alternatives

Two replacement alternatives were considered for this structure and are provided in ***Appendix M***. The following profile alternatives were investigated:

- Replacement Alternative 1 – Maintain existing vertical clearance of 21'-2" minimum above the CSX-West Trenton Line below
- Replacement Alternative 2 – Increase vertical clearance to 23'-0" standard railroad clearance over the CSX-West Trenton Line below

Replacement Alternative 1 – Maintain Existing Vertical Clearance of 21'-2" Minimum Above the CSX-West Trenton Line

The horizontal alignment would not change as the widening would hold the existing roadway centerline. A parallel alignment was considered and removed from further consideration due to the light volume of the roadway compared to the significant impacts to adjacent properties with a parallel alignment. The proposed cross section will consist of two bicycle-compatible 14-foot wide travel lanes with a 6-foot sidewalk on the southern side of the bridge. An umbrella section with a 7-foot berm is proposed on the northern side of the roadway and a 10-foot berm on the southern side of the roadway is proposed to be able to accommodate a future sidewalk. A raised berm was eliminated from further consideration due to the changes it would have on the existing drainage pattern. Beam guide rail is proposed on all four quadrants of the structure. The vertical profile of the roadway would be improved to provide proper vertical sight distance. Due to the revisions of the vertical profile, six driveways west of the structure would require regrading to meet the new profile. Temporary construction easements and permanent Right-of-Way would be required to construct the new bridge over the CSX-West Trenton line.

This replacement alternative would require four utility poles carrying electric and cable along the north side of Camp Meeting Avenue to be permanently shifted away from the roadway. In addition, the two poles closest to the bridge would need to be temporarily shifted even further away than their permanent position to accommodate the operation of the crane used during bridge construction. The operation of the crane will also require a temporary relocation of the high voltage aerial electric lines crossing over Camp Meeting Avenue and continuing along the

CSX-West Trenton line below. This temporary relocation will require several utility poles to be installed. These utility relocations are included in the construction cost estimate.

Replacement Alternative 1 with a steel truss structure has a construction cost (structure, highway, and utilities) and life cycle cost (structure) of $4,142,000 and $3,892,000, respectively. This replacement alternative with a prestressed adjacent box beam structure has a construction cost (structure, highway, and utilities) and life cycle cost (structure) of $3,801,000 and $2,778,000, respectively. This replacement alternative with a welded steel multi-girder structure has a construction cost (structure, highway, and utilities) and life cycle cost (structure) of $3,972,000 and $3,341,000, respectively. No fatal flaws were identified.

Replacement Alternative 2 – Increase Vertical Clearance to 23'-0" Over the CSX-West Trenton Line

Replacement Alternative 2 is nearly identical to Replacement Alternative 1 with the exception of the vertical profile difference to account for the 23-foot vertical clearance to the CSX rail. The increased profile would further impact the driveways to the west of the structure and require the project limits to be extended further west. This alternative would eliminate all controlling substandard design elements. Temporary construction easements and permanent Right-of-Way would be required to construct the new bridge over the CSX-West Trenton line.

Replacement Alternative 2 with a steel truss structure has a construction cost (structure, highway, and utilities) and life cycle cost (structure) of $4,376,000 and $4,030,000, respectively. This replacement alternative with a prestressed adjacent box beam structure has a construction cost (structure, highway, and utilities) and life cycle cost (structure) of $4,018,000 and $2,901,000, respectively. This replacement alternative with a welded steel multi-girder structure has a construction cost (structure, highway, and utilities) and life cycle cost (structure) of $4,198,000 and $3,471,000, respectively. No fatal flaws were identified.

D. Traffic Analysis

After consultation with and approval of the local and county officials, this project will be constructed under a full detour. The approved detour route will involve Belle-Mead Blawenburg Road (County Route 601), Georgetown and Franklin Turnpike (County Route 518), and Hollow Road.

The total length of this detour would be approximately 2.9 miles; the distance without detour is 1.1 miles. The estimated travel time for this detour under uncongested conditions is approximately six minutes; the travel time without the detour under uncongested conditions is estimated at two minutes. Three signalized intersections are located along the detour route.

The following tables present a comparison of the Year 2016 operational conditions without and with the proposed detour.

INTERSECTION APPROACH		AM PEAK			PM PEAK		
		LOS	V/C	Delay (sec/veh)	LOS	V/C	Delay (sec/veh)
YEAR 2016 WITHOUT DETOUR							
Skillman Rd EB	L	D	0.64	44.6	C	0.15	34.0
	TR	D	0.74	46.9	D	0.42	36.1
Skillman Rd WB	L	**E**	0.92	56.1	C	0.36	21.2
	TR	C	0.34	23.6	C	0.21	22.4
Belle-Mead Blawenburg Rd NB	L	C	0.39	20.8	B	0.12	10.7
	TR	D	0.98	38.6	C	0.88	25.3
Belle-Mead Blawenburg Rd SB	L	B	0.28	19.3	B	0.29	19.7
	TR	**E**	**1.01**	60.3	B	0.66	17.9
Intersection Total		D	-	47.8	C	-	22.8
YEAR 2016 WITH DETOUR							
Skillman Rd EB	L	D	0.38	36.2	C	0.14	34.0
	TR	D	0.46	36.5	D	0.42	36.1
Skillman Rd WB	L	D	0.91	51.8	C	0.51	22.7
	TR	C	0.22	22.4	C	0.12	21.6
Belle-Mead Blawenburg Rd NB	L	B	0.32	18.2	A	0.05	9.9
	TR	**E**	**1.06**	59.6	C	0.88	25.3
Belle-Mead Blawenburg Rd SB	L	B	0.28	19.3	B	0.29	19.7
	TR	D	**1.01**	51.6	B	0.66	17.8
Intersection Total		D	-	51.8	C	-	22.9

County Route 602 (Skillman Road) – County Route 601 (Belle-Mead Blawenburg Road) Signalized Intersection

INTERSECTION APPROACH		AM PEAK			PM PEAK		
		LOS	V/C	Delay (sec/veh)	LOS	V/C	Delay (sec/veh)
YEAR 2016 WITHOUT DETOUR							
Georgetown and Franklin Tpke EB	L	**F**	**1.06**	**110.5**	B	0.43	14.5
	TR	**F**	**1.14**	**118.3**	C	0.54	23.7
Georgetown and Franklin Tpke WB	L	**E**	0.71	40.2	B	0.40	13.2
	TR	**E**	0.79	41.8	C	0.67	27.1
Belle-Mead Blawenburg Rd NB	L	D	0.45	37.9	**F**	**0.91**	**82.2**
	TR	**F**	**1.41**	**238.9**	**F**	**1.54**	**297.1**
Belle-Mead Blawenburg Rd SB	L	**F**	**1.03**	**98.8**	C	0.65	29.1
	T	C	0.68	32.5	C	0.68	30.4
	R	C	0.21	24.4	C	0.74	32.5
Intersection Total		**F**	**-**	**111.7**	**F**	**-**	**82.5**
YEAR 2016 WITH DETOUR							
Georgetown and Franklin Tpke EB	L	**F**	**1.51**	**289.7**	B	0.47	14.8
	TR	**F**	**1.18**	**137.3**	C	0.54	23.7
Georgetown and Franklin Tpke WB	L	D	0.71	40.2	B	0.40	13.2
	TR	D	0.79	41.8	C	0.67	27.1
Belle-Mead Blawenburg Rd NB	L	D	0.45	37.7	**F**	**0.98**	**103.4**
	TR	**F**	**1.40**	**235.1**	**F**	**1.50**	**279.2**
Belle-Mead Blawenburg Rd SB	L	**F**	**1.03**	**98.8**	C	0.65	29.1
	T	C	0.65	31.6	C	0.68	30.4
	R	C	0.41	27.1	D	0.89	42.8
Intersection Total		**F**	**-**	**133.3**	**E**	**-**	**79.1**

County Route 518 (Georgetown and Franklin Turnpike) – County Route 601 (Belle-Mead Blawenburg Road) Signalized Intersection

INTERSECTION APPROACH		AM PEAK			PM PEAK		
		LOS	V/C	Delay (sec/veh)	LOS	V/C	Delay (sec/veh)
YEAR 2016 WITHOUT DETOUR							
Georgetown and Franklin Tpke EB	L	A	0.25	4.2	A	0.20	5.8
	T	A	0.68	7.7	A	0.41	6.6
Georgetown and Franklin Tpke WB	TR	A	0.36	4.5	B	0.88	18.3
Hollow Rd SB	LR	D	0.73	46.5	C	0.49	22.8
Intersection Total		A	-	9.8	B	-	15.0
YEAR 2016 WITH DETOUR							
Georgetown and Franklin Tpke EB	L	A	0.15	3.7	A	0.22	6.0
	T	A	0.72	8.6	A	0.41	6.6
Georgetown and Franklin Tpke WB	TR	A	0.41	4.8	C	0.97	31.9
Hollow Rd SB	LR	**E**	0.95	76.6	C	0.43	22.4
Intersection Total		B	-	14.7	C	-	23.5

County Route 518 (Georgetown and Franklin Turnpike) – Hollow Road Signalized Intersection

INTERSECTION APPROACH		AM PEAK			PM PEAK		
		LOS	V/C	Delay (sec/veh)	LOS	V/C	Delay (sec/veh)
YEAR 2016 WITHOUT DETOUR							
Camp Meeting Ave WB	LR	B	0.07	11.3	A	0.05	9.5
Hollow Rd SB	L	A	0.08	7.9	A	0.00	7.4
YEAR 2016 WITH DETOUR							
Camp Meeting Ave WB	LR	A	0.01	9.5	A	0.02	9.9
Hollow Rd SB	L	A	0.00	7.5	A	0.00	7.7

Camp Meeting Avenue – Hollow Road Unsignalized Intersection

During construction, it will be the responsibility of the Contractor to monitor intersection operations along the detour route. The Contractor will make signal timing adjustments to minimize intersection delays and optimize traffic flow.

E. Hydrology & Hydraulics Analysis

Ditches located adjacent to the CSX railroad tracks will likely be regulated as wetlands or state open waters by NJDEP. Since a Freshwater Wetlands Transition

Area permit will be required, the project will trigger compliance with the Stormwater Management Rules if greater than 0.25 acres of new impervious surface is proposed. Replacement Alternative 1, described in Section C above, creates approximately 0.20 acres of new impervious surface and Replacement Alternative 2, also described in Section C above, has approximately 0.21 acres of new impervious surface.

The roadway approaches will be umbrella section. Stormwater runoff will sheet-flow from the crowned roadway to the adjacent properties. Scuppers are not proposed on the bridge. Stormwater on the bridge will collect against the parapets and wing walls and gutter-flow to the bridge approaches where no curbs are provided. Once off the structure the stormwater will make its way to the railroad ditches below the structure via rip-rap stone slope protection. Further details will be worked out during the Final Design phase.

F. Right of Way Impacts and Review

The following table summarizes the permanent Right of Way and utility/construction easements that would be required for the two Replacement Alternatives.

Property/Owner	Alternative 1		Alternative 2	
	Permanent ROW	ROW Easements	Permanent ROW	ROW Easements
Block 14001, Lot 15 **Winifred A. Poor**	None	810 SF	None	3,655 SF
Block 14001, Lot 27 **Jean B. Pariso Trustee**	None	2,980 SF	None	3,840 SF
Block 14001, Lot 16 **New York Central Lines, LLC**	None	2,835 SF	None	2,835 SF
Block 14001, Lot 38 **Township of Montgomery**	None	1,434 SF	None	1,616 SF
Block 25001, Lot 16 **Sculpture House, Inc.**	None	None	None	910 SF
Block 25001, Lot 35 **Radiation Data, Inc.**	1,584 SF	4,696 SF	1,584 SF	5,230 SF

Block 25001, Lot 23 **New York Central Lines, LLC**	800 SF / 300 SF*	1,950 SF	800 SF / 300 SF*	2,006 SF
Block 25001, Lot 27 **NJ Department of Treasury**	1,032 SF	27,071 SF	1,032 SF	27,784 SF
TOTAL	**3,416 SF / 2,916 SF**	**41,776 SF**	**3,416 SF / 2,916 SF**	**47,876 SF**

***Only with Steel Thru-Truss / Only with Prestressed Concrete Beam or Steel Girder**

G. ITS Facilities

In coordination with the NJDOT-ITS unit, no ITS facilities are planned for the Camp Meeting Avenue over CSX-West Trenton Line project. A SERF is not required.

H. Access Impacts and Review

The proposed project will have no impact on the driveway to the Otto Kaufman Senior Center (Block 14001, Lot 38). The property in the southeast quadrant (Block 25001, Lot 27) does not have a driveway accessing Camp Meeting Avenue. A number of driveways on the properties west of the structure will be impacted by the project due to the change in the vertical profile and the widening of the roadway. Although not a state roadway, in order to meet NJDOT Access Code requirements, adjustments of access will be required for the following properties: Block 25001, Lot 35; Block 14001, Lot 15; and Block 14001, Lot 27.

I. Constructability and Staging Plans and Detour Plan

Since the traffic will be detoured during construction (see Section D), the bridge can be built during a full closure and staging will not be required. However, the bridge provides direct access for school bus traffic to and from Montgomery High School. Ideally, most of the construction should take place during the summer months, if possible.

In addition, direct coordination with CSX must be established during the design phase in order to coordinate the construction over railroad tracks. During both the design and construction phases of the project, right-of-entry and construction agreements will need to be obtained from the CSX Public Projects Group.

Initial coordination with the CSX Public Projects Group was started during this phase of the project. It is CSX policy to provide detailed input and design requirements only for projects that are in their design phase. However, CSX was asked to provide their future business plan related to the West Trenton Line to

determine if additional tracks will need to be accommodated in the Camp Meeting Avenue Bridge design. CSX also advised that during the design phase, NJDOT will need to provide reasons to make the case to CSX to maintain the vertical clearance less than 23 feet. Preliminary discussions with CSX indicate that they will not provide their concurrence with substandard vertical clearance at this time.

J. Controlling Substandard Design Elements and Reasonable Assurance

Preliminary discussions with CSX indicate that the railroad will not provide their concurrence with substandard vertical clearance; therefore no Controlling Substandard Design Elements will occur with the recommended alternative.

K. Construction Cost Estimate

Detailed construction cost estimates for the two alternatives are included in ***Appendix R***. The cost estimates include structural elements, roadway elements, and utility relocation. ROW costs are broken out separately.

The construction cost estimate summary for the Preliminary Preferred Alternative with a steel thru-truss is:

WORK TYPE	TOTAL
Earthwork	$145,600.00
Pavement	$210,879.63
Other Roadway Items	$29,146.67
Signing/Striping	$5,250.00
Bridges	$2,897,000.00
Drainage	$4,000.00
Landscape	$11,401.37
General Items & Utility Work	$250,000.00
Soil Erosion & Sediment Control	$88,831.94
Maintenance of Traffic	$29,285.00
Training	$3,553.28
Mobilization	$355,327.77
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$245,818.91
PROJECT SUBTOTAL (ROW not included)	$4,376,095.00
ROW	$465,500.00
PROJECT TOTAL (ROW included)	**$4,841,595.00**

The construction cost estimate summary for the Preliminary Preferred Alternative with adjacent box beams is:

WORK TYPE	TOTAL
Earthwork	$145,600.00
Pavement	$210,879.63
Other Roadway Items	$29,146.67
Signing/Striping	$5,250.00
Bridges	$2,588,000.00
Drainage	$4,000.00
Landscape	$11,401.37
General Items & Utility Work	$250,000.00
Soil Erosion & Sediment Control	$81,106.94
Maintenance of Traffic	$29,285.00
Training	$3,244.28
Mobilization	$324,427.77
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$236,085.41
PROJECT SUBTOTAL (ROW not included)	$4,018,428.00
ROW	$465,500.00
PROJECT TOTAL (ROW included)	**$4,483,928.00**

The construction cost estimate summary for the Preliminary Preferred Alternative with a steel multi-girder system is:

WORK TYPE	TOTAL
Earthwork	$145,600.00
Pavement	$210,879.63
Other Roadway Items	$29,146.67
Signing/Striping	$5,250.00
Bridges	$2,743,000.00
Drainage	$4,000.00
Landscape	$11,401.37
General Items & Utility Work	$250,000.00
Soil Erosion & Sediment Control	$84,981.94
Maintenance of Traffic	$29,285.00
Training	$3,399.28

Mobilization	$339,927.77
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$240,967.91
PROJECT SUBTOTAL (ROW not included)	$4,197,840.00
ROW	$465,500.00
PROJECT TOTAL (ROW included)	**$4,663,340.00**

L. Value Engineering Study and Report

A NJDOT Value Engineering study was not completed for this project. However, Subject Matter Experts from the NJDOT Value Engineering unit that were part of the Core Group, provided their input throughout the Concept Development phase of the project.

M. Life Cycle Cost Analysis

Life Cycle Cost Analysis for the two alternatives can be found in **Appendix T**. A 100-year bridge service life and a 2% discount rate per NJDOT Year 2012 Office of Management and Budget, Circular A-94 were used for comparison. For the steel truss option, the maintenance cost was estimated at $20,200 every 10 years after the first five years, the deck replacement cost was estimated at $796,200, and the FCM inspection cost was estimated at $20,000 every two years. For the adjacent box beam option, the maintenance cost was estimated at $30,300 every 10 years after the first five years, and the deck replacement cost was estimated at $489,400. For the steel girder option, the maintenance cost was estimated at $30,300 every 10 years after the first five years, the deck replacement cost was estimated at $737,700, and the FCM inspection cost was estimated at $5,000 every two years.

N. Discussions with Subject Matter Experts

Continuous coordination with NJDOT Subject Matter Experts (SMEs) was completed throughout the Concept Development phase of the project. The NJDOT SMEs have expressed support for the replacement of the existing bridge. The bridge is at the end of its current service life. The replacement of the bridge will provide for a 100-year service life.

O. Preliminary Preferred Alternative (PPA)

Replacement Alternative 1 (maintaining the 21'2" vertical clearance) was supported as the Preferred Project Alternative (PPA) by the NJDOT Core Group at a meeting on May 10, 2012, however since preliminary discussions with CSX indicate that the railroad will not provide their concurrence with substandard vertical clearance at this time, Replacement Alternative 2 (increase vertical clearance to 23'-0") is recommended as the PPA. It should be noted that the NJDOT Core Group did not oppose Replacement Alternative 2. At the core group meeting, Replacement Alternative 1 was selected due to the cheaper overall cost. The CSX coordination occurred following the core group meeting. It was determined that further coordination with SHPO will be required during Preliminary Design to select the final structure type. Additionally, coordination with CSX during Preliminary Design is necessary to determine the ultimate vertical clearance and span arrangement that is required for compatibility with CSX requirements.

P. Preliminary Engineering Scope Statement

The Preliminary Engineering Scope Statement is located in **Appendix X**.

Q. Next Steps

The Preliminary Engineering phase will be started in Fiscal Year 2014, the Final Design phase is projected to start in Fiscal Year 2016, and Construction is estimated to begin in Fiscal Year 2019.

R. Design Costs

The planning and Concept Development project phases have been funded by Transportation Trust Funds at an estimated cost of $500,000. The projected cost for Preliminary Engineering is $500,000 and $2,000,000 for Final Design. Preliminary Engineering, Final Design, and Construction will be funded by Federal Highway Administration (FHWA).

S. STIP Conformity

Conformity to the Statewide Transportation Improvement Plan (STIP) is determined during the planning phase prior to entering the Concept Development phase. The Camp Meeting Avenue bridge over CSX – West Trenton Line is included in the current STIP Program. The Fiscal Year 2014-2023 Draft STIP is included in **Appendix A**.

VII. CONCEPT DEVELOPMENT RECOMMENDATION

A. Federal Highway Administration (FHWA) Approval of Report

B. Capital Program Screening Committee (CPSC) Recommendation

C. Capital Program Committee (CPC) Approval

APPENDIX A –
Statewide Transportation Program

FY 2014-2023 DRAFT STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM
New Jersey Department of Transportation

Camp Meeting Avenue Bridge over Trenton Line, CR 602

DB # 99405 **UPC 994050** **MILEPOST(S) N/A**

COUNTY: Somerset **MUNICIPALITY: Montgomery Twp**

This project will address the proposed replacement of this "orphan" structure which is in critical condition. The proposed replacement of this structure will be designed so as not to preclude improvements needed to reintroduce passenger service to the West Trenton Line, as well as increasing the height of the bridge to allow the current tracks to be raised to address ongoing railroad operational issues, as identified in the NJTPA Grade Crossing Assessment Study. The bridge sufficiency rating is 6.2. It provides a single lane and has steep grades on the approaches. The vertical sight distance is substandard. The bridge needs widening to accommodate two traffic lanes.

Total construction funding needed is expected to be $5,000,000.

ASSET MANAGEMENT CATEGORY: Bridge Assets-Railroad Overhead Bridges **LEGISLATIVE DISTRICT:** 16

AIR QUALITY CODE (NON-EXEMPT/EXEMPT): S19 (Exempt)

FINANCIAL PLAN REQUIREMENT:

SPONSOR: NJDOT **STRUCTURE NO.:** 1850160

			Amounts in Millions of Dollars									
MPO	**Phase**	**Fund**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**
NJTPA	**PE**	**BRIDGE-OFF**	**$0.500**									
NJTPA	**DES**	**BRIDGE-OFF**			**$0.800**							
NJTPA	**ROW**	**BRIDGE-OFF**				**$0.600**						
NJTPA	**CON**	**BRIDGE-OFF**						**$5.000**				

APPENDIX B –
Bridge Re-evaluation Survey Report (latest cycle)

PICKERING, CORTS & SUMMERSON, INC.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS

August 11, 2011

Mr. Gregory T. Renman, Manager
Structural Evaluation
New Jersey Department of Transportation
P.O. Box 615
Trenton, NJ 08625

Attention: Mr. Ayodele Oshilaja
Project Manager

Re: Interim Inspection Letter
13 On-System and 1 Off-System
State Owned Bridges, Group RC8A
BR-NBIS (753) and BR-Z-NBIS (754)
Bridge No. 1850-160 (Mile Point 0.00)
Camp Meeting Avenue (CR 602 over Trenton Line (CSX)
Montgomery Township, Somerset County

Dear Mr. Oshilaja:

In accordance with the terms of our Agreement No. 2008BI698A with the New Jersey Department of Transportation, we are transmitting the results of the interim inspection performed on the above referenced structure.

STRUCTURE TYPE: Three span, simply supported, steel, Pony truss
COMPONENT REQUIRING INTERIM INSPECTION: Superstructure (Truss)
DATE OF INTERIM INSPECTION: August 11, 2011
DATE OF ORIGINAL INSPECTION: August 19, 2010
DATE OF NEXT INSPECTION: August 2012
CHANGES SINCE THE PREVIOUS INSPECTION: There has been no significant change.
ACTION REQUIRED: Re-inspect the structure at the next regularly scheduled period.
STRUCTURE INVENTORY AND APPRAISAL CODING CHANGES:

Item	Description	From	To
93C	Special Inspection Date	8/10	8/11

If you have any questions about this submission or require additional information, please do not hesitate to call our West Trenton, New Jersey office.

Very truly yours,
PICKERING, CORTS & SUMMERSON, INC.

John C. Wilhelm

John C. Wilhelm, P.E.
Project Manager

JCW/HDH/njo
cc: Project File, Bridge File
K:\NJ\CURRENT CYCLE\14 ORPHAN GROUP RC8A (2010)\BRIDGE FOLDERS\1850160\1850160_20110811CY13_INT.DOC

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State of New Jersey

NEW JERSEY DEPARTMENT OF TRANSPORTATION
1035 PARKWAY AVENUE
P.O. Box 600
TRENTON, NEW JERSEY 08625-0600

BRIDGE RE-EVALUATION SURVEY REPORT

STRUCTURE NO. 1850-160
CAMP MEETING AVENUE (CR 602) OVER TRENTON LINE (CSX)
R.R. M.P. 45.95
ROUTE NO. 6118
USRA LINE CODE 0326
MONTGOMERY TOWNSHIP
SOMERSET COUNTY

13TH CYCLE

AUGUST 19, 2010

NOTE: This Bridge Re-evaluation Report shall be filed immediately after the 12TH Cycle Inspection Report.

Prepared By

PICKERING, CORTS & SUMMERSON, INC.
WEST TRENTON, NEW JERSEY
NEWTOWN, PENNSYLVANIA
PLYMOUTH MEETING, PENNSYLVANIA

RECEIVED
Structural Evaluation
FEB 2 2 2011
N.J. Department of Transportation
Trenton, New Jersey 08625-0600

TABLE OF CONTENTS

		Page No.
1	Structural Data	13-1
2	Controlling Ratings	13-2
3	Conclusions and Recommendations	13-2
4	Structural Inventory & Appraisal and Pontis Sheets	13-4
5	Summary of Ratings	13-7
6	Drawings and Photographs	13-18
7	Field Notes	13-24
8	Priority Letter and Memorandum	13-47

N.J.D.O.T. - STRUCTURAL EVALUATION
RE-EVALUATION BRIDGE SURVEY REPORT
CYCLE NO. 13

STRUCTURAL DATA:

Bridge No.:	1850-160	Year Built:	1889	Widened/ Rehab:	1922 & 1950
Route No.:	6118	Length:	104'	Width:	15.9'
Mile Point:	0.00	Date of this Evaluation:	8/19/10 & 1/11/11		
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)	By:	Pickering, Corts & Summerson, Inc.		
Structure Type:	Three span, simply supported, steel, Pony truss	Date of Previous Evaluation:	8/27/08, 7/16/09 & 7/30/09		
		By:	Pickering, Corts & Summerson, Inc.		
		Special Equipment Used:	Large Ladder		

OVERALL CONDITION: Critical, due to the low inventory ratings.

WORK DONE: The severe rust with 100% section loss to the web and bottom flange at the west end of stringer 4 in span 1 has been repaired with steel channels (Photo 13-4). The large void due to missing stones at the northwest wingwall has been patched (Photo 13-5).

Inspection Team Leader: **Cynthia Vergara** **Initials:**_____

Certifying Engineer: **John C. Wilhelm, P.E.**

NJ P.E. Number: **43410**

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

Signature: John C. Wilhelm

Date: 2-21-11

Seal

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

CONTROLLING RATINGS: (From 8th Cycle Report)

Computer Program Used: PennDOT BAR7 (Version 7.9)

Based on the Working Stress method of analysis, the following load ratings have been computed:

		Truck Type (Tons)			
Controlling Member	Rating Type	HS-20 (36)	3 (25)	3S2 (40)	3-3 (40)
Truss Member U2L3 (Span 2)	Inventory Rating	6	5	9	11
	Operating Rating	11	10 [91]	16 [77]	20 [64]

[ ] Denotes % overstress.

The structure is currently posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks. Based on the current load ratings, this posting is adequate.

CONCLUSIONS & RECOMMENDATIONS:

The overall condition of the structure is critical due to the low inventory ratings.

The superstructure is in poor condition due to the painted over moderate to severe rust to the trusses, floorbeams, knee bracing, and stringers. Floorbeam 1 in span 1, floorbeam 8 in span 2, and floorbeam 11 in span 3 exhibit areas of 100% section loss to the web and flanges. The north truss knee bracing at the second floorbeam and the south truss knee bracing at the first floorbeam from the east pier in span 2 exhibits areas of 100% section loss. Stringers 1 and 7 in spans 1 and 2 and stringer 1 in span 3 exhibit areas of 100% section loss to the web and flanges. The west end of the top chord of the north truss in span 1 is bent towards the south ($1^3/_8$" over a 3' length) and the interior leg of the top flange is locally buckled (1/4"). The bottom chord cover plate exhibits moderate collision damage at joint L5 from the west and is bent upward 1" over an 18" length and has a 1/4" deep gouge on the south edge at this location. There are two gouges (2" long x 1/4" deep and 2" long x 3/4" deep) to the south edge of the bottom chord cover plate of the south truss in span 1. The flange is bent upward 1" at this location. Diagonal U2L3 from the east at the north truss in span 2 exhibits an area (3" x 3") of severe rust with 1/16" minimum remaining section with knife edging at the intersection with member U3L2. U3L4 is bowed outward 1½" over a 24" length. U0L0 at the north truss in span 3 exhibits local buckling (3/4" over 9") and top chord is bent laterally 4½" to the north over an 8'-5" length. Members U3L2 from the east of the south truss in span 3 are bowed up to 2" over a 20" length. There is up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers.

The substructure is fair condition due to the voids (14" deep) at the bottom of the top half of the west abutment stone masonry breastwall beneath stringers 3 and 6. The east flange of the north steel column at the west pier bent is bent up to 3/4" to the south and the northeast leg exhibits local buckling (1/2" over 8"). The west flange is bent up to 3/4" to the south 3' from the bottom. The west vertical gusset plate exhibits local buckling (1/2"). The cross bracing of both pier bents exhibits painted over moderate to severe rust with up to 100% section loss.

Since the previous inspection, the structure does not show any further deterioration.

CONCLUSIONS & RECOMMENDATIONS (continued):

The structure is posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks at the northeast and southwest corners of the structure. There is a 'One Lane Bridge' and 'Reduce Speed' sign at both approaches.

The structure is fracture critical. The fracture critical members of the structure are the truss tension members. The truss members are in poor condition.

The structure is classified as structurally deficient due to the condition of the superstructure and the low inventory ratings and functionally obsolete due to the inadequate deck geometry and lateral underclearance. Therefore, we recommend the following remedial action:

Bridge Replacement
(Based on 5,720 S.F. @ $250 S.F.)

Demolition (Lump Sum)		$ 143,000
New Structure (130' x 44')		$ 1,430,000
Approach Roadway (200' x 44') @ $10/S.F.		$ 88,000
Traffic Maintenance (~10%)		$ 152,000
Preliminary Engineering (~15%)		$ 228,000
Railroad Escalation (~25%)		$ 380,000
	Total	$ 2,421,000

In the interim, we recommend that the following Priority 2 repairs be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety, and extend its useful life:

Restore the north and south knee bracing to the original section by bolting two steel plates over the deteriorated area (Reference Priority 2 Repair Notification Letter Dated January 13, 2011 – Page 13-47).

3 Each

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

A. Superstructure (Truss) 12 Months

StructNum: 1850160

NJDOT SI and A Sheet

Name: CAMP MEETING AVE. (CR 602) / TRENTON LINE (CSX) **S.R.:** 5.8 **SD/FO-** 1 -Structurally Defici..

IDENTIFICATION

1 State: 34 New Jersey 8 Struc Num: 1850160
7 Facility Carried: CAMP MEETING AVE. 9 Location: 1.0 Mi N OF RT 518
5A Rte.(On/Under): Route On Structure 5B Rte. Signing Prefix: 4 -County Hwy
5C Level of Service: 1 -Mainline 5D Rte. Number: 00602
5E Directional Suffix: 0- Not Applicable % Responsibility : NA
2 SHD District: 02- Central 3 County Code: Somerset
4 Place Code: Montgomery (Township of) 11 Mile Post: 0.000 mi
6 Feature Intersected : TRENTON LINE (CSX)
16 Latitude: 40d 25' 13.30" 17 Longitude: 074d 42' 44.60"
98 Border Bridge Code: -2 Not Applicable (P)
99 Border Bridge Number: NA

INSPECTION

91 Frequency: 24 months 90 Inspection Date: 8/19/2010 Next Inspection: 08/19/2012
92A FC Frequency: 24 months 93A FC Inspection Date: 8/19/2010 Next FC Inspection: 8/19/2012
92B UW Frequency: NA 93B UW Inspection Date: NA Next UW Inspection: NA
92C SI Frequency: 12 months 93C SI Date: 8/19/2010 Next SI: 8/19/2011
Element Frequency: 24 months Element Inspection Date: 08/19/2010 Next Elem. Insp. Due: 08/19/2012

CLASSIFICATION

100 STRAHNET Highway: 0 -Not a STRAHNET hwy 101 Parallel Structure: N -No || bridge exists
102 Direction of Traffic: 3 -1-lane Br for 2-way 103 Temporary Structure: -1
104 Highway System: 0 -Not on NHS 112 NBIS Length: Y - Long Enough
20 Toll Facility: 3 -On free road 26 Functional Class: 09 -Rural Local
37 Historical Significance: 2 -Eligible for NRHP
22 Owner: 80 Unknown (NBI)
21 Custodian: 01 NJDOT

STRUCTURE TYPE AND MATERIALS

46 Number of Approach Spans : 0 45 Number of Spans Main Unit: 3
43A/B Main Span Material/Design:
3 -Steel 10 -Truss-Thru
107 Deck Type: 6- Corrugated Steel
108A Wearing Surface: 6 -Bituminous
108B Membrane: 0- None
108C Deck Protection: 0- None

CONDITION

58 Deck: 7 -Good 59 Super: 4 -Poor 60 Sub: 5 -Fair
62 Culvert: N -Not applicable 61 Channel/Channel Protection: N -Not applicable

LOAD RATING AND POSTING

65 Inventory Rating Method: 2 -AS Allowable Stres 63 Operating Rating Method: 2 -AS Allowable Stress
66 Inventory Rating: HS6.0 64 Operating Rating: HS11.0
31 Design Load: 0 -Other or Unknown 70 Posting: 0 >39.9% below
41 Posting status: P -Posted for load

AGE AND SERVICE

27 Year Built: 1889 106 Year Reconstructed: 1950
42A Type of Service On: 1 -Highway
42B Type of Service Under: 2 -Railroad
28A Lanes on: 1 28B Lanes Under: 0 19 Detour Length: 4.0 mi
29 ADT: 900 109 Truck ADT: 3 % 30 Year of ADT: 2010

APPRAISAL

36A Bridge Rail: 0 -Substandard 36C Approach Rail: 0 -Substandard
36B Transition: 0 -Substandard 36D Approach Rail Ends: 0 -Substandard
67 Str. Evaluation: 2 68 Deck Geometry: 2 Intolerable - Replace
69 Underclearance, Vertical and Horizontal: 2 -Intolerable - Replace
71 Waterway Adequacy: N -Not applicable 72 Approach Alignment: 4-Minimum Tolerable
113 Scour Critical: N -Not Over Waterway

GEOMETRIC DATA

48 Length Max Span: 42.0 ft 49 Structure Length: 104.0 ft
50A Curb/Sdwlk Wdth L: 0.5 ft 50B Curb/Sidewalk Width R: 0.5 ft
Width Curb to Curb 51: 14.0 ft 52 Width Out to Out: 15.9 ft
32 Approach Roadway Width: (w/ shoulders) 14 ft 33 Median: 0 No median
Deck Area: 1,653.6 sq. ft
34 Skew: 46.00 ° 35 Structure Flared: 0 -No flare
53 Minimum Vertical Clearance Over Bridge: 9999
54A Minimum Vertical Underclearance Reference: R -Railroad beneath str.
54B Minimum Vertical Underclearance: 21.17 ft
55A Minimum Lateral Underclearance Reference R: R -Railroad beneath str.
55B Minimum Lateral Undrclearance R: 6.20 ft
56 Minimum Lateral Undrclearance L: 0.00 ft

PROPOSED IMPROVEMENTS

94 Bridge Cost: $1,430,000 75 Type of Work: 31
95 Roadway Cost: $88,000 76 Length of Improvment: 130 ft
96 Total Cost: $2,421,000 114 Future ADT: 1,220
97 Year of Cost Estimate: 2010 115 Year of Future ADT: 2030

NAVIGATION DATA

38 Navigation Control: N N -N/A-No waterway
39 Vertical Clearance: 0.0 ft 40 Horizontal Clearance: 0.0 ft
111 Pier Protection: -1 116 Lift Bridge Vertical Clearance:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	30/3	Corrug/Orthotpc Deck	(SF)	1,653	100 %	1,653	0 %	0	0 %	0	0 %	0	0 %	0
0	113/3	Paint Stl Stringer	(LF)	725	13 %	95	40 %	287	23 %	168	0 %	0	24 %	175
0	121/3	P/Stl Thru Truss/Bot	(LF)	208	0 %	0	0 %	0	0 %	0	99 %	206	1 %	2
0	126/3	P/Stl Thru Truss/Top	(LF)	208	80 %	166	0 %	0	19 %	40	0 %	0	1 %	2
0	152/3	Paint Stl Floor Beam	(LF)	165	0 %	0	41 %	67	41 %	68	8 %	13	10 %	17
0	202/3	Paint Stl Column	(EA)	4	0 %	0	0 %	0	100 %	4	0 %	0	0 %	0

StructNum: 1850160

NJDOT SI and A Sheet

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	205/3	R/Conc Column	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	217/3	Other Mtl Abutment	(LF)	114	0 %	0	50 %	57	50 %	57	0 %	0	0 %	0
0	301/3	Pourable Joint Seal	(LF)	92	0 %	0	100 %	92	0 %	0	0 %	0	0 %	0
0	313/3	Fixed Bearing	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	334/3	Metal Rail Coated	(LF)	207	95 %	196	5 %	11	0 %	0	0 %	0	0 %	0
0	357/3	Pack Rust Smart Flag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
0	359/3	Soffit Smart Flag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
0	362/3	Traf Impact SmFlag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
0	363/3	Section Loss SmFlag	(EA)	1	0 %	0	0 %	0	0 %	0	100 %	1	0 %	0
0	372/3	Sliding Plate Bear	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	502/3	Curbs/Walks - P Stl	(LF)	208	0 %	0	90 %	188	5 %	10	5 %	10	0 %	0
0	506/3	Wingwalls - Abut	(LF)	40	50 %	20	38 %	15	13 %	5	0 %	0	0 %	0

NJDOT BRIDGE FIELDS

(V1.1)

Brkey: 1850160 **Inspkey**

GENERAL

(A) Town: Montgomery Twp.
(AA) Route: 6118
(AD) Admin: -1
(AE) Alt Agency: -1 _

STRUCTURE AND APPURTENANCES

(AC) Non-Inv Feature: RR Rdwy and/or RR ovr RR
(AF) Alt Struct #: -1
(AG) Rail Type: 58
(AH) Rail Height:: 1.92
(AJ) Slope Protection: -1
(AK) Abutment: 07 Masonry
(AL) Pier: 07 Steel Bent
(AM) Depth of Fill:
(AP) Fender System: -1
(AT) Special Material 1: _
(AT) Special Material 2: _
(AU) Add Struct: 1 F
2 _
(AV) Widen Stru: Material Design
1st Widen _ -1
2nd Widen _ -1

FUNDING AND COST

(BL) Discretionary: _
(BM) Fed Job #: BRZNBIS754
(BN) State Job #: 2204820
(BO) St Maint Cost: -1.00
(BP) Brdg Demo N

SCOUR EVALUATION

(FA) FHWA Category: -1
(FB) Stage 1 Date:
(FC) Stage 1 Consultant: -1
(FD) Prioritization: _
(FE) Sufficiency: -1.0
(FF)Date Stage II 1/1/1901
(FG) Stage II Consultant: -1
(FH) Crit. Element:
-1

COUNTER MEASURES

(FI) Recommended:
-1

(FJ) Cost: -1.00
(FK) Installed: 1 _ 2 _ 3 _
(FL) Monitoring Reqd: _

PROJECT PROGRAMMING

(HB) Bridge List ID: RC8A_
(HC) Consultant A47
(HD) 2-Cy Insp Contr: N
(HE) Proceed Date: I 9/14/2000
II 4/23/2002
(HF) State Proj Mgr: AO_

BRIDGE NOISE BARRIER (HA)

Material 1: _
2: _
Height 1: _
2: _

PAINTING

(GB) Environment: 01
(GR) Last Painting: 01/2009
(GA) Painting Req: Y

FENCING

(AQ) Chain Link: ft
(FN) Warranted: N

SIGN STRUCTURES

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

POSTINGS

(CG) Load Type: 2
(CG) Tons 10
(AI) Speed: -1

TEMPORARY STRUCTURES

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

LOAD RATINGS

Type		Inv		Opr
H	(BQ)	-1	(CA)	-1
HS	(BR)	6	(CB)	11
3	(BS)	5	(CC)	10
3S2	(BT)	9	(CD)	16
3-3	(BU)	11	(CE)	20
M	(BV)	_	(CF)	_
Misc	(CH1)	W		
	(CH2)	0		

MISCELLANEOUS

(CQ) Bridge List: _
(BK) Overstress %: 91
(FV) Route Milepost: 1 .
(FM) Incident Reprtd: _
(AO) Utilities: 1: _
2: _
3: _
4: _
(CR) Off-Route Bridge: N
(BB) Orphan Bridge: Y
(AN) Plan Available: Y
(FX) Fed Error Uncorr N
(FW) Estimated ADT Y

RAILROAD

(BC) USRA Code: 0326
(BD 1) Rail On/Under: 0
(BD2)RRs intersected: 2
(BE) Rail Milepost: 45.95

StructNum: 1850160

NJDOT SI and A Sheet

NJDOT INSPECTION FIELDS (V1.2)

GENERAL

(CI) Cycle Number:	13
(CJ) Insp Type:	S
(CK) Inspection Crew:	R
(CM) Consultant:	P14
(CO) Prev Consultant:	P14
(CP) Federal Report:	_

INSPECTION DATES

(AW) Mech/Electrical:		
(AX) Deck:		
(AY) Special Testing:		
(GC) Paint:		6/19/2010
(AR) Equipment:	1:	L
	2:	_
	3:	_
(AS) Testing:	1:	_
	2:	_
	3:	_

MISCELLANEOUS

(B) Deletion Code:	N
(BA) Apr Rdwy Cond:	7

FATIGUE DETAIL (AZ)

Location1:	03
	29
Location 2:	07
	20
Location 3:	-1
	-1

IN-DEPTH PIN-HANGER

(FR) Consultant:	-1
(FS)	
-1	
(FT) Combo:	N
(FQ) FCM/Pin-Hngr Insp Date:	

REMARKS

(BF) Deck:	1:	Z
	2:	_
	3:	_
	4:	_
	5:	_
(BG) Super:	1:	2
	2:	A
	3:	C
(BH) Sub:	1:	Z
	2:	_
	3:	_
(BI) Channel		_
(BJ) Culvert		_

FENCING

(FO) Pedestrian Traffic:	_	
(FP) Improvement Cost:	$ 0	Thousands

PAINTING

(GD) Fascia Beam:	02
(GE) Fascia B. Flange:	04
(GF) Interior Beam:	04
(GH) Interior B. Flange:	04
(GI) Beam Ends:	04
(GJ) Connections:	04
(GK) Bracings:	04
(GL) Bearings:	04
(GM) Substructure:	07
(GN) Above Deck Super:	05
(GO) Railings/Fence:	-1
(GP) Remarks 1:	

Pitting and section loss has been painted over.

(GQ) Remarks 2:
-1

ROADWAY DATA (V1.1)

Bridge Id:	1850160
SRI	18000602_

ROADWAY IDENTIFICATION

NBI Roadway?:	1		
Roadway Name:	Camp Meeting Avenue (CR 602)		
Item 5A:	1		
Item 5B:	4		
Item 5C:	1		
Item 5D:	00602	Item 5E	0

HWY NETWORKS AND SERVICE CLASSIFICATION

11 Milepost:	0.000 mi		
12 Base Hwy Network:	0		
20 Toll Facility:	3		
13A LRS Inventory Route	-1	Subroute No.:	-1
26 Functional Class:	09	102 TraffDirection:	3

ALTERNATE CLASSIFICATION

100 Strahnet Hwy:	0	Transit Rt:	0
104 NHS System:	0	Emergency	0
105 Fed. Lands Hwy:	0		
110 Truck Hwy Net:	0		
School Bus:	0		

TRAFFIC AND ACCIDENTS

28 Lanes :	1
Num Median:	0
Road Speed:	30 mph
ADTclass:	02
29 ADTtotal:	900
30 Year of ADT:	2010
114 Future ADT:	1220
115 Year of Future ADT:	2030
109 Truck ADTT % :	3
19 Bypass Length:	4.00 mi
Detour Speed:	25 mph

CLEARANCES

10 Vertical Clearance:	99.99 ft
47 Invent Route Horiz Clear:	14.00 ft
(DJ) Min Vert Undrclr:	00.00 ft

WIDTHS

32 Appr Rdwy Width:	14 ft
51 Brdg Rdwy With Curb-Curb:	14.0 ft

StructNum: 1850160

NJDOT SI and A Sheet

Name: CAMP MEETING AVE. (CR 602) / TRENTON LINE (CSX) **S.R.:** 5.8 **SD/FO-** 1 -Structurally Defici..

IDENTIFICATION

1 State: 34 New Jersey 8 Struc Num: 1850160
7 Facility Carried: CAMP MEETING AVE. 9 Location: 1.0 MI N OF RT 518
5A Rte.(On/Under): Route On Structure 5B Rte. Signing Prefix: 4 -County Hwy
5C Level of Service: 1 -Mainline 5D Rte. Number: 00602
5E Directional Suffix: 0- Not Applicable % Responsibility : NA
2 SHD District: 02- Central 3 County Code: Somerset
4 Place Code: Montgomery (Township of) 11 Mile Post: 0.000 mi
6 Feature Intersected : TRENTON LINE (CSX)
16 Latitude: 40d 25' 13.30" 17 Longitude: 074d 42' 44.60"
98 Border Bridge Code: -2 Not Applicable (P)
99 Border Bridge Number: NA

INSPECTION

91 Frequency: 24 months 90 Inspection Date: ~~08/27/2008~~ 8/19/10 Next Inspection: ~~08/27/2010~~ 8/19/12
92A FC Frequency: 24 months 93A FC Inspection Date: ~~08/27/2008~~ 8/19/10 Next FC Inspection: ~~08/27/2010~~ 8/19/12
92B UW Frequency: NA 93B UW Inspection Date: NA Next UW Inspection: NA
92C SI Frequency: 12 months 93C SI Date: ~~08/28/2009~~ 8/19/10 Next SI: ~~08/28/2010~~ 8/19/11
Element Frequency: 24 months Element Inspection Date: ~~08/27/2008~~ 8/19/10 Next Elem. Insp. Due: ~~08/27/2010~~ 8/19/12

CLASSIFICATION

100 STRAHNET Highway: 0 -Not a STRAHNET hwy 101 Parallel Structure: N -No || bridge exists
102 Direction of Traffic: 3 -1-lane Br for 2-way 103 Temporary Structure: -1
104 Highway System: 0 -Not on NHS 112 NBIS Length: Y - Long Enough
20 Toll Facility: 3 -On free road 26 Functional Class: 09 -Rural Local
37 Historical Significance: 2 -Eligible for NRHP
22 Owner: 80 Unknown (NBI)
21 Custodian: 01 NJDOT

STRUCTURE TYPE AND MATERIALS

46 Number of Approach Spans : 0 45 Number of Spans Main Unit: 3
43A/B Main Span Material/Design:
3 -Steel 10 -Truss-Thru
107 Deck Type: 6- Corrugated Steel
108A Wearing Surface: 6 -Bituminous
108B Membrane: 0- None
108C Deck Protection: 0- None

CONDITION

58 Deck: 7 -Good 59 Super: 4 -Poor 60 Sub: 5 -Fair
62 Culvert: N -Not applicable 61 Channel/Channel Protection: N -Not applicable

LOAD RATING AND POSTING

65 Inventory Rating Method: 2 -AS Allowable Stres 63 Operating Rating Method: 2 -AS Allowable Stress
66 Inventory Rating: HS6.0 64 Operating Rating: HS11.0
31 Design Load: 0 -Other or Unknown 70 Posting: 0 >39.9% below
41 Posting status: P -Posted for load

AGE AND SERVICE

27 Year Built: 1889 106 Year Reconstructed: 1950
42A Type of Service On: 1 -Highway
42B Type of Service Under: 2 -Railroad
28A Lanes on: 1 28B Lanes Under: 0 19 Detour Length: 4.0 mi
29 ADT: ~~880~~ 900 109 Truck ADT: 3 % 30 Year of ADT: ~~2008~~ 2010

APPRAISAL

36A Bridge Rail: 0 -Substandard 36C Approach Rail: 0 -Substandard
36B Transition: 0 -Substandard 36D Approach Rail Ends: 0 -Substandard
67 Str. Evaluation: 2 68 Deck Geometry: 2 Intolerable - Replace
69 Underclearance, Vertical and Horizontal: 2 -Intolerable - Replace
71 Waterway Adequacy: N -Not applicable 72 Approach Alignment: 4-Minimum Tolerable
113 Scour Critical: N -Not Over Waterway

GEOMETRIC DATA

48 Length Max Span: 42.0 ft 49 Structure Length: 104.0 ft
50A Curb/Sdwlk Width L: 0.5 ft 50B Curb/Sidewalk Width R: 0.5 ft
Width Curb to Curb 51: 14.0 ft 52 Width Out to Out: 15.9 ft
32 Approach Roadway Width: (w/ shoulders) 14 ft 33 Median: 0 No median
Deck Area: 1,653.6 sq. ft
34 Skew: 46.00 ° 35 Structure Flared: 0 -No flare
53 Minimum Vertical Clearance Over Bridge: 9999
54A Minimum Vertical Underclearance Reference: R -Railroad beneath str.
54B Minimum Vertical Underclearance: 21.17 ft
55A Minimum Lateral Underclearance Reference R: R -Railroad beneath str.
55B Minimum Lateral Undrclearance R: 6.20 ft
56 Minimum Lateral Undrclearance L: 0.00 ft

PROPOSED IMPROVEMENTS

94 Bridge Cost: ~~$1,872,000~~ 1420000 75 Type of Work: 31
95 Roadway Cost: ~~303,000~~ 880000 76 Length of Improvment: ~~131~~ ft 130
96 Total Cost: ~~$2,183,000~~ 2300000 114 Future ADT: ~~1,100~~ 1220
97 Year of Cost Estimate: ~~2004~~ 2010 115 Year of Future ADT: ~~2020~~ 2030

NAVIGATION DATA

38 Navigation Control: N N -N/A-No waterway
39 Vertical Clearance: 0.0 ft 40 Horizontal Clearance: 0.0 ft
111 Pier Protection: -1 116 Lift Bridge Vertical Clearance:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	30/3	Corrug/Orthotpc Deck	(SF)	1,653	100 %	1,653	0 %	0	0 %	0	0 %	0	0 %	0
0	113/3	Paint Stl Stringer	(LF)	725	8 %	95 ~~60~~	40 %	287	23 %	168	0 %	0	29 %	175 ~~210~~
0	121/3	P/Stl Thru Truss/Bot	(LF)	208	0 %	0	0 %	0	0 %	0	99 %	206	1 %	2
0	126/3	P/Stl Thru Truss/Top	(LF)	208	80 %	166	0 %	0	19 %	40	0 %	0	1 %	2
0	152/3	Paint Stl Floor Beam	(LF)	165	0 %	0	41 %	67	41 %	68	8 %	13	10 %	17
0	202/3	Paint Stl Column	(EA)	4	0 %	0	0 %	0	100 %	4	0 %	0	0 %	0

StructNum: 1850160 — NJDOT SI and A Sheet

Str	Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0		205/3	R/Conc Column	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0		217/3	Other Mtl Abutment	(LF)	114	0 %	0	50 %	57	50 %	57	0 %	0	0 %	0
0		301/3	Pourable Joint Seal	(LF)	92	0 %	0	100 %	92	0 %	0	0 %	0	0 %	0
0		313/3	Fixed Bearing	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0		334/3	Metal Rail Coated	(LF)	207	95 %	196	5 %	11	0 %	0	0 %	0	0 %	0
0		357/3	Pack Rust Smart Flag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
0		359/3	Soffit Smart Flag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
0		362/3	Traf Impact SmFlag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
0		363/3	Section Loss SmFlag	(EA)	1	0 %	0	0 %	0	0 %	0	100 %	1	0 %	0
0		372/3	Sliding Plate Bear	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0		502/3	Curbs/Walks - P Stl	(LF)	208	0 %	0	90 %	188	5 %	10	5 %	10	0 %	0
0		506/3	Wingwalls - Abut	(LF)	40	50 %	20	25 %	10	13 %	5	13 %	5	0 %	0

NJDOT BRIDGE FIELDS (V1.1)

Brkey: 1850160 **Inspkey**

GENERAL

(A) Town: Montgomery Twp
(AA) Route: 6118
(AD) Admin: -1
(AE) Alt Agency: -1 _

STRUCTURE AND APPURTENANCES

(AC) Non-Inv Feature: RR Rdwy and/or RR ovr RR
(AF) Alt Struct #: -1
(AG) Rail Type: 58
(AH) Rail Height: 1.92
(AJ) Slope Protection: -1
(AK) Abutment: 07 Masonry
(AL) Pier: 07 Steel Bent
(AM) Depth of Fill:
(AP) Fender System: -1
(AT) Special Material 1: _
(AT) Special Material 2: _
(AU) Add Struct: 1 F
2 _
(AV) Widen Stru: Material Design
1st Widen _ -1
2nd Widen _ -1

FUNDING AND COST

(BL) Discretionary: _
(BM) Fed Job #: BRZNBIS~~750~~ 754
(BN) State Job #: ~~2204564~~ 2204622
(BO) St Maint Cost: -1.00
(BP) Brdg Demo N

SCOUR EVALUATION

(FA) FHWA Category: -1
(FB) Stage 1 Date:
(FC) Stage 1 Consultant: -1
(FD) Prioritization: _
(FE) Sufficiency: -1.0
(FF)Date Stage II 1/1/1901
(FG) Stage II Consultant: -1
(FH) Crit. Element:
-1

COUNTER MEASURES

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

PROJECT PROGRAMMING

(HB) Bridge List ID: RC8A_
(HC) Consultant A47
(HD) 2-Cy Insp Contr: N
(HE) Proceed Date: I 9/14/2000
II 4/23/2002
(HF) State Proj Mgr: AO_

BRIDGE NOISE BARRIER (HA)

Material 1: _
2: _
Height 1: _
2: _

PAINTING

(GB) Environment: 01
(GR) Last Painting: 01/2009
(GA) Painting Req: Y

FENCING

(AQ) Chain Link: ft
(FN) Warranted: N

SIGN STRUCTURES

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

POSTINGS

(CG) Load Type: 2
(CG) Tons ~~13~~ 10
(AI) Speed: -1

TEMPORARY STRUCTURES

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

LOAD RATINGS

Type		Inv		Opr
H	(BQ)	-1	(CA)	-1
HS	(BR)	6	(CB)	11
3	(BS)	5	(CC)	10
3S2	(BT)	9	(CD)	16
3-3	(BU)	11	(CE)	20
M	(BV)	_	(CF)	_
Misc	(CH1)	W		
	(CH2)	0		

MISCELLANEOUS

(CQ) Bridge List: _
(BK) Overstress %: 91
(FV) Route Milepost: 1.
(FM) Incident Reprtd: _
(AO) Utilities: 1: _
2: _
3: _
4: _
(CR) Off-Route Bridge: N
(BB) Orphan Bridge: Y
(AN) Plan Available: Y
(FX) Fed Error Uncorr N
(FW) Estimated ADT Y

RAILROAD

(BC) USRA Code: 0326
(BD 1) Rail On/Under: 0
(BD2)RRs intersected: 2
(BE) Rail Milepost: 45.95

StructNum: 1850160

NJDOT SI and A Sheet

NJDOT INSPECTION FIELDS (V1.2)

GENERAL

(CI) Cycle Number:	~~12~~ 13
(CJ) Insp Type:	S
(CK) Inspection Crew:	R
(CM) Consultant:	P14
(CO) Prev Consultant:	~~A47~~ PA
(CP) Federal Report:	_

INSPECTION DATES

(AW) Mech/Electrical:	
(AX) Deck:	
(AY) Special Testing:	
(GC) Paint:	~~07/21/2006~~ 8/19/10
(AR) Equipment:	1: L
	2: _
	3: _
(AS) Testing:	1: _
	2: _
	3: _

MISCELLANEOUS

(B) Deletion Code:	N
(BA) Apr Rdwy Cond:	7

FATIGUE DETAIL (AZ)

Location1:	03
	29
Location 2:	07
	20
Location 3:	-1
	-1

IN-DEPTH PIN-HANGER

(FR) Consultant:	-1
(FS)	-1
(FT) Combo:	N
(FQ) FCM/Pin-Hngr Insp Date:	

REMARKS

(BF) Deck:	1:	Z
	2:	_
	3:	_
	4:	_
	5:	_
(BG) Super:	1:	2
	2:	A
	3:	C
(BH) Sub:	1:	Z
	2:	_
	3:	_
(BI) Channel		_
(BJ) Culvert		_

FENCING

(PO) Pedestrian Traffic:	_	
(BP) Improvement Cost:	$ -1	Thousands

PAINTING

(GD) Fascia Beam:	02
(GE) Fascia B. Flange:	04
(GF) Interior Beam:	04
(GH) Interior B. Flange:	04
(GI) Beam Ends:	04
(GJ) Connections:	04
(GK) Bracings:	04
(GL) Bearings:	04
(GM) Substructure:	07
(GN) Above Deck Super:	05
(GO) Railings/Fence:	-1
(GP) Remarks 1:	

Pitting and section loss has been painted over.

(GQ) Remarks 2:
-1

ROADWAY DATA (V1.1)

Bridge Id: 1850160
SRI + 18000602 -

ROADWAY IDENTIFICATION

NBI Roadway?:	1		
Roadway Name:	Camp Meeting Avenue (CR 602)		
Item 5A:	1		
Item 5B:	4		
Item 5C:	1		
Item 5D:	00602	Item 5E	0

HWY NETWORKS AND SERVICE CLASSIFICATION

11 Milepost:	0.000 mi		
12 Base Hwy Network:	0		
20 Toll Facility:	3		
13A LRS Inventory Route	-1	Subroute No.:	-1
26 Functional Class:	09	102 TraffDirection:	3

ALTERNATE CLASSIFICATION

100 Strahnet Hwy:	0	Transit Rt:	0
104 NHS System:	0	Emergency	0
105 Fed. Lands Hwy:	0		
110 Truck Hwy Net:	0		
School Bus:	0		

TRAFFIC AND ACCIDENTS

28 Lanes :		1
Num Median:		0
Road Speed:		30 mph
ADTclass:		02
29 ADTtotal:	900	~~-888~~
30 Year of ADT:	2010	~~-2008~~
114 Future ADT:	1220	~~1190~~
115 Year of Future ADT:	2030	~~-2020~~
109 Truck ADTT % :		3
19 Bypass Length:		4.00 mi
Detour Speed:		25 mph

CLEARANCES

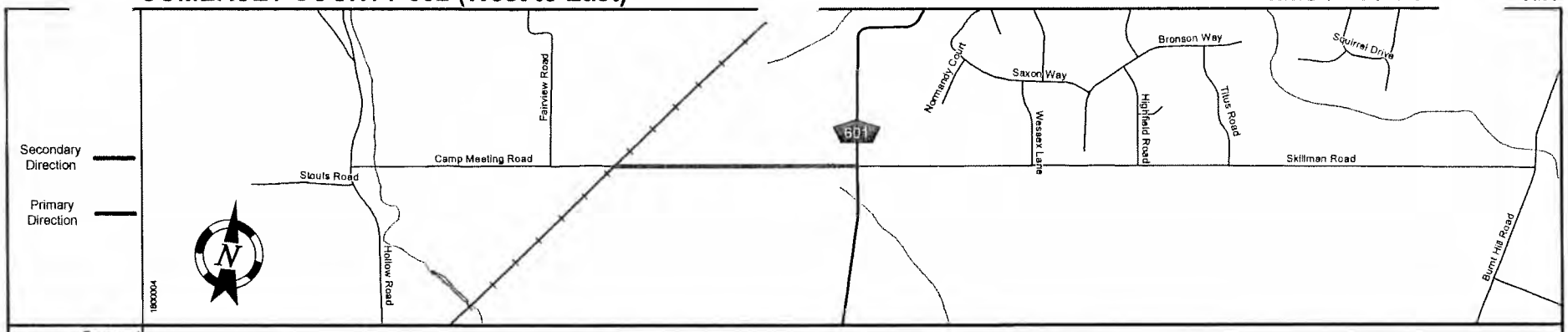
10 Vertical Clearance:	99.99 ft
47 Invent Route Horiz Clear:	14.00 ft
(DJ) Min Vert Undrclr:	00.00 ft

WIDTHS

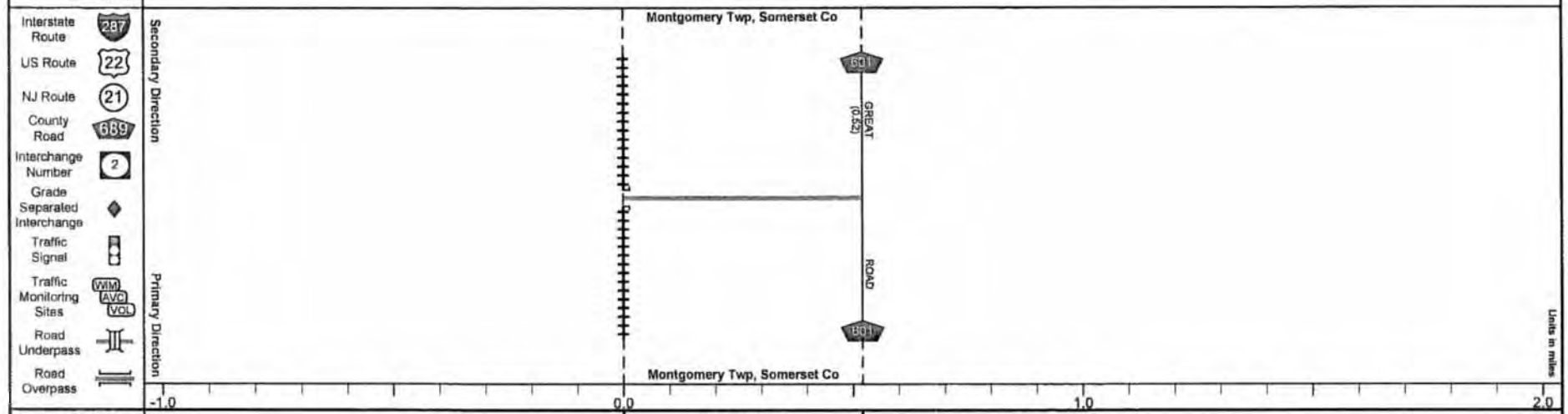
32 Appr Rdwy Width:	14 ft
51 Brdg Rdwy Wdth Curb-Curb:	14.0 ft

SOMERSET COUNTY 602 (West to East)

Mile Posts: 0.0 .520



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Skillman Road	
Jurisdiction	County	
Functional Class	Rural Local	
Federal Aid - NHS Sy	Non-Federal Aid	
Control Section		
Speed Limit	30	
Number of Lanes	2	
Med. Type	None	
Med. Width	0	
Pavement	20	
Shoulder	1	
Traffic Volume		
Traffic Sta. ID		
Structure No.		
Enlarged Views		

Begin Somerset County 602 MP=0

End Somerset County 602 MP=0.52

Page Created: May 2009

SRI = 18000602__

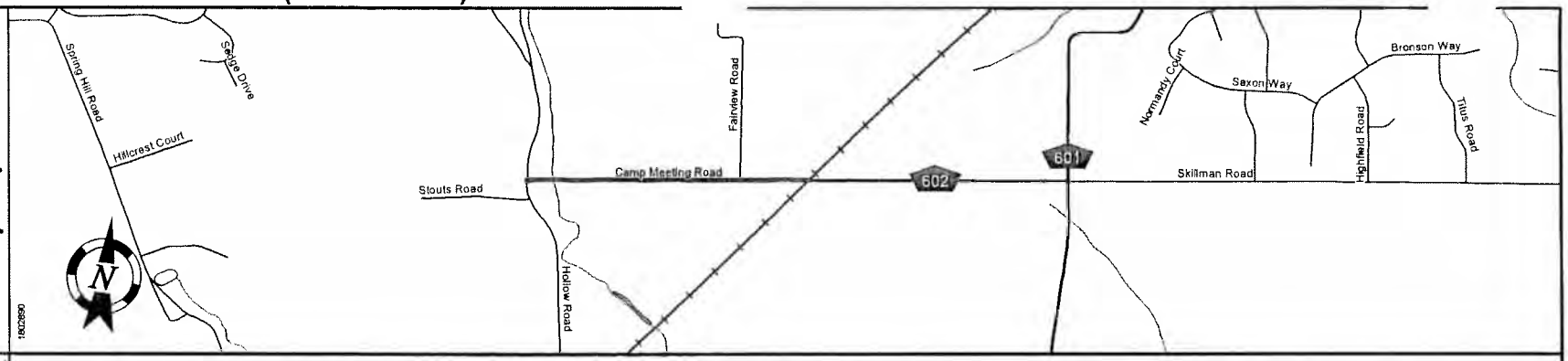
Date last inventoried: July 2000

CAMP MEETING RD (West to East)

Mile Posts: 0.0 – .560

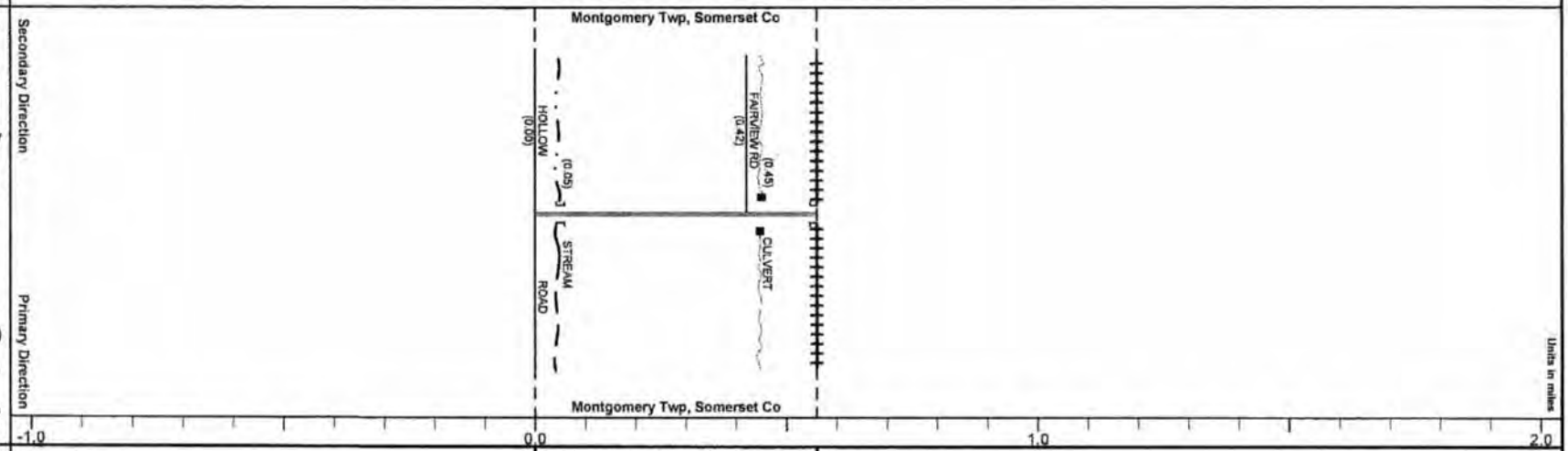
Secondary Direction

Primary Direction



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route 287
US Route 22
NJ Route 21
County Road 689
Interchange Number 2
Grade Separated Interchange
Traffic Signal
Traffic Monitoring Sites WIM AVC VOL
Road Underpass
Road Overpass



	Begin Camp Meeting Rd MP=0		End Camp Meeting Rd MP=0.56
Street Name		Camp Meeting Road	
Jurisdiction		Municipal	
Functional Class		Rural Local	
Federal Aid - NHS Sy		Non-Federal Aid	
Control Section			
Speed Limit		35 | 30	
Number of Lanes		2	
Med. Type		None	
Med. Width		0	
Pavement		21	
Shoulder		0	
Traffic Volume			
Traffic Sta. ID			
Structure No			
Enlarged Views			

Page Created: May 2009

SRI = 18131011__

Date last inventoried: July 2000

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

Rated By: EJM Dated: 12/7/00 Checked By: JR Dated: 12/7/00

SUMMARY OF RATINGS

The Load Factor and Working Stress ratings were computed in the fifth cycle report and updated in the eighth cycle report in accordance with the FHWA directive dated November 1993 and AASHTO Manual for Condition Evaluation of Bridges, 1994, as modified by Section 1.42A.2 of the New Jersey Department of Transportation Design Manual, Bridges and Structures. Based on the load factor method of analysis, the following load ratings have been computed:

Computer Program Used: PennDOT BAR7 (Version 7.9)

PERCENT (%) SECTION LOSSES:

50% section loss to the north truss diagonal member U2L3 of span 2 is included in the eighth cycle load rating.

Additional section loss was noted on the fascia stringers and the floorbeam over the west pier during the tenth cycle inspection. A cursory review of the load ratings for these members revealed that the fascia stringers carry no live load and that the section loss on the floorbeam is not significant enough to cause it to be the controlling member. Therefore, the north truss diagonal member U2L3 of span 2 remains the controlling member.

		Allowable Stresses (psi)		
Material	Compressive Strength f'c	Yield	Inventory	Operating
Structural Steel (1889 Truss)	-	26,000	14,000	19,500
Structural Steel (1922 Truss)	-	30,000	16,000	22,500
Structural Steel (1950 Truss)	-	33,000	18,000	24,500

		Rating (Tons)			
		Load Factor		Working Stress	
Member	Truck Type (Tons)	Inventory	Operating	Inventory	Operating
Truss Member U2L3 (Span 2) (Controlling Member)	Type HS-20 (36T)	-	-	6	11
	Type 3 (25T)	-	-	5	10 [91]
	Type 3S2 (40T)	-	-	9	16 [77]
	Type 3-3 (40T)	-	-	11	20 [64]

[ ] Denotes % section loss.

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)	Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L1U2 (Span 2)	Type HS-20 (36T)	-	-	8 [141]	13 [93]
	Type 3 (25T)	-	-	7 [95]	12 [56]
	Type 3S2 (40T)	-	-	12 [94]	19 [56]
	Type 3-3 (40T)	-	-	14 [73]	23 [39]
Truss Member U8L9 (Span 2)	Type HS-20 (36T)	-	-	10 [123]	15 [79]
	Type 3 (25T)	-	-	9 [78]	14 [43]
	Type 3S2 (40T)	-	-	15 [82]	22 [46]
	Type 3-3 (40T)	-	-	17 [62]	26 [30]
Truss Member L1U0 (Span 2)	Type HS-20 (36T)	-	-	10 [124]	18 [61]
	Type 3 (25T)	-	-	10 [78]	17 [28]
	Type 3S2 (40T)	-	-	16 [82]	27 [30]
	Type 3-3 (40T)	-	-	18 [61]	32 [16]
Truss Member L7U8 (Span 2)	Type HS-20 (36T)	-	-	11 [125]	19 [61]
	Type 3 (25T)	-	-	10 [79]	17 [28]
	Type 3S2 (40T)	-	-	16 [82]	28 [28]
	Type 3-3 (40T)	-	-	19 [59]	33 [13]
Truss Member U6L7 (Span 2)	Type HS-20 (36T)	-	-	13 [92]	19 [54]
	Type 3 (25T)	-	-	12 [57]	17 [26]
	Type 3S2 (40T)	-	-	19 [58]	28 [27]
	Type 3-3 (40T)	-	-	23 [38]	34 [11]
Truss Member L1U0 (Spans 1 and 3)	Type HS-20 (36T)	-	-	15 [87]	25 [34]
	Type 3 (25T)	-	-	14 [50]	22 [8]
	Type 3S2 (40T)	-	-	22 [52]	35 [9]
	Type 3-3 (40T)	-	-	27 [30]	43

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)	Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L1U2 (Spans 1 and 3)	Type HS-20 (36T)	-	-	15 [81]	21 [45]
	Type 3 (25T)	-	-	14 [47]	20 [18]
	Type 3S2 (40T)	-	-	21 [51]	30 [21]
	Type 3-3 (40T)	-	-	28 [27]	39 [2]
Truss Member U4U5 (Span 2)	Type HS-20 (36T)	-	-	17 [65]	24 [32]
	Type 3 (25T)	-	-	15 [37]	21 [9]
	Type 3S2 (40T)	-	-	24 [38]	34 [11]
	Type 3-3 (40T)	-	-	29 [20]	42
Truss Member U5U6 (Span 2)	Type HS-20 (36T)	-	-	17 [65]	24 [32]
	Type 3 (25T)	-	-	15 [37]	21 [9]
	Type 3S2 (40T)	-	-	24 [38]	34 [11]
	Type 3-3 (40T)	-	-	29 [20]	42
Truss Member L5U6 (Spans 1 and 3)	Type HS-20 (36T)	-	-	17 [76]	27 [26]
	Type 3 (25T)	-	-	16 [41]	24 [1]
	Type 3S2 (40T)	-	-	24 [45]	38 [4]
	Type 3-3 (40T)	-	-	31 [20]	48
Truss Member L5U6 (Span 2)	Type HS-20 (36T)	-	-	17 [86]	26 [35]
	Type 3 (25T)	-	-	16 [46]	23 [5]
	Type 3S2 (40T)	-	-	25 [50]	36 [8]
	Type 3-3 (40T)	-	-	31 [22]	42
North Column (Pier 1) (From Fourth Cycle)	Type HS-20 (36T)	38	63	18	27
	Type 3 (25T)	34	57	16	25
	Type 3S2 (40T)	44	74	21	32
	Type 3-3 (40T)	52	88	25	38

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)	Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member U2U3 (Span 2)	Type HS-20 (36T)	-	-	20 [49]	28 [20]
	Type 3 (25T)	-	-	18 [22]	25
	Type 3S2 (40T)	-	-	29 [23]	40
	Type 3-3 (40T)	-	-	35 [8]	49
Truss Member U3U4 (Span 2)	Type HS-20 (36T)	-	-	20 [49]	28 [20]
	Type 3 (25T)	-	-	18 [22]	25
	Type 3S2 (40T)	-	-	29 [23]	40
	Type 3-3 (40T)	-	-	35 [8]	49
Truss Member L3U4 (Spans 1 and 3)	Type HS-20 (36T)	-	-	21 [56]	27 [25]
	Type 3 (25T)	-	-	16 [42]	21 [13]
	Type 3S2 (40T)	-	-	26 [42]	34 [13]
	Type 3-3 (40T)	-	-	32 [19]	42
Truss Member L3U2 (Spans 1 and 3)	Type HS-20 (36T)	-	-	21 [56]	31 [13]
	Type 3 (25T)	-	-	19 [25]	27 [27]
	Type 3S2 (40T)	-	-	29 [32]	42 [42]
	Type 3-3 (40T)	-	-	37 [5]	54
Truss Member L7U6 (Spans 1 and 3)	Type HS-20 (36T)	-	-	21 [48]	29 [19]
	Type 3 (25T)	-	-	19 [19]	26
	Type 3S2 (40T)	-	-	31 [20]	42
	Type 3-3 (40T)	-	-	37 [5]	50
Truss Member L7U6 (Span 2)	Type HS-20 (36T)	-	-	22 [37]	36
	Type 3 (25T)	-	-	20 [14]	33
	Type 3S2 (40T)	-	-	32 [15]	52
	Type 3-3 (40T)	-	-	39 [1]	63

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L4L5 (Span 2)	Type HS-20	(36T)	-	-	22 [37]	36
	Type 3	(25T)	-	-	20 [14]	33
	Type 3S2	(40T)	-	-	32 [15]	52
	Type 3-3	(40T)	-	-	39 [1]	63
Truss Member L5U4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	24 [34]	32 [8]
	Type 3	(25T)	-	-	22 [9]	29
	Type 3S2	(40T)	-	-	33 [15]	44
	Type 3-3	(40T)	-	-	43	58
Truss Member L5L6 (Span 2)	Type HS-20	(36T)	-	-	27 [23]	42
	Type 3	(25T)	-	-	24 [1]	38
	Type 3S2	(40T)	-	-	39 [1]	61
	Type 3-3	(40T)	-	-	47	74
Truss Member L6L7 (Span 2)	Type HS-20	(36T)	-	-	27 [23]	42
	Type 3	(25T)	-	-	24 [1]	38
	Type 3S2	(40T)	-	-	39 [1]	61
	Type 3-3	(40T)	-	-	47	74
Truss Member U6L7 (Spans 1 and 3)	Type HS-20	(36T)	-	-	21 [10]	29 [18]
	Type 3	(25T)	-	-	19 [19]	26
	Type 3S2	(40T)	-	-	31 [20]	42
	Type 3-3	(40T)	-	-	37 [4]	50
Stringer	Type HS-20	(36T)	26 [8]	44	31	43
	Type 3	(25T)	26	44	31	43
	Type 3S2	(40T)	42	71	50	69
	Type 3-3	(40T)	52	86	60	84

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member U2U3 (Spans 1 and 3)	Type HS-20	(36T)	-	-	36	48
	Type 3	(25T)	-	-	31	41
	Type 3S2	(40T)	-	-	47	61
	Type 3-3	(40T)	-	-	62	82
Truss Member U3U4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	36	48
	Type 3	(25T)	-	-	31	41
	Type 3S2	(40T)	-	-	47	61
	Type 3-3	(40T)	-	-	62	82
Truss Member L1L2 (Span 2)	Type HS-20	(36T)	-	-	38	57
	Type 3	(25T)	-	-	35	53
	Type 3S2	(40T)	-	-	57	86
	Type 3-3	(40T)	-	-	67	102
Truss Member L2L3 (Span 2)	Type HS-20	(36T)	-	-	38	57
	Type 3	(25T)	-	-	35	53
	Type 3S2	(40T)	-	-	57	86
	Type 3-3	(40T)	-	-	67	102
Floorbeam 2 (Spans 1 and 3)	Type HS-20	(36T)	30 [36]	51	39	55
	Type 3	(25T)	25	42	32	45
	Type 3S2	(40T)	40	67	51	73
	Type 3-3	(40T)	49	82	62	88
Truss Member L3L4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	45	68
	Type 3	(25T)	-	-	40	59
	Type 3S2	(40T)	-	-	61	90
	Type 3-3	(40T)	-	-	79	117

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)	Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L4L5 (Spans 1 and 3)	Type HS-20 (36T)	-	-	45	68
	Type 3 (25T)	-	-	40	59
	Type 3S2 (40T)	-	-	61	90
	Type 3-3 (40T)	-	-	79	117
Truss Member U4U5 (Spans 1 and 3)	Type HS-20 (36T)	-	-	46	60
	Type 3 (25T)	-	-	42	54
	Type 3S2 (40T)	-	-	65	84
	Type 3-3 (40T)	-	-	83	107
Truss Member U5U6 (Spans 1 and 3)	Type HS-20 (36T)	-	-	46	60
	Type 3 (25T)	-	-	42	54
	Type 3S2 (40T)	-	-	65	84
	Type 3-3 (40T)	-	-	83	107
Truss Member U7U8 (Span 2)	Type HS-20 (36T)	-	-	47	62
	Type 3 (25T)	-	-	44	58
	Type 3S2 (40T)	-	-	69	90
	Type 3-3 (40T)	-	-	81	106
Floorbeam 3 (Span 2)	Type HS-20 (36T)	46	76	50	71
	Type 3 (25T)	38	63	42	59
	Type 3S2 (40T)	60	101	67	94
	Type 3-3 (40T)	73	123	81	114
Floorbeam 3 (Spans 1 and 3)	Type HS-20 (36T)	46	76	50	71
	Type 3 (25T)	38	63	42	59
	Type 3S2 (40T)	60	101	67	94
	Type 3-3 (40T)	74	123	81	114

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Floorbeam 4 (Spans 1 and 3)	Type HS-20	(36T)	46	76	50	71
	Type 3	(25T)	38	63	42	59
	Type 3S2	(40T)	60	101	67	94
	Type 3-3	(40T)	74	123	81	114
Truss Member L1L2 (Spans 1 and 3)	Type HS-20	(36T)	-	-	52	76
	Type 3	(25T)	-	-	47	70
	Type 3S2	(40T)	-	-	73	107
	Type 3-3	(40T)	-	-	94	137
Truss Member L2L3 (Spans 1 and 3)	Type HS-20	(36T)	-	-	52	76
	Type 3	(25T)	-	-	47	70
	Type 3S2	(40T)	-	-	73	107
	Type 3-3	(40T)	-	-	94	137
Truss Member L0U0 (Spans 1 and 3)	Type HS-20	(36T)	-	-	60	77
	Type 3	(25T)	-	-	55	70
	Type 3S2	(40T)	-	-	87	111
	Type 3-3	(40T)	-	-	105	136
Truss Member L4U4 (Span 2)	Type HS-20	(36T)	-	-	73	105
	Type 3	(25T)	-	-	78	113
	Type 3S2	(40T)	-	-	126	181
	Type 3-3	(40T)	-	-	153	220
Truss Member L6U6 (Span 2)	Type HS-20	(36T)	-	-	73	105
	Type 3	(25T)	-	-	78	113
	Type 3S2	(40T)	-	-	126	181
	Type 3-3	(40T)	-	-	153	220

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)	Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L4U4 (Spans 1 and 3)	Type HS-20 (36T)	-	-	73	105
	Type 3 (25T)	-	-	78	113
	Type 3S2 (40T)	-	-	126	181
	Type 3-3 (40T)	-	-	153	220
Truss Member L2U2 (Span 2)	Type HS-20 (36T)	-	-	74	106
	Type 3 (25T)	-	-	79	114
	Type 3S2 (40T)	-	-	127	182
	Type 3-3 (40T)	-	-	154	222
Truss Member L2U2 (Spans 1 and 3)	Type HS-20 (36T)	-	-	74	106
	Type 3 (25T)	-	-	79	114
	Type 3S2 (40T)	-	-	127	182
	Type 3-3 (40T)	-	-	154	222
Truss Member L8U8 (Span 2)	Type HS-20 (36T)	-	-	76	109
	Type 3 (25T)	-	-	82	116
	Type 3S2 (40T)	-	-	131	187
	Type 3-3 (40T)	-	-	159	227
Truss Member L6U6 (Spans 1 and 3)	Type HS-20 (36T)	-	-	76	109
	Type 3 (25T)	-	-	82	117
	Type 3S2 (40T)	-	-	132	187
	Type 3-3 (40T)	-	-	160	227
Truss Member U0U1 (Span 2)	Type HS-20 (36T)	-	-	87	111
	Type 3 (25T)	-	-	82	104
	Type 3S2 (40T)	-	-	127	162
	Type 3-3 (40T)	-	-	150	191

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member U1U2 (Span 2)	Type HS-20	(36T)	-	-	87	111
	Type 3	(25T)	-	-	82	104
	Type 3S2	(40T)	-	-	127	162
	Type 3-3	(40T)	-	-	150	191
Truss Member U0U1 (Spans 1 and 3)	Type HS-20	(36T)	-	-	96	122
	Type 3	(25T)	-	-	87	110
	Type 3S2	(40T)	-	-	138	175
	Type 3-3	(40T)	-	-	168	213
Truss Member U1U2 (Spans 1 and 3)	Type HS-20	(36T)	-	-	96	122
	Type 3	(25T)	-	-	87	110
	Type 3S2	(40T)	-	-	138	175
	Type 3-3	(40T)	-	-	168	213
Truss Member L7L8 (Span 2)	Type HS-20	(36T)	-	-	113	162
	Type 3	(25T)	-	-	106	152
	Type 3S2	(40T)	-	-	165	235
	Type 3-3	(40T)	-	-	194	277
Truss Member L8L9 (Span 2)	Type HS-20	(36T)	-	-	113	162
	Type 3	(25T)	-	-	106	152
	Type 3S2	(40T)	-	-	165	235
	Type 3-3	(40T)	-	-	194	277
Truss Member L5L6 (Spans 1 and 3)	Type HS-20	(36T)	-	-	165	234
	Type 3	(25T)	-	-	151	213
	Type 3S2	(40T)	-	-	240	339
	Type 3-3	(40T)	-	-	289	409

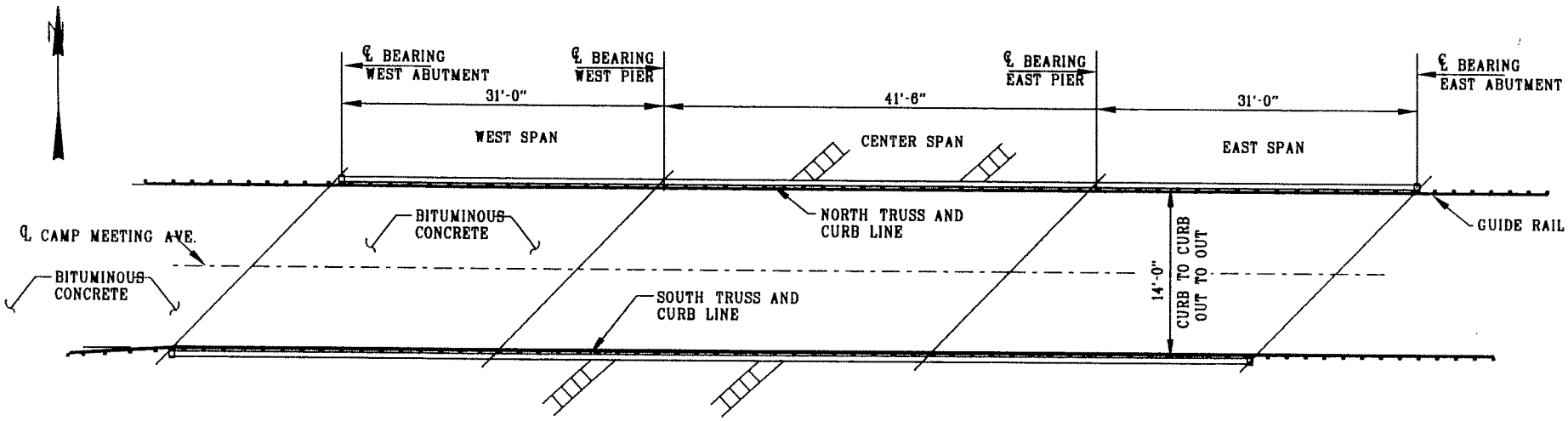
Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

SUMMARY OF RATINGS (continued)

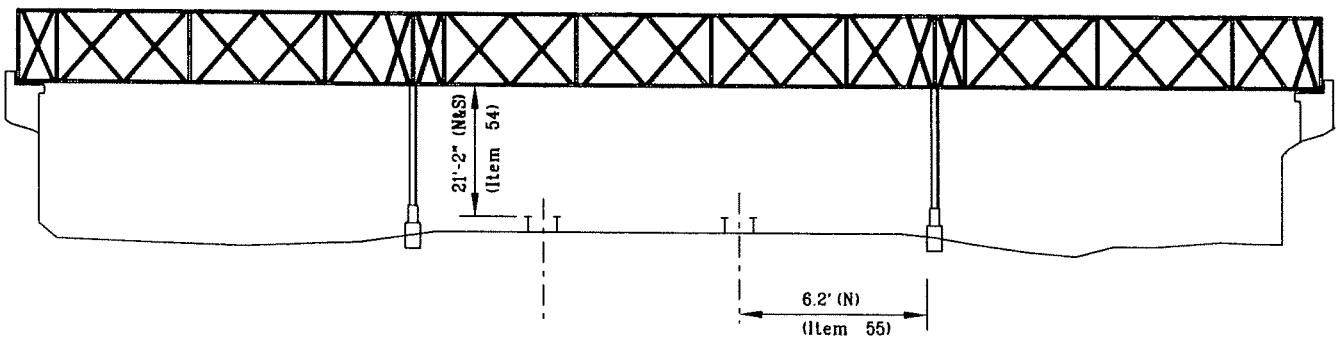
Member	Truck Type (Tons)	Rating (Tons)			
		Load Factor		Working Stress	
		Inventory	Operating	Inventory	Operating
Truss Member L6L7 (Spans 1 and 3)	Type HS-20 (36T)	-	-	165	234
	Type 3 (25T)	-	-	151	213
	Type 3S2 (40T)	-	-	240	339
	Type 3-3 (40T)	-	-	289	409

Based on the findings of the current inspection, there has been no change in the condition of the structure that warrants revision of the load ratings.

Cycle No. 13



PLAN



ELEVATION

New Jersey Department of Transportation
Bureau of Structural Evaluation

PLAN AND ELEVATION
Structure No.: 1850-160
Camp Meeting Avenue (CR 602) over
Trenton Line (CSX)
Montgomery Twp., Somerset County
Pickering, Corts & Summerson, Inc.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

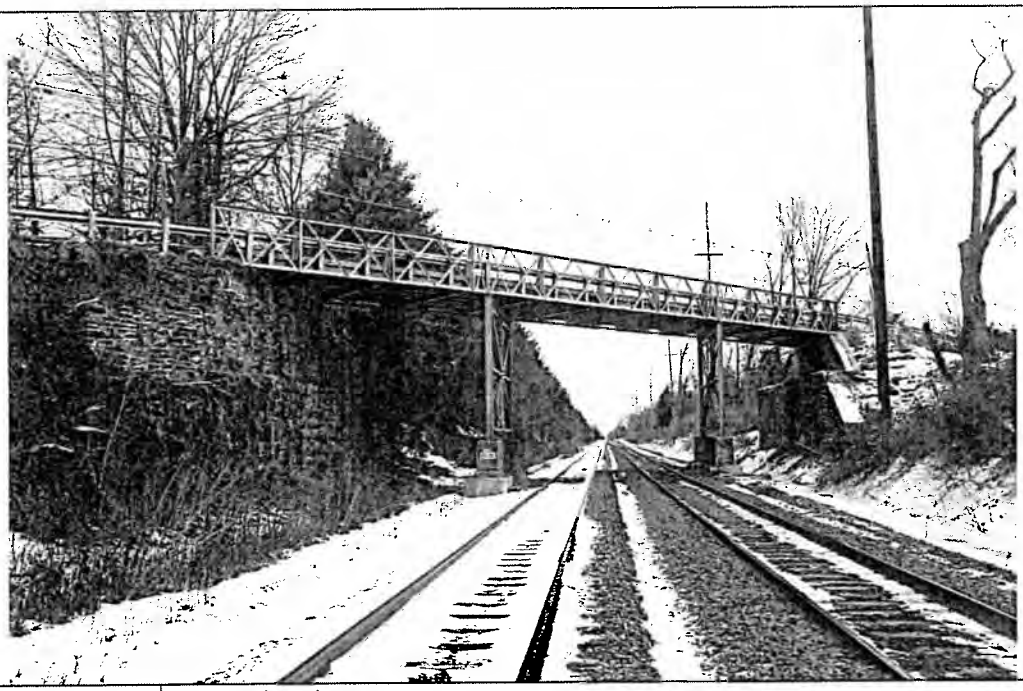


Photo No: 13-1

Location:	South Elevation.
Description:	General view.

Photo No: 13-2

Location:	Roadway, looking east.
Description:	General view.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

Photo No: 13-3

Location:	Superstructure, span 2, looking east.
Description:	General view.

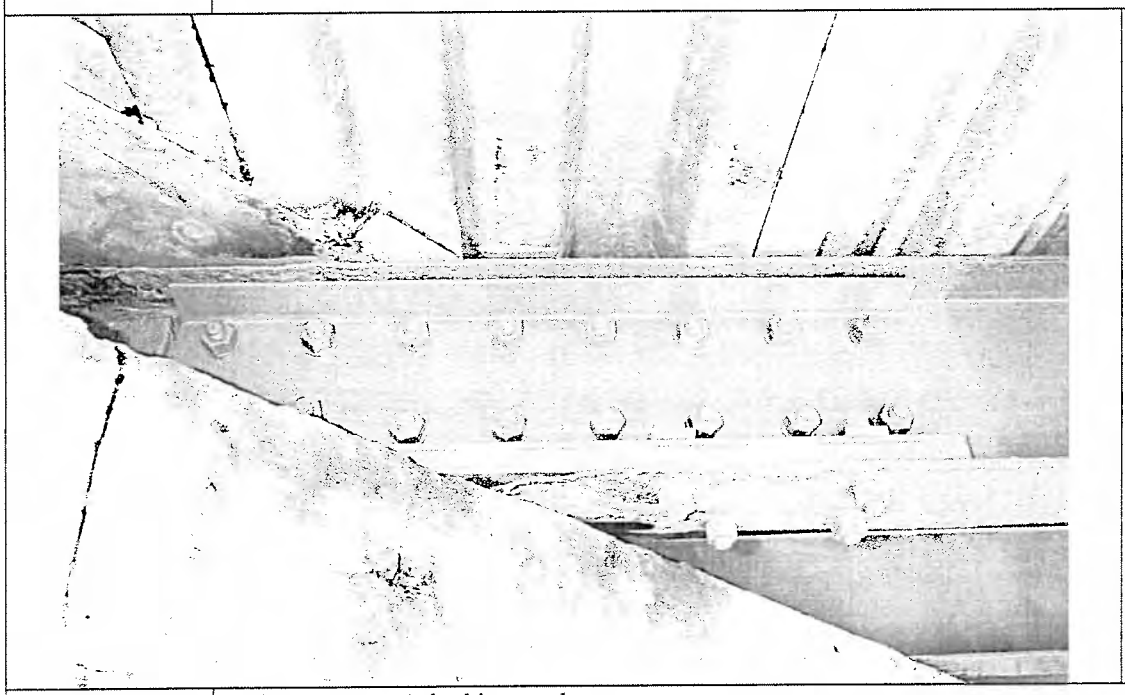


Photo No: 13-4

Location:	Stringer 4, span 1, looking north
Description:	Work Done: The severe rust with 100% section loss to the web and bottom flange at the west end has been repaired with steel channels.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

Photo No: 13-5

Location:	Northwest wingwall, looking south.
Description:	Work Done: The large void due to missing stones has been patched.

Photo No: 13-6

Location:	Stringer 1, span 1, looking west.
Description:	Severe rust to the top (1½" high) of the web between floorbeams 3 and 4 with 100% section loss adjacent to floorbeam 3.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

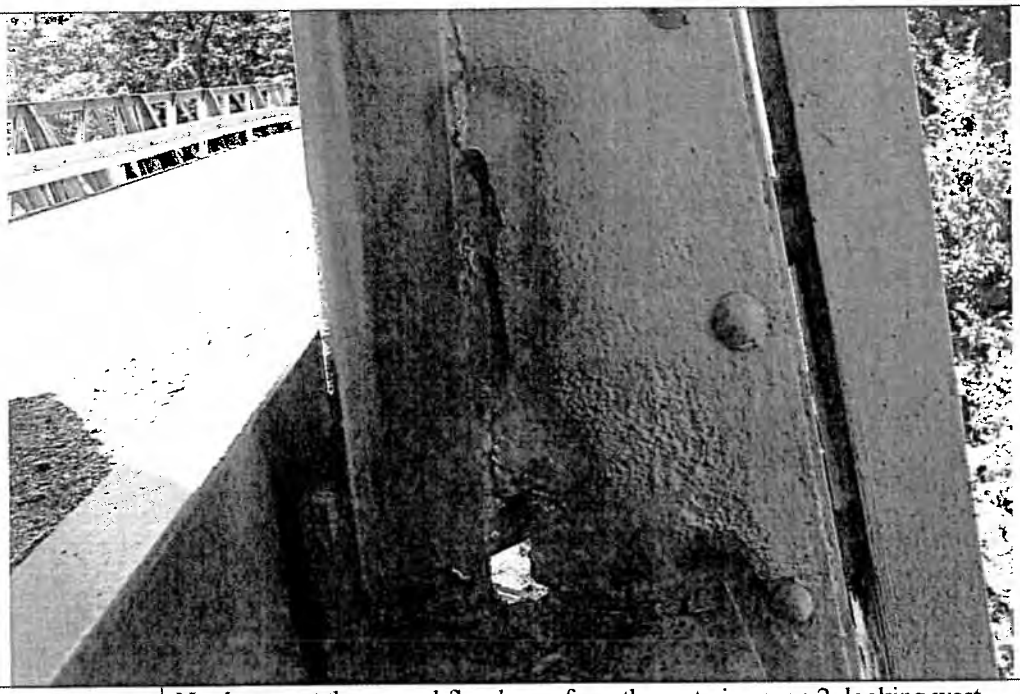


Photo No: 13-7

Location:	North truss at the second floorbeam from the east pier, span 2, looking west.
Description:	Severe rust with two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange.

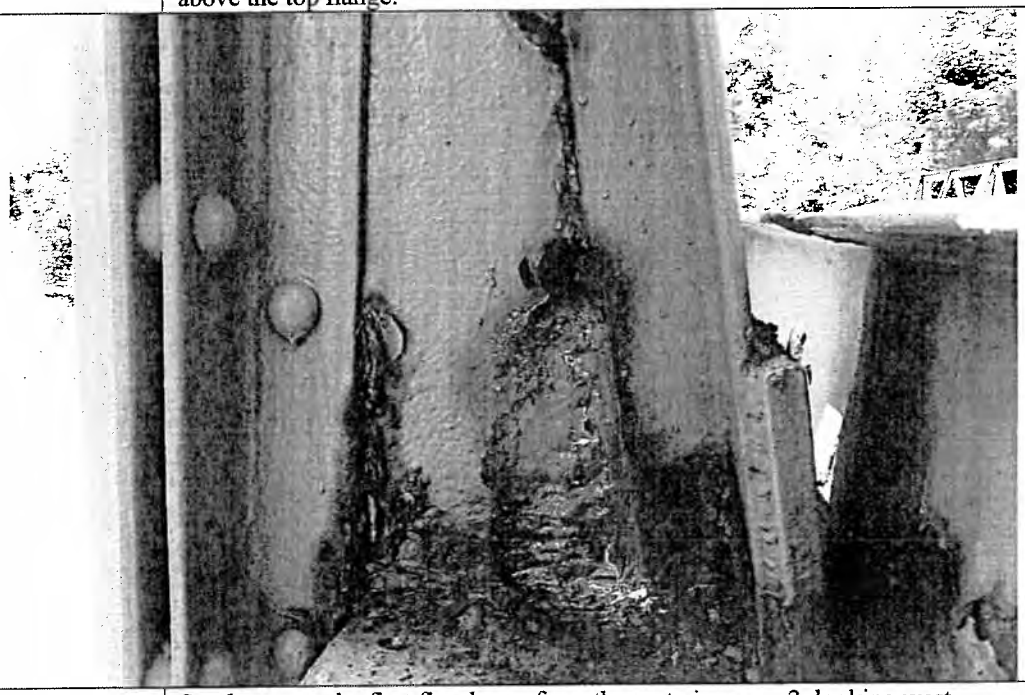


Photo No: 13-8

Location:	South truss at the first floorbeam from the east pier, span 2, looking west.
Description:	Area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes and two pinholes directly above the top flange.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

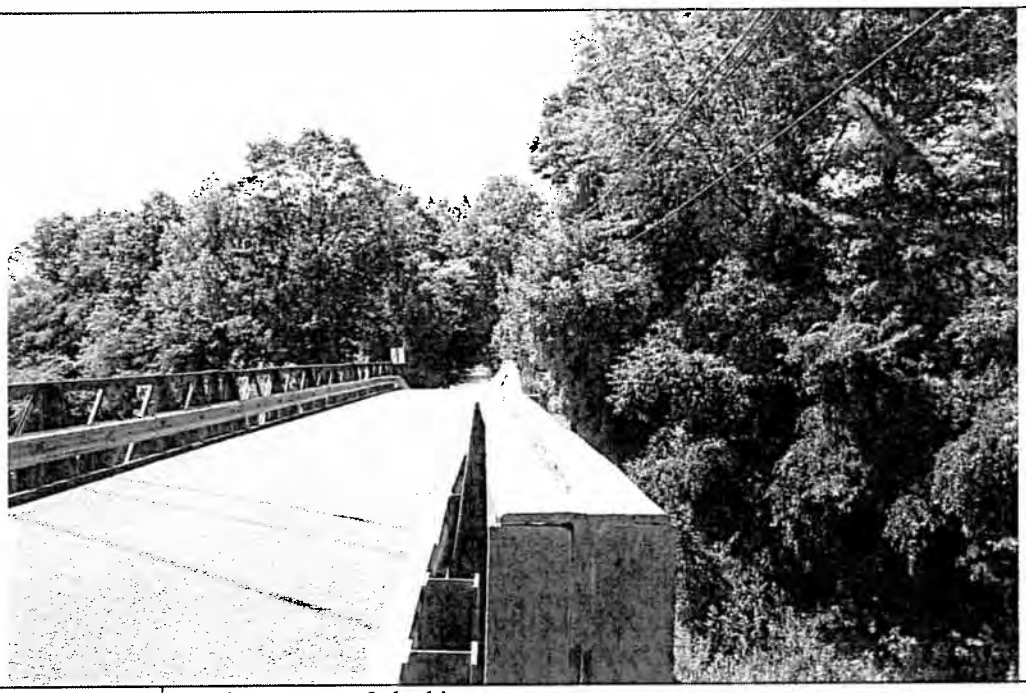


Photo No: 13-9

Location:	North truss, span 3, looking west.
Description:	The top chord is bent laterally to the north 4½" over an 8'-5" length (no change since the previous inspection).

Photo No: 13-10

Location:	Southwest approach, looking east.
Description:	The structure is posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks at the northeast and southwest corners of the structure.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

NEW JERSEY DEPARTMENT OF TRANSPORTATION
STRUCTURAL EVALUATION
BRIDGE EVALUATION CHECK LIST

(FIELD NOTES)

Inspectors: Mike Hale, Doutsen Hettema, John Ziemblicki, Casey Rider

Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX)

Crew Chief: Cindy Vergara

Temperature: 90° F (8/19/10); 30° F (1/11/11)

Weather: Clear (8/19/10) & Cloudy (1/11/11)

Special Equipment Used: Large Ladder

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 of primary structural elements.
4 **Poor Condition** – advance section loss of primary structural elements.
3 Serious Condition – seriously deteriorated primary structural elements.
2 Critical Condition – facility should be closed until repairs are made.
1 Imminent Failure Condition – facility closed. Study of repairs is feasible.
0 Failed Condition – facility is closed and beyond repair.

GPS COORDINATES		
@ southwest corner		
N40°	25′ 13. 30 ″	Lat.
W74°	42′ 44. 60 ″	Long.

GENERAL

Type of Bridge: Three span, simply supported, steel, Pony truss

Year Built: 1889 Year of Widening / Major Repairs: 1922 and 1950

No. of Lanes: On 1 Under Railroad (1 Track)

Vertical Clearances: Over Deck: Unlimited

Minimum Under: 21'-2" (north or south truss to the top of either rail of the west track)

Maximum Under (Item 10): N/A

Horizontal Underclearance: Total Horizontal Clearance: N/A

Right 6.2' (west face of the north column pedestal of the east pier bent to the centerline of the east track)

Left N/A

Overall Physical Condition of Structure: Poor, due to the superstructure.

Work Done: The severe rust with 100% section loss to the web and bottom flange at the west end of stringer 4 in span 1 has been repaired with steel channels (Photo 13-4). The large void due to missing stones at the northwest wingwall has been patched (Photo 13-5).

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

DECK

SI&A Item 58 Condition Rating: 7

SPAN # 1 (West)

RATING	COMPONENT	REMARKS
7	Wearing Surface (Bituminous Concrete)	
7	Underside of Deck (S.I.P. Forms)	
N	Median	
6	Curbs (Steel Channel)	
N	Sidewalks	
N	Parapets / Balustrades	
7	Railings (W-Beam)	
6	Deck Joints / Filler Material	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

DECK

SI&A Item 58 Condition Rating: 7

SPAN # 2 (Center)

RATING	COMPONENT	REMARKS
7	Wearing Surface (Bituminous Concrete)	
7	Underside of Deck (S.I.P. Forms)	
N	Median	
6	Curbs (Steel Channel)	
N	Sidewalks	
N	Parapets / Balustrades	
7	Railings (W-Beam)	
N	Deck Joints / Filler Material	Not visible; overlaid with bituminous concrete.
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

DECK

SI&A Item 58 Condition Rating: 7

SPAN # 3 (East)

RATING	COMPONENT	REMARKS
7	Wearing Surface (Bituminous Concrete)	
7	Underside of Deck (S.I.P. Forms)	
N	Median	
6	Curbs (Steel Channel)	
N	Sidewalks	
N	Parapets / Balustrades	
7	Railings (W-Beam)	
6	Deck Joints / Filler Material	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

APPROACHES

SI&A Item BA Rating: 7

SI&A Item 72 Rating: 4

APPROACH West

RATING	COMPONENT	REMARKS
7	Approach Pavement (Bituminous Concrete)	
N	Approach Shoulder	
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade onto the structure (structure located on a crest). Horizontal: Tangent. Limited sight distance with a significant speed reduction required (30 MPH).
7	Guide Rail Condition	
N	Sidewalks	
5	Curbs (Concrete)	South: Fractured section adjacent to the structure with a large spall (1 SF) at the west end.
N	Utilities	Aerial wires along the north embankment.
6	Approach Roadway Embankment	Both: Steep slope and well vegetated.
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

APPROACHES

SI&A Item BA Rating: 7

SI&A Item 72 Rating: 4

APPROACH East

RATING	COMPONENT	REMARKS
7	Approach Pavement (Bituminous Concrete)	
N	Approach Shoulder	
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade onto the structure (structure located on a crest). Horizontal: Tangent. Limited sight distance with a significant speed reduction required (30 MPH).
7	Guide Rail Condition	
N	Sidewalks	
6	Curbs (Concrete)	
N	Utilities	Aerial wires along the north embankment.
6	Approach Roadway Embankment	Both: Moderate to steep slope and well vegetated.
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 1 (West)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered South to North, (4) Floorbeams Numbered West to East, and South and North Trusses	Truss: General: Up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers. North: West end of the top chord is bent towards the south (1 3/8" over a 3' length) and the interior leg of the top flange is locally buckled (1/4") (no change since the previous inspection). The bottom chord cover plate exhibits moderate collision damage at joint L5 from the west and is bent upward (1" over an 18" length) and has a 1/4" deep gouge on the south edge at this location (no change since the previous inspection). South: Two gouges (2" long x 1/4" deep and 2" long x 3/4" deep) to the south edge of the bottom chord cover plate. The flange is bent upward 1" at this location (no change since the previous inspection). Floorbeams: General: Localized areas of moderate to severe rust to the top and bottom flanges (most severe at floorbeam ends with up to 1/8" section loss). Floorbeam 1: 3½" high x 2" wide hole to the web located at the west side of the connection of the second stringer from the north to the floorbeam web. Area (3" diameter) of 1/4" section loss to the web at the connection to the first stringer from the north. The south leg of the top flange exhibits severe rust with 1/8" remaining section over the fascia stringer (no repair necessary). 2.5" diameter hole to the web at stringer 2 and a 1" diameter hole to the web at stringer 3. Floorbeam 2: 1/8" deep painted over pitting to the web. Floorbeam 4: Moderate to severe rust to the top and bottom flanges with 1/2" remaining section for a 2" width along both legs of the top flange and 1/2" remaining section to the bottom flange. Knee Bracing: General: The knee bracing exhibits moderate to severe rust with localized areas of up to 1/8" section loss and some of the tack welds are broken due to severe pack rust. Minor collision scrapes to a few of the knee braces on the south.

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 1 (West) (continued)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Stringers: General: Localized areas of moderate rust with up to 1/8" section loss. The interior leg of the top flange of the fascia stringers exhibits severe rust with up to 100% section loss. Moderate to severe rust to the ends of the interior stringers with up to 1/8" section loss to the top flange in this area. Stringer 1: 1" diameter hole to the top of the web adjacent to the coping of floorbeam 1. Area (4" long x 2½" wide) of 100% section loss to the north leg of the bottom flange between floorbeam 1 and floorbeam 2 beginning 39" from floorbeam 2. The remaining bottom flange exhibits 1/4" deep pitting. The north leg of the top flange exhibits 1/4" deep pitting. The north face of the web exhibits 1/16" section loss with areas of 1/4" deep pitting. Moderate to severe rust with up to 1/8" deep pitting to the bottom flange between floorbeams 2 and 3. Severe rust to the top (1½" high) of the web between floorbeams 3 and 4 with 100% section loss adjacent to floorbeams 3 and 4 (Photo 13-06). There is 1" diameter hole to the bottom flange 56" from floorbeam 3. Stringer 4: Repair channels to the west end. Stringer 7: The top of the web exhibits an area (22" long x up to 2" high) of 100% section loss. The top flange exhibits 1/16" remaining section (knife edging) with areas of 100% section loss. Area (2" x 1") of 100% section loss to the web over the bearing.
5	Diaphragms / Cross Frames	The bottom half of the clevis pin connection to the north end of floorbeam 2 exhibits 100% section loss.
5	Bearings	North: Severe rust to all components with up to 1/8" section loss. South: Light to moderate rust with 1/16" section loss.
	Deflection and Vibration	Moderate vibration under truck loads.
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 3%

Category	Detail Description and Location
E	Knee brace angles tack welded to the truss verticals (> 4") (Similar to Detail 5).
E	Plug welds to the floorbeam knee bracing (Detail 15).

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 2 (Center)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Truss: General: Up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers. North: Bolt missing at the top chord splice (no repair necessary). Diagonal U2L3 (two 3" x 5/16" bars) from the east exhibits an area (3" x 3") of severe rust with 1/16" minimum remaining section with knife edging at the intersection with member U3L2. U3L4 is bowed outward 1½" over a 24" length. Floorbeams: General: Localized areas of moderate to severe rust to the top and bottom flanges (most severe at floorbeam ends with up to 1/8" section loss). 1/4" wide area of section loss around the perimeter of the clip angles. The pitting and section loss to the web of floorbeams 5 through 7 is painted over. Floorbeam 5: Exhibits severe rust with 1/16" remaining section with one pinhole located directly above the top flange of the floorbeam. Floorbeam 8: 1/8" to 1/4" remaining section to the top flange with an area (10" long x 1" wide) of 100% section loss to the west leg in stringer bay 6. Area of 100% section loss to the north end of the east (1½" long x 2" wide) and west (3" long x 1" wide) legs adjacent to the bottom chord of the truss. The web exhibits an area (1/4" high x 1" wide) of 100% section loss at stringer 3 adjacent to the north clip angle. Repair plate to the face of the web at stringer 2. Knee Bracing: General: The knee bracing exhibits moderate to severe rust with localized areas of up to 1/8" section loss and some of the tack welds are broken due to severe pack rust. Minor collision scrapes to a few of the knee braces on the south. North Truss: The knee bracing at the second floorbeam from the east pier exhibits two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange of the floorbeam (Photo 13-7). South Truss: The knee bracing at the first floorbeam from the east pier exhibits severe rust (8" high x 3" wide) with 1/16" remaining section with two 1" diameter holes and two pinholes located directly above the top flange of the floorbeam (Photo 13-8).

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: **4**

SPAN # 2 (Center) (continued)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Stringers: General: Localized areas of moderate rust with up to 1/8" section loss. The interior leg of the top flange of the fascia stringers exhibits severe rust with up to 100% section loss. Note that the fascia stringers are located beneath the guide rail and the distance to the interior stringers is 25". The wheel load is 24" from the face of the guide rail and affects the interior stringers and not the fascia stringers. Stringer 1: The north leg of the top flange exhibits 100% section loss (3¼" original width) between floorbeams 4 and 5. Stringer 5: 1/4" remaining section (3/8" original section) to the west leg of the bottom flange. Stringer 7: Area (22" long x 1" high) of 100% section loss along the top of the web at the west end. Area (1" long x 1/2" high) of 100% section loss along the top of the web at the east end with < 1/8" remaining to the adjacent area. Severe rust with up to 1/8" section loss to the top 2" of the web (full length) with an area (22" long x 4" high) of < 1/8" remaining section located 25" from the east pier bent. The top of the web exhibits an area (5" long x 1" high) of 100% section loss and a 1" diameter hole at floorbeam 7. The bottom flange exhibits severe rust with 1/8" to 1/4" section loss with localized knife edging (full length x full width) to the north leg and 1/8" section loss to the south leg. Repair plate and top flange repair angles between floorbeams 4 and 5. Severe rust (36" long x up to 3" high) with 1/16" to 1/8" remaining section to the web between floorbeams 5 and 6 with an area of 100% section loss 24" from floorbeam 5 (2" long x 1/2" high) and adjacent to floorbeam 6 (24" long x 1" high). Similar condition between floorbeams 6 and 7.
6	Diaphragms / Cross Frames	
6	Bearings	
	Deflection and Vibration	Moderate vibration under truck loads.
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 3%

Category	Detail Description and Location
E	Knee brace angles tack welded to the truss verticals (> 4") (Similar to Detail 5).
E	Plug welds to the floorbeam knee bracing (Detail 15).

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 3 (East)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (3) Floorbeams Numbered West to East, and South and North Trusses	Truss: General: Up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers. North: U0L0 exhibits local buckling (3/4" over 9" to the outstanding leg of the interior angle approximately 2' from the bottom). The top chord is bent laterally 4½" to the north over an 8'-5" length (no change since the previous inspection) (Photo 13-9). South: The bottom chord at the bearing masonry plate (12" long) exhibits 100% section loss to the outstanding leg of the fascia angle for a 4" length measured from the bearing. The next 8" has 1/8" to 1/4" remaining section (3/8" original section). The bearing anchor bolt is no longer connected to the truss due to the section loss and the interior leg is covered with debris. The fascia angle of U0L0 exhibits 100% section loss (2½" long x full width) to the bottom of the fascia angle of member U0L0 from the east. Members U3L2 from the east are bowed up to 2" over a 20" length. Floorbeams: General: Localized areas of moderate to severe rust to the top and bottom flanges (most severe at floorbeam ends with up to 1/8" section loss). Floorbeam 11: Painted over section loss to the top flange with 1/8" remaining section for a 1" width along both legs with small localized areas of 100% section loss. Knee Bracing: General: The knee bracing exhibits moderate to severe rust with localized areas of up to 1/8" section loss and some of the tack welds are broken due to severe pack rust.

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 3 (East) (continued)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Stringers: General: Localized areas of moderate rust with up to 1/8" section loss. The interior leg of the top flange of the fascia stringers exhibits painted over section loss with 1/16" to 3/16" knife edging. Stringer 1: Repair angle between floorbeams 8 and 9. Stringer 2: Repair angle between floorbeams 8 and 9. Stringer 5: The top flange exhibits painted over section loss with 1/16" to 3/16" knife edging. Between floorbeams 9 and 10 is a plated retrofit along the top of the web at the south face. Stringer 7: 1" diameter hole to the top of the web adjacent to the coped area at floorbeam 11 and areas of 100% section loss to the south leg of the top flange for 3'. Repair plate to the top of the web at the south face between floorbeams 9 and 10.
6	Diaphragms / Cross Frames	
5	Bearings	North and South: Not visible; covered with a heavy accumulation of debris.
	Deflection and Vibration	Moderate vibration under truck loads.
	Others	

Additional Remarks:

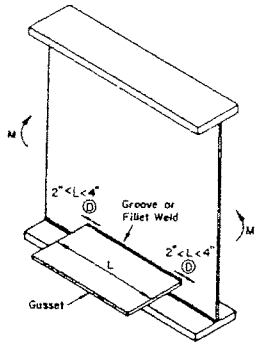
FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 3%

Category	Detail Description and Location
E	Knee brace angles tack welded to the truss verticals (> 4") (Similar to Detail 5).
E	Plug welds to the floorbeam knee bracing (Detail 15).

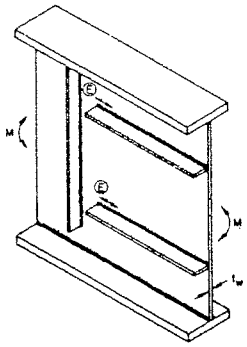
Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

TYPICAL FATIGUE DETAILS



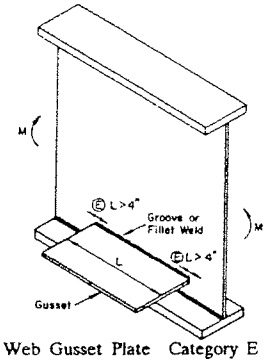
Short Wed Gusset Plate L < 4 in. Category D

Detail 1



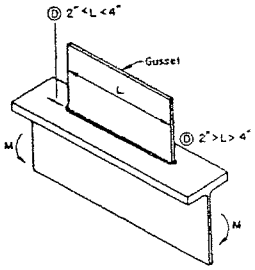
Termination of Longitudinal Stiffeners Category E

Detail 2



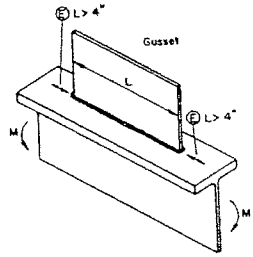
Web Gusset Plate Category E

Detail 3



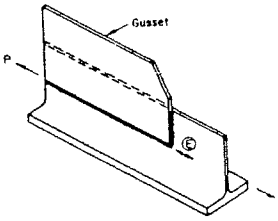
Short Flange Gusset Plate L ≤ 4 in. Category D

Detail 4



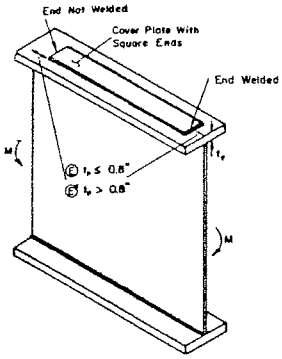
Flange Gusset Plate Category E

Detail 5



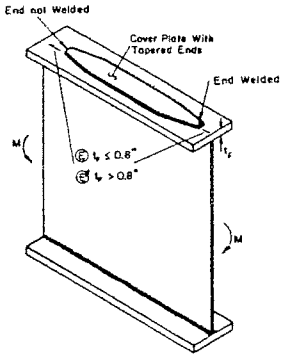
Gusset Welded to Bracing Member Category E

Detail 6



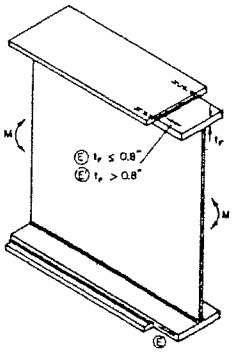
Square Ended Cover Plates Narrower than the Girder Flange Category E or E'

Detail 7



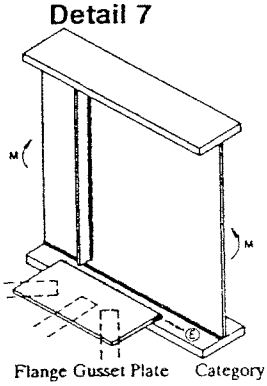
Cover Plates Narrower than the Girder Flange with Tapered Ends Category E or E'

Detail 8



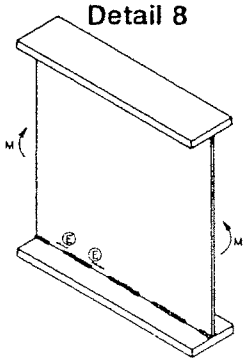
Cover Plates Wider than the Girder Flange with End Welds Category E or E'

Detail 9



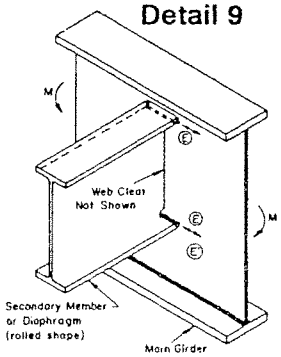
Flange Gusset Plate Category E

Detail 10



Intermittent Fillet Welds Category E

Detail 11



Stringer Framing into Girder Web Category E or E'

Detail 12

TYPICAL FATIGUE DETAILS

13. Field Weld Repairs - Proper welding procedures may not have been used; testing of weld by non-destructive methods was usually not done, therefore, the possibility of large flaws exists. Check carefully on the main structural members (stringers, floorbeams, girders).

14. Tack Welds - Check carefully on riveted members constructed in 1940's and 1950's as these welds were sometimes used to hold the plates together during riveting.

15. Plug Welds - Check at bolted connections on welded structures. These welds may have been used to fill-in incorrectly drilled holes (see sketch).

16. Backing Bars - These welds are possibly not full penetration. Check carefully on box girders if accessible and at butt (groove) welds made in the field.

17. Details with 2 or 3 Intersecting Welds (Slot Welds) - Incomplete penetration of the second and third welds is possible.

18. Butt (Groove) Welds on Horizontal Web Stiffeners - NDT of the weld was not always required on the stiffener in the tension zone. If the weld is not good, this will be an "E" detail or worse which can exist in a high stress area (This would be the same as or worse than typical detail 3).

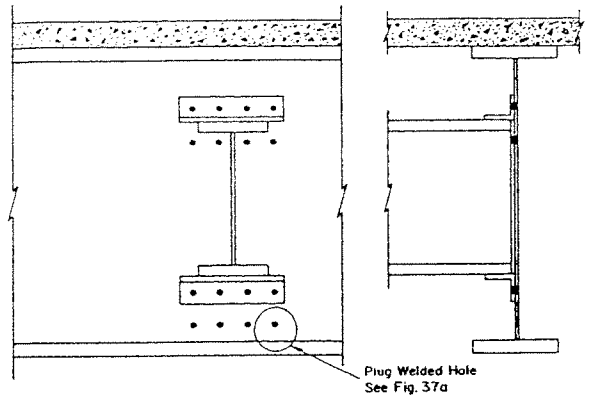
19. Detail Without Proper Welding Clearance - Poor welding can result if proper clearance for the welding rod is not maintained by the designer (such as a horizontal web stiffener placed too near the bottom flange of a girder; fillet weld at bottom of stiffener is difficult due to a lack of clearance for the welding rod).

20. Coped or Blocked Flanges - Check carefully when these details exist on main structural members (stringers and floorbeams). Coped flanges are a typical detail on movable spans.

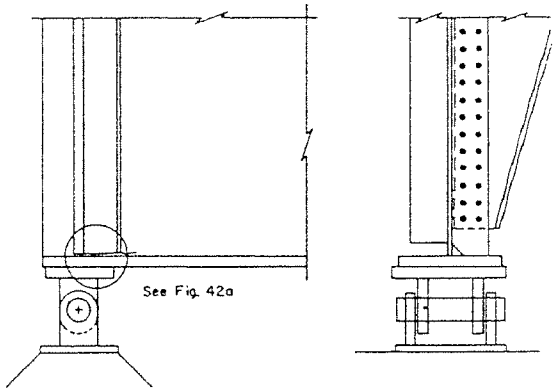
21. Distortion (Bending) at Small Gaps - For typical details which exhibit damage due to this, see "Inspecting Steel Bridges for Fatigue Damage" (see sketches).

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

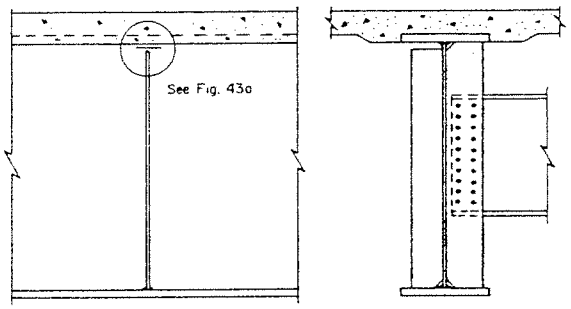
TYPICAL FATIGUE DETAILS



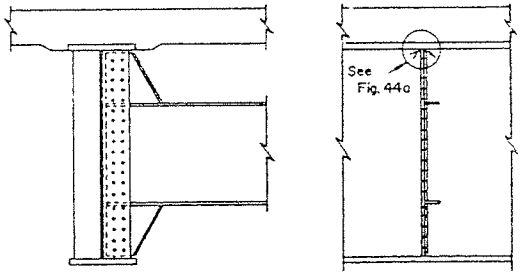
Schematic Showing Misplaced Holes Filled with Weld
Detail 15



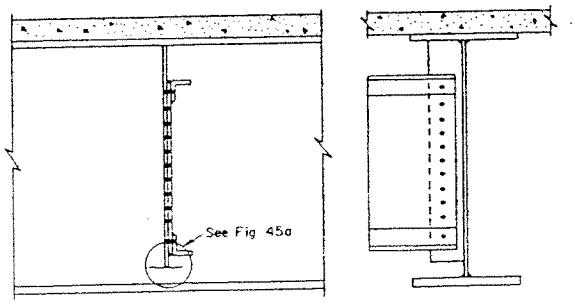
Schematic Showing Crack in Girder Web at Floor Beam Connection Plates at Supports
Detail 21A



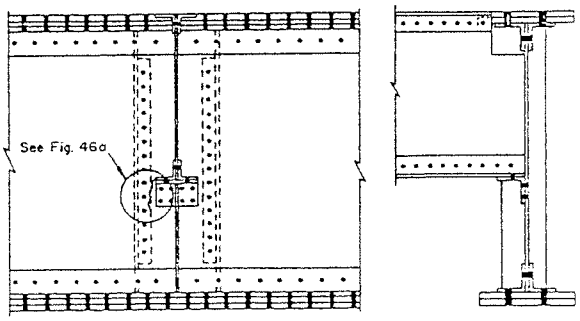
Schematic of Crack in Girder Web at Floor Beam Connection Plates in Negative Moment Region
Detail 21B



Schematic of Crack in Girder Web and Transverse Connection Plate Welds at Floor Beam in Negative Moment Region of Skewed Bridge
Detail 21C



Schematic of Transverse Diaphragm Attached to Cut Short Welded Connection Plate Showing Web Cracking in Gap
Detail 21D



Schematic Showing Stringer Framing into Riveted Floor Beam With Crack Between Seat Angle Connection and Adacent Web Stiffeners
Detail 21E

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

PAINT INSPECTION

*Environment: 1

Date of Last Painting: 2009

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

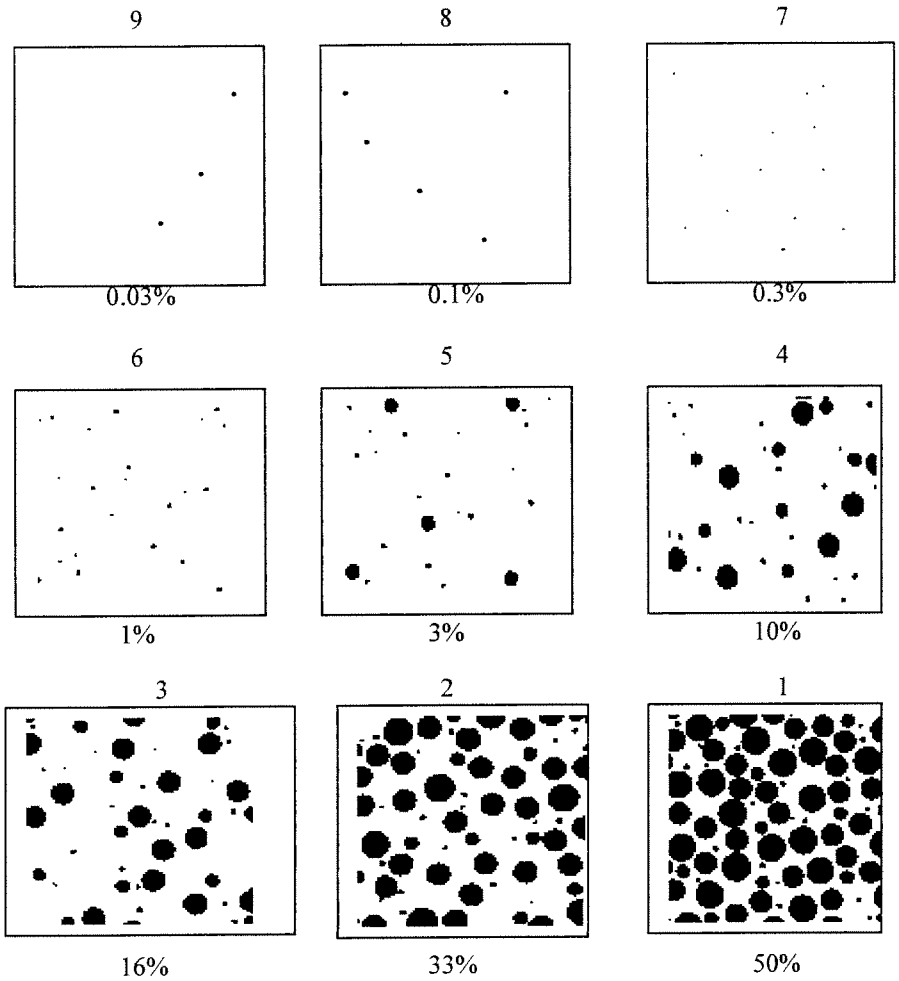


FIG. 1 Examples of Area Percentages

Note: Blistered Paint areas are counted as rust

10 = 0% Rust
0 = 100% Rust

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

INSPECTION RATINGS (0 THROUGH 10 OR N/A)

Fascia Beam:	2	Fascia Bottom Flange:	4	Beams Ends:	4
Interior Beam:	4	Interior Bottom Flange:	4	Connections:	4
Bracing:	4	Substructure:	7	Railings/Fence:	N/A
Bearings:	4	Above Deck Superstructure:	5		

Remarks 1: The pitting and section loss to the superstructure and substructure elements has been painted over.

Remarks 2:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

ABUTMENT West

RATING	COMPONENT	REMARKS
5	Breastwall (Stone Masonry)	There are voids (14" deep) at the bottom of the top half beneath stringers 3 and 6.
N	Backwall	
6	Bridge Seat (Stone and Concrete)	
6	Wingwalls (Stone Masonry)	
N	Embankment / Slope Protection	
6	Others (Stone Masonry Retaining Wall in Front of Abutment)	

Additional Remarks:

ABUTMENT East

RATING	COMPONENT	REMARKS
6	Breastwall (Stone Masonry)	
N	Backwall	
6	Bridge Seat (Stone and Concrete)	
7	Wingwalls (Stone Masonry)	
6	Embankment / Slope Protection	
6	Others (Stone Masonry Retaining Wall in Front of Abutment)	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

BENT 1 (West)

RATING	COMPONENT	REMARKS
6	Bent (Steel Angles with Lacing Bars)	
N	Cap	
5	Posts (2) (Steel Columns)	General: Light to moderate localized painted over rust areas. North: The east flange is bent up to 3/4" to the south and the northeast leg exhibits local buckling (1/2" over 8") 6' from the bottom of the column (no change since the previous inspection). The west flange is bent up to 3/4" to the south 3' from the bottom (no change since the previous inspection). The west vertical gusset plate exhibits local buckling (1/2"). Localized areas of 3/16" section loss to the vertical gusset plates.
6	Foundation (Concrete)	
5	Cross Bracing (Steel)	Painted over moderate to severe rust with up to 100% section loss to the outside angle of the brace near the lower center gusset plate. Painted over up to 1/4" deep pitting throughout.
7	Horizontal Bracing (Steel)	
N	Longitudinal Bracing	
N	Girts	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

BENT 2 (East)

RATING	COMPONENT	REMARKS
6	Bent (Steel Angles with Lacing Bars)	
N	Cap	
5	Posts (2) (Steel Columns)	General: Localized light rust to the bottom connection angles. North: Local flange buckling to east leg approximately 4' from the bottom of the column for 4" and to the east and west legs at the bottom of the gusset plate connection.
6	Foundation (Concrete)	
5	Cross Bracing (Steel)	Painted over moderate to severe rust throughout. The center vertical bracing and bottom gusset plate (east leg) exhibits painted over 1/8" deep pitting and localized areas of 100% section loss.
7	Horizontal Bracing (Steel)	
N	Longitudinal Bracing	
N	Girts	

Additional Remarks:

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

HIGHWAY SAFETY

Coding of SI&A Item 36: **0000**
1: Good
0: Not Good
N: Not Applicable

RATING		COMPONENT	REMARKS
0		Bridge Railing	1'-11" high nested W-beam guide rail with steel posts (6' post spacing) and no spacer blocks. Due to the substandard height and post spacing and the lack of spacer blocks.
0	0	Transition to Bridge Railing	2'-0" high W-beam guide rail with steel posts (6' post spacing) and spacer blocks. Due to the substandard height and spacer blocks at all four corners.
	1	Curb / Sidewalk Terminations	The curbs are continuous at all four corners and there are no sidewalks on the structure.
0		Approach Guide Rails	2'-0" high W-beam guide rail with steel posts (6' post spacing) and spacer blocks. Northeast and Southeast: Continuous. Northwest and Southwest: 50 LF. Due to the substandard height and spacer blocks at all four corners and the length at the northwest and southwest corners.
0		Approach Guide Rail End Terminals	Northeast and Southeast: Continuous with BCT. Northwest and Southwest: BCT. Due to the substandard end terminal at the northwest and southwest corners.

DECK GEOMETRY

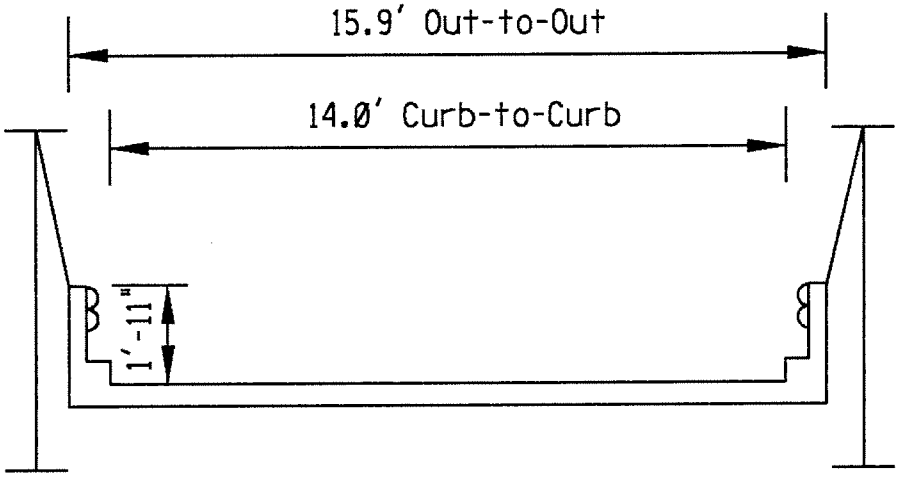
SI&A Item 68 Rating: **2**

COMPONENT	REMARKS
Bridge Cross Section	The approach roadway widths are wider than the structure roadway width (see roadway cross section on Page 13-44).
Adequacy of Lane / Shoulder Widths	One Lane; Two-way Traffic (Table 2B) ADT = 900 (2010) Curb-to-Curb = 14.0'
Vertical Clearance over Deck	Unlimited.

*Posting for Load / Speed / Clearance Restrictions (Include a Photo)	The structure is posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks respectively at the northeast and southwest corners of the structure. There is a 'One Lane Bridge' and 'Reduce Speed' sign at both approaches (Photo 13-10).

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

DECK CROSS SECTION



ROADWAY CROSS SECTION (LOOKING EAST)

SCALE: NTS

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

CLEARANCES

FEATURE ON STRUCTURE: Totowa Spur (Norfolk Southern) SI&A SHEET 1

Minimum Vertical Underclearance (SI&A Item 54)	21'-2" (north or south truss to the top of either rail of the west track).
Lateral Right (SI&A Item 55)	6.2' (west face of the north column pedestal of the east pier bent to the centerline of the east track).
Lateral Left (SI&A Item 56)	N/A
Total Horizontal Clearance (SI&A Item 47)	N/A

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

Structure No.: 1850-160 Route: 6118 Cycle No.: 13
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/19/2010

WORK DONE HISTORICAL DATA

CYCLE NO.	YEAR	WORK DONE SUMMARY
13	2010	The severe rust with 100% section loss to the web and bottom flange at the west end of stringer 4 in span 1 has been repaired with steel channels. The large void due to missing stones at the northwest wingwall has been patched.
12	2008	The stone masonry breastwall of both abutments and the northwest wingwall have been repointed and there are concrete repairs to the concrete cap of the east abutment stone masonry retaining wall. The bottom cross bracing of the east pier bent has been replaced and the horizontal steel bracing of both pier bents has been replaced. Several of the superstructure and substructure elements have painted.
11	2006	New advanced weight limit posting 1/2 mile west of structure. New corrected advance weight limit posting 1/2 mile east of structure. New cautionary signs 'Yield To Oncoming Traffic', 'Hill Blocks View', and '15 MPH' posting at both approaches.

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/19/2010

PRIORITY REPAIRS

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

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

PDF Filename(s):

1850160_20100819cy13_PR2_01.pdf

PICKERING, CORTS & SUMMERSON, INC.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS

January 13, 2011

Mr. Gregory T. Renman, Manager
Structural Evaluation
New Jersey Department of Transportation
P.O. Box 615
Trenton, NJ 08625

Attention: Mr. Ayodele Oshilaja
Project Manager

Re: Priority 2 Repair Notification Letter
13 On-System and 1 Off-System
State Owned Bridges, Group RC8A
BR-NBIS (753) and BR-Z-NBIS (754)
Bridge No. 1850-160 (Mile Point 0.00)
Camp Meeting Avenue (CR 602) over
Trenton Line (CSX)

Dear Mr. Oshilaja:

Under the terms of our contract with the New Jersey Department of Transportation, we have recently completed the field inspection for the above referenced structure. The bridge is a three span, simply supported, steel pony truss structure. The structure was built in 1889 and carries an estimated ADT of 900 (2010). The structure is posted for '10 Tons', '16 Tons', and '20 Tons' (note that the posting is frequently ignored).

Condition — The north truss knee bracing at the second floorbeam from the east pier exhibits two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange.

The south truss knee bracing at the first floorbeam from the east pier exhibits cleaned and painted section loss with an area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes and one pin hole directly above the top flange. The knee bracing at the forth floorbeam from the west pier exhibits cleaned and painted section loss with 1/16" remaining section with one pin hole located directly above the top flange of the floorbeam.

Recommendation — Restore the knee bracing to the original section by bolting two steel plates over the deteriorated area.

840 BEAR TAVERN ROAD • SUITE 307 • WEST TRENTON, NJ 08628 • TEL: 609.737.2033 • FAX: 609.737.7306
WEST TRENTON, NJ • NEWTOWN, PA • PLYMOUTH MEETING, PA
www.pcs-civil.com

If you have any questions or require any additional information, please do not hesitate to contact Ms. Doutsen Hettema or myself in our West Trenton, New Jersey office.

Very truly yours,
PICKERING, CORTS & SUMMERSON, INC.

John C. Wilhelm

John C. Wilhelm P.E.
Bridge Inspection Division Manager

JCW/HDH/njo
cc: Bridge File
Project File
K:\NJ\Current Cycle\14 Orphan Group RC8A (2010)\Bridge Folders\1850160\1850160_20100819cy13_PR2_02.doc

Structure No.:	1850-160	Route:	6118	Cycle No.:	13
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	1/11/2011

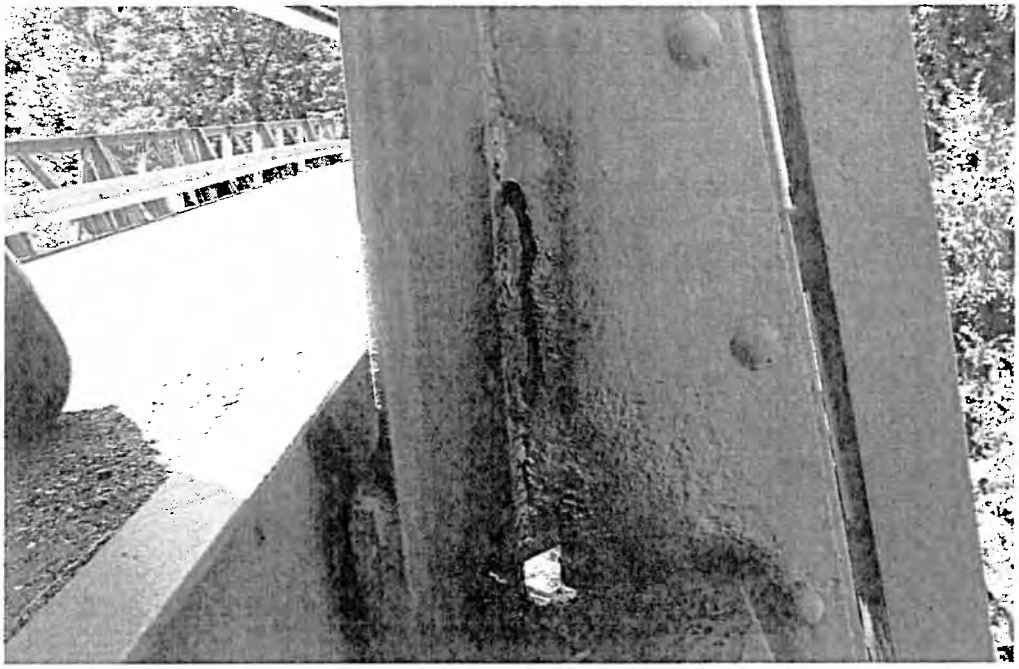


Photo No: 01

Location:	North truss at the second floorbeam from the east pier, span 2 from the west, looking west.
Description:	Severe rust with two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange.

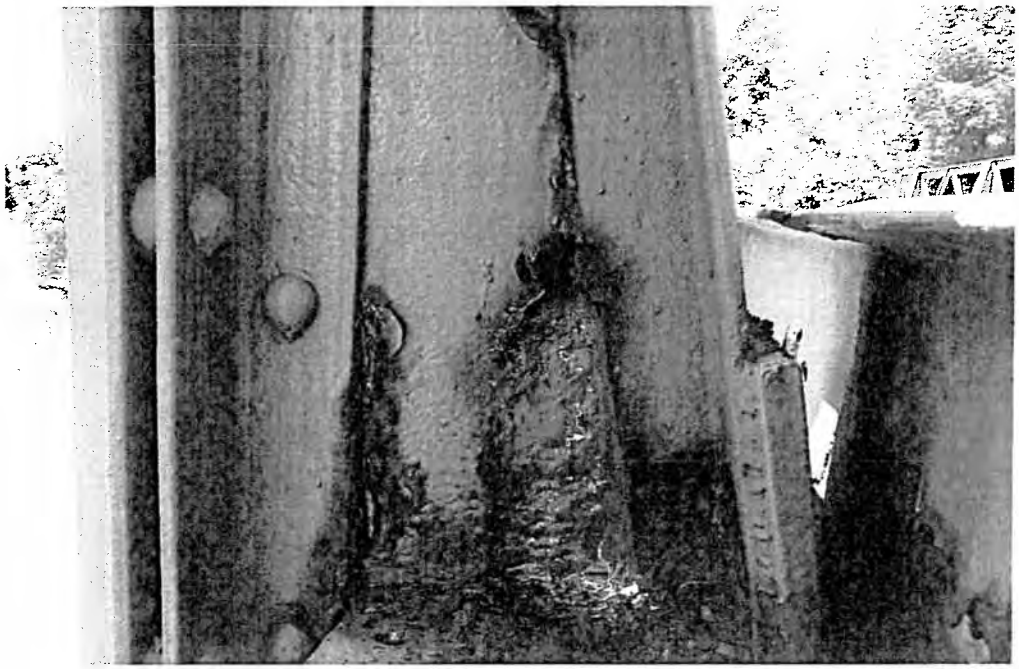
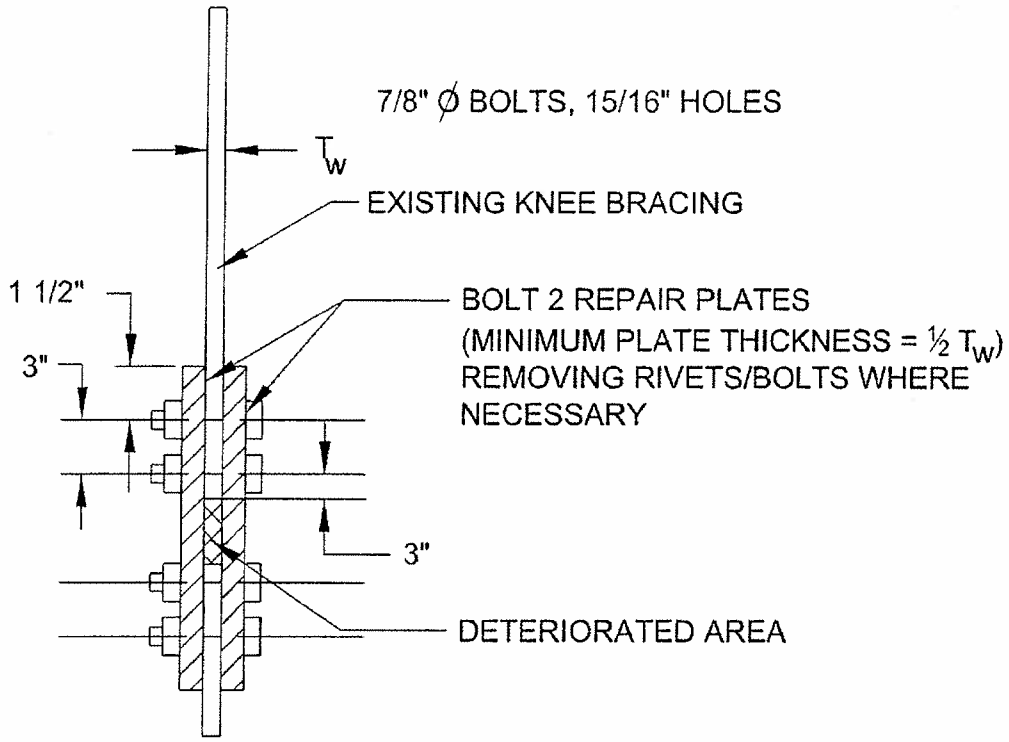


Photo No: 02

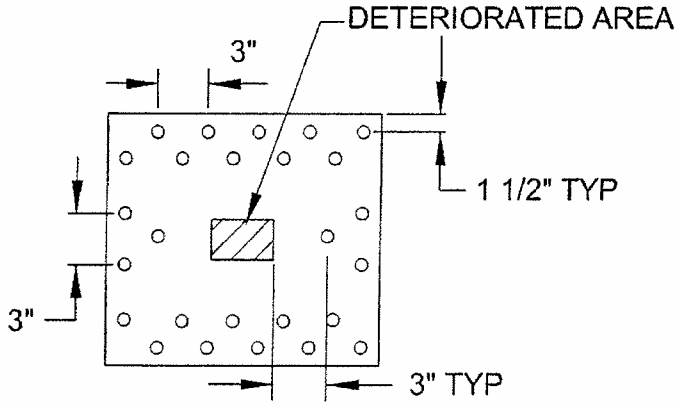
Location:	South truss at the first floorbeam from the east pier, span 2 from the west, looking west.
Description:	Area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes and one pin hole directly above the top flange.

	SUBJECT: Structure No. 1850-160 Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Montgomery Township, Somerset County	SHEET NO: 4 of 4 JOB NO: 880061 BY: CV DATE: 1/13/11 CHK: JCW DATE: 1/13/11



CROSS SECTION

N.T.S.



MATERIALS

FABRICATED STRUCTURAL STEEL = A36 ASTM

BOLTS = A325 ASTM

ELEVATION

N.T.S.

This sketch is a conceptual repair scheme for the defect described in the priority letter. It is provided for information only and not intended to take the place of a detailed designed repair and specifications.

PICKERING, CORTS & SUMMERSON, INC.

Final
RC8A

State of New Jersey

NEW JERSEY DEPARTMENT OF TRANSPORTATION
1035 PARKWAY AVENUE
P.O. Box 600
TRENTON, NEW JERSEY 08625-0600

BRIDGE RE-EVALUATION SURVEY REPORT

STRUCTURE NO. 1850-160
CAMP MEETING AVENUE (CR 602) OVER TRENTON LINE (CSX)
R.R. M.P. 45.95
ROUTE NO. 6118
USRA LINE CODE 0326
MONTGOMERY TOWNSHIP
SOMERSET COUNTY

12TH CYCLE

AUGUST 27, 2008

NOTE: This Bridge Re-evaluation Report shall be filed immediately after the 11TH Cycle Inspection Report.

Prepared By

PICKERING, CORTS & SUMMERSON, INC.
WEST TRENTON, NEW JERSEY
NEWTOWN, PENNSYLVANIA
PLYMOUTH MEETING, PENNSYLVANIA

DEC 0 4 2009
N.J. Department of Transportation
Trenton, New Jersey 08625-0600

TABLE OF CONTENTS

		Page No.
1	Structural Data	12-1
2	Controlling Ratings	12-2
3	Conclusions and Recommendations	12-2
4	Structural Inventory & Appraisal and Pontis Sheets	12-4
5	Summary of Ratings	12-7
6	Drawings and Photographs	12-18
7	Field Notes	12-25
8	Priority Letter and Memorandum	12-48

N.J.D.O.T. - STRUCTURAL EVALUATION
RE-EVALUATION BRIDGE SURVEY REPORT
CYCLE NO. 12

STRUCTURAL DATA:

Bridge No.:	1850-160	Year Built:	1889	Widened/ Rehab:	1922 & 1950
Route No.:	6118	Length:	104'	Width:	15.9'
Mile Point:	0.00	Date of this Evaluation:	8/27/08, 7/16/09 & 7/30/09		
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)	By:	Pickering, Corts & Summerson, Inc.		
Structure Type:	Three span, simply supported, steel, Pony truss	Date of Previous Evaluation:	7/22/06		
		By:	Abbington Associates, Inc.		
		Special Equipment Used:	Large Ladder		

OVERALL CONDITION: Critical, due to the low inventory ratings.

WORK DONE: The stone masonry breastwall of both abutments and the northwest wingwall have been repointed and there are concrete repairs to the concrete cap of the east abutment stone masonry retaining wall (Photo 12-4). The bottom cross bracing of the east pier bent has been replaced and the horizontal steel bracing of both pier bents has been replaced (Photo 12-5). Several of the superstructure and substructure elements have been painted (Photo 12-5).

Inspection Team Leader: **Cynthia Vergara** **Initials:** CV

Certifying Engineer: **John C. Wilhelm, P.E.**

NJ P.E. Number: **43410**

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

Signature: John C. Wilhelm

Date: 12-2-09

Seal

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

CONTROLLING RATINGS: (From 8th Cycle Report)

Computer Program Used: PennDOT BAR7 (Version 7.9)

Based on the Working Stress method of analysis, the following load ratings have been computed:

		Truck Type (Tons)			
Controlling Member	Rating Type	HS-20 (36)	3 (25)	3S2 (40)	3-3 (40)
Truss Member U2L3 (Span 2)	Inventory Rating	6	5	9	11
	Operating Rating	11	10 [91]	16 [77]	20 [64]

[ ] Denotes % section loss.

CONCLUSIONS & RECOMMENDATIONS:

The overall condition of the structure is critical due to the low inventory ratings.

The superstructure is in poor condition due to the painted over moderate to severe rust to the trusses, floorbeams, knee bracing, and stringers. Floorbeam 1 in span 1, floorbeam 8 in span 2, and floorbeam 11 in span 3 exhibit areas of 100% section loss to the web and flanges. The north truss knee bracing at the second floorbeam and the south truss knee bracing at the first floorbeam from the east pier in span 2 exhibits areas of 100% section loss. Stringers 1, 4, and 7 in span 1, stringers 1, 5, and 7 in span 2, and stringers 1 and 5 in span 3 exhibit areas of 100% section loss to the web and flanges. The west end of the top chord of the north truss in span 1 is bent towards the south ($1^3/_8$" over a 3' length) and the interior leg of the top flange is locally buckled (1/4"). The bottom chord cover plate exhibits moderate collision damage at joint L5 from the west and is bent upward 1" over an 18" length and has a 1/4" deep gouge on the south edge at this location. There are two gouges (2" long x 1/4" deep and 2" long x 3/4" deep) to the south edge of the bottom chord cover plate of the south truss in span 1. The flange is bent upward 1" at this location. Diagonal U2L3 from the east at the north truss in span 2 exhibits an area (3" x 3") of severe rust with 1/16" minimum remaining section with knife edging at the intersection with member U3L2. U3L4 is bowed outward 1½" over a 24" length. U0L0 at the north truss in span 3 exhibits local buckling (3/4" over 9") and top chord is bent laterally 4½" to the north over an 8'-5" length. Members U3L2 from the east of the south truss in span 3 are bowed up to 2" over a 20" length. There is up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers.

The substructure is fair condition due to the voids (14" deep) at the bottom of the top half of the west abutment stone masonry breastwall beneath stringers 3 and 6. The east flange of the north steel column at the west pier bent is bent up to 3/4" to the south and the northeast leg exhibits local buckling (1/2" over 8"). The west flange is bent up to 3/4" to the south 3' from the bottom. The west vertical gusset plate exhibits local buckling (1/2"). The cross bracing of both pier bents exhibits painted over moderate to severe rust with up to 100% section loss.

Since the previous inspection, the substructure condition rating has been upgraded from poor to fair due to the new bottom cross bracing of the east pier bent and the new horizontal steel bracing of both pier bents.

CONCLUSIONS & RECOMMENDATIONS (continued):

The structure is posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks at the northeast and southwest corners of the structure. There is a 'One Lane Bridge' and 'Reduce Speed' sign at both approaches.

The structure is fracture critical. The fracture critical members of the structure are the truss tension members. The truss members are in poor condition.

The structure is classified as structurally deficient due to the condition of the superstructure and the low inventory ratings and functionally obsolete due to the inadequate deck geometry and lateral underclearance. Therefore, we recommend the following remedial action:

Bridge Replacement
(Based on 5,720 S.F. @ $250 S.F.)

Demolition (Lump Sum)		$ 143,000
New Structure (130' x 44')		$ 1,430,000
Approach Roadway (200' x 44') @ $10/S.F.		$ 88,000
Traffic Maintenance (~10%)		$ 152,000
Preliminary Engineering (~15%)		$ 228,000
Railroad Escalation (~25%)		$ 380,000
	Total	$ 2,421,000

In the interim, we recommend that the following Priority 2 repairs be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety, and extend its useful life:

Patch the hole to the wearing surface of both approach roadway with bituminous concrete (Reference Priority 2 Repair Notification Letter Dated August 29, 2008 – Page 12-48).

2 S.F.

Restore stringer 4 in span 1 to the original section by bolting two steel channels over the deteriorated area and the north and south knee bracing to the original section by bolting two steel plates over the deteriorated area (Reference Priority 2 Repair Notification Letter Dated August 11, 2009 – Page 12-48).

Stringers: 1 Each
Bracing: 2 Each

In the interim, we recommend the following repairs be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety, and extend its useful life:

1. Monitor the northwest wingwall for any further deterioration during the next regular schedule inspection (Photo 12-11).

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

A. Superstructure (Truss) 12 Months

StructNum: 1850160

NJDOT SI and A Sheet

Name: CAMP MEETING AVE. (CR 602) / TRENTON LINE (CSX) **S.R.:** 5.8 **SD/FO-** 1 -Structurally Defici..

IDENTIFICATION

1 State: 34 New Jersey 8 Struc Num: 1850160
7 Facility Carried: CAMP MEETING AVE. 9 Location: 1.0 MI N OF RT 518
5A Rte.(On/Under): Route On Structure 5B Rte. Signing Prefix: 4 -County Hwy
5C Level of Service: 1 -Mainline 5D Rte. Number: 00602
5E Directional Suffix: 0- Not Applicable % Responsibility : NA
2 SHD District: 02- Central 3 County Code: Somerset
4 Place Code: Montgomery (Township of) 11 Mile Post: 0.000 mi
6 Feature Intersected : TRENTON LINE (CSX)
16 Latitude: 40d 25' 13.30" 17 Longitude: 074d 42' 44.60"
98 Border Bridge Code: -2 Not Applicable (P)
99 Border Bridge Number: NA

INSPECTION

91 Frequency: 24 months 90 Inspection Date: 8/27/2008 Next Inspection: 08/27/2010
92A FC Frequency: 24 months 93A FC Inspection Date: 8/27/2008 Next FC Inspection: 8/27/2010
92B UW Frequency: NA 93B UW Inspection Date: NA Next UW Inspection: NA
92C SI Frequency: 12 months 93C SI Date: 8/28/2009 Next SI: 8/28/2010
Element Frequency: 24 months Element Inspection Date: 08/27/2008 Next Elem. Insp. Due: 08/27/2010

CLASSIFICATION

100 STRAHNET Highway: 0 -Not a STRAHNET hwy 101 Parallel Structure: N -No || bridge exists
102 Direction of Traffic: 3 -1-lane Br for 2-way 103 Temporary Structure: -1
104 Highway System: 0 -Not on NHS 112 NBIS Length: Y - Long Enough
20 Toll Facility: 3 -On free road 26 Functional Class: 09 -Rural Local
37 Historical Significance: 2 -Eligible for NRHP
22 Owner: 80 Unknown (NBI)
21 Custodian: 01 NJDOT

STRUCTURE TYPE AND MATERIALS

46 Number of Approach Spans : 0 45 Number of Spans Main Unit: 3
43A/B Main Span Material/Design:
3 -Steel 10 -Truss-Thru
107 Deck Type: 6- Corrugated Steel
108A Wearing Surface: 6 -Bituminous
108B Membrane: 0- None
108C Deck Protection: 0- None

CONDITION

58 Deck: 7 -Good 59 Super: 4 -Poor 60 Sub: 5 -Fair
62 Culvert: N -Not applicable 61 Channel/Channel Protection: N -Not applicable

LOAD RATING AND POSTING

65 Inventory Rating Method: 2 -AS Allowable Stres 63 Operating Rating Method: 2 -AS Allowable Stress
66 Inventory Rating: HS6.0 64 Operating Rating: HS11.0
31 Design Load: 0 -Other or Unknown 70 Posting: 0 >39.9% below
41 Posting status: P -Posted for load

AGE AND SERVICE

27 Year Built: 1889 106 Year Reconstructed: 1950
42A Type of Service On: 1 -Highway
42B Type of Service Under: 2 -Railroad
28A Lanes on: 1 28B Lanes Under: 0 19 Detour Length: 4.0 mi
29 ADT: 880 109 Truck ADT: 3 % 30 Year of ADT: 2008

APPRAISAL

36A Bridge Rail: 0 -Substandard 36C Approach Rail: 0 -Substandard
36B Transition: 0 -Substandard 36D Approach Rail Ends: 0 -Substandard
67 Str. Evaluation: 2 68 Deck Geometry: 2 Intolerable - Replace
69 Underclearance, Vertical and Horizontal: 2 -Intolerable - Replace
71 Waterway Adequacy: N -Not applicable 72 Approach Alignment: 4-Minimum Tolerable
113 Scour Critical: N -Not Over Waterway

GEOMETRIC DATA

48 Length Max Span: 42.0 ft 49 Structure Length: 104.0 ft
50A Curb/Sdwlk Width L: 0.5 ft 50B Curb/Sidewalk Width R: 0.5 ft
Width Curb to Curb 51: 14.0 ft 52 Width Out to Out: 15.9 ft
32 Approach Roadway Width: (w/ shoulders) 14 ft 33 Median: 0 No median
Deck Area: 1,653.6 sq. ft
34 Skew: 46.00 ° 35 Structure Flared: 0 -No flare
53 Minimum Vertical Clearance Over Bridge: 9999
54A Minimum Vertical Underclearance Reference: R -Railroad beneath str.
54B Minimum Vertical Underclearance: 21.17 ft
55A Minimum Lateral Underclearance Reference R: R -Railroad beneath str.
55B Minimum Lateral Undrclearance R: 6.20 ft
56 Minimum Lateral Undrclearance L: 0.00 ft

PROPOSED IMPROVEMENTS

94 Bridge Cost: $1,872,000 75 Type of Work: 31
95 Roadway Cost: $63,000 76 Length of Improvment: 131 ft
96 Total Cost: $3,183,000 114 Future ADT: 1,190
97 Year of Cost Estimate: 2004 115 Year of Future ADT: 2028

NAVIGATION DATA

38 Navigation Control: N N -N/A-No waterway
39 Vertical Clearance: 0.0 ft 40 Horizontal Clearance: 0.0 ft
111 Pier Protection: -1 116 Lift Bridge Vertical Clearance:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	30/3	Corrug/Orthotpc Deck	(SF)	1,653	100 %	1,653	0 %	0	0 %	0	0 %	0	0 %	0
0	113/3	Paint Stl Stringer	(LF)	725	8 %	60	40 %	287	23 %	168	0 %	0	29 %	210
0	121/3	P/Stl Thru Truss/Bot	(LF)	208	0 %	0	0 %	0	0 %	0	99 %	206	1 %	2
0	126/3	P/Stl Thru Truss/Top	(LF)	208	80 %	166	0 %	0	19 %	40	0 %	0	1 %	2
0	152/3	Paint Stl Floor Beam	(LF)	165	0 %	0	41 %	67	41 %	68	8 %	13	10 %	17
0	202/3	Paint Stl Column	(EA)	4	0 %	0	0 %	0	100 %	4	0 %	0	0 %	0

StructNum: 1850160

NJDOT SI and A Sheet

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	205/3	R/Conc Column	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	217/3	Other Mtl Abutment	(LF)	114	0 %	0	50 %	57	50 %	57	0 %	0	0 %	0
0	301/3	Pourable Joint Seal	(LF)	92	0 %	0	100 %	92	0 %	0	0 %	0	0 %	0
0	313/3	Fixed Bearing	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	334/3	Metal Rail Coated	(LF)	207	95 %	196	5 %	11	0 %	0	0 %	0	0 %	0
0	357/3	Pack Rust Smart Flag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
0	359/3	Soffit Smart Flag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
0	362/3	Traf Impact SmFlag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
0	363/3	Section Loss SmFlag	(EA)	1	0 %	0	0 %	0	0 %	0	100 %	1	0 %	0
0	372/3	Sliding Plate Bear	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	502/3	Curbs/Walks - P Stl	(LF)	208	0 %	0	90 %	188	5 %	10	5 %	10	0 %	0
0	506/3	Wingwalls - Abut	(LF)	40	50 %	20	25 %	10	13 %	5	13 %	5	0 %	0

NJDOT BRIDGE FIELDS

(V1.1)

Brkey: 1850160 **Inspkey**

GENERAL

(A) Town: Montgomery Twp
(AA) Route: 6118
(AD) Admin: -1
(AE) Alt Agency: -1 _

STRUCTURE AND APPURTENANCES

(AC) Non-Inv Feature: RR Rdwy and/or RR ovr RR
(AF) Alt Struct #: -1
(AG) Rail Type: 58
(AH) Rail Height:: 1.92
(AJ) Slope Protection: -1
(AK) Abutment: 07 Masonry
(AL) Pier: 07 Steel Bent
(AM) Depth of Fill:
(AP) Fender System: -1
(AT) Special Material 1: _
(AT) Special Material 2: _
(AU) Add Struct: 1 F
2 _
(AV) Widen Stru: Material Design
1st Widen _ -1
2nd Widen _ -1

FUNDING AND COST

(BL) Discretionary: _
(BM) Fed Job #: BRZNBIS750
(BN) State Job #: 2204584
(BO) St Maint Cost: -1.00
(BP) Brdg Demo N

SCOUR EVALUATION

(FA) FHWA Category: -1
(FB) Stage 1 Date:
(FC) Stage 1 Consultant: -1
(FD) Prioritization: _
(FE) Sufficiency: -1.0
(FF)Date Stage II 1/1/1901
(FG) Stage II Consultant: -1
(FH) Crit. Element:
-1

COUNTER MEASURES

(FI) Recommended:
-1

(FJ) Cost: -1.00
(FK) Installed: 1 _ 2 _ 3 _
(FL) Monitoring Reqd: _

PROJECT PROGRAMMING

(HB) Bridge List ID: RC8A_
(HC) Consultant A47
(HD) 2-Cy Insp Contr: N
(HE) Proceed Date: I 9/14/2000
II 4/23/2002
(HF) State Proj Mgr: AO_

BRIDGE NOISE BARRIER (HA)

Material 1: _
2: _
Height 1: _
2: _

PAINTING

(GB) Environment: 01
(GR) Last Painting: 01/2009
(GA) Painting Req: Y

FENCING

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

SIGN STRUCTURES

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

POSTINGS

(CG) Load Type: 2
(CG) Tons 13
(AI) Speed: -1

TEMPORARY STRUCTURES

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

LOAD RATINGS

Type		Inv		Opr
H	(BQ)	-1	(CA)	-1
HS	(BR)	6	(CB)	11
3	(BS)	5	(CC)	10
3S2	(BT)	9	(CD)	16
3-3	(BU)	11	(CE)	20
M	(BV)	_	(CF)	_
Misc	(CH1)	W		
	(CH2)	0		

MISCELLANEOUS

(CQ) Bridge List: _
(BK) Overstress %: 91
(FV) Route Milepost: 1 .
(FM) Incident Reprtd: _
(AO) Utilities: 1: _
2: _
3: _
4: _
(CR) Off-Route Bridge: N
(BB) Orphan Bridge: Y
(AN) Plan Available: Y
(FX) Fed Error Uncorr N
(FW) Estimated ADT Y

RAILROAD

(BC) USRA Code: 0326
(BD 1) Rail On/Under: 0
(BD2)RRs intersected: 2
(BE) Rail Milepost: 45.95

StructNum: 1850160

NJDOT SI and A Sheet

NJDOT INSPECTION FIELDS (V1.2)

GENERAL

(CI) Cycle Number:	12
(CJ) Insp Type:	S
(CK) Inspection Crew:	R
(CM) Consultant:	P14
(CO) Prev Consultant:	A47
(CP) Federal Report:	_

INSPECTION DATES

(AW) Mech/Electrical:		
(AX) Deck:		
(AY) Special Testing:		
(GC) Paint:		8/27/2008
(AR) Equipment:	1:	L
	2:	_
	3:	_
(AS) Testing:	1:	_
	2:	_
	3:	_

MISCELLANEOUS

(B) Deletion Code:	N
(BA) Apr Rdwy Cond:	7

FATIGUE DETAIL (AZ)

Location1:	03
	29
Location 2:	07
	20
Location 3:	-1
	-1

IN-DEPTH PIN-HANGER

(FR) Consultant: -1

(FS)
-1

(FT) Combo: N

(FQ) FCM/Pin-Hngr Insp Date:

REMARKS

(BF) Deck:	1:	Z
	2:	_
	3:	_
	4:	_
	5:	_
(BG) Super:	1:	2
	2:	A
	3:	C
(BH) Sub:	1:	Z
	2:	_
	3:	_
(BI) Channel		_
(BJ) Culvert		_

FENCING

(FO) Pedestrian Traffic:	_	
(FP) Improvement Cost:	$ -1	Thousands

PAINTING

(GD) Fascia Beam:	02
(GE) Fascia B. Flange:	04
(GF) Interior Beam:	04
(GH) Interior B. Flange:	04
(GI) Beam Ends:	04
(GJ) Connections:	04
(GK) Bracings:	04
(GL) Bearings:	04
(GM) Substructure:	07
(GN) Above Deck Super:	05
(GO) Railings/Fence:	-1

(GP) Remarks 1:
Pitting and section loss has been painted over.

(GQ) Remarks 2:
-1

ROADWAY DATA (V1.1)

Bridge Id: 1850160
SRI -1

ROADWAY IDENTIFICATION

NBI Roadway?:	1		
Roadway Name:	Camp Meeting Avenue (CR 602)		
Item 5A:	1		
Item 5B:	4		
Item 5C:	1		
Item 5D:	00602	Item 5E	0

HWY NETWORKS AND SERVICE CLASSIFICATION

11 Milepost:	0.000 mi		
12 Base Hwy Network:	0		
20 Toll Facility:	3		
13A LRS Inventory Route	-1	Subroute No.:	-1
26 Functional Class:	09	102 TraffDirection:	3

ALTERNATE CLASSIFICATION

100 Strahnet Hwy:	0	Transit Rt:	0
104 NHS System:	0	Emergency	0
105 Fed. Lands Hwy:	0		
110 Truck Hwy Net:	0		
School Bus:	0		

TRAFFIC AND ACCIDENTS

28 Lanes :	1
Num Median:	0
Road Speed:	30 mph
ADTclass:	02
29 ADTtotal:	880
30 Year of ADT:	2008
114 Future ADT:	1190
115 Year of Future ADT:	2028
109 Truck ADTT % :	3
19 Bypass Length:	4.00 mi
Detour Speed:	25 mph

CLEARANCES

10 Vertical Clearance:	99.99 ft
47 Invent Route Horiz Clear:	14.00 ft
(DJ) Min Vert Undrclr:	00.00 ft

WIDTHS

32 Appr Rdwy Width:	14 ft
51 Brdg Rdwy With Curb-Curb:	14.0 ft

StructNum: 1850160

NJDOT SI and A Sheet

Name: CAMP MEETING AV(CR 602)/TRENTON LINE CSX **S.R.:** 6.2 **SD/FO-** 1 -Structurally Defici..

IDENTIFICATION

1 State: 34 New Jersey
8 Struc Num: 1850160
7 Facility Carried: CAMP MEETING AVE.
9 Location: 1.0 MI N OF RT 518
5A Rte.(On/Under): Route On Structure
5B Rte. Signing Prefix: 4 -County Hwy
5C Level of Service: 1 -Mainline
5D Rte. Number: 00602
5E Directional Suffix: 0- Not Applicable
% Responsibility : NA
2 SHD District: 02- Central
3 County Code: Somerset
4 Place Code: Montgomery (Township of)
11 Mile Post: 0.000 mi
6 Feature Intersected : TRENTON LINE (csx)
16 Latitude: 40d 25' ~~30.00"~~ 13.30
17 Longitude: 074d 42' ~~48.00"~~ 44.60
98 Border Bridge Code: ~~4 -Unknown (P)~~ X
99 Border Bridge Number: NA

INSPECTION

91 Frequency: 24 months
90 Inspection Date: 8/27/2008
Next Inspection: 08/27/2010
92A FC Frequency: 24 months
93A FC Inspection Date: 8/27/2008
Next FC Inspection: 8/27/2010
92B UW Frequency: NA
93B UW Inspection Date: NA
Next UW Inspection: NA
92C SI Frequency: 12 months
93C SI Date: ~~8/27/2008~~ 8/20/09
Next SI: ~~8/27/2009~~ 8/20/10
Element Frequency: 24 months
Element Inspection Date: 08/27/2008
Next Elem. Insp. Due: 08/27/2010

CLASSIFICATION

100 STRAHNET Highway: 0 -Not a STRAHNET hwy
101 Parallel Structure: N -No || bridge exists
102 Direction of Traffic: 3 -1-lane Br for 2-way
103 Temporary Structure: -1
104 Highway System: 0 -Not on NHS
112 NBIS Length: Y - Long Enough
20 Toll Facility: 3 -On free road
26 Functional Class: 09 -Rural Local
37 Historical Significance: 2 -Eligible for NRHP
22 Owner: 80 Unknown (NBI)
21 Custodian: 01 NJDOT

STRUCTURE TYPE AND MATERIALS

46 Number of Approach Spans : 0
45 Number of Spans Main Unit: 3
43A/B Main Span Material/Design:
3 -Steel
10 -Truss-Thru
107 Deck Type: 6- Corrugated Steel
108A Wearing Surface: 6 -Bituminous
108B Membrane: 0- None
108C Deck Protection: 0- None

CONDITION

58 Deck: ~~8 -Very Good~~ 7*
59 Super: 4 -Poor
60 Sub: ~~4 -Poor~~ 5
62 Culvert: N -Not applicable
61 Channel/Channel Protection: N -Not applicable

* NOT UPDATED IN THE PREVIOUS INSPECTION.

LOAD RATING AND POSTING

65 Inventory Rating Method: 2 -AS Allowable Stres
63 Operating Rating Method: 2 -AS Allowable Stress
66 Inventory Rating: HS6.0
64 Operating Rating: HS11.0
31 Design Load: 0 -Other or Unknown
70 Posting: 0 >39.9% below
41 Posting status: P -Posted for load

AGE AND SERVICE

27 Year Built: 1889
106 Year Reconstructed: 1950
42A Type of Service On: 1 -Highway
42B Type of Service Under: 2 -Railroad
28A Lanes on: ~~4~~ 1
28B Lanes Under: 0
19 Detour Length: 4.0 mi
29 ADT: ~~[illegible]~~ 880
109 Truck ADT: 3 %
30 Year of ADT: ~~2005~~ 2008

APPRAISAL

36A Bridge Rail: 0 -Substandard
36C Approach Rail: 0 -Substandard
36B Transition: 0 -Substandard
36D Approach Rail Ends: 0 ~~1 -Meets Standards~~
67 Str. Evaluation: 2
68 Deck Geometry: 2 Intolerable - Replace
69 Underclearance, Vertical and Horizontal: 2 -Intolerable - Replace
71 Waterway Adequacy: N -Not applicable
72 Approach Alignment: 4-Minimum Tolerable
113 Scour Critical: N -Not Over Waterway

GEOMETRIC DATA

48 Length Max Span: 42.0 ft
49 Structure Length: 104.0 ft
50A Curb/Sdwlk Wdth L: 0.5 ft
50B Curb/Sidewalk Width R: 0.5 ft
Width Curb to Curb 51: 14.0 ft
52 Width Out to Out: 15.9 ft
32 Approach Roadway Width: (w/ shoulders) 14 ft
33 Median: 0 No median
Deck Area: ~~1,651~~ sq. ft 1653.6
34 Skew: 46.00 °
35 Structure Flared: 0 -No flare
53 Minimum Vertical Clearance Over Bridge: 99.9
54A Minimum Vertical Underclearance Reference: R -Railroad beneath str.
54B Minimum Vertical Underclearance: 21.17 ft
55A Minimum Lateral Underclearance Reference R: R -Railroad beneath str.
55B Minimum Lateral Undrclearance R: 6.20 ft
56 Minimum Lateral Undrclearance L: 0.00 ft

PROPOSED IMPROVEMENTS

94 Bridge Cost: ~~$1,872,000~~ 1490000
75 Type of Work: 31
95 Roadway Cost: ~~$63,000~~ 89000
76 Length of Improvment: ~~131~~ 130 ft
96 Total Cost: ~~$3,183,000~~ 2410000
114 Future ADT: ~~1,115~~ 1190
97 Year of Cost Estimate: ~~2004~~ 2008
115 Year of Future ADT: ~~2025~~ 2028

NAVIGATION DATA

38 Navigation Control: N N -N/A-No waterway
39 Vertical Clearance: 0.0 ft
40 Horizontal Clearance: 0.0 ft
111 Pier Protection: -1
116 Lift Bridge Vertical Clearance:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	30/3	Corrug/Orthotpc Deck	(SF)	1,653	100 %	1,653	0 %	0	0 %	0	0 %	0	0 %	0
0	113/3	Paint Stl Stringer	(LF)	725	23 %	60 ~~170~~	8 %	257 ~~60~~	40 %	168 ~~287~~	0 %	0	29 %	210 ~~208~~
0	121/3	P/Stl Thru Truss/Bot	(LF)	208	0 %	0 ~~1~~	0 %	0	0 %	0	99 %	206 ~~205~~	1 %	2
0	126/3	P/Stl Thru Truss/Top	(LF)	208	80 %	166	0 %	0	19 %	40	0 %	0	1 %	2
0	152/3	Paint Stl Floor Beam	(LF)	165	0 %	0	41 %	67	41 %	68	8 %	13	10 %	17
0	202/3	Paint Stl Column	(EA)	4	0 %	0	0 %	0	100 %	4	0 %	0	0 %	0

StructNum: 1850160

NJDOT SI and A Sheet

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	205/3	R/Conc Column	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	217/3	Other Mtl Abutment	(LF)	114	0 %	0	0 %	57 ~~0~~	100 %	57 ~~114~~	0 %	0	0 %	0
0	301/3	Pourable Joint Seal	(LF)	92	0 %	0	100 %	92	0 %	0	0 %	0	0 %	0
0	313/3	Fixed Bearing	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	334/3	Metal Rail Coated	(LF)	207	95 %	196	5 %	11	0 %	0	0 %	0	0 %	0
0	357/3	Pack Rust Smart Flag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
0	359/3	Soffit Smart Flag	(EA)	1	0 %	1 ~~0~~	0 %	0	0 %	0	100 %	0 ~~1~~	0 %	0
0	362/3	Traf Impact SmFlag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
0	363/3	Section Loss SmFlag	(EA)	1	0 %	0	0 %	0	0 %	0	100 %	1	0 %	0
0	372/3	Sliding Plate Bear	(EA)	4	0 %	0	100 %	4	0 %	0	0 %	0	0 %	0
0	502/3	Curbs/Walks - P Stl	(LF)	208 ~~207~~	100 %	0 ~~207~~	0 %	188 ~~0~~	0 %	10 ~~0~~	0 %	10 ~~0~~	0 %	0
0	506/3	Wingwalls - Abut	(LF)	40	25 %	20 ~~10~~	33 %	10 ~~13~~	35 %	5 ~~14~~	8 %	5 ~~3~~	0 %	0

NJDOT BRIDGE FIELDS

(V1.1)

Brkey: 1850160 **Inspkey**

GENERAL

(A) Town: Montgomery Twp
(AA) Route: 6118
(AD) Admin: -1
(AE) Alt Agency: -1 _

STRUCTURE AND APPURTENANCES

(AC) Non-Inv Feature: RR Rdwy and/or RR ovr RR
(AF) Alt Struct #: -1
(AG) Rail Type: 58
(AH) Rail Height:: ~~3.28~~ 1.92
(AJ) Slope Protection: -1
(AK) Abutment: 07 Masonry
(AL) Pier: 07 Steel Bent
(AM) Depth of Fill: ~~3.28~~ X
(AP) Fender System: -1
(AT) Special Material 1: _
(AT) Special Material 2: _
(AU) Add Struct: 1 F
2 _
(AV) Widen Stru: Material Design
1st Widen _ -1
2nd Widen _ -1

FUNDING AND COST

(BL) Discretionary: _
(BM) Fed Job #: BRZNBIS~~742~~ 756
(BN) State Job #: ~~2203870~~ 2204584
(BO) St Maint Cost: -1.00
(BP) Brdg Demo N

SCOUR EVALUATION

(FA) FHWA Category: -1
(FB) Stage 1 Date: 1/1/1901
(FC) Stage 1 Consultant: -1
(FD) Prioritization: _
(FE) Sufficiency: -1.0
(FF)Date Stage II 1/1/1901
(FG) Stage II Consultant: -1
(FH) Crit. Element:
-1

COUNTER MEASURES

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

PROJECT PROGRAMMING

(HB) Bridge List ID: RC8A_
(HC) Consultant A47
(HD) 2-Cy Insp Contr: N
(HE) Proceed Date: I 9/14/2000
II 4/23/2002
(HF) State Proj Mgr: AO_

BRIDGE NOISE BARRIER (HA)

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

PAINTING

(GB) Environment: ~~-1~~ 01
(GR) Last Painting: ~~01/1901~~ 01/2002
(GA) Painting Req: ~~-N-~~

FENCING

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

SIGN STRUCTURES

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

POSTINGS

(CG) Load Type: 2
(CG) Tons 13
(AI) Speed: -1

TEMPORARY STRUCTURES

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

LOAD RATINGS

Type		Inv		Opr
~~H~~	(BQ)	-1	(CA)	-1
~~HS~~	(BR)	6	(CB)	11
~~3~~	(BS)	~~6~~ 5	(CC)	10
~~3S2~~	(BT)	9	(CD)	~~17~~ 16
~~3-3~~	(BU)	11	(CE)	20
~~M~~	(BV)	--	(CF)	--
~~Misc~~	(CH1)	W		
	(CH2)	~~*1.102311*~~ X		

MISCELLANEOUS

(CQ) Bridge List: _
(BK) Overstress %: 91
(FV) Route Milepost: 1
(FM) Incident Reprtd: _
(AO) Utilities: 1: _
2: _
3: _
4: _
(CR) Off-Route Bridge: N
(BB) Orphan Bridge: Y
(AN) Plan Available: Y
(FX) Fed Error Uncorr N
(FW) Estimated ADT ~~-N-~~ Y

RAILROAD

(BC) USRA Code: 0326
(BD 1) Rail On/Under: 0
(BD2)RRs intersected: 2
(BE) Rail Milepost: ~~45.98~~ 45.95

StructNum: 1850160

NJDOT SI and A Sheet

NJDOT INSPECTION FIELDS (V1.2)

GENERAL

(CI) Cycle Number: ~~10~~ 12
(CJ) Insp Type: S
(CK) Inspection Crew: R
(CM) Consultant: ~~A47~~ P14
(CO) Prev Consultant: ~~A22~~ A47
(CP) Federal Report: _

INSPECTION DATES

(AW) Mech/Electrical: 1/1/1901
(AX) Deck: 1/1/1901
(AY) Special Testing: 1/1/1901
(GC) Paint: ~~1/1/1901~~ 8/27/2008
(AR) Equipment: 1: L
2: _
3: _
(AS) Testing: 1: _
2: _
3: _

MISCELLANEOUS

(B) Deletion Code: N
(BA) Apr Rdwy Cond: ~~8~~ 7*

FATIGUE DETAIL (AZ)

Location1: 03
29
Location 2: 07
20
Location 3: -1
-1

IN-DEPTH PIN-HANGER

(FR) Consultant: -1
(FS)
-1
(FT) Combo: N
(FQ) FCM/Pin-Hngr Insp Date: 1/1/1901

REMARKS

(BF) Deck: 1: _ Z
2: _
3: _
4: _
5: _
(BG) Super: 1: 2
2: A
3: C
(BH) Sub: 1: ~~R~~ Z
2: _
3: _
(BI) Channel _
(BJ) Culvert _

FENCING

(FO) Pedestrian Traffic: _
(FP) Improvement Cost: $ -1 Thousands

PAINTING

(GD) Fascia Beam: ~~-1~~ 2
(GE) Fascia B. Flange: ~~-1~~ 4
(GF) Interior Beam: ~~-1~~ 4
(GH) Interior B. Flange: ~~-1~~ 4
(GI) Beam Ends: ~~-1~~ 4
(GJ) Connections: ~~-1~~ 4
(GK) Bracings: ~~-1~~ 4
(GL) Bearings: ~~-1~~ 4
(GM) Substructure: ~~-1~~ 7
(GN) Above Deck Super: ~~-1~~ 5
(GO) Railings/Fence: -1
(GP) Remarks 1: ~~-1~~ PITTING AND SECTION LOSS HAS BEEN PAINTED OVER.
(GQ) Remarks 2:
-1

ROADWAY DATA

* NOT UPDATED IN THE PREVIOUS INSPECTION

Bridge Id: 1850160
SRI ~~-1~~ 18000602_ (V1.1)

ROADWAY IDENTIFICATION

NBI Roadway?: 1
Roadway Name: ~~-1~~ CAMP MEETING AVENUE (CR 602)
Item 5A: 1
Item 5B: 4
Item 5C: 1
Item 5D: 00602 Item 5E 0

HWY NETWORKS AND SERVICE CLASSIFICATION

11 Milepost: 0.000 mi
12 Base Hwy Network: 0
20 Toll Facility: 3
13A LRS Inventory Route -1 Subroute No.: -1
26 Functional Class: 09 102 TraffDirection: 3

ALTERNATE CLASSIFICATION

100 Strahnet Hwy: 0 Transit Rt: 0
104 NHS System: 0 Emergency 0
105 Fed. Lands Hwy: _ 0
110 Truck Hwy Net: 0
School Bus: 0

TRAFFIC AND ACCIDENTS

28 Lanes : 1 ~~4~~
Num Median: 0
Road Speed: 30 ~~-1~~ mph
ADTclass: 02
29 ADTtotal: 880 ~~845~~
30 Year of ADT: 2008 ~~2005~~
114 Future ADT: 1190 ~~1115~~
115 Year of Future ADT: 2028 ~~2025~~
109 Truck ADTT % : 3
19 Bypass Length: 4.00 mi
Detour Speed: 25 ~~-1~~ mph

CLEARANCES

10 Vertical Clearance: 99.99 ft
47 Invent Route Horiz Clear: 14.00 ft
(DJ) Min Vert Undrclr: 00.00 ft

WIDTHS

32 Appr Rdwy Width: 14 ft
51 Brdg Rdwy With Curb-Curb: 14.0 ft

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

Rated By: EJM Dated: 12/7/00 Checked By: JR Dated: 12/7/00

SUMMARY OF RATINGS

The Load Factor and Working Stress ratings were computed in the fifth cycle report and updated in the eighth cycle report in accordance with the FHWA directive dated November 1993 and AASHTO Manual for Condition Evaluation of Bridges, 1994, as modified by Section 1.42A.2 of the New Jersey Department of Transportation Design Manual, Bridges and Structures. Based on the load factor method of analysis, the following load ratings have been computed:

Computer Program Used: PennDOT BAR7 (Version 7.9)

PERCENT (%) SECTION LOSSES:

50% section loss to the north truss diagonal member U2L3 of span 2 is included in the eighth cycle load rating.

Additional section loss was noted on the fascia stringers and the floorbeam over the west pier during the tenth cycle inspection. A cursory review of the load ratings for these members revealed that the fascia stringers carry no live load and that the section loss on the floorbeam is not significant enough to cause it to be the controlling member. Therefore, the north truss diagonal member U2L3 of span 2 remains the controlling member.

Additional section loss (up to 100%) was noted on the end of the fourth stringer from the south at the west abutment bearing during the eleventh cycle inspection. Based on the review of the interior stringer rating performed in the fifth cycle report it is anticipated that the rating of the rusted stringer end would not be lower than the rating of the controlling member.

		Allowable Stresses (psi)		
Material	Compressive Strength f'c	Yield	Inventory	Operating
Structural Steel (1889 Truss)	-	26,000	14,000	19,500
Structural Steel (1922 Truss)	-	30,000	16,000	22,500
Structural Steel (1950 Truss)	-	33,000	18,000	24,500

		Rating (Tons)			
		Load Factor		Working Stress	
Member	Truck Type (Tons)	Inventory	Operating	Inventory	Operating
Truss Member U2L3 (Span 2) (Controlling Member)	Type HS-20 (36T)	-	-	6	11
	Type 3 (25T)	-	-	5	10 [91]
	Type 3S2 (40T)	-	-	9	16 [77]
	Type 3-3 (40T)	-	-	11	20 [64]

[ ] Denotes % section loss.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L1U2 (Span 2)	Type HS-20	(36T)	-	-	8 [141]	13 [93]
	Type 3	(25T)	-	-	7 [95]	12 [56]
	Type 3S2	(40T)	-	-	12 [94]	19 [56]
	Type 3-3	(40T)	-	-	14 [73]	23 [39]
Truss Member U8L9 (Span 2)	Type HS-20	(36T)	-	-	10 [123]	15 [79]
	Type 3	(25T)	-	-	9 [78]	14 [43]
	Type 3S2	(40T)	-	-	15 [82]	22 [46]
	Type 3-3	(40T)	-	-	17 [62]	26 [30]
Truss Member L1U0 (Span 2)	Type HS-20	(36T)	-	-	10 [124]	18 [61]
	Type 3	(25T)	-	-	10 [78]	17 [28]
	Type 3S2	(40T)	-	-	16 [82]	27 [30]
	Type 3-3	(40T)	-	-	18 [61]	32 [16]
Truss Member L7U8 (Span 2)	Type HS-20	(36T)	-	-	11 [125]	19 [61]
	Type 3	(25T)	-	-	10 [79]	17 [28]
	Type 3S2	(40T)	-	-	16 [82]	28 [28]
	Type 3-3	(40T)	-	-	19 [59]	33 [13]
Truss Member U6L7 (Span 2)	Type HS-20	(36T)	-	-	13 [92]	19 [54]
	Type 3	(25T)	-	-	12 [57]	17 [26]
	Type 3S2	(40T)	-	-	19 [58]	28 [27]
	Type 3-3	(40T)	-	-	23 [38]	34 [11]
Truss Member L1U0 (Spans 1 and 3)	Type HS-20	(36T)	-	-	15 [87]	25 [34]
	Type 3	(25T)	-	-	14 [50]	22 [8]
	Type 3S2	(40T)	-	-	22 [52]	35 [9]
	Type 3-3	(40T)	-	-	27 [30]	43

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L1U2 (Spans 1 and 3)	Type HS-20	(36T)	-	-	15 [81]	21 [45]
	Type 3	(25T)	-	-	14 [47]	20 [18]
	Type 3S2	(40T)	-	-	21 [51]	30 [21]
	Type 3-3	(40T)	-	-	28 [27]	39 [2]
Truss Member U4U5 (Span 2)	Type HS-20	(36T)	-	-	17 [65]	24 [32]
	Type 3	(25T)	-	-	15 [37]	21 [9]
	Type 3S2	(40T)	-	-	24 [38]	34 [11]
	Type 3-3	(40T)	-	-	29 [20]	42
Truss Member U5U6 (Span 2)	Type HS-20	(36T)	-	-	17 [65]	24 [32]
	Type 3	(25T)	-	-	15 [37]	21 [9]
	Type 3S2	(40T)	-	-	24 [38]	34 [11]
	Type 3-3	(40T)	-	-	29 [20]	42
Truss Member L5U6 (Spans 1 and 3)	Type HS-20	(36T)	-	-	17 [76]	27 [26]
	Type 3	(25T)	-	-	16 [41]	24 [1]
	Type 3S2	(40T)	-	-	24 [45]	38 [4]
	Type 3-3	(40T)	-	-	31 [20]	48
Truss Member L5U6 (Span 2)	Type HS-20	(36T)	-	-	17 [86]	26 [35]
	Type 3	(25T)	-	-	16 [46]	23 [5]
	Type 3S2	(40T)	-	-	25 [50]	36 [8]
	Type 3-3	(40T)	-	-	31 [22]	42
North Column (Pier 1) (From Fourth Cycle)	Type HS-20	(36T)	38	63	18	27
	Type 3	(25T)	34	57	16	25
	Type 3S2	(40T)	44	74	21	32
	Type 3-3	(40T)	52	88	25	38

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)	Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member U2U3 (Span 2)	Type HS-20 (36T)	-	-	20 [49]	28 [20]
	Type 3 (25T)	-	-	18 [22]	25
	Type 3S2 (40T)	-	-	29 [23]	40
	Type 3-3 (40T)	-	-	35 [8]	49
Truss Member U3U4 (Span 2)	Type HS-20 (36T)	-	-	20 [49]	28 [20]
	Type 3 (25T)	-	-	18 [22]	25
	Type 3S2 (40T)	-	-	29 [23]	40
	Type 3-3 (40T)	-	-	35 [8]	49
Truss Member L3U4 (Spans 1 and 3)	Type HS-20 (36T)	-	-	21 [56]	27 [25]
	Type 3 (25T)	-	-	16 [42]	21 [13]
	Type 3S2 (40T)	-	-	26 [42]	34 [13]
	Type 3-3 (40T)	-	-	32 [19]	42
Truss Member L3U2 (Spans 1 and 3)	Type HS-20 (36T)	-	-	21 [56]	31 [13]
	Type 3 (25T)	-	-	19 [25]	27 [27]
	Type 3S2 (40T)	-	-	29 [32]	42 [42]
	Type 3-3 (40T)	-	-	37 [5]	54
Truss Member L7U6 (Spans 1 and 3)	Type HS-20 (36T)	-	-	21 [48]	29 [19]
	Type 3 (25T)	-	-	19 [19]	26
	Type 3S2 (40T)	-	-	31 [20]	42
	Type 3-3 (40T)	-	-	37 [5]	50
Truss Member L7U6 (Span 2)	Type HS-20 (36T)	-	-	22 [37]	36
	Type 3 (25T)	-	-	20 [14]	33
	Type 3S2 (40T)	-	-	32 [15]	52
	Type 3-3 (40T)	-	-	39 [1]	63

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L4L5 (Span 2)	Type HS-20	(36T)	-	-	22 [37]	36
	Type 3	(25T)	-	-	20 [14]	33
	Type 3S2	(40T)	-	-	32 [15]	52
	Type 3-3	(40T)	-	-	39 [1]	63
Truss Member L5U4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	24 [34]	32 [8]
	Type 3	(25T)	-	-	22 [9]	29
	Type 3S2	(40T)	-	-	33 [15]	44
	Type 3-3	(40T)	-	-	43	58
Truss Member L5L6 (Span 2)	Type HS-20	(36T)	-	-	27 [23]	42
	Type 3	(25T)	-	-	24 [1]	38
	Type 3S2	(40T)	-	-	39 [1]	61
	Type 3-3	(40T)	-	-	47	74
Truss Member L6L7 (Span 2)	Type HS-20	(36T)	-	-	27 [23]	42
	Type 3	(25T)	-	-	24 [1]	38
	Type 3S2	(40T)	-	-	39 [1]	61
	Type 3-3	(40T)	-	-	47	74
Truss Member U6L7 (Spans 1 and 3)	Type HS-20	(36T)	-	-	21 [10]	29 [18]
	Type 3	(25T)	-	-	19 [19]	26
	Type 3S2	(40T)	-	-	31 [20]	42
	Type 3-3	(40T)	-	-	37 [4]	50
Stringer	Type HS-20	(36T)	26 [8]	44	31	43
	Type 3	(25T)	26	44	31	43
	Type 3S2	(40T)	42	71	50	69
	Type 3-3	(40T)	52	86	60	84

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member U2U3 (Spans 1 and 3)	Type HS-20	(36T)	-	-	36	48
	Type 3	(25T)	-	-	31	41
	Type 3S2	(40T)	-	-	47	61
	Type 3-3	(40T)	-	-	62	82
Truss Member U3U4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	36	48
	Type 3	(25T)	-	-	31	41
	Type 3S2	(40T)	-	-	47	61
	Type 3-3	(40T)	-	-	62	82
Truss Member L1L2 (Span 2)	Type HS-20	(36T)	-	-	38	57
	Type 3	(25T)	-	-	35	53
	Type 3S2	(40T)	-	-	57	86
	Type 3-3	(40T)	-	-	67	102
Truss Member L2L3 (Span 2)	Type HS-20	(36T)	-	-	38	57
	Type 3	(25T)	-	-	35	53
	Type 3S2	(40T)	-	-	57	86
	Type 3-3	(40T)	-	-	67	102
Floorbeam 2 (Spans 1 and 3)	Type HS-20	(36T)	30 [36]	51	39	55
	Type 3	(25T)	25	42	32	45
	Type 3S2	(40T)	40	67	51	73
	Type 3-3	(40T)	49	82	62	88
Truss Member L3L4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	45	68
	Type 3	(25T)	-	-	40	59
	Type 3S2	(40T)	-	-	61	90
	Type 3-3	(40T)	-	-	79	117

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L4L5 (Spans 1 and 3)	Type HS-20	(36T)	-	-	45	68
	Type 3	(25T)	-	-	40	59
	Type 3S2	(40T)	-	-	61	90
	Type 3-3	(40T)	-	-	79	117
Truss Member U4U5 (Spans 1 and 3)	Type HS-20	(36T)	-	-	46	60
	Type 3	(25T)	-	-	42	54
	Type 3S2	(40T)	-	-	65	84
	Type 3-3	(40T)	-	-	83	107
Truss Member U5U6 (Spans 1 and 3)	Type HS-20	(36T)	-	-	46	60
	Type 3	(25T)	-	-	42	54
	Type 3S2	(40T)	-	-	65	84
	Type 3-3	(40T)	-	-	83	107
Truss Member U7U8 (Span 2)	Type HS-20	(36T)	-	-	47	62
	Type 3	(25T)	-	-	44	58
	Type 3S2	(40T)	-	-	69	90
	Type 3-3	(40T)	-	-	81	106
Floorbeam 3 (Span 2)	Type HS-20	(36T)	46	76	50	71
	Type 3	(25T)	38	63	42	59
	Type 3S2	(40T)	60	101	67	94
	Type 3-3	(40T)	73	123	81	114
Floorbeam 3 (Spans 1 and 3)	Type HS-20	(36T)	46	76	50	71
	Type 3	(25T)	38	63	42	59
	Type 3S2	(40T)	60	101	67	94
	Type 3-3	(40T)	74	123	81	114

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Floorbeam 4 (Spans 1 and 3)	Type HS-20	(36T)	46	76	50	71
	Type 3	(25T)	38	63	42	59
	Type 3S2	(40T)	60	101	67	94
	Type 3-3	(40T)	74	123	81	114
Truss Member L1L2 (Spans 1 and 3)	Type HS-20	(36T)	-	-	52	76
	Type 3	(25T)	-	-	47	70
	Type 3S2	(40T)	-	-	73	107
	Type 3-3	(40T)	-	-	94	137
Truss Member L2L3 (Spans 1 and 3)	Type HS-20	(36T)	-	-	52	76
	Type 3	(25T)	-	-	47	70
	Type 3S2	(40T)	-	-	73	107
	Type 3-3	(40T)	-	-	94	137
Truss Member L0U0 (Spans 1 and 3)	Type HS-20	(36T)	-	-	60	77
	Type 3	(25T)	-	-	55	70
	Type 3S2	(40T)	-	-	87	111
	Type 3-3	(40T)	-	-	105	136
Truss Member L4U4 (Span 2)	Type HS-20	(36T)	-	-	73	105
	Type 3	(25T)	-	-	78	113
	Type 3S2	(40T)	-	-	126	181
	Type 3-3	(40T)	-	-	153	220
Truss Member L6U6 (Span 2)	Type HS-20	(36T)	-	-	73	105
	Type 3	(25T)	-	-	78	113
	Type 3S2	(40T)	-	-	126	181
	Type 3-3	(40T)	-	-	153	220

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L4U4 (Spans 1 and 3)	Type HS-20	(36T)	-	-	73	105
	Type 3	(25T)	-	-	78	113
	Type 3S2	(40T)	-	-	126	181
	Type 3-3	(40T)	-	-	153	220
Truss Member L2U2 (Span 2)	Type HS-20	(36T)	-	-	74	106
	Type 3	(25T)	-	-	79	114
	Type 3S2	(40T)	-	-	127	182
	Type 3-3	(40T)	-	-	154	222
Truss Member L2U2 (Spans 1 and 3)	Type HS-20	(36T)	-	-	74	106
	Type 3	(25T)	-	-	79	114
	Type 3S2	(40T)	-	-	127	182
	Type 3-3	(40T)	-	-	154	222
Truss Member L8U8 (Span 2)	Type HS-20	(36T)	-	-	76	109
	Type 3	(25T)	-	-	82	116
	Type 3S2	(40T)	-	-	131	187
	Type 3-3	(40T)	-	-	159	227
Truss Member L6U6 (Spans 1 and 3)	Type HS-20	(36T)	-	-	76	109
	Type 3	(25T)	-	-	82	117
	Type 3S2	(40T)	-	-	132	187
	Type 3-3	(40T)	-	-	160	227
Truss Member U0U1 (Span 2)	Type HS-20	(36T)	-	-	87	111
	Type 3	(25T)	-	-	82	104
	Type 3S2	(40T)	-	-	127	162
	Type 3-3	(40T)	-	-	150	191

SUMMARY OF RATINGS (continued)

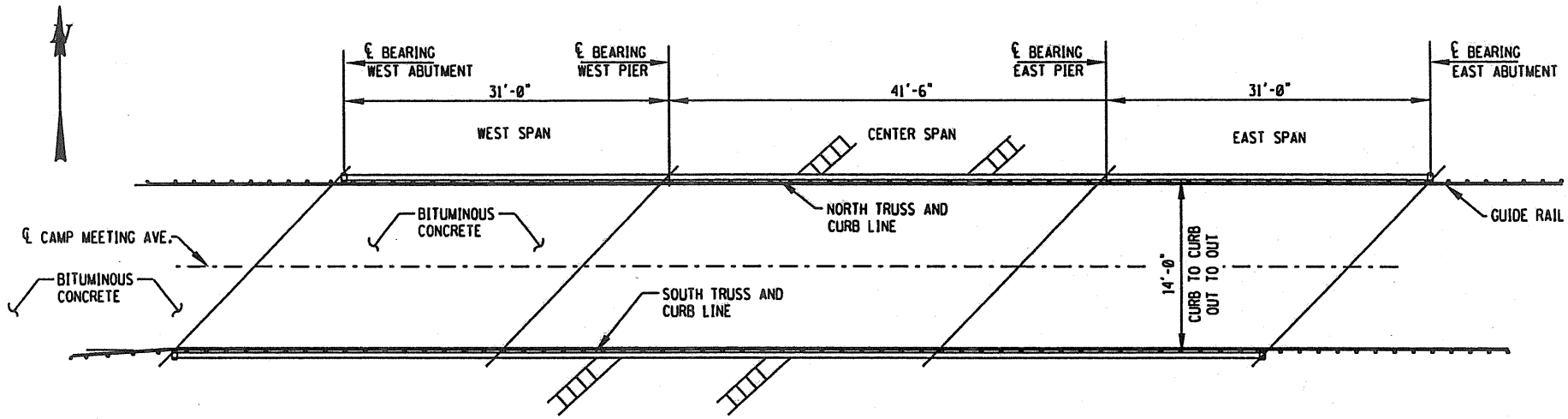
Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member U1U2 (Span 2)	Type HS-20	(36T)	-	-	87	111
	Type 3	(25T)	-	-	82	104
	Type 3S2	(40T)	-	-	127	162
	Type 3-3	(40T)	-	-	150	191
Truss Member U0U1 (Spans 1 and 3)	Type HS-20	(36T)	-	-	96	122
	Type 3	(25T)	-	-	87	110
	Type 3S2	(40T)	-	-	138	175
	Type 3-3	(40T)	-	-	168	213
Truss Member U1U2 (Spans 1 and 3)	Type HS-20	(36T)	-	-	96	122
	Type 3	(25T)	-	-	87	110
	Type 3S2	(40T)	-	-	138	175
	Type 3-3	(40T)	-	-	168	213
Truss Member L7L8 (Span 2)	Type HS-20	(36T)	-	-	113	162
	Type 3	(25T)	-	-	106	152
	Type 3S2	(40T)	-	-	165	235
	Type 3-3	(40T)	-	-	194	277
Truss Member L8L9 (Span 2)	Type HS-20	(36T)	-	-	113	162
	Type 3	(25T)	-	-	106	152
	Type 3S2	(40T)	-	-	165	235
	Type 3-3	(40T)	-	-	194	277
Truss Member L5L6 (Spans 1 and 3)	Type HS-20	(36T)	-	-	165	234
	Type 3	(25T)	-	-	151	213
	Type 3S2	(40T)	-	-	240	339
	Type 3-3	(40T)	-	-	289	409

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

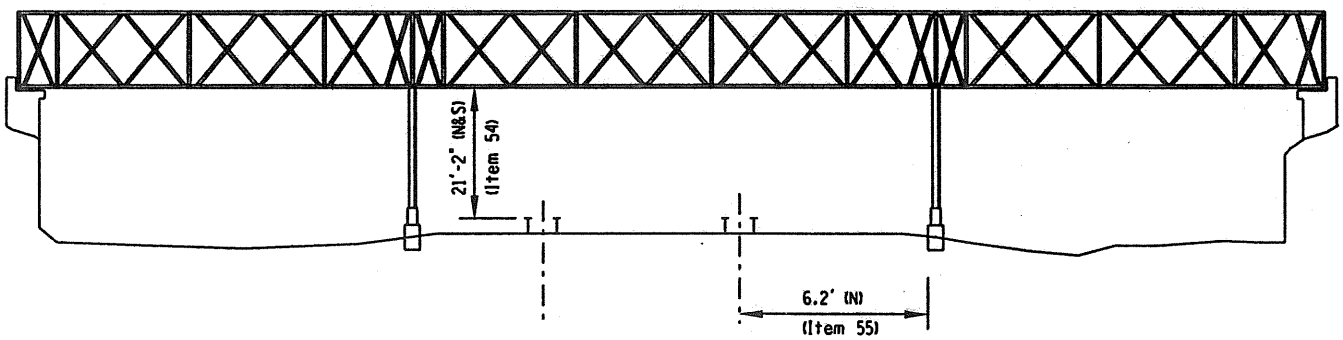
SUMMARY OF RATINGS (continued)

Member	Truck Type (Tons)		Rating (Tons) Load Factor Inventory	Load Factor Operating	Working Stress Inventory	Working Stress Operating
Truss Member L6L7 (Spans 1 and 3)	Type HS-20	(36T)	-	-	165	234
	Type 3	(25T)	-	-	151	213
	Type 3S2	(40T)	-	-	240	339
	Type 3-3	(40T)	-	-	289	409

Cycle No. 12



PLAN



ELEVATION

New Jersey Department of Transportation
Bureau of Structural Evaluation

PLAN AND ELEVATION
Structure No.: 1850-160
Camp Meeting Avenue (CR 602) over
Trenton Line (CSX)
Montgomery Twp., Somerset County
Pickering, Corts & Summerson, Inc.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

Photo No: 12-1

Location:	North Elevation.
Description:	General view.

Photo No: 12-2

Location:	Roadway, looking east.
Description:	General view.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

Photo No: 12-3

Location:	Superstructure, span 3, looking west.
Description:	General view.

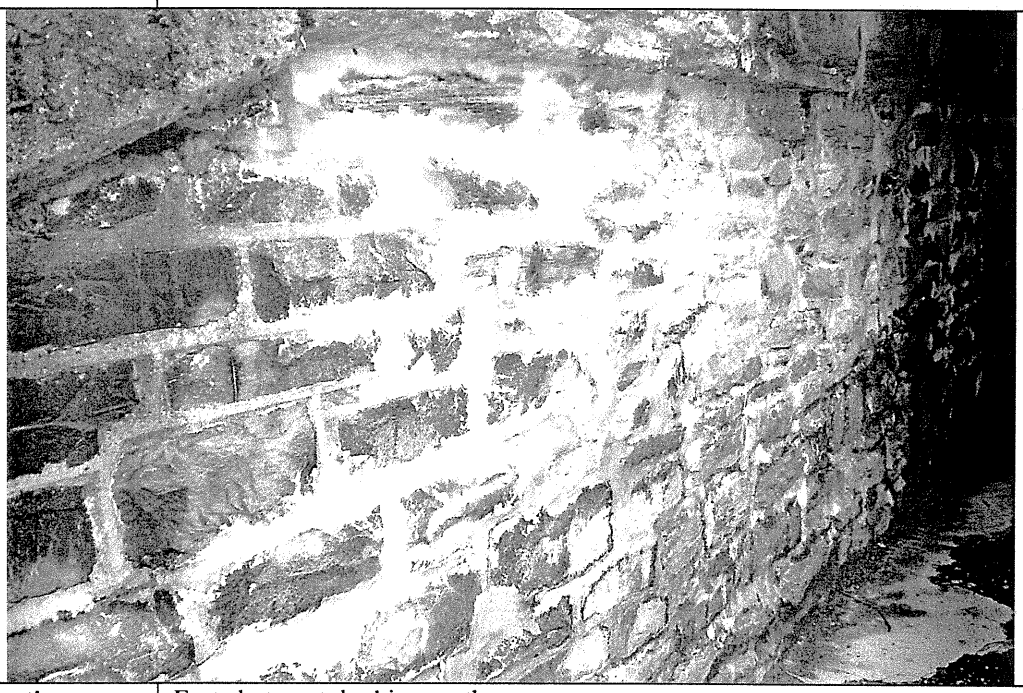


Photo No: 12-4

Location:	East abutment, looking southeast.
Description:	Work Done: The stone masonry breastwall has been repointed (typical condition at the west abutment and northwest wingwall). Note that there are concrete repairs to the concrete cap of the east abutment stone masonry retaining wall.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

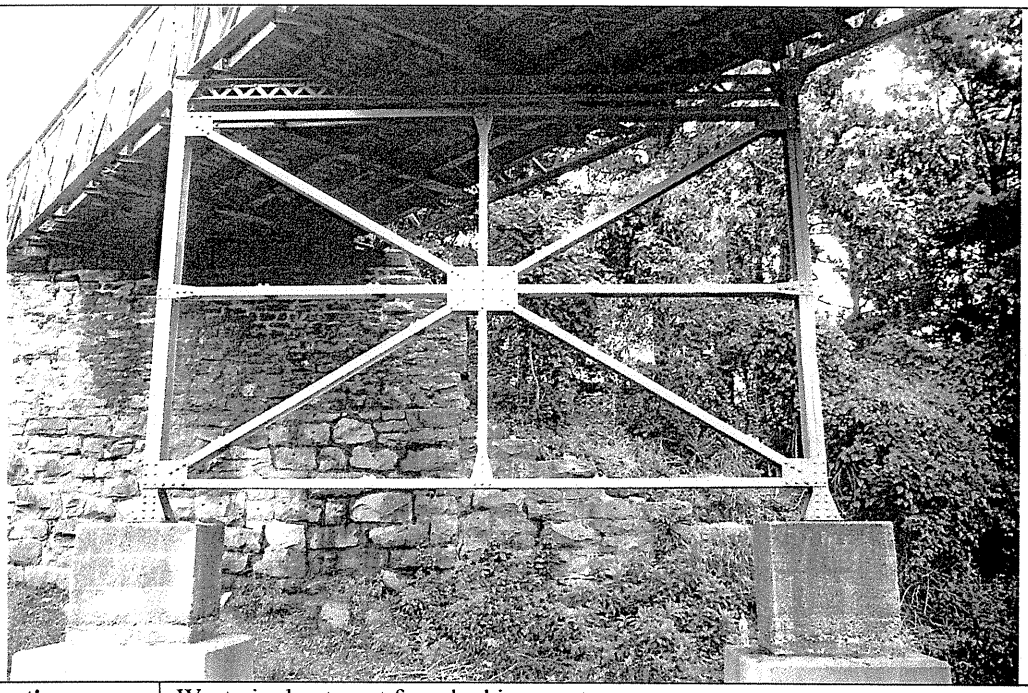


Photo No: 12-5

Location:	West pier bent, east face, looking west.
Description:	Work Done: The horizontal steel bracing has been replaced (typical condition at the west pier bent). Note that the bottom cross bracing of the east pier bent has been replaced.

Photo No: 12-6

Location:	Stringer 4, span 1, looking north.
Description:	Severe rust with 100% section loss (9" long x 1" high) along the bottom of the web beginning 6" from the face of the west abutment.

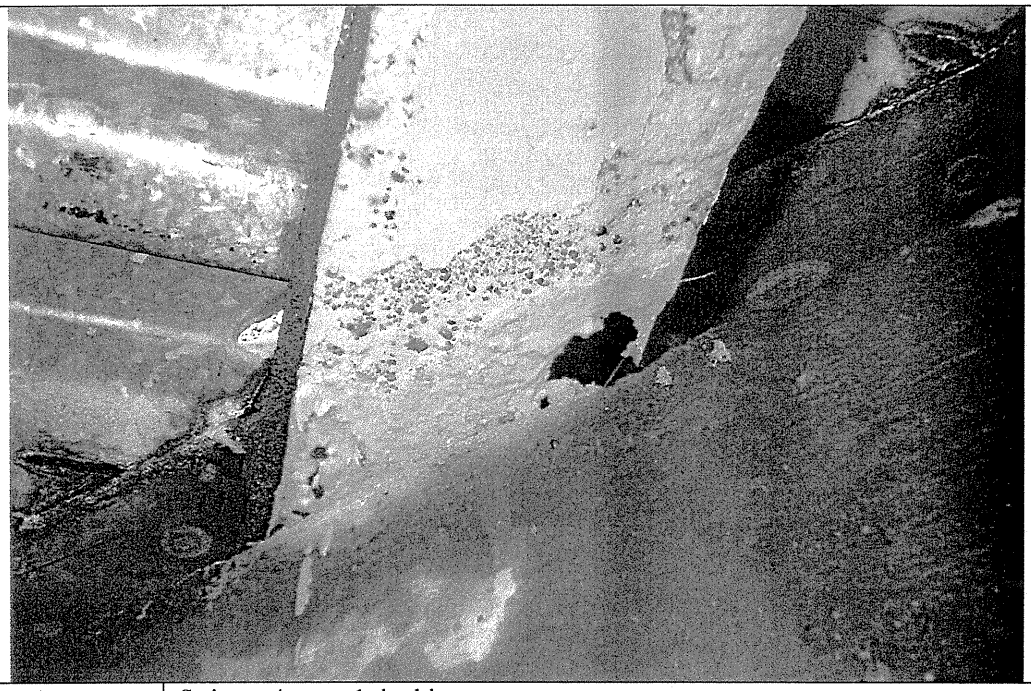


Photo No: 12-7

Location:	Stringer 4, span 1, looking west.
Description:	Severe rust with 1/16" remaining section to 100% section loss to the bottom flange located 12" from the centerline of the west abutment bearing.

Photo No: 12-8

Location:	North truss at the second floorbeam from the east pier, span 2, looking east.
Description:	Severe rust with two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

Photo No: 12-9

Location:	South truss at the first floorbeam from the east pier, span 2, looking west.
Description:	Area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes directly above the top flange.

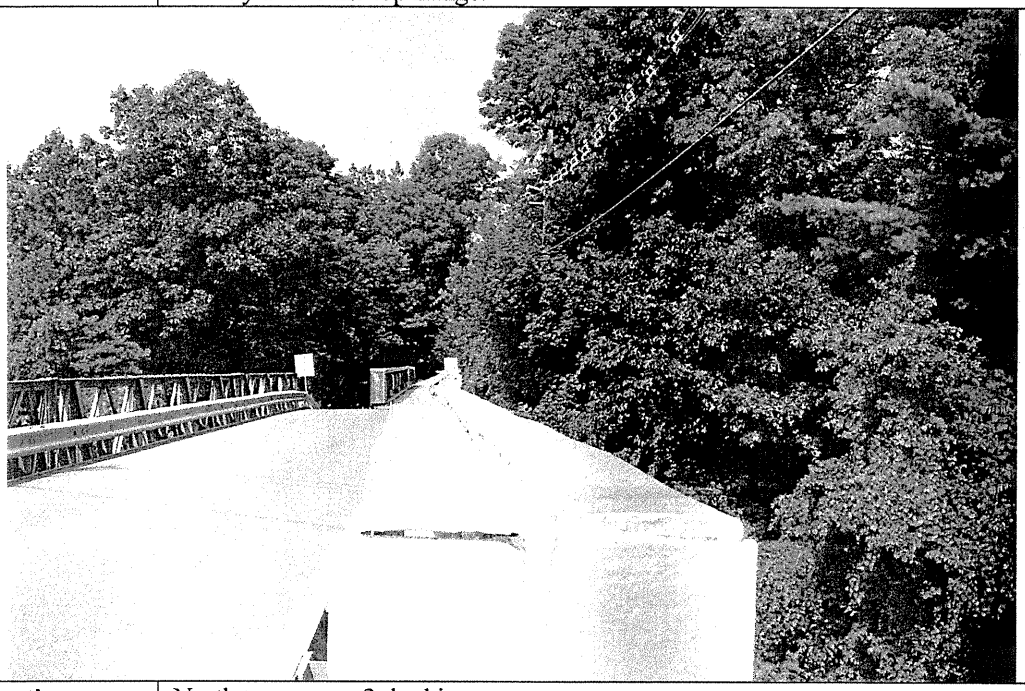


Photo No: 12-10

Location:	North truss, span 3, looking west.
Description:	The top chord is bent laterally to the north 4½" over a 8'-5" length (no change since the previous inspection).

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

Photo No: 12-11

Location:	Northwest wingwall, looking west.
Description:	Large void (54" wide x 24" high x 24" deep) due to missing stones along the base adjacent to the breastwall. An area (24" high x 36" wide) of stones has shifted outward towards the north up to 1".

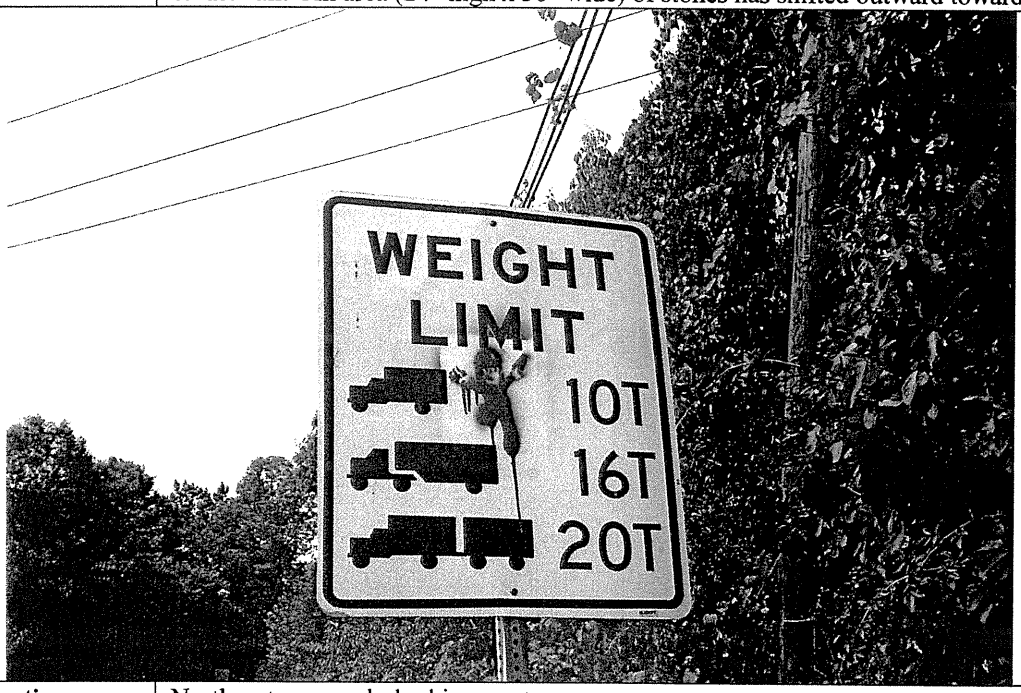


Photo No: 12-12

Location:	Northeast approach, looking west.
Description:	The structure is posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks at the northeast and southwest corners of the structure.

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

NEW JERSEY DEPARTMENT OF TRANSPORTATION
STRUCTURAL EVALUATION
BRIDGE EVALUATION CHECK LIST

(FIELD NOTES)

Inspectors: Mike Hale
Doutsen Hettema
Ted Tuz
Mike Willey

Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX)

Crew Chief: Cindy Vergara

Temperature: 80° F (8/27/08)
90° F (7/16 & 7/30/09)

Weather: Clear

Special Equipment Used: Large Ladder

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 of primary structural elements.
4 **Poor Condition** – advance section loss of primary structural elements.
3 Serious Condition – seriously deteriorated primary structural elements.
2 Critical Condition – facility should be closed until repairs are made.
1 Imminent Failure Condition – facility closed. Study of repairs is feasible.
0 Failed Condition – facility is closed and beyond repair.

GPS COORDINATES		
@ southwest corner		
N40°	25′ 13. 30 ″	Lat.
W74°	42′ 44. 60 ″	Long.

GENERAL

Type of Bridge: Three span, simply supported, steel, Pony truss

Year Built: 1889 Year of Widening / Major Repairs: 1922 and 1950

No. of Lanes: On 1 Under Railroad (1 Track)

Vertical Clearances: Over Deck: Unlimited

Minimum Under: 21'-2" (north or south truss to the top of either rail of the west track)

Maximum Under (Item 10): N/A

Horizontal Underclearance: Total Horizontal Clearance: N/A

Right 6.2' (west face of the north column pedestal of the east pier bent to the centerline of the east track)

Left N/A

Overall Physical Condition of Structure: Poor, due to the superstructure.

Work Done: The stone masonry breastwall of both abutments and the northwest wingwall have been repointed and there are concrete repairs to the concrete cap of the east abutment stone masonry retaining wall (Photo 12-4). The bottom cross bracing of the east pier bent has been replaced and the horizontal steel bracing of both pier bents has been replaced (Photo 12-5). Several of the superstructure and substructure elements have been painted (Photo 12-5).

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

DECK

SI&A Item 58 Condition Rating: 7

SPAN # 1 (West)

RATING	COMPONENT	REMARKS
7	Wearing Surface (Bituminous Concrete)	
7	Underside of Deck (S.I.P. Forms)	
N	Median	
6	Curbs (Steel Channel)	
N	Sidewalks	
N	Parapets / Balustrades	
7	Railings (W-Beam)	
6	Deck Joints / Filler Material	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

DECK

SI&A Item 58 Condition Rating: 7

SPAN # 2 (Center)

RATING	COMPONENT	REMARKS
7	Wearing Surface (Bituminous Concrete)	
7	Underside of Deck (S.I.P. Forms)	
N	Median	
6	Curbs (Steel Channel)	
N	Sidewalks	
N	Parapets / Balustrades	
7	Railings (W-Beam)	
N	Deck Joints / Filler Material	Not visible; overlaid with bituminous concrete.
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

DECK

SI&A Item 58 Condition Rating: 7

SPAN # 3 (East)

RATING	COMPONENT	REMARKS
7	Wearing Surface (Bituminous Concrete)	
7	Underside of Deck (S.I.P. Forms)	
N	Median	
6	Curbs (Steel Channel)	
N	Sidewalks	
N	Parapets / Balustrades	
7	Railings (W-Beam)	
6	Deck Joints / Filler Material	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

APPROACHES

SI&A Item BA Rating: 7

SI&A Item 72 Rating: 4

APPROACH West

RATING	COMPONENT	REMARKS
7	Approach Pavement (Bituminous Concrete)	
N	Approach Shoulder	
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade onto the structure (structure located on a crest). Horizontal: Tangent. Limited sight distance with a significant speed reduction required (30 MPH).
7	Guide Rail Condition	
N	Sidewalks	
5	Curbs (Concrete)	South: Fractured section adjacent to the structure with a large spall (1 SF) at the west end.
N	Utilities	
6	Approach Roadway Embankment	Both: Steep slope and well vegetated.
	Others	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

APPROACHES

SI&A Item BA Rating: 7

SI&A Item 72 Rating: 4

APPROACH East

RATING	COMPONENT	REMARKS
7	Approach Pavement (Bituminous Concrete)	
N	Approach Shoulder	
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade onto the structure (structure located on a crest). Horizontal: Tangent. Limited sight distance with a significant speed reduction required (30 MPH).
7	Guide Rail Condition	
N	Sidewalks	
6	Curbs (Concrete)	
N	Utilities	Aerial wires along the north embankment.
6	Approach Roadway Embankment	Both: Moderate to steep slope and well vegetated.
	Others	

Additional Remarks:

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 1 (West)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered South to North, (4) Floorbeams Numbered West to East, and South and North Trusses	Truss: General: Up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers. North: West end of the top chord is bent towards the south ($1^3/_8$" over a 3' length) and the interior leg of the top flange is locally buckled (1/4") (no change since the previous inspection). The bottom chord cover plate exhibits moderate collision damage at joint L5 from the west and is bent upward (1" over an 18" length) and has a 1/4" deep gouge on the south edge at this location (no change since the previous inspection). South: Two gouges (2" long x 1/4" deep and 2" long x 3/4" deep) to the south edge of the bottom chord cover plate. The flange is bent upward 1" at this location (no change since the previous inspection). Floorbeams: General: Localized areas of moderate to severe rust to the top and bottom flanges (most severe at floorbeam ends with up to 1/8" section loss). Floorbeam 1: 3½" high x 2" wide hole to the web located at the west side of the connection of the second stringer from the north to the floorbeam web. Area (3" diameter) of 1/4" section loss to the web at the connection to the first stringer from the north. The south leg of the top flange exhibits severe rust with 1/8" remaining section over the fascia stringer (no repair necessary). 2.5" diameter hole to the web at stringer 2 and a 1" diameter hole to the web at stringer 3. Floorbeam 2: 1/8" deep painted over pitting to the web. Floorbeam 4: Moderate to severe rust to the top and bottom flanges with 1/2" remaining section for a 2" width along both legs of the top flange and 1/2" remaining section to the bottom flange. Knee Bracing: General: The knee bracing exhibits moderate to severe rust with localized areas of up to 1/8" section loss and some of the tack welds are broken due to severe pack rust. Minor collision scrapes to a few of the knee braces on the south.

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 1 (West) (continued)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Stringers: General: Localized areas of moderate rust with up to 1/8" section loss. The interior leg of the top flange of the fascia stringers exhibits severe rust with up to 100% section loss. Moderate to severe rust to the ends of the interior stringers with up to 1/8" section loss to the top flange in this area. Stringer 1: 1" diameter hole to the top of the web adjacent to the coping of floorbeam 1. Area (4" long x 2½" wide) of 100% section loss to the north leg of the bottom flange between floorbeam 1 and floorbeam 2 beginning 39" from floorbeam 2. The remaining bottom flange exhibits 1/4" deep pitting. The north leg of the top flange exhibits 1/4" deep pitting. The north face of the web exhibits 1/16" section loss with areas of 1/4" deep pitting. Moderate to severe rust with up to 1/8" deep pitting to the bottom flange between floorbeams 2 and 3. 100% section loss (1½" high) to the web 24" from floorbeam 3 with a 1" diameter hole to the bottom flange 56" from floorbeam 3. Stringer 4: Area of 100% section loss (9" long x 1" high) along the bottom of the web beginning 6" from the face of the west abutment (Photo 12-6). The remaining bottom 3" of the web exhibits 3/16" section loss. The bottom flange exhibits 1/16" to 100% section loss 12" from the centerline of the west abutment bearing and the top flange exhibits 1/16" to 1/4" remaining section with areas of 100% section loss (Photo 12-7). Stringer 7: The top of the web exhibits an area (18" long x 2" high) of 1/16" remaining section with three areas of 100% section loss. The top flange exhibits 1/16" remaining section (knife edging) with areas of 100% section loss. Area (2" x 1") of 100% section loss to the web over the bearing.
5	Diaphragms / Cross Frames	The bottom half of the clevis pin connection to the north end of floorbeam 2 exhibits 100% section loss.
5	Bearings	North: Severe rust to all components with up to 1/8" section loss. South: Light to moderate rust with 1/16" section loss.
	Deflection and Vibration	Moderate vibration under truck loads.
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 3%

Category	Detail Description and Location
E	Knee brace angles tack welded to the truss verticals (> 4") (Similar to Detail 5).
E	Plug welds to the floorbeam knee bracing (Detail 15).

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 2 (Center)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Truss: General: Up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers. North: Bolt missing at the top chord splice (no repair necessary). Diagonal U2L3 (two 3" x 5/16" bars) from the east exhibits an area (3" x 3") of severe rust with 1/16" minimum remaining section with knife edging at the intersection with member U3L2. U3L4 is bowed outward 1½" over a 24" length. Floorbeams: General: Localized areas of moderate to severe rust to the top and bottom flanges (most severe at floorbeam ends with up to 1/8" section loss). 1/4" wide area of section loss around the perimeter of the clip angles. The pitting and section loss to the web of floorbeams 5 through 7 is painted over. Floorbeam 8: 1/8" to 1/4" remaining section to the top flange with an area (10" long x 1" wide) of 100% section loss to the west leg in stringer bay 6. Area of 100% section loss to the north end of the east (1½" long x 2" wide) and west (3" long x 1" wide) legs adjacent to the bottom chord of the truss. The web exhibits an area (1/4" high x 1" wide) of 100% section loss at stringer 3 adjacent to the north clip angle. Painted repair plate to the north face of the web at stringer 2. Knee Bracing: General: The knee bracing exhibits moderate to severe rust with localized areas of up to 1/8" section loss and some of the tack welds are broken due to severe pack rust. Minor collision scrapes to a few of the knee braces on the south. North Truss: The knee bracing at the second floorbeam from the east pier exhibits two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange of the floorbeam (Photo 12-8). South Truss: The knee bracing at the first floorbeam from the east pier exhibits severe rust with 1/16" remaining section with two 1" diameter holes located directly above the top flange of the floorbeam (Photo 12-9).

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 2 (Center) (continued)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Stringers: General: Localized areas of moderate rust with up to 1/8" section loss. The interior leg of the top flange of the fascia stringers exhibits severe rust with up to 100% section loss. Stringer 1: The north leg of the top flange exhibits 100% section loss (3¼" original width) between floorbeams 4 and 5. Stringer 5: 1/4" remaining section (3/8" original section) to the west leg of the bottom flange. Stringer 7: Area (22" long x 1" high) of 100% section loss along the top of the web at the west end. Area (1" long x 1/2" high) of 100% section loss along the top of the web at the east end with < 1/8" remaining to the adjacent area. Severe rust with up to 1/8" section loss to the top 2" of the web (full length) with an area (22" long x 4" high) of < 1/8" remaining section located 25" from the east pier bent. The top of the web exhibits an area (5" long x 1" high) of 100% section loss and a 1" diameter hole at floorbeam 7. The bottom flange exhibits severe rust with 1/8" to 1/4" section loss with localized knife edging (full length x full width) to the north leg and 1/8" section loss to the south leg. Repair plate and top flange repair angles between floorbeams 4 and 5.
6	Diaphragms / Cross Frames	
6	Bearings	
	Deflection and Vibration	Moderate vibration under truck loads.
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 3%

Category	Detail Description and Location
E	Knee brace angles tack welded to the truss verticals (> 4") (Similar to Detail 5).
E	Plug welds to the floorbeam knee bracing (Detail 15).

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 3 (East)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Truss: General: Up to 3/4" pack rust between the angles of the top and bottom chords and up to 1/2" pack rust between the angles of several vertical members and between the top chord and connection plates at the piers. North: U0L0 exhibits local buckling (3/4" over 9" to the outstanding leg of the interior angle approximately 2' from the bottom). The top chord is bent laterally 4½" to the north over an 8'-5" length (no change since the previous inspection) (Photo 12-10). South: The bottom chord at the bearing masonry plate (12" long) exhibits 100% section loss to the outstanding leg of the fascia angle for a 4" length measured from the bearing. The next 8" has 1/8" to 1/4" remaining section (3/8" original section). The bearing anchor bolt is no longer connected to the truss due to the section loss and the interior leg is covered with debris. The fascia angle of U0L0 exhibits 100% section loss (2½" long x full width) to the bottom of the fascia angle of member U0L0 from the east. Members U3L2 from the east are bowed up to 2" over a 20" length. Floorbeams: General: Localized areas of moderate to severe rust to the top and bottom flanges (most severe at floorbeam ends with up to 1/8" section loss). Floorbeam 11: Painted over section loss to the top flange with 1/8" remaining section for a 1" width along both legs with small localized areas of 100% section loss. Knee Bracing: General: The knee bracing exhibits moderate to severe rust with localized areas of up to 1/8" section loss and some of the tack welds are broken due to severe pack rust.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 4

SPAN # 3 (East) (continued)

RATING	COMPONENT	REMARKS
4	Stringers / Floorbeams / Trusses (7) Steel Stringers Numbered North to South, (4) Floorbeams Numbered West to East, and South and North Trusses	Stringers: General: Localized areas of moderate rust with up to 1/8" section loss. The interior leg of the top flange of the fascia stringers exhibits painted over section loss with 1/16" to 3/16" knife edging. Stringer 1: 1" diameter hole to the top of the web adjacent to the coped area at floorbeam 11. Stringer 5: The top flange exhibits painted over section loss with 1/16" to 3/16" knife edging.
6	Diaphragms / Cross Frames	
5	Bearings	North and South: Not visible; covered with a heavy accumulation of debris.
	Deflection and Vibration	Moderate vibration under truck loads.
	Others	

Additional Remarks:

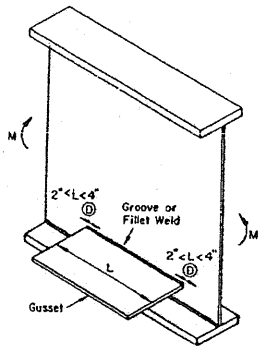
FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 3%

Category	Detail Description and Location
E	Knee brace angles tack welded to the truss verticals (> 4") (Similar to Detail 5).
E	Plug welds to the floorbeam knee bracing (Detail 15).

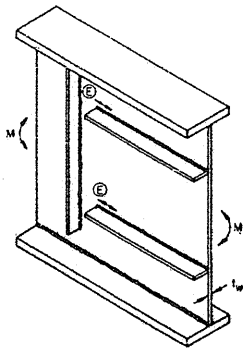
Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

TYPICAL FATIGUE DETAILS



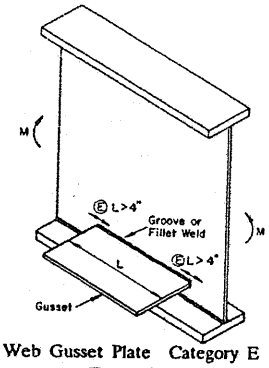
Short Wed Gusset Plate L < 4 in. Category D

Detail 1



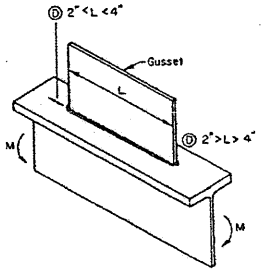
Termination of Longitudinal Stiffeners Category E

Detail 2



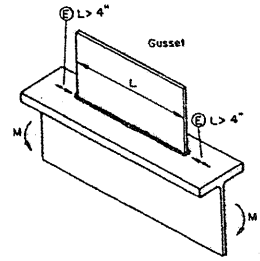
Web Gusset Plate Category E

Detail 3



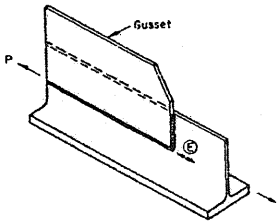
Short Flange Gusset Plate L ≤ 4 in. Category D

Detail 4



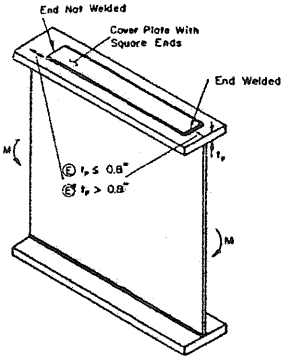
Flange Gusset Plate Category E

Detail 5



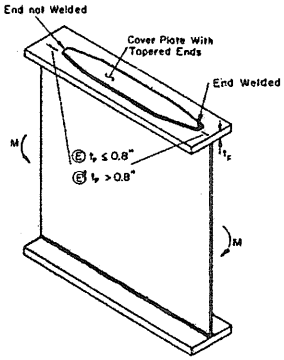
Gusset Welded to Bracing Member Category E

Detail 6



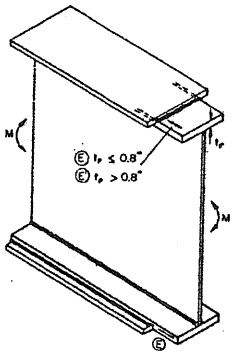
Square Ended Cover Plates Narrower than the Girder Flange Category E or E'

Detail 7



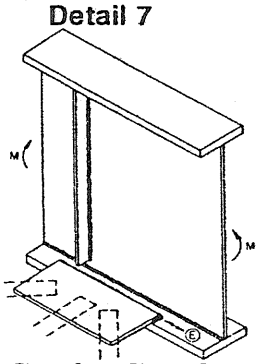
Cover Plates Narrower than the Girder Flange with Tapered Ends Category E or E'

Detail 8



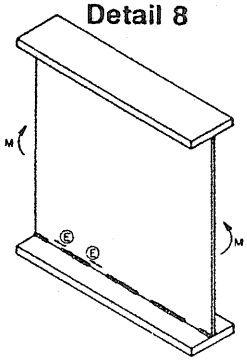
Cover Plates Wider than the Girder Flange with End Welds Category E or E'

Detail 9



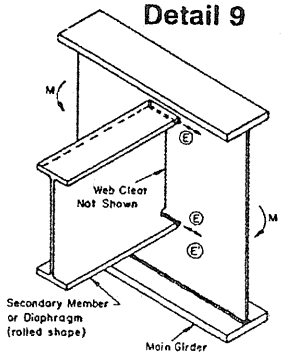
Flange Gusset Plate Category E

Detail 10



Intermittent Fillet Welds Category E

Detail 11



Stringer Framing into Girder Web Category E or E'

Detail 12

TYPICAL FATIGUE DETAILS

13. Field Weld Repairs - Proper welding procedures may not have been used; testing of weld by non-destructive methods was usually not done, therefore, the possibility of large flaws exists. Check carefully on the main structural members (stringers, floorbeams, girders).

14. Tack Welds - Check carefully on riveted members constructed in 1940's and 1950's as these welds were sometimes used to hold the plates together during riveting.

15. Plug Welds - Check at bolted connections on welded structures. These welds may have been used to fill-in incorrectly drilled holes (see sketch).

16. Backing Bars - These welds are possibly not full penetration. Check carefully on box girders if accessible and at butt (groove) welds made in the field.

17. Details with 2 or 3 Intersecting Welds (Slot Welds) - Incomplete penetration of the second and third welds is possible.

18. Butt (Groove) Welds on Horizontal Web Stiffeners - NDT of the weld was not always required on the stiffener in the tension zone. If the weld is not good, this will be an "E" detail or worse which can exist in a high stress area (This would be the same as or worse than typical detail 3).

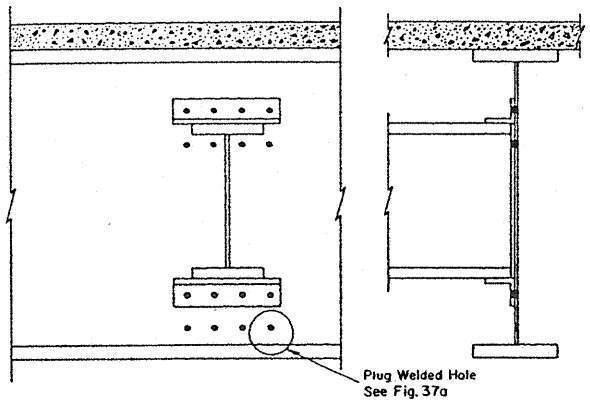
19. Detail Without Proper Welding Clearance - Poor welding can result if proper clearance for the welding rod is not maintained by the designer (such as a horizontal web stiffener placed too near the bottom flange of a girder; fillet weld at bottom of stiffener is difficult due to a lack of clearance for the welding rod).

20. Coped or Blocked Flanges - Check carefully when these details exist on main structural members (stringers and floorbeams). Coped flanges are a typical detail on movable spans.

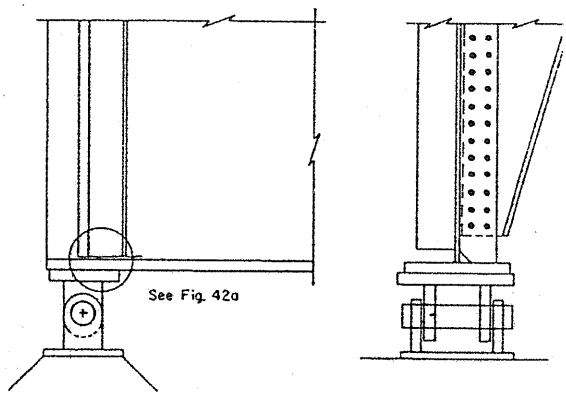
21. Distortion (Bending) at Small Gaps - For typical details which exhibit damage due to this, see "Inspecting Steel Bridges for Fatigue Damage" (see sketches).

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

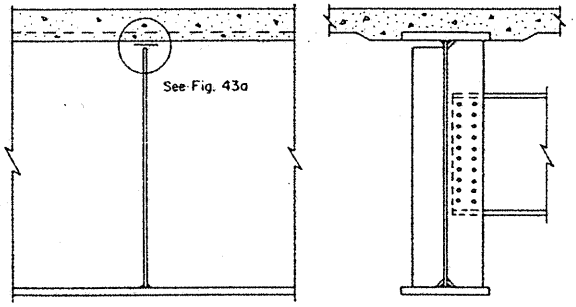
TYPICAL FATIGUE DETAILS



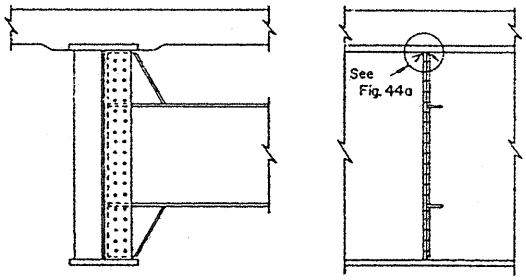
Schematic Showing Misplaced Holes Filled with Weld
Detail 15



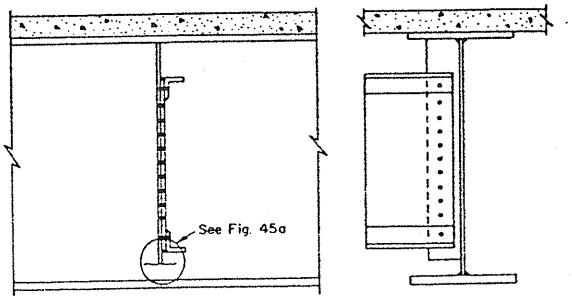
Schematic Showing Crack in Girder Web at Floor Beam Connection Plates at Supports
Detail 21A



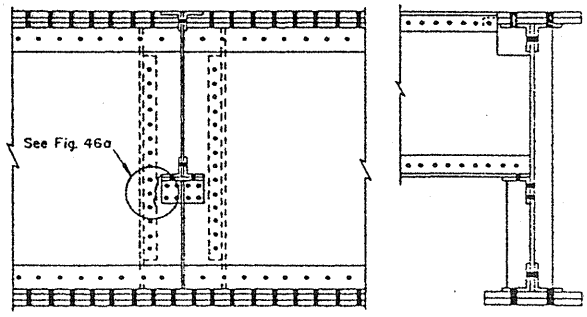
Schematic of Crack in Girder Web at Floor Beam Connection Plates in Negative Moment Region
Detail 21B



Schematic of Crack in Girder Web and Transverse Connection Plate Welds at Floor Beam in Negative Moment Region of Skewed Bridge
Detail 21C



Schematic of Transverse Diaphragm Attached to Cut Short Welded Connection Plate Showing Web Cracking in Gap
Detail 21D



Schematic Showing Stringer Framing into Riveted Floor Beam With Crack Between Seat Angle Connection and Adacent Web Stiffeners
Detail 21E

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

PAINT INSPECTION

*Environment: 1

Date of Last Painting: 2009

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

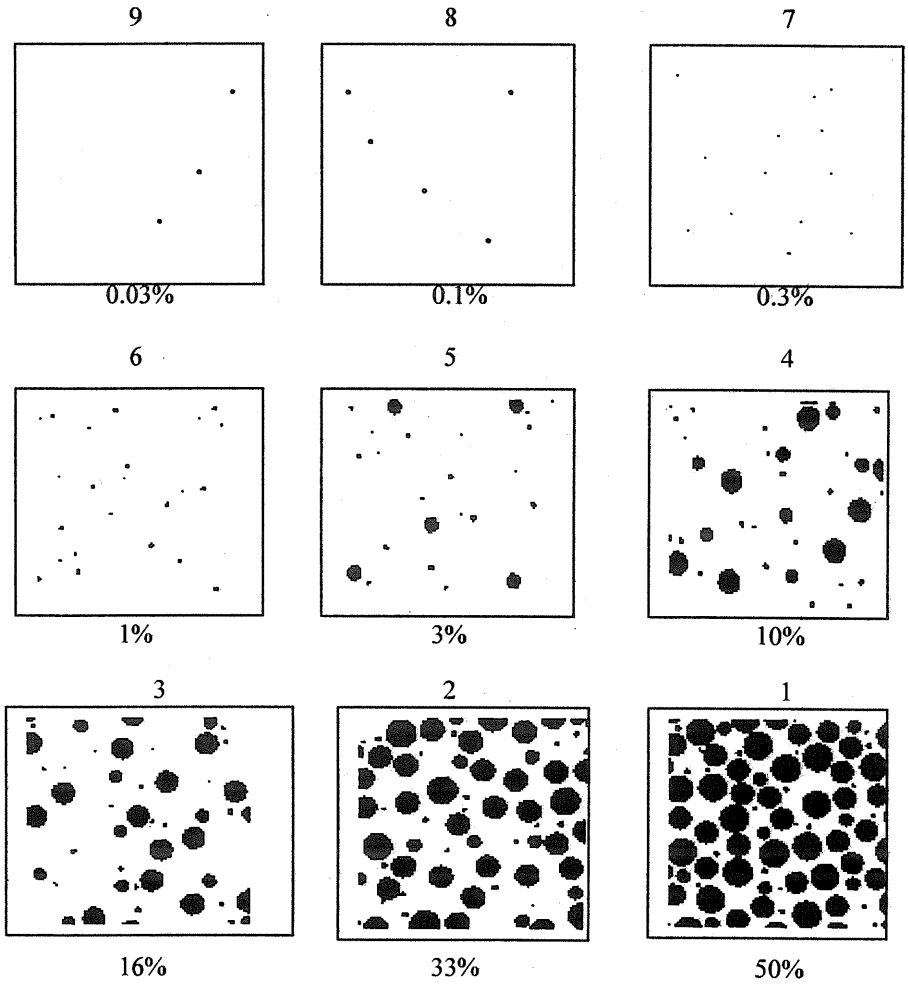


FIG. 1 Examples of Area Percentages

Note: Blistered Paint areas are counted as rust

10 = 0% Rust
0 = 100% Rust

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

INSPECTION RATINGS (0 THROUGH 10 OR N/A)

Fascia Beam:	2	Fascia Bottom Flange:	4	Beams Ends:	4
Interior Beam:	4	Interior Bottom Flange:	4	Connections:	4
Bracing:	4	Substructure:	7	Railings/Fence:	N/A
Bearings:	4	Above Deck Superstructure:	5		

Remarks 1: The pitting and section loss to the superstructure and substructure elements has been painted over.

Remarks 2:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

ABUTMENT West

RATING	COMPONENT	REMARKS
5	Breastwall (Stone Masonry)	There are voids (14" deep) at the bottom of the top half beneath stringers 3 and 6.
N	Backwall	
6	Bridge Seat (Stone and Concrete)	
5	Wingwalls (Stone Masonry)	North: Large void (54" wide x 24" high x 24" deep) due to missing stones along the base adjacent to the breastwall (monitor) (Photo 12-11). An area (24" high x 36" wide) of stones has shifted outward towards the north up to 1".
N	Embankment / Slope Protection	
6	Others (Stone Masonry Retaining Wall in Front of Abutment)	

Additional Remarks:

ABUTMENT East

RATING	COMPONENT	REMARKS
6	Breastwall (Stone Masonry)	
N	Backwall	
6	Bridge Seat (Stone and Concrete)	
7	Wingwalls (Stone Masonry)	
6	Embankment / Slope Protection	
6	Others (Stone Masonry Retaining Wall in Front of Abutment)	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

BENT 1 (West)

RATING	COMPONENT	REMARKS
5	Bent (Steel Angles with Lacing Bars)	Severe rust with up to 100% section loss to the north end of the bottom angle (14" long).
N	Cap	
5	Posts (2) (Steel Columns)	General: Light to moderate localized painted over rust areas. North: The east flange is bent up to 3/4" to the south and the northeast leg exhibits local buckling (1/2" over 8") 6' from the bottom of the column (no change since the previous inspection). The west flange is bent up to 3/4" to the south 3' from the bottom (no change since the previous inspection). The west vertical gusset plate exhibits local buckling (1/2"). Localized areas of 1/8" section loss to the vertical gusset plates.
6	Foundation (Concrete)	
5	Cross Bracing (Steel)	Painted over moderate to severe rust with up to 100% section loss to the outside angle of the brace near the center gusset plate. Painted over 1/8" deep pitting throughout.
7	Horizontal Bracing (Steel)	
N	Longitudinal Bracing	
N	Girts	

Additional Remarks:

Structure No.: 1850-160 Route: 6118 Cycle No.: 12
Name: Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Insp. Date: 8/27/2008

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

BENT 2 (East)

RATING	COMPONENT	REMARKS
6	Bent (Steel Angles with Lacing Bars)	
N	Cap	
6	Posts (2) (Steel Columns)	
6	Foundation (Concrete)	
5	Cross Bracing (Steel)	Painted over moderate to severe rust throughout with a few areas of 100% section loss within 5' from the center gusset plate. The center vertical bracing and bottom gusset plate (east leg) exhibits painted over 1/8" deep pitting and localized areas of 100% section loss.
7	Horizontal Bracing (Steel)	
N	Longitudinal Bracing	
N	Girts	

Additional Remarks:

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

HIGHWAY SAFETY

Coding of SI&A Item 36: **0000**
1: Good
0: Not Good
N: Not Applicable

RATING		COMPONENT	REMARKS
0		Bridge Railing	1'-11" high nested W-beam guide rail with steel posts (6' post spacing) and no spacer blocks. Due to the substandard height and post spacing and the lack of spacer blocks.
0	0	Transition to Bridge Railing	2'-0" high W-beam guide rail with steel posts (6' post spacing) and spacer blocks. Due to the substandard height and spacer blocks at all four corners.
	1	Curb / Sidewalk Terminations	The curbs are continuous at all four corners and there are no sidewalks on the structure.
0		Approach Guide Rails	2'-0" high W-beam guide rail with steel posts (6' post spacing) and spacer blocks. Northeast and Southeast: Continuous. Northwest and Southwest: 50 LF. Due to the substandard height and spacer blocks at all four corners and the length at the northwest and southwest corners.
0		Approach Guide Rail End Terminals	Northeast and Southeast: Continuous with BCT. Northwest and Southwest: BCT. Due to the substandard end terminal at the northwest and southwest corners.

DECK GEOMETRY

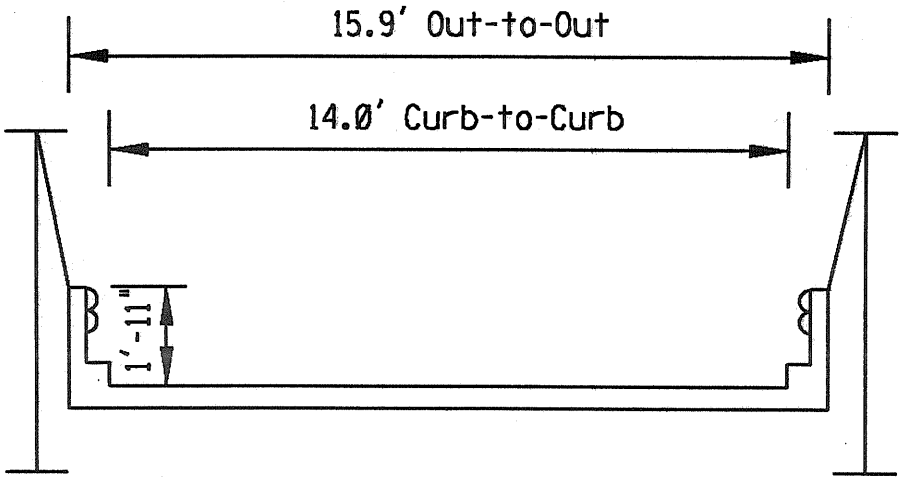
SI&A Item 68 Rating: **2**

COMPONENT	REMARKS
Bridge Cross Section	The approach roadway widths are wider than the structure roadway width (see roadway cross section on Page 12-45).
Adequacy of Lane / Shoulder Widths	One Lane; Two-way Traffic (Table 2B) ADT = 880 (2008) Curb-to-Curb = 14.0'
Vertical Clearance over Deck	Unlimited.

*Posting for Load / Speed / Clearance Restrictions (Include a Photo)	The structure is posted for '10 Tons', '16 Tons', and '20 Tons' for the Type 3, 3S2, and 3-3 trucks respectively at the northeast and southwest corners of the structure. There is a 'One Lane Bridge' and 'Reduce Speed' sign at both approaches (Photo 12-12).

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

DECK CROSS SECTION



ROADWAY CROSS SECTION (LOOKING EAST)

SCALE: NTS

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

CLEARANCES

FEATURE ON STRUCTURE: Totowa Spur (Norfolk Southern) SI&A SHEET 1

Minimum Vertical Underclearance (SI&A Item 54)	21'-2" (north or south truss to the top of either rail of the west track).
Lateral Right (SI&A Item 55)	6.2' (west face of the north column pedestal of the east pier bent to the centerline of the east track).
Lateral Left (SI&A Item 56)	N/A
Total Horizontal Clearance (SI&A Item 47)	N/A

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

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

WORK DONE HISTORICAL DATA

CYCLE NO.	YEAR	WORK DONE SUMMARY
12	2008	The stone masonry breastwall of both abutments and the northwest wingwall have been repointed and there are concrete repairs to the concrete cap of the east abutment stone masonry retaining wall (Photo 12-4). The bottom cross bracing of the east pier bent has been replaced and the horizontal steel bracing of both pier bents has been replaced. Several of the superstructure and substructure elements have painted.
11	2006	New advanced weight limit posting 1/2 mile west of structure. New corrected advance weight limit posting 1/2 mile east of structure. New cautionary signs 'Yield To Oncoming Traffic', 'Hill Blocks View', and '15 MPH' posting at both approaches.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

PRIORITY REPAIRS

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

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

PDF Filename(s):

1850160_20080827cy12_PR2_01.pdf
1850160_20080827cy12_PR2_02.pdf

PICKERING, CORTS & SUMMERSON, INC.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS

August 29, 2008

Mr. James C. Lane, P.E., Manager
Structural Evaluation
New Jersey Department of Transportation
P.O. Box 615
Trenton, NJ 08625

Attention: Mr. Ayodele Oshilaja
Project Manager

Re: Priority 2 Repair Notification Letter
13 On-System and 1 Off-System
State Owned Bridges, Group RC8A
BR-NBIS (749) and BR-Z-NBIS (750)
Bridge No. 1850-160 (Mile Point 0.00)
Camp Meeting Avenue (CR 602) over
Trenton Line (CSX)

Dear Mr. Oshilaja:

Under the terms of our contract with the New Jersey Department of Transportation, we have recently completed the field inspection for the above referenced structure. The bridge is a three span, simply supported, steel pony truss structure. The structure was built in 1889 and carries an estimated ADT of 880 (2008).

Condition — There is large hole to the bituminous concrete wearing surface at the south side of the east (4" diameter x 7" deep) and west (12" diameter x 24" deep) approach roadways.

Recommendation — Patch the hole to the wearing surface of both approach roadways with bituminous concrete.

If you have any questions or require any additional information, please do not hesitate to contact Ms. Doutsen Hettema or myself in our West Trenton, New Jersey office.

Very truly yours,
PICKERING, CORTS & SUMMERSON, INC.

John C. Wilhelm

John C. Wilhelm P.E.
Bridge Inspection Division Manager

JCW/HDH/njo
cc: Bridge File
Project File
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www.pcs-inc.biz

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	8/27/2008

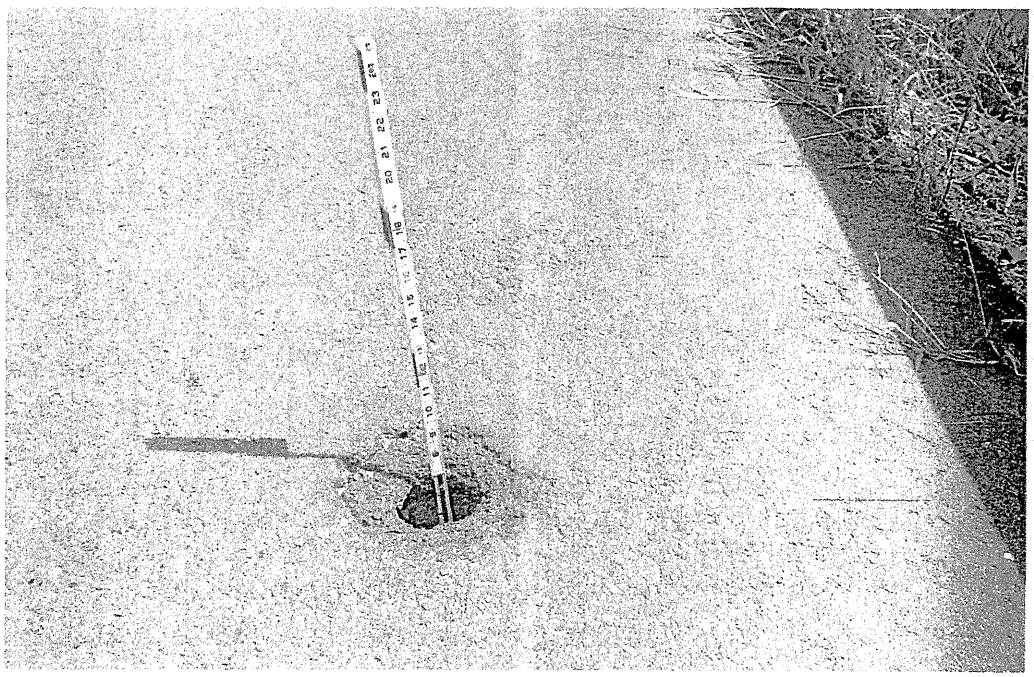


Photo No: 01

Location:	East approach roadway, looking east.
Description:	Large hole (4" diameter x 7" deep) to the bituminous concrete wearing surface.

Photo No: 02

Location:	West approach roadway, looking east.
Description:	Large hole (12" diameter x 24" deep) to the bituminous concrete wearing surface.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Michael Davis, Manager
Bureau of Engineering Maintenance

FROM: James Lane, Manager
Structural Evaluation

DATE: September 11, 2008

PHONE: 530-3572

SUBJECT: Priority II Repair
Structure No. 1850-160
Camp Meeting Avenue (CR 602) over Trenton Line (CSX)
Township of Montgomery, Somerset County RR MP 0.00

During the routine inspection of the above referenced structure by our Consultant, Pickering, Corts & Summerson, Inc., the following observations were made:

There is a large hole in the bituminous concrete wearing surface at the south side of the east (4" diameter x 7" deep) and west (12" diameter x 24" deep) approach roadways (see attached photos).

We recommend patching the holes in the wearing surface of both approach roadways with bituminous concrete as a Priority II repair.

Please advise this office when the recommended repairs are completed so that we can keep our records up to date.

If you have any questions, please contact Ayodele Oshilaja, Project Engineer of this office at 530-3814.

JL/NM: nm

c: Richard W. Dunne
Richard M. Shaw
Ayodele Oshilaja
John C. Wilhelm - Pickering, Corts & Summerson
Bridge File

PICKERING, CORTS & SUMMERSON, INC.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS

August 11, 2009

Manager
Structural Evaluation
New Jersey Department of Transportation
P.O. Box 615
Trenton, NJ 08625

Attention: Mr. Ayodele Oshilaja
Project Manager

Re: Priority 2 Repair Notification Letter
13 On-System and 1 Off-System
State Owned Bridges, Group RC8A
BR-NBIS (749) and BR-Z-NBIS (750)
Bridge No. 1850-160 (Mile Point 0.00)
Camp Meeting Avenue (CR 602) over
Trenton Line (CSX)

Dear Mr. Oshilaja:

Under the terms of our contract with the New Jersey Department of Transportation, we have recently completed the field inspection for the above referenced structure. The bridge is a three span, simply supported, steel pony truss structure. The structure was built in 1889 and carries an estimated ADT of 880 (2008). The structure is posted for '10 Tons', '16 Tons', and '20 Tons' (note that the posting is frequently ignored).

Condition

Stringer 4 (from the south) in span 1 (from the west) exhibits cleaned and painted section loss with an area of 100% section loss (9" long x 1" high) along the bottom of the web beginning 6" from the face of the west abutment. The remaining bottom 3" of the web exhibits 3/16" section loss. The bottom flange exhibits cleaned and painted section loss with 1/16" remaining section to 100% section loss 12" from the centerline of the west abutment bearing and the top flange exhibits cleaned and painted section loss with 1/16" to 1/4" remaining section with areas of 100% section loss.

The north truss knee bracing at the second floorbeam from the east pier exhibits two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange. The south truss knee bracing at the first floorbeam from the east pier exhibits cleaned and painted section loss with an area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes directly above the top flange.

840 BEAR TAVERN ROAD • SUITE 307 • WEST TRENTON, NJ 08628 • TEL: 609.737.2033 • FAX: 609.737.7306
NEWTOWN, PA • WEST TRENTON, NJ • PLYMOUTH MEETING, PA • CENTER VALLEY, PA
www.pcs-civil.com
90th Anniversary 1918-2008

Recommendation Restore the stringer to the original section by bolting two steel channels over the deteriorated area and the knee bracing to the original section by bolting two steel plates over the deteriorated area.

If you have any questions or require any additional information, please do not hesitate to contact Ms. Doutsen Hettema or myself in our West Trenton, New Jersey office.

Very truly yours,
PICKERING, CORTS & SUMMERSON, INC.

John C. Wilhelm P.E.
Bridge Inspection Division Manager

JCW/HDH/njo
cc: Bridge File
Project File
K:\NJ\Current Cycle\14 Orphan Group RC8A (2008)\Bridge Folders\1850160\1850160_20080827cy12_PR2_02.doc

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	7/30/2009

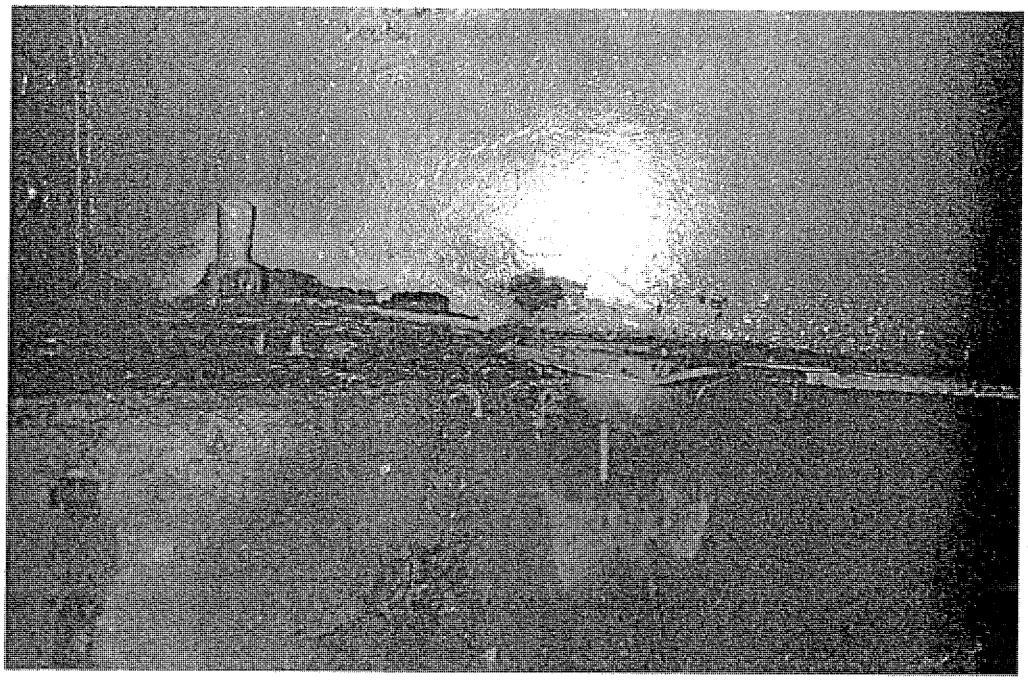


Photo No: 01

Location:	Stringer 4 (from the south), span 1 (from the west), looking north.
Description:	Severe rust with 100% section loss (9" long x 1" high) along the bottom of the web beginning 6" from the face of the west abutment.

Photo No: 02

Location:	Stringer 4 (from the south), span 1 (from the west), looking west.
Description:	Severe rust with 1/16" remaining section to 100% section loss to the bottom flange located 12" from the centerline of the west abutment bearing.

Structure No.:	1850-160	Route:	6118	Cycle No.:	12
Name:	Camp Meeting Avenue (CR 602) over Trenton Line (CSX)			Insp. Date:	7/30/2009

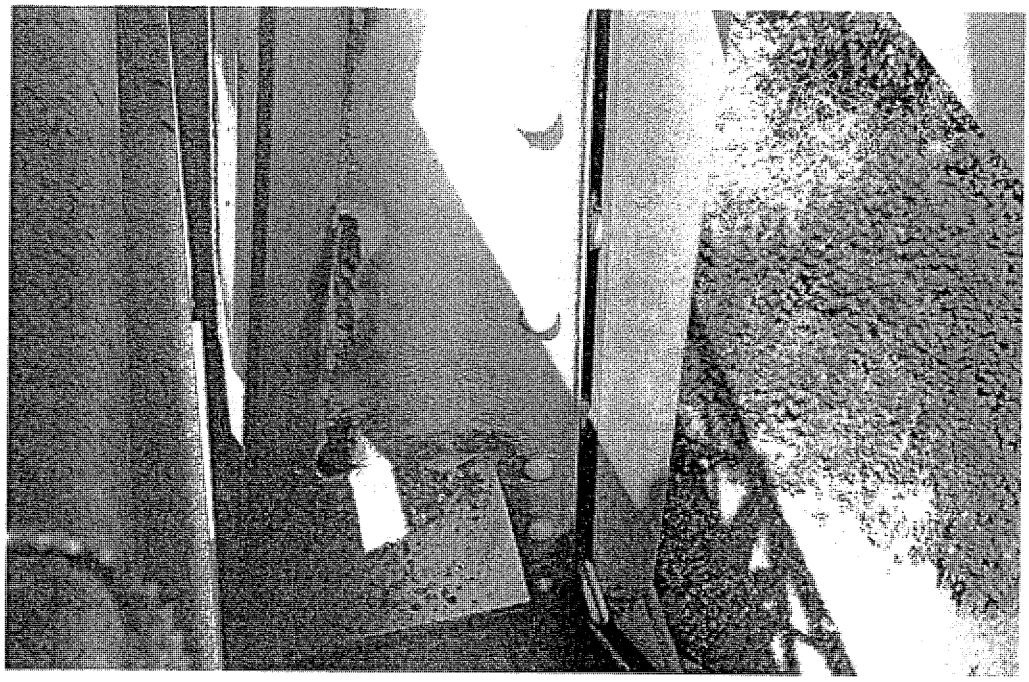


Photo No: 03

Location:	North truss at the second floorbeam from the east pier, span 2 from the west, looking west.
Description:	Severe rust with two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange.

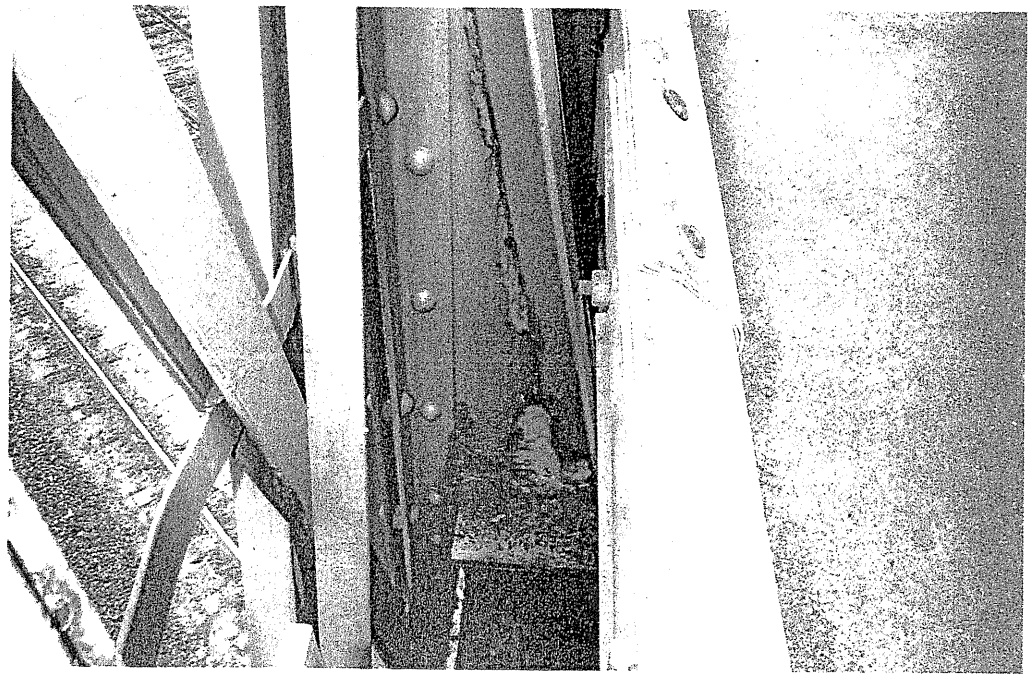
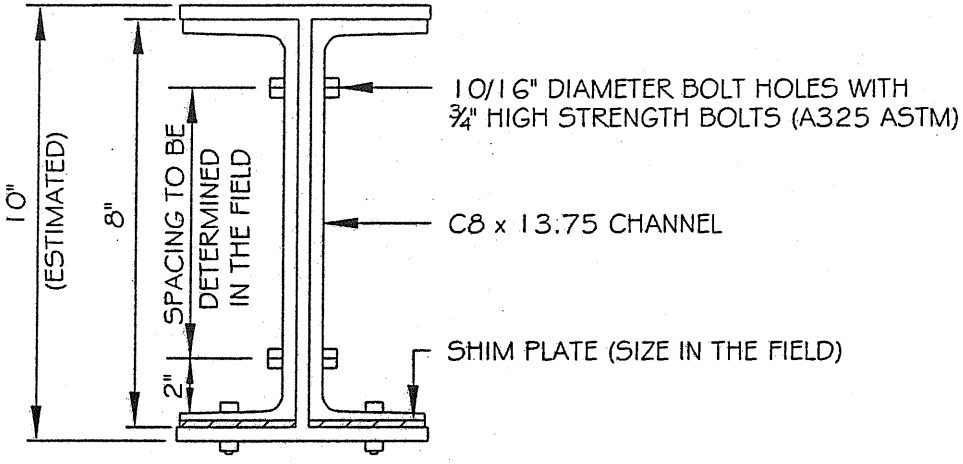


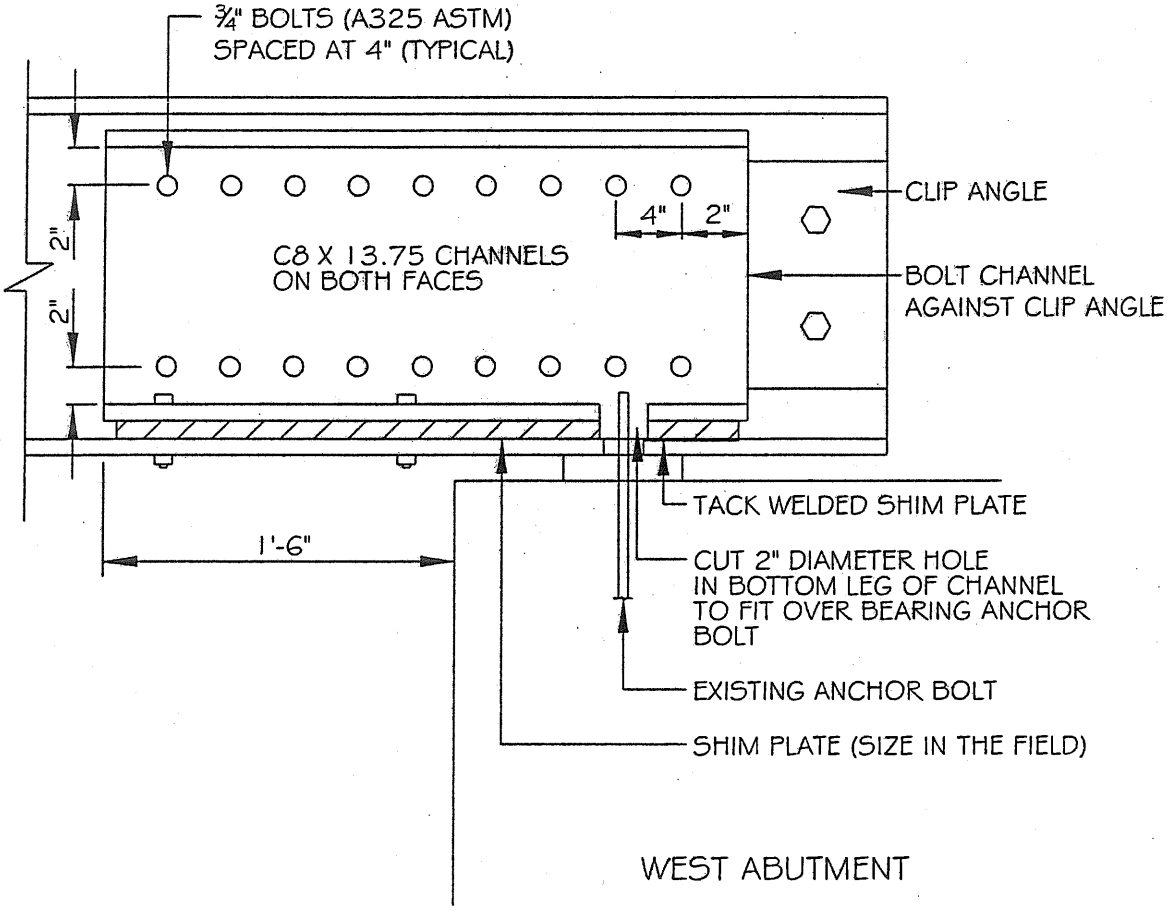
Photo No: 04

Location:	South truss at the first floorbeam from the east pier, span 2 from the west, looking west.
Description:	Area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes directly above the top flange.

SUBJECT:
Structure No. 1850-160
Camp Meeting Avenue (CR 602) over Trenton Line (CSX)
Montgomery Township, Somerset County

SHEET NO: 5 of 6
JOB NO: 880061
BY: CV DATE: 8/3/09
CHK: JCW DATE: 8/4/09

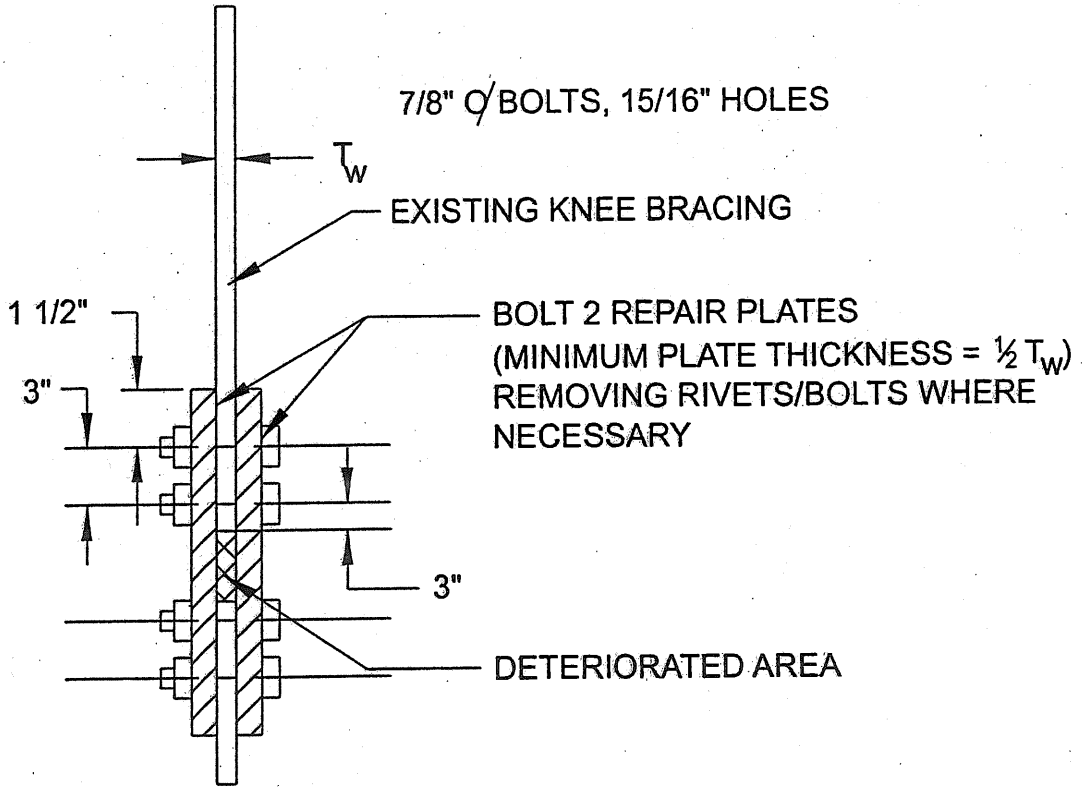




This sketch is a conceptual repair scheme for the defect described in the priority letter. It is provided for information only and not intended to take the place of a detailed designed repair and specifications.

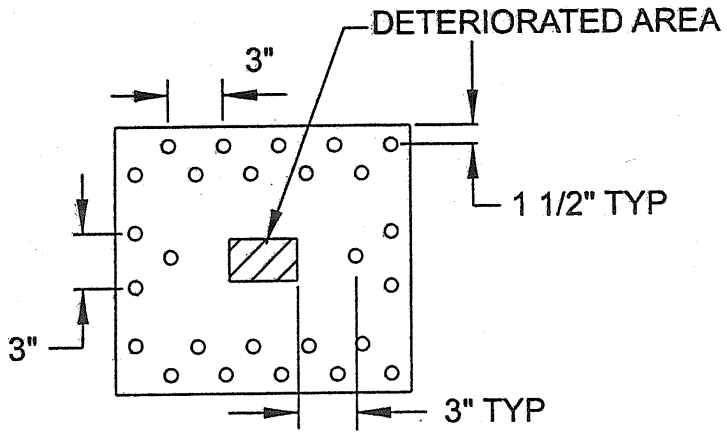
PICKER ;, CORTS & SUMMERSON, INC.

	SUBJECT: Structure No. 1850-160 Camp Meeting Avenue (CR 602) over Trenton Line (CSX) Montgomery Township, Somerset County	SHEET NO: 6 of 6 JOB NO: 880061 BY: CV DATE: 8/3/09 CHK: JCW DATE: 8/11/09



CROSS SECTION

N.T.S.



MATERIALS

FABRICATED STRUCTURAL STEEL = A36 ASTM

BOLTS = A325 ASTM

ELEVATION

N.T.S.

This sketch is a conceptual repair scheme for the defect described in the priority letter. It is provided for information only and not intended to take the place of a detailed designed repair and specifications.

PICKERI. , CORTS & SUMMERSON, INC.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

RECEIVED
AUG 21 2009

TO: Ahmad Ghorbani, Manager
Bureau of Engineering Maintenance

FROM: for Manager GTN
Structural Evaluation

DATE: 8/18/09

PHONE: 530-3572

SUBJECT: Priority II Repairs
Structure No. 1850-160
Camp Meeting Avenue (CR 602) over Trenton Line (CSX)
Township of Montgomery, Somerset County

During the routine inspection of the above referenced structure by our Consultant, Pickering, Corts & Summerson, Inc., the following observations were made:

Stringer 4 (from the south) in span 1 (from the west) exhibits cleaned and painted section loss with an area of 100% section loss (9" long x 1" high) along the bottom of the web beginning 6" from the face of the west abutment. The remaining bottom 3" of the web exhibits 3/16" section loss. The bottom flange exhibits cleaned and painted section loss with 1/16" remaining section to 100% section loss 12" from the centerline of the west abutment bearing and the top flange exhibits cleaned and painted section loss with 1/16" to 1/4" remaining section with areas of 100% section loss (Photos 1 & 2).

The north truss knee bracing at the second floorbeam from the east pier exhibits two areas of 100% section loss (7" high x 1" wide and 4" high x 1½" wide) directly above the top flange (Photo 3). The south truss knee bracing at the first floorbeam from the east pier exhibits cleaned and painted section loss with an area of severe rust (8" high x up to 3" wide) with 1/16" remaining section with two 1" diameter holes directly above the top flange (Photo 4). A copy of the consultant's letter is attached.

We recommend the following repairs:

Restore the stringer to the original section by bolting two steel channels over the deteriorated area and the knee bracing to the original section by bolting two steel plates over the deteriorated area
We consider this work to be a Priority I repair.

Please advise this office when the recommended repairs are completed so that we can keep our records up to date.

If you have any questions, please contact Ayodele Oshilaja, Project Engineer of this office at 530-3814.

SE/NM: nm

c: Richard W. Dunne
Richard M. Shaw
Ayodele Oshilaja
John C. Wilhelm - Pickering, Corts & Summerson
Bridge File

APPENDIX C –
Bridge Rehabilitation Report and SHPO Documentation

CAMP MEETING AVENUE OVER TRENTON LINE (CSX)
STRUCTURE NO. 1850-160
MONTGOMERY TOWNSHIP, SOMERSET COUNTY
PRELIMINARY DESIGN SUBMSISION REPORT

BRIDGE REHABILITATION REPORT AND SHPO DOCUMENTATION

Submitted to:

New Jersey Department of Transportation
1035 Parkway Avenue
Trenton, New Jersey 08625

Submitted by:

The Louis Berger Group, Inc.
30-A Vreeland Road
Florham Park, New Jersey 07932

October, 2006

TABLE OF CONTENTS

Page

A. INTRODUCTION 2

B. BACKGROUND RESEARCH 3

C. HISTORIC STRUCTURE DESIGN STUDY 4
Overview of Bridge Type and Design 4
Brief History of Trenton Line Construction and Operations 5
Responses to Questions Posed by Historical Consultation Process 6
Assessment of Character Defining Features 8

D. ENGINEERING ANALYSIS 9
1. Assessment of the Integrity of the Extant Structure 9
2. Inventory and Design Parameters 9
3. Bridge Building Technology 10
4. Original Character Defining Features 10

E. BRIDGE REPLACEMENT DESIGN CONSIDERATIONS 11
1. Horizontal Alignment 11
2. Vertical Alignment 11
3. Geotechnical Design Considerations 12
4. Superstructure Design Considerations 12

F. DESIGN RECOMMENDATIONS 13

BIBLIOGRAPHY 14

APPENDIX 15

- PHOTOS OF THE CAMP MEETING AVENUE BRIDGE
- NEW JERSEY HISTORIC BRIDGE DATA SHEET
- GEOTECHNICAL FOUNDATION ENGINEERING REPORT
- PROPOSED BRIDGE DRAWINGS

CAMP MEETING AVENUE OVER TRENTON LINE (CSX)
STRUCTURE NO. 1850-160
MONTGOMERY TOWNSHIP, SOMERSET COUNTY, NJ

PRELIMINARY DESIGN SUBMISSION REPORT
BRIDGE REHABILITATION REPORT AND SHPO DOCUMENTATION

A. INTRODUCTION

This project is a part of the Department's statewide program to rehabilitate twenty seven (27) structurally deficient bridges of an "orphan" bridge status, that carry local roads over a railroad.

Camp Meeting Avenue Bridge was evaluated last in June 2004 and its overall condition was rated critical and structurally evaluated as "deficient and functionally obsolete, requiring high-priority replacement". The appraisal ratings for structural evaluation, deck geometry and approach roadway alignment indicate a Sufficiency Ratio of 6.5 and according to the Federal Coding Guidelines for bridge evaluation, the bridge is "basically intolerable requiring high priority of corrective action or replacement." Subsequent inspections revealed continued deterioration at an accelerated rate, that prompted the Department to prioritize rehabilitation of this structure by its complete replacement.

Since the age of the bridge is more than 100 years, it may be of historic significance. As such the Department decided also to gather historical information pertaining to the original design and construction of the bridge, analyze such data and present it to the State Historic Preservation Officer (SHPO).

Therefore this report combines historic design study, engineering analysis and design recommendations that, upon the concurrence by the SHPO and Department will be used to prepare final design and contract documents for the replacement of the Camp Meeting Avenue Bridge.

B. BACKGROUND RESEARCH

The purpose of this task is to gather historical information pertaining to the original design and construction of the Camp Meeting Avenue Bridge and analyze this information in order to identify the character defining features that could make it a contributing resource to the significance of the Port Reading Railroad and Blawenburg Historic District. If character defining features are identified, they will be considered by the engineering design team for possible replication or emulation using both historic and modern materials.

Additional objectives are to understand and explain the overall design rationale for the bridge and answer several specific questions posed by the historical consultation process that are pertinent to such an understanding:

(1) Why was the bridge built with a Howe pony steel truss?
(2) How is the design of the bridge related to the physical setting?
(3) How is the design of the bridge related to railroad operating requirements?
(4) How was the design of the bridge related to the "evolving engineering technology" developed?
(5) Was the practice of steel truss in bridge construction as represented by Camp Meeting Avenue Bridge used elsewhere by the P&R or other railroads?

Answers and discussion to each of the specific questions posed above, with reference to the source of the information is presented in Section C.

Research for gathering railroad engineering literature was conducted at the libraries and websites, information on historic railroad lines in New Jersey provided by the NJ Historic Preservation Office, and notes and photographs of similar bridges along the Trenton Line were obtained from a field inspection of those structures.

C. HISTORIC STRUCTURE DESIGN STUDY

Overview of Bridge Type and Design

The skewed three-span rivet-connected Howe pony truss bridge is supported on ashlar abutments and metal bents consisting of toe-out angles. The lateral bracing on the bents was added in 1914. A Howe truss works on the opposite principle of the more common Pratt truss. The verticals are in tension, and the diagonals and counters are the compression members. The chords, verticals and diagonals are composed of toe-out angles while the counters are dimensioned plate. The original floor beams, which have been replaced at least twice, were built up. The floor beams are perpendicular to the roadway, not the abutments. The most unusual design detail of the trusses is the use of a small panel at either end of each truss which allowed for equal sizing of each pair of skewed trusses. The bridge has been strengthened with welded knee braces on the inside of the trusses and plate welded to the top chord. The stringers and flooring were originally wood, but they have been replaced with steel stringers and an asphalt wearing surface. A modern beam guide rail protects the inner face of the trusses.

William Howe (1803-52) of Massachusetts was granted a truss patent in 1840 that used metal rods as the vertical members of what was otherwise a simple timber parallel-chord, cross-braced truss. The configuration used easy-to-erect and readily prefabricated components that could be assembled on site and adjusted via threaded connections at the rod ends. Little skilled labor was involved in assembling and erecting this truss type, and it became an immediate success.

The Camp Meeting Avenue Howe pony truss bridge was designed by the Philadelphia & Reading Railroad Chief Engineer's Office in 1889. In addition to being one of the few documented examples of a Howe pony truss bridge in the state, it ranks as the oldest railroad-related span in Somerset County. Why a Howe truss was used is not documented, but it may relate to the decision to reuse the existing substructure which divided the bridge into three spans. The use of the small panels at the end of each truss in order to keep each pair of trusses the same length is also an unusual design detail. In 1914 the bracing between the bent posts was added as were the concrete piers, and in 1982 most of the floor beams and stringers were replaced.

Lowest initial project cost was the primary concern with new railroad bridge construction. A dramatic drop in price of steel in 1870's made steel bridges including plate girders, trusses and arches very popular choice. Generally, only bridges in urban areas were given stylized architectural detailing at extra cost, and then, on a limited basis. Maintenance cost was seldom a design consideration for steel railroad bridges; in the case of railroad bridge replacements and new overhead highway bridges for grade crossing elimination, such as the Camp Meeting Avenue Bridge, the most important consideration was limiting project costs resulting from interruption of train service during construction. In flat open areas, temporary tracks could be inexpensively laid on rented land to bypass the construction site. But for the most part, the railroads developed astonishingly fast and innovative methods of bridge construction without diverting the traffic.

The trusses were shop-built by steel bridge fabricators and delivered to the site on flat rail cars and then lifted and placed on the piers and abutments by one or more derrick cars. Wooden planks were used as deck over uncommon built-up steel-beam floor system. Apparently the whole structure system was chosen to expedite the construction by minimizing the field work. Built-up floor beams connected to the trusses, wooden stringers placed on floor beams and wooden planks over stringers, without any need of formwork or cast-in-place concrete. Same is true for the two built-up bents over masonry foundations.

Brief history of Trenton Line construction and operation

The National Railway or National Air Line Railroad was a planned railroad between New York City and Washington, DC around 1870. Part of it was eventually built from New York to Philadelphia by the Delaware and Bound Brook Railroad and the Delaware River Branch of the North Pennsylvania Railroad, leased by the Philadelphia and Reading Railway in 1879. The line was intended to provide an alternate to the various monopolies that existed along the route, specifically the United New Jersey Railroad and Canal Companies and their Camden and Amboy Railroad, and as such underwent a long struggle to be built.

The first two sections were chartered in New Jersey as the Hamilton Land Improvement Company and Millstone and Trenton Railroad, forming half of the New Jersey route. The Millstone and Trenton Railroad was authorized to build a line from Trenton northeast to Millstone, and the Hamilton Land Improvement Company could build six miles anywhere in the state, which was enough to bridge the gap from Millstone to the Central Railroad of New Jersey at Bound Brook.

The Camp Meeting Avenue bridge was constructed for the Philadelphia and Reading Railroad at Skillman, site of the state's epileptic village. A non-extant station was located to the southwest of the bridge. The rail right-of-way was chartered in 1870 and built as the Delaware & Bound Brook Railroad by the Central Railroad of New Jersey in 1873-1875 as an alternative double-track route between New York and Philadelphia. The line was acquired by the Reading Railroad, and was used for both freight and passenger service until the 1970s when the line went bankrupt. The right-of-way passed to Conrail which found it useful for freight service displaced from Amtrak's Northeast Corridor which is the old Camden & Amboy (Pennsylvania Railroad after 1873) route. The Skillman Road overpass is also one of the oldest grade crossing elimination bridges in the region. This is at least the second bridge at the crossing.

Conrail was formed on April 1, 1976 as a federally-funded takeover of the major railroad companies in the Northeast, all of which were financially failing. Against all predictions, Conrail managed to turn a profit, and on August 22, 1998, most of Conrail's track was split between two newly-formed Conrail subsidiary limited liability companies: 42% to New York Central Lines, to be operated by CSX, and 58% to Pennsylvania Lines, to be operated by Norfolk Southern.

Responses to Questions Posed by Historical Consultation Process

(1) Why is the bridge built with a steel truss?

The reason for this practice is simply economy. Achieving the best economy and therefore the most efficient design for a given set of site conditions and constraints often requires engineers to analyze the cost-effectiveness of various materials and methods of construction in combination with one-another. A dramatic drop in price of steel in 1870's made steel bridges including plate girders, trusses and arches very popular choice.

Erection of bridges without falsework has always been a goal of bridge builders. Falsework requires expensive materials and labor and is prone to damage or destruction by storms. The development of the thru truss bridge was driven by the desire to eliminate the need for falsework. The length of the main span of the Bridge, 41.5 feet, did not require the truss bridge, which is usually used for much bigger spans, but the desire to reuse the then existing substructures determined the three span configuration.

(2) How is the design of the bridge related to the physical setting?

The physical setting, or site constraints, except in unusual cases, is the primary factor governing the design of a bridge. Site considerations include both the natural physical characteristics of the site such as topography and subsurface conditions, and manmade features such as roads, utilities and type of development present at or adjacent to the site.

The combination of the required height over the tracks and the need to limit the height to make the side road connections without overly steep approach grades, dictated a bridge as flat and shallow as possible. These constraints eliminated deck spans and arches from consideration for the main span,

A well known engineering textbook from the period states:

> "The simple slab is used for spans from 12 to 30 feet, the through girder for spans from 30 to 55 feet and the deck girder for spans from 40 to 60 feet. The deck girder usually proves more economical than the through girder whenever there is sufficient headroom to permit the use of girders below the floor" (Hool and Kinne 1924:397).
>
> "The fact that the deck girder requires a deeper floor system, resulting in the necessity of raising the grade line, is often a determining factor in choosing the type to be used" (Hool and Kinne 1924:414).

For the Camp Meeting Avenue Bridge, the right-of-way was developed by the Reading Railroad in the mid-1870s. It is located in a sparsely developed rural portion of the county in an area known as Skillman, location of the state's "epileptic village." A station was located on the south side of the bridge. When it was removed is not known but it is depicted on a 1955 county map.

(3) How is the design of the bridge related to railroad operating requirements?

As previously discussed, the design of the bridge is directly related to the operating requirements of the railroad in that the steel truss spans over the tracks were utilized intentionally to avoid the expensive interruption of train traffic. Hirschthal addresses this issue:

> "The problem presented by the necessity of replacing bridges on a railroad is one whose solution requires a design or plan contemplating a minimum disturbance of railroad traffic. Until recent years, this consideration made it imperative that steel bridges be replaced by new structures of a similar material, because of the rapidity and facility of erection as compared with concrete bridges cast in place" (Hirschthal 1926:527).
>
> "In the design of railroad structures replacing those in use the main consideration is to cause a minimum disturbance of traffic. This factor frequently far out-balances economy in the design of the structure itself, for the differences in the cost of the trackwork or temporary construction for two different types of design may constitute a large percentage of the total cost of construction" (Hirschthal 1923:384).
>
> "Frequently the problem of grade crossing elimination involves the same conditions as does that of replacement, in so far as it precludes any disturbance of railroad traffic. The solution, in the event of concrete design in such situations, is precast members similar to the design for bridge replacement" (Hirschthal 1926:527).
>
> "In replacing [overhead highway bridges] by means of precast units, it is possible to maintain traffic both on the railroad and the highway except for the short time necessary to set the units on the abutments. At the same time the use of falsework is unnecessary" (Hirschthal 1926:588).

In a discussion of grade separation projects on lines with heavy traffic, G.H. Wilsey, Engineer for the railroad construction contracting firm of Foley Brothers of New York City states: "of major importance - the maintenance of traffic on both railroad and highway... can change a simple job into a tedious one which may take three or four times longer than would the same amount of work on a new location" (Wilsey 1933:142).

(4) How is the design of the bridge related to the "evolving engineering technology"?

The Camp Meeting Avenue Bridge represents "evolving engineering technology" and is representative of the economical and innovative construction technique utilized for quick and un-interruptive of railroad schedules and to eliminate need for traffic detours. William Howe based his design on the limited stress analysis information available at that time, the first designer to do so since previous trusses were inadaptable to analysis (Edwards 1976:156-157). The Howe truss used metal vertical tension rods and timber diagonal compression members. This joint use of metal and wood materials for bridge components, called a "combination truss," was a significant transitional feature in the eventual development of an all-metal truss. The popularity of the Howe truss resulted, in part, from its comparatively simple erection. The Howe truss design eliminated the need for skilled carpenters to notch and peg wooden jointed bridges by using threaded iron rods for verticals and simple junction boxes as connections (Kemp and Anderson 1987:19). As bridge historian Eric DeLony wrote, "The Howe truss may be the closest that wooden-bridge design ever came to perfection. For simplicity of construction, rapidity of erection, and ease of replacing parts, it stands without rival" (DeLony 1994:11).

The absence of architectural stylization of the components indicates that no concern for aesthetics was warranted. Maintenance cost was seldom a design consideration for steel railroad bridges; in the case of railroad bridge replacements and new overhead highway bridges for grade crossing elimination, such as the Camp Meeting Avenue Bridge, the most important consideration was limiting project costs resulting from interruption of train service during construction. In flat open areas, temporary tracks could be

inexpensively laid on rented land to bypass the construction site. But for the most part, the railroads developed astonishingly fast and innovative methods of bridge construction without diverting the traffic.

The production method of truss bridges is the result of advances made throughout all the sectors of industry during the Industrial Revolution. This includes development of new materials: cast iron, wrought iron, steel; methods of production of structural elements; modes of transportation of bridge elements throughout the country by wagon, boat, railroad, and truck; and finally methods of assembly: pin connected, riveted, shop welded, and field welded.

(5) *Was the practice of using steel truss in bridge construction as represented by Camp Meeting Avenue Bridge used elsewhere by the P&R or other railroads?*

During the 1840s iron bridge building in America made impressive strides. In 1845 Richard Osborne, a London-born Irish-emigrant engineer working for the Philadelphia & Reading Railroad, built the country's first all-iron railroad bridge. It was known as the Manayunk Bridge, after the Philadelphia neighborhood in which it was built, and consisted of three lines of Howe trussing reaching thirty-four feet across a small stream. A single line of that trussing was donated to the Smithsonian Institution in 1911; today it serves as part of the exhibit of the *John Bull*, an early steam locomotive.

A period of rapid experimentation with the new material ensued. In 1847 Frederick Harbach built an iron Howe truss on the Western Railroad (later the Boston & Albany) near Pittsfield, Massachusetts. Pennsylvania Railroad bridge across the Susquehanna at Rockville, was finished in 1849. Each span of the 23-span, 3670-foot-long bridge was a wooden Howe truss with iron ties combined with arches, and either the truss or the arch was capable of supporting the whole load by itself. In 1850's Amasa Stone Howe's brother-in-law became President of the Lake Shore and Michigan Southern Railroad and the city's first millionaire. Stone, who, with some justification considered himself a bridge designer, and whose company had previously constructed at least 20 bridges using Howe truss, sketched out a new bridge. Basically it was old Howe truss with years of success, but all of the components of Stone's new bridge design were to be made of wrought-iron.

Assessment of Character Defining Features

The Camp Meeting Avenue over Trenton Line is listed as a historical structure in Blawenburg Historic District (NR Reference - #88000632. The Camp Meeting Avenue Bridge is eligible for the Register of Historic Places per SHPO Opinion on 10/31/2005.

On the basis of a research conducted from a historical engineering perspective, the Camp Meeting Avenue Bridge does possess characteristics which distinguish it someway, but the type of construction was common at the time. The first bridge constructed using Howe truss was in 1845 and the truss type was very common in covered bridges. About 15% of extant covered bridges use Howe truss system.

The bridge taken as a whole could be considered to represent a type of highway overpass bridge used by the railroads for grade elimination projects undertaken during the late 19th century. Specifically, it is a good example of a Howe truss application with a modification using small spacer panels added to each truss to compensate for the skew.

D. ENGINEERING ANALYSIS

1. Assessment of the Integrity of the Extant Structure

The subject structure, built in 1889, has gone through major repairs and rehabilitations in 1914, 1922 and 1950. The bridge is in critical condition and considered structurally deficient due to poor condition of the superstructure and substructure, and low inventory rating. HS-20 Truck type inventory rating is 6 Tons while according to Department's Recording and Coding Guidelines, minimum acceptable rating is 14 Tons for the ADT of more than 500. The bridge is currently load posted for 10 tons for the Type 3 truck. The truss and stringers show extensive section losses, collision damages and bent members. The bridge is also functionally obsolete due to substandard deck geometry and lateral and vertical underclearances. It was recommended that this structurally deficient bridge be programmed for replacement.

The existing bridge has an overall length of 104' and an overall width of 15.9'. It has one main center span over the tracks and two approach spans. All three spans consist of rivet-connected skewed Howe pony truss with counters supported on ashlar abutments and steel bents. Small spacer panels in the truss were added to compensate for the skew. The floor beams are perpendicular to the road. All, except a few of the built-up floor beams and the flooring system have been replaced but the original 1889 truss components are still the main load bearing components.

The steel built-up bent type piers are supported on concrete pedestals. These piers have substandard lateral clearance from the railroad tracks and exhibit extensive section loss and impact damages.

Also, the Cycle No. 10 Report, dated June 11, 2004 rated the overall bridge condition as "critical," and structurally evaluated the bridge as "deficient and functionally obsolete, requiring high-priority replacement." Subsequent inspections revealed continued deterioration. The bridge is structurally deficient due to low ratings at both, inventory and operating levels.

The appraisal ratings for structural evaluation, deck geometry and approach roadway alignment indicate that according to the Federal Coding Guidelines for bridge evaluation, the bridge is "basically intolerable requiring high priority of corrective action or replacement."

Findings from previous inspection reports also indicate that the deck was in serious condition due to the extensive section loss of the load bearing steel members, impact damages, medium to large cracks and loss of pointing in the masonry of abutments.

To correct these deficiencies the existing structure must be widened and the loading capacity of existing members increased to raise structural ratings. However, the deck widening is impractical because of thru-truss type superstructure, since the trusses project above the deck. To increase the loading capacity of critical members is also impractical, since these have almost 100% section loss and impact damages at several locations.

The Bridge is posted as One Lane Bridge with "Yield to Oncoming Traffic" Signs, while the approach roadways are striped for two lane traffic with roadway pavement width of approximately 20.5 feet.

2. Inventory and Design Parameters

Camp Meeting Avenue presently functions as a two-lane rural road and is classified as a Rural Collector roadway. To benefit the safety of motorists, bicyclists and pedestrians, the bridge replacement project

will also include bridge widening and modifications to the approach roadway comprising minor change in vertical roadway geometry. The required minimum underclearance for bridges over non-electrified tracks is 23'- 0" and lateral clearance of 18'. Camp Meeting Avenue Bridge has substandard vertical as well as lateral clearances.

The proposed bridge will use steel truss framing system, similar to that of the existing, to replicate one of its character defining features. The steel bent piers will be removed to provide minimum lateral clearance for railroad operations. The proposed abutments will be located at 18' from the centerline of the tracks and offset from the existing abutments and a single span truss bridge may be constructed with a span of approximately 75 feet.

The proposed profile will be developed for the design speed of 30 MPH, provide smooth riding surface by eliminating the existing angle points and to minimize the structural depth of the bridge superstructure. The resulting vertical underclearance will maintain at least the existing 21'-2".

3. Bridge Building Technology

Lowest initial project cost was the primary concern with new railroad bridge construction. Maintenance cost was seldom a design consideration for steel railroad bridges; in the case of railroad bridge replacements and new overhead highway bridges for grade crossing elimination, such as the Camp Meeting Avenue Bridge, the most important consideration was limiting project costs resulting from interruption of train service during construction. In flat open areas, temporary tracks could be inexpensively laid on rented land to bypass the construction site. But for the most part, the railroads developed astonishingly fast and innovative methods of bridge construction without diverting the traffic.

The proposed trusses will be of the length and tonnage that will permit using modern high capacity erection cranes. Since there are no major constrains for the cranes working from the ground, this method will be the most practical and expeditious in view of current erection technology. The cranes may be placed on the both sides of the tracks for erecting trusses and floor beams. The trusses and beams may be transported to the bridge site via tracks or by trucks along the Camp Meeting Avenue.

4. Original Character Defining Features

The historical background research findings indicated that this structure was built with no intention to convey a historical importance as evident by its lack of aesthetic features. The original character defining features of the bridge are trusses and built-up bents. Due to lateral clearance requirements and site constraints, the geometrical features of the existing piers are not possible to duplicate. However, an attempt will be made to visually emulate the superstructure. The proposed truss elements could be of similar configuration and detailing as the existing truss, so that the original character is preserved.

E. BRIDGE REPLACEMENT DESIGN CONSIDERATIONS

1. Horizontal Alignment

The existing bridge provides a roadway width between the guide rails (curb-to-curb) of 14 feet. The width of approach pavement is 20.5 feet, striped for two lanes of 8.5 feet. The resulting condition is hazardous to the traffic, as it truly constricts traffic to one lane on the bridge. As the bridge is slated for replacement, a wider bridge should be constructed.

Matching the width of the approach pavement would still leave a substandard condition on the bridge. Therefore it is proposed to provide a lane width of 11 feet in each direction bordered with a nominal one-foot shoulder, rendering a curb-to-curb width on the bridge of 24 feet. As the proposed trusses will project above the roadway in a manner emulating the existing configuration, the guide rails will be designed to extend for the entire length of the bridge similar to the existing arrangement. The resulting wider pavement adjacent to the bridge will be then gradually transitioned to the existing roadway pavement.

2. Vertical Alignment

The profile of Camp Meeting Avenue constitutes a crest vertical profile at the crossing over the railroad tracks. Approximate existing grades, based on the topographic survey, from east to west are +4.4%, +5.9%, +0.2% (bridge), -4.5% and -2.9%. It appears that the profile does not follow a vertical curve; rather it has angle points at the bridge with an unsafe stopping sight distance for the posted speed of 30 MPH resulting in uncomfortable driving.

Since the bridge will be replaced and the roadway widened, it is desirable to also improve the vertical profile.

The most desirable improvement would call for raising the vertical underclearance over the tracks to 23 feet and provide a vertical crest curve for a design speed of 35 MPH, since the posted speed just west of the bridge is 30 MPH.

Such an improvement would result in extensive roadwork extending approximately 400 feet on each side of the bridge and in undesirable right-of-way impacts due to a raised profile. This undoubtedly would increase the construction cost and cause impacts beyond that contemplated by the Department for the rehabilitation program of the "orphan bridges".

Alternately, if the proposed vertical underclearance maintains at least the existing 21'-2" and the vertical crest curve is designed for a speed of 30 MPH, the resulting roadway work can be limited to a distance of 150' to 180' beyond the bridge limits.

Adopting this concept, no adverse impacts would ensue and construction cost would commensurate with the intent of the project. As a result, this latter improvement alternative will be recommended. Nevertheless, it will be also recommended to post the speed at the bridge to 25 MPH and keep the existing warning signs for reduced speed and "Yield to Oncoming Traffic".

3. Geotechnical Design Considerations

The existing abutments are of stone masonry, most likely gravity type construction. The foundation conditions and configuration are unknown. To determine soils conditions, a subsurface exploration program was developed and two soils borings were lowered from the roadway in the vicinity of the existing abutments. Details of the program with results and foundation recommendations are presented in the Geotechnical Foundation Engineering Report (see Appendix).

The borings identified similar soils conditions at both abutments. The soils above the level of the track bed consist of gravel fill, underlayed by layers of clayey silt transitioning to clayey siltstone. The strata below the track bed consist of weathered rock classified as claystone or silty claystone. Rock was cored to a depth of 20' to 25', yielding rock quality designation of very poor to poor.

The proposed structure will locate the abutments between the existing pier bents and abutments. The pier bents will be removed, however removing the abutments might be expensive and it is considered unnecessary, except for the top portion as necessary for roadway construction and grading. Constructing a new full height abutment might require foundations that most likely would conflict with existing footings and compromise stability of the existing abutments.

Since the contemplated superstructure will consist of two thru trusses, they can be conveniently supported by columns at each end, which in turn will be founded on drilled shafts installed from the track bed into the rock strata.

The recommended shaft diameter is 3 feet with the minimum depth of embedment of 16.5 feet. After removal of existing pier bents, the space between the tracks and existing abutments will be adequate for installing the shafts.

The column above the drilled shaft can be cast-in-place monolithically with abutment curtain wall and wingwalls to retain the fill that will be placed in the space between existing and proposed abutments. These walls will require a nominal footing only, as they will span horizontally between the columns and may be also anchored to the existing stone masonry.

4. Superstructure Design Considerations

A single span structure envisioned for this bridge replacement will have a span length of approximately 75 feet. An economical superstructure type in this case might be steel 'I' beam acting compositely with reinforced concrete slab, or precast prestressed box beams of adjacent or spread configuration with one course composite deck slab.

A construction depth of such system would be at least 48-inch which would exceed the existing construction depth between top of roadway and bottom of Howe truss by a minimum of 2 feet. Implementing the required structural depth would therefore necessitate raising of vertical profile, causing the undesirable impacts discussed above under Vertical Alignment.

If a thru-truss type superstructure is used, the effective construction depth can be as shallow as that in the existing bridge. Furthermore, based on the principles of context sensitive design, a steel thru-truss framing system, similar to the existing Howe pony truss, will replicate one of the original character defining features of the Camp Meeting Avenue Bridge.

F. DESIGN RECOMMENDATIONS

It is recommended to replace the Camp Meeting Avenue Bridge in its entirety with a single span structure on the same alignment. The roadway traffic will be detoured and a detour plan developed, but the railroad traffic under the bridge will be maintained and protected during reconstruction.

The new bridge will provide for 24-foot wide curb-to-curb roadway, striped for two 11-foot wide lanes and two 1-foot wide shoulders. The resulting bridge pavement width will be transitioned back to the existing 20.5-foot wide pavement.

The roadway approaches and bridge vertical alignment will be re-profiled to provide a vertical crest curve designed for a speed of 30 MPH with touch-down curves that will transition to the existing approach roadway grades. The bridge vertical underclearance will be at least 21'-2".

The bridge superstructure will consist of two thru-trusses with floor beams and stringers that will carry a cast-in-place concrete slab. The trusses will be prefabricated trusses by "Steadfast Bridges" or "Continental Bridge" or other equivalent system with the truss members of a similar configuration and visual appearance as the existing Howe pony trusses. Namely, the arrangement of diagonals and counters may be evaluated by using "Steadfast Bridges" Link Style Truss with "X" braces or a similar truss design.

It is further recommended to use four drilled shaft foundations that in turn will support four columns, one at each end of truss. The columns will be provided with cast-in-place curtain wall and wingwalls to constitute a bridge abutment.

The preliminary bridge and roadway plans included in the Appendix present the recommended scheme. The Construction cost for this scheme is estimated at $1,350,000.00.

BIBLIOGRAPHY:

Hool, George A and W. S. Kinne, Editors
1924 *Reinforced Concrete and Masonry Structures.* [First edition] McGraw-Hill Book Company, New York.

Hirschthal, Meyer
1926a What the D.L.&W. is Doing in Concrete Design. Part 1. *Railway Review,* October 7, pp. 527-531.

1926b What the D.L.&W. is Doing in Concrete Design. Part 2. *Railway Review,* October 16, pp. 587-591.

Vogel, J. L.
1933 Grade Separations for Railroads: Structural Design of Economic Types. *Civil Engineering*, March, pp. 140-142.

Edwards, Llewellyn
1976 The Evolution of Early American Bridges. *Reprinted, American Wooden Bridges, American Society of Civil Engineers.* Originally published 1933.

Delony, Eric
1994 The Golden Age Invention and Technology. *Fall:8-22.*

FHWA
2005 Report on Covered Bridges, *Report No. FHWA-HRT-04-098*

APPENDIX

PHOTOS OF THE
CAMP MEETING AVENUE BRIDGE

PHOTO- 1

DESCRIPTION:

Bridge Elevation, looking south.

PHOTO- 2

DESCRIPTION:

General underdeck view, looking west.

PHOTO- 3

DESCRIPTION:

Bridge Approach, looking east.

PHOTO- 4

DESCRIPTION:

Bridge Approach, looking west.

PHOTO- 5

DESCRIPTION:

East Abutment and Bent, looking east.

PHOTO- 6

DESCRIPTION:

West Abutment

PHOTO- 7

DESCRIPTION:

East Abutment:
Loss of mortar, cracked and settled masonry stones, especially under truss supports.

PHOTO- 8

DESCRIPTION:

Northwest Wingwall:
Loss of mortar and cracks in the masonry with loose stones.

PHOTO- 9

DESCRIPTION:

North Fascia Truss: Looking west.

PHOTO- 10

DESCRIPTION:

General condition of Bent members, excessive rust and loss of section.

NEW JERSEY HISTORIC BRIDGE DATA SHEET

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES
NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1850160 **CO** SOMERSET **OWNER** UNKNOWN **MILEPOINT**

NAME & FEATURE INTERSECTED CAMP MEETING ROAD OVER CONRAIL (N.Y BRANCH) **FACILITY** CAMP MEETING ROAD

TOWNSHIP MONTGOMERY TOWNSHIP

TYPE PONY TRUSS **DESIGN** HOWE **MATERIAL** Ferrous

 # SPANS 3 **LENGTH** 104 ft **WIDTH** 14 ft

CONSTRUCTION DT 1889 **ALTERATION DT** 1914 **SOURCE** CONRAIL RECORDS

DESIGNER/PATENT CHIEF ENG. OFF. P&R RR **BUILDER** UNKNOWN

SETTING / CONTEXT The narrow bridge carries one lane of traffic over 2 active tracks of ConRail's main freight line known as the New York Branch. The right-of-way was developed by the Reading Railroad in the mid-1870s. It is located in a sparsely developed rural portion of the county in an area known as Skillman, location of the state's "epileptic village." A station was located on the south side of the bridge. When it was removed is not known, but it is depicted on a 1955 county map.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** Yes

CONSULT STATUS Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The rivet-connected skewed 3-span Howe pony truss with counters overpass on ashlar abutments and 1914 steel bents is an example of an uncommon truss type. It is an unconventional design with small spacer panels added to each truss to compensate for the skew. The floor beams are perpendicular to the road. Even though all but a few of the built-up floor beams and the flooring system have been replaced, the 1889 bridge survives as a good example and unusual example of its type.

INFOR MATION

Bibliography:
Conrail Records.
NJDOT Plan File: 6118 (45.95).
Gibb, Hugh. "Brotherly Love - Philadelphia Style," Bulletin of the National Railway Historical Society, 39, No. 6, 1974, pp. 21-43.

Physical Description: The skewed three-span rivet-connected Howe pony truss bridge is supported on ashlar abutments and metal bents composed of toe-out angles. The lateral bracing on the bents was added in 1914. A Howe truss works on the opposite principle of the more common Pratt truss. The verticals are in tension, and the diagonals and counters are the compression members. The chords, verticals, and diagonals are composed of toe-out angles while the counters are dimensioned plate. The original floor beams, which have been replaced at least twice, were built up. The floor beams are perpendicular to the roadway, not the abutments. The most unusual design detail of the trusses is the use of a small panel at either end of each truss which allowed for equal sizing of each pair of skewed trusses. The bridge has been strengthened with welded knee braces on the inside of the trusses and plate welded to the top chord. The stringers and flooring were originally wood, but they have been replaced with steel stringers and an asphalt wearing surface. A modern beam guard rail protects the inner face of the trusses.

Historical and Technological Significance: The Howe pony truss bridge was designed by the Philadelphia & Reading Railroad Chief Engineer's Office in 1889. In addition to being one of the few documented example of a Howe pony truss bridge in the state, it ranks as the oldest railroad-related span in Somerset County. Why a Howe truss was used is not documented, but it may relate to the decision to reuse the existing substructure which divided the bridge into three spans. The use of the small panels at the end of each truss in order keep each pair of trusses the same length is also an unusual design detail. In 1914 the bracing between the bent posts was added as were the concrete piers, and in 1982 most of the floor beams and stringers were replaced. Despite its over 100 years of active service, the bridge is extremely well preserved and ranks as one of the distinctive pony truss spans in the state.

The bridge was constructed for the Philadelphia and Reading Railroad (Reading) at Skillman, site of the state's epileptic village. A non-extant station was located to the southwest of the bridge. The rail right-of-way was chartered in 1870 and built as the Delaware & Bound Brook Railroad by the Central Railroad of New Jersey in 1873-1875 as an alternative double-track route between New York and Philadelphia. The line was acquired by the Reading Railroad, and was used for both freight and passenger service until the 1970s when the line went bankrupt. The right-of-way passed to Conrail which found it useful for freight service displaced from Amtrak's Northeast Corridor which is the old Camden & Amboy (Pennsylvania Railroad after 1873) route. The Skillman Road overpass is also one of the oldest grade crossing elimination bridges in the region. This is at least the second bridge at the crossing.

Boundary Description and Justification: The bridge is evaluated as individually distinguished for its technological significance. It is adjacent to the campus of the State's Skillman Training School for Boys, but it is not near historic buildings associated with the early history of that facility. The boundary is limited to the substructure and superstructure of the bridge itself.

PHOTO: 101:29-37 (10/10/91) REVISED BY (DATE): QUAD: Rocky Hill

CAMP MEETING AVENUE OVER TRENTON LINE (CSX)
STRUCTURE NO. 1850-160
MONTGOMERY TOWNSHIP, SOMERSET COUNTY

GEOTECHNICAL FOUNDATION ENGINEERING REPORT

Prepared for:

New Jersey Department of Transportation
1035 Parkway Avenue
Trenton, New Jersey 08625

Prepared by:

The Louis Berger Group, Inc.
30 Vreeland Road, Building A
Florham Park, New Jersey 07932

October, 2006

SUBSURFACE INVESTIGATIONS

1 Field Investigations

Berger developed a program of subsurface exploration that was executed in July, 2006. The boring contract was performed by Site-Blauvelt Engineers, between July 17 and 18, 2006. The program included 2 structural borings near the existing bridge abutments. The location of these borings is shown on the attached bridge plan. The borings with their designation and the depths are listed below:

Boring No.	Structure	Depth of Boring
B-1	West Abutment	47.5 feet
B-2	East Abutment	44.0 feet

Continuous sampling with SPTs was carried out for the first 11 feet, and thereafter sampling was continued with SPTs at regular 5 feet intervals unless rock was encountered. Borings were extended into rock by rock coring using NX-size. Holes were terminated in moderately to slightly weathered Salty Clay stone.

Groundwater was not encountered during boring of these two borings.

The boring logs are attached.

2 Laboratory Investigations

Upon completion of the fieldwork, a laboratory program was developed by Berger, which included the following tests:

Test type	Number of tests
Moisture content	9
Atterberg limits	3
Gradation to Sieve # 200	8

The laboratory tests were performed by Site-Blauvelt Engineers, Inc. in August 2006. The results are attached.

3 SUBSURFACE CONDITIONS

The top of the existing roadway grade is approximately at elevation El. +147 and the ground at railroad is at El. ±122. Following is a brief description of the subsurface conditions. These conditions are also indicated on the attached schematic transverse soil profile.

The subsurface conditions at the west and east abutments, respectively are represented by borings B-1 and B-2.

No foundation data is available for the existing abutments. It is assumed that the bottom of the existing abutments is approximately at elevation El. +116. The borings were terminated approximately 22 feet (B-1) and 18 feet (B-2) feet below the existing ground. Based on the borings, similar subsurface conditions were noted at the abutment locations

Based on the information from the borings, three generalized layers were identified:

Stratum 1: **Fill:** Approximately ten feet (10 ft) thick layer of fill was encountered. Fill consist mainly of coarse to fine reddish brown gravel with some clayey silt. The Standard Penetration Value (N-Value) in this layer ranged from 4 to 12, indicating loose to medium dense compactness of the material.

Stratum 2: **Clayey Silt (CL/ML):** A layer of clayey silt mixed with varying amounts of sand and gravel was noted underlying the fill material. This layer is approximately 4 feet in thickness and generally transitions to extremely weathered clay Siltstone. The "N-Value" in the clayey silt layer is on the order of 4 whereas, higher N-values in excess of 50 were noted in the extremely weathered rock.

Stratum 3: **Silty Claystone/Claystone:** The Silty Claystone/Claystone was encountered in both the borings. It generally occurred at an approximate elevation El.+123. The layer consists of moderately to slightly weathered rock, medium hard to hard with very closely spaced fractures. The boring was extended into this layer by coring. The total core recovery (TCR) ranged between 83% and 100% and the rock quality designation (RQD) ranged between 0 and 47%.

Groundwater was not encountered during the drilling of these borings.

FOUNDATION DESIGN AND RECOMMENDATIONS

Foundation Type

Drilled shafts are recommended to be used as foundations for the abutments of the proposed bridge. Based on the anticipated structural load, using four shafts, two for each abutment, a design axial capacity of 70 tons per shaft is considered adequate. The required minimum depth of embedment of the shaft to achieve the required geotechnical axial capacity was estimated by using axial capacity analysis software. The lateral stability of the shaft will be governed by the maximum allowable deflection at the top of the shaft that may be extended to the bearing elevation. Limiting the deflection to an inch, the associated maximum applied lateral load and the minimum required depth of embedment of the shaft was estimated by using lateral pile analysis software. Using these analyses, the minimum required depth of embedment of the shaft was established. Use of 3 feet diameter concrete shaft drilled through the claystone is considered adequate.

Spread footing foundations, though feasible based on the existing subsurface conditions, are not practical. As the existing abutments are expected to remain in place, the available area to build a new footing necessary to support a full height abutment is insufficient. Using four drilled shaft columns, two at each abutment is therefore recommended due to potential conflict with existing gravity foundations.

Geotechnical Axial Capacity and Lateral Stability Analysis

Geotechnical Axial Capacity: The use of 3 feet diameter concrete shaft installed in Silty Claystone to a minimum depth of embedment of 16.5 feet is estimated to yield an anticipated allowable design axial capacity of 70 tons. Based on an average ground elevation at El. +122.0, the bottom of the shaft will be located at elevation El. +105.5. The allowable design axial capacity is based on a safety factor of 3 of the ultimate axial capacity. The static axial capacity has been determined using APILEPlus Computer Program (Ref. 1).

Geotechnical Lateral Stability: In order to examine the pile behavior under lateral loading, lateral pile analysis was performed using LPILEPLUS$^{5.0}$ Computer Program (Ref. 2). The analysis indicates that with the shaft installed to elevation El.+105.5 and when subjected to an applied lateral load on the order of 9.5 kips, the top of the shaft deflects on the order of one inch. If the maximum allowable deflection of the shaft at the top is limited to an inch, the resulting maximum allowable applied lateral load is 9.5 kips.

Seismic Design Considerations

The acceleration coefficient to be used is A = 0.18 and the Seismic Performance Category (SPC) is B. Soil profile Type I is considered adequate with a site coefficient of S = 1.0. A seismic coefficient k_h =0.5A is recommended for use in conjunction with the Mononobe-Okabe method of analysis to calculate maximum lateral earth pressure (Ref. 3).

Summary of Axial Capacity and Lateral Stability Analysis

Foundation Type	3 feet diameter concrete shaft
Average Ground Elevation	El. 122.0
Anticipated Axial Design Capacity	70 Ton
Factor of Safety	3
Top of the Shaft	El. 145
Minimum Tip of the Shaft	El. 105.5
Minimum Depth of embedment	16.5 ft
Total Length of the Shaft	39.5 ft
Maximum Allowable Shaft Head Deflection	1 inch
Maximum Lateral Load	9.8 Kip

REFERENCES

1. Computer Program APILEPlus, Version 4.0, ENSOFT, Inc., 2004.
2. Computer Program LPILEPlus, Version 5.0, ENSOFT, Inc., July 2004.
3. American Association of State Highway and Transportation officials, Standard Specifications for Highway Bridges – AASHTO, 17th Edition, 2002.

BORING LOGS &
LABORATORY TEST RESULTS

The Louis Berger Group, Inc. 30 Vreeland Road, Building A Florham Park, NJ 07932	**Drilling Log**	**BORING NO.: B-1** Page 1 of 2

PROJECT: Camp Meeting Ave Bridge over Trenton Line **PROJECT LOCATION:** Montgomery Twp, New Jersey

STATION: 12+79.00 **REFERENCE LINE:** Camp Meeting Ave Bridge Baseline **GROUND ELEVATION (ft.):** 147

OFFSET: R 5.0 **DRILLING METHODS:** 7-1/4" HSA, 4-1/4" Soft Rock Bit

BORINGS BY: SITE-Blauvelt Engineers **DATE STARTED:** 7/18/2006

INSPECTOR: Anna Fyodorova **DATE FINISHED:** 7/18/2006

GROUNDWATER ELEVATION (DEPTH) (ft.)
0 Hr. (not encountered) **DATE:** 7/18/06 12:50
24 Hr. **DATE:**
P.P. Installed (ft.)

DEPTH (ft)	DRILL RUN TIME (min)	SAMPLE NO.	SAMPLE DEPTH (ft)		BLOWS ON SPOON 0 6 (in)	6 12 (in)	12 18 (in)	18 24 (in)	REC (in)	USCS	SOIL DESCRIPTION AND STRATIGRAPHY	DEPTH OF STRATUM (ft)
											8" ASPHALT CONCRETE over 8" SUBBASE (Dark brownish gray F GRAVEL, some cf Sand).	
		S-1	1	3	5	4	4	5	18		FILL: Reddish brown (10R 3/4) mottled light brown (5YR 5/2) to moderate brown (5YR 4/4) SILT, little cf Sand, little f Gravel (angular).	1.4
		S-2	3	5	5	7	5	4	11		FILL: Reddish brown (10R 3/4) CF GRAVEL, some Silt, damp.	3.0
5												
		S-3	5	7	10	5	5	3	14		...mottled green (5GY 5/2) below 5 ft.	
		S-4	7	9	4	4	4	4	14		...with 4"-thick brown (5YR 4/4) Silt layer at 7.9 ft.	
10		S-5	9	11	5	3	3	6	14		...light brown, greenish brown, and brown below 9 ft.	
										ML	Red-brown (10R 3/4) Clayey SILT, little cf Sand, little f Gravel (RESIDUAL SOIL).	12.0
15												
		S-6	15	17	20	27	34	41	24		Red-brown (10R 3/4) Clayey SILTSTONE, extremely to highly weathered, soft; fractured (PASSAIC FORMATION).	15.5
20											Red-brown (10R 3/4) SILTSTONE, little white f Sand, extremely to highly weathered, soft; very closely-spaced (0.5" o.c.) fractures along subhorizontal bedding planes.	18.5
		S-7	20	20.8	50	50/3"	-	-	9			
25											Red-brown (10R 3/4) Silty CLAYSTONE, moderately to slightly weathered, hard; very closely-spaced (0.5"-2" o.c.) fractures: J = 0° to 20°, VN, Mn, Su, Pl, S, VC-C (PASSAIC FORMATION).	22.0

Nominal I.D. of Drive Pipe :		--
Nominal I.D. of Split Barrel Sample :		1-3/8 ins
Weight of Hammer on Drive Pipe :		--
Weight of Hammer on Split Barrel Sampler :	(cathead)	140 lbs
Drop of Hammer on Drive Pipe :		--
Drop of Hammer on Split Barrel Sampler :		30 ins

Soil descriptions represent a field identification using the Burmister Systen of Classification unless otherwise noted.
All dimensions are in feet unless noted otherwise.

The subsurface information shown hereon was obtained for the State design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users.

The Louis Berger Group, Inc.

Approximate Change in Strata ———————————
Inferred Change in Strata — — — — — — — — — — —

The Louis Berger Group, Inc. 30 Vreeland Road, Building A Florham Park, NJ 07932	**Drilling Log**	**BORING NO.: B-1** Page 2 of 2

PROJECT: Camp Meeting Ave Bridge over Trenton Line **PROJECT LOCATION:** Montgomery Twp, New Jersey

STATION: 12+79.00 **REFERENCE LINE:** Camp Meeting Ave Bridge Baseline **GROUND ELEVATION (ft.):** 147

OFFSET: R 5.0 **DRILLING METHODS:** 7-1/4" HSA, 4-1/4" Soft Rock Bit

BORINGS BY: SITE-Blauvelt Engineers **DATE STARTED:** 7/18/2006

INSPECTOR: Anna Fyodorova **DATE FINISHED:** 7/18/2006

GROUNDWATER ELEVATION (DEPTH) (ft.)
0 Hr. (not encountered) **DATE:** 7/18/06 12:50
24 Hr. **DATE:**
P.P. Installed (ft.)

DEPTH (ft)	DRILL RUN TIME (min)	SAMPLE NO.	SAMPLE DEPTH (ft)		BLOWS ON SPOON 0 6 (in)	6 12 (in)	12 18 (in)	18 24 (in)	REC (in)	USCS	SOIL DESCRIPTION AND STRATIGRAPHY	DEPTH OF STRATUM (ft)
	5:00	R-1	24.5	27.5	RQD	=	0%		33		Red-brown (10R 3/4) Silty CLAYSTONE, moderately to slightly weathered, hard; very closely-spaced (0.5"-2" o.c.) fractures: J = 0° to 20°, VN, Mn, Su, Pl, S, VC-C (PASSAIC FORMATION).	
	6:00				Rec.	=	91%					
	9:00											
	5:00	R-2	27.5	32.5	RQD	=	0%		57			
	4:00				Rec.	=	95%				Medium dark gray (N4) CLAYSTONE (MARL), calcaerous, thinly laminated, moderately weathered, hard; Ca-filled healed fractures along subhorizontal bedding planes/laminations: J = 0°, VN (H), Ca, Fi, Pl, SR, VC; (Gradational bottom contact).	28.6
30	4:00											
	6:00											
	6:00										Dark gray (N3) CLAYSTONE, slightly calcaerous, moderately weathered, medium hard to hard; Ca-filled fractures: J = 0°, N, Ca, Fi, Pl, SR, VC.	31.1
	4:00										...with iron oxide staining on fracture planes at 32.5 ft.	
	1:00	R-3	32.5	37.5	RQD	=	7%		55		...gray (N5-N6), non-calcaerous below 33.7 ft.	
35	1:00				Rec.	=	91%				Pale brown (5YR 5/2) medium- to coarse-grained Silty SANDSTONE, highly weathered, hard; J = 45°, N-MW, Cl+Ep, Pf, Pl, SR, VW.	34.3
	5:00											35.6
	1:00										Gray (N4) SILTSTONE, non-calcaerous, moderately weathered, hard; J1 = 90°, VN, Fe, Su, Wa, R, C; J2 ~15°, T, Fe, Su, Wa, R, VC.	
	2:00	R-4	37.5	42.5	RQD	=	47%		60		...closely-spaced fractures below 37.5 ft.; (Gradational bottom contact).	38.5
	2:00				Rec.	=	100%				Red-brown (10R 3/4) Silty CLAYSTONE, slightly weathered, hard; J = 0°, 45°, 65°, 90°, No to Fe+Ca, Su, Pl, S, Pl, C.	
40	4:00											
	3:00										...below 40': J1 (typical) = 30°, No, Pl, S, Pl, C; J2 (@~41') = 45°, N, Ca, Fi, Pl, S, W; (Gradational bottom contact).	
	4:00											
	3:00	R-5	42.5	47.5	RQD	=	35%		60		Gray (N4) CLAYSTONE (MARL), calcaerous, slightly weathered, hard; one-half of fractures Ca-filled: J = 20-25°, VN (H), Ca, Fi, Pl, S, VC-C.	42.8
	2:00				Rec.	=	100%					
45	1:00										Red-brown (10R 3/4) Clayey SILTSTONE, non-calcaerous, slightly weathered, hard; scattered 50° to 75° dipping, very narrow to wide, Ca-healed fractures: V/J (@46.5') = 75°, W (H), Ca, Fi, Pl, S, Pl, VW.	44.5
	2:00											
	2:00											
											Bottom of Boring at 47.5 feet.	47.5
50												

Nominal I.D. of Drive Pipe :		--
Nominal I.D. of Split Barrel Sample :		1-3/8 ins
Weight of Hammer on Drive Pipe :		--
Weight of Hammer on Split Barrel Sampler :	(cathead)	140 lbs
Drop of Hammer on Drive Pipe :		--
Drop of Hammer on Split Barrel Sampler :		30 ins

Soil descriptions represent a field identification using the Burmister System of Classification unless otherwise noted.
All dimensions are in feet unless noted otherwise.

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The Louis Berger Group, Inc.

Approximate Change in Strata ———————
Inferred Change in Strata - - - - - - - - - - -

The Louis Berger Group, Inc. 30 Vreeland Road, Building A Florham Park, NJ 07932	**Drilling Log**	**BORING NO.: B-2** Page 1 of 2

PROJECT: Camp Meeting Ave Bridge over Trenton Line **PROJECT LOCATION:** Montgomery Twp, New Jersey

STATION: 14+09.00 **REFERENCE LINE:** Camp Meeting Ave Bridge Baseline **GROUND ELEVATION (ft.):** 148

OFFSET: R 6.0 **DRILLING METHODS:** 7-1/4" HSA, 4-1/4" Soft Rock Bit

BORINGS BY: SITE-Blauvelt Engineers **DATE STARTED:** 7/17/2006

INSPECTOR: Anna Fyodorova **DATE FINISHED:** 7/17/2006

GROUNDWATER ELEVATION (DEPTH) (ft.)
0 Hr. (not encountered) **DATE:** 7/17/06 15:40
24 Hr. **DATE:**
P.P. Installed (ft.)

DEPTH (ft)	DRILL RUN TIME (min)	SAMPLE NO.	SAMPLE DEPTH (ft)		BLOWS ON SPOON 0 6 (in)	6 12 (in)	12 18 (in)	18 24 (in)	REC (in)	USCS	SOIL DESCRIPTION AND STRATIGRAPHY	DEPTH OF STRATUM (ft)
											2'-2" ASPHALT CONCRETE (no subbase).	
		S-1	2	4	1	2	2	2	19		FILL: Orange-brown (5YR 5/6) Silty CLAY, trace f Sand.	2.1
5		S-2	4	6	2	2	3	4	7		...~3" AC fragment at 4.2 ft.	4.5
											FILL: Grayish red (5R 4/2) SILT, some f Gravel (angular).	5.2
		S-3	6	8	7	7	5	3	9		FILL: Red-brown (10R 3/4) CF GRAVEL (angular), some Clayey Silt.	
		S-4	8	10	6	3	4	6	13			
10												
		S-5	10	12	2	3	4	3	14	ML	Yellow-brown (5YR 4/4-10YR 5/4) Clayey SILT, low (medium) plasticity, scattered iron oxide spotting in matrix.	10.1
15										SM	Red-brown (10R 3/4) CM SAND, some cf Gravel (disintegrated bedrock) (RESIDUAL SOIL).	14.0
		S-6	15	17	16	12	22	19	18			
20											Grayish black (N2), light brown (5YR 6/4), and dark brown (10YR 4/2) Silty CLAYSTONE to Clayey SILTSTONE, highly weathered, soft; fractured (PASSAIC FORMATION).	18.5
		S-7	20	22	14	20	30	29	24			
25	5:00	R-1	24	29	RQD	=	21%		56		continued on next page	23.8

Nominal I.D. of Drive Pipe :	--
Nominal I.D. of Split Barrel Sample :	1-3/8 ins
Weight of Hammer on Drive Pipe :	--
Weight of Hammer on Split Barrel Sampler : (cathead)	140 lbs
Drop of Hammer on Drive Pipe :	--
Drop of Hammer on Split Barrel Sampler :	30 ins

Soil descriptions represent a field identification using the Burmister Systen of Classification unless otherwise noted.
All dimensions are in feet unless noted otherwise.

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The Louis Berger Group, Inc.

Approximate Change in Strata ———————
Inferred Change in Strata — — — — — — — — — —

The Louis Berger Group, Inc. 30 Vreeland Road, Building A Florham Park, NJ 07932	**Drilling Log**	**BORING NO.: B-2** Page 2 of 2

PROJECT: Camp Meeting Ave Bridge over Trenton Line **PROJECT LOCATION:** Montgomery Twp, New Jersey

STATION: 14+09.00 **REFERENCE LINE:** Camp Meeting Ave Bridge Baseline **GROUND ELEVATION (ft.):** 148

OFFSET: R 6.0 **DRILLING METHODS:** 7-1/4" HSA, 4-1/4" Soft Rock Bit

BORINGS BY: SITE-Blauvelt Engineers **DATE STARTED:** 7/17/2006

INSPECTOR: Anna Fyodorova **DATE FINISHED:** 7/17/2006

GROUNDWATER ELEVATION (DEPTH) (ft.)
0 Hr. (not encountered) **DATE:** 7/17/06 15:40
24 Hr. **DATE:**
P.P. Installed (ft.)

DEPTH (ft)	DRILL RUN TIME (min)	SAMPLE NO.	SAMPLE DEPTH (ft)		BLOWS ON SPOON 0 6 (in)	6 12 (in)	12 18 (in)	18 24 (in)	REC (in)	USCS	SOIL DESCRIPTION AND STRATIGRAPHY	DEPTH OF STRATUM (ft)
	5:00				Rec.	=	93%				Black (N1) to grayish black (N2) SILTSTONE, moderately weathered, medium hard to hard; very closely-spaced fractures: J = 5° to 55°, No to Ca, Fi, Pl, S, VC; (Gradational bottom contact) (PASSAIC FORMATION).	
	5:00											
	7:00											
	8:00										Blackish red (5R 2/2) CLAYSTONE, moderately to slightly weathered, hard; fractures: J (typical) = 10-15°,VN, No or Mn, Fi, Pl, S, VC (1.5" o.c.).	28.1
30	2:00	R-2	29	34	RQD	=	10%		60			
	9:00				Rec.	=	100%				...slightly calcaerous below 30 ft.	
	2:00											
	4:00											
	4:00										Gray (N5) to dark gray (N2) CLAYSTONE (MARL), slightly weathered, hard; very closely-spaced fractures dipping 25° to 30°.	33.4
35	4:00	R-3	34	39	RQD	=	17%		50			
	4:00				Rec.	=	83%				Grayish red (5R 4/2) Silty CLAYSTONE, slightly calcaerous, moderately to slightly weathered, hard; fractures dipping 15°.	34.8
	4:00										...dark reddish brown (10R 3/4) below 35.3 ft.; with fractures: J = 15°,VN (H), Ca, Fi, Pl, S, VC-C.	
	4:00										...calcite nodule/vein fragment 1/2"-diameter at 37.5 ft.	
	3:00											
40	2:00	R-4	39	44	RQD	=	25%		60			
	3:00				Rec.	=	100%					
	3:00											
	5:00										...non-calcaerous below 43 ft.; fracture: J(@43') = 85°, VN (H), Mn, Fi, Pl, SR.	
	3:00											
45											Bottom of Boring at 44 feet.	44.0
50												

Nominal I.D. of Drive Pipe :		--
Nominal I.D. of Split Barrel Sample :		1-3/8 ins
Weight of Hammer on Drive Pipe :		--
Weight of Hammer on Split Barrel Sampler :	(cathead)	140 lbs
Drop of Hammer on Drive Pipe :		--
Drop of Hammer on Split Barrel Sampler :		30 ins

Soil descriptions represent a field identification using the Burmister Systen of Classification unless otherwise noted.
All dimensions are in feet unless noted otherwise.

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The Louis Berger Group, Inc.

Approximate Change in Strata ———————
Inferred Change in Strata — — — — — — — — — —

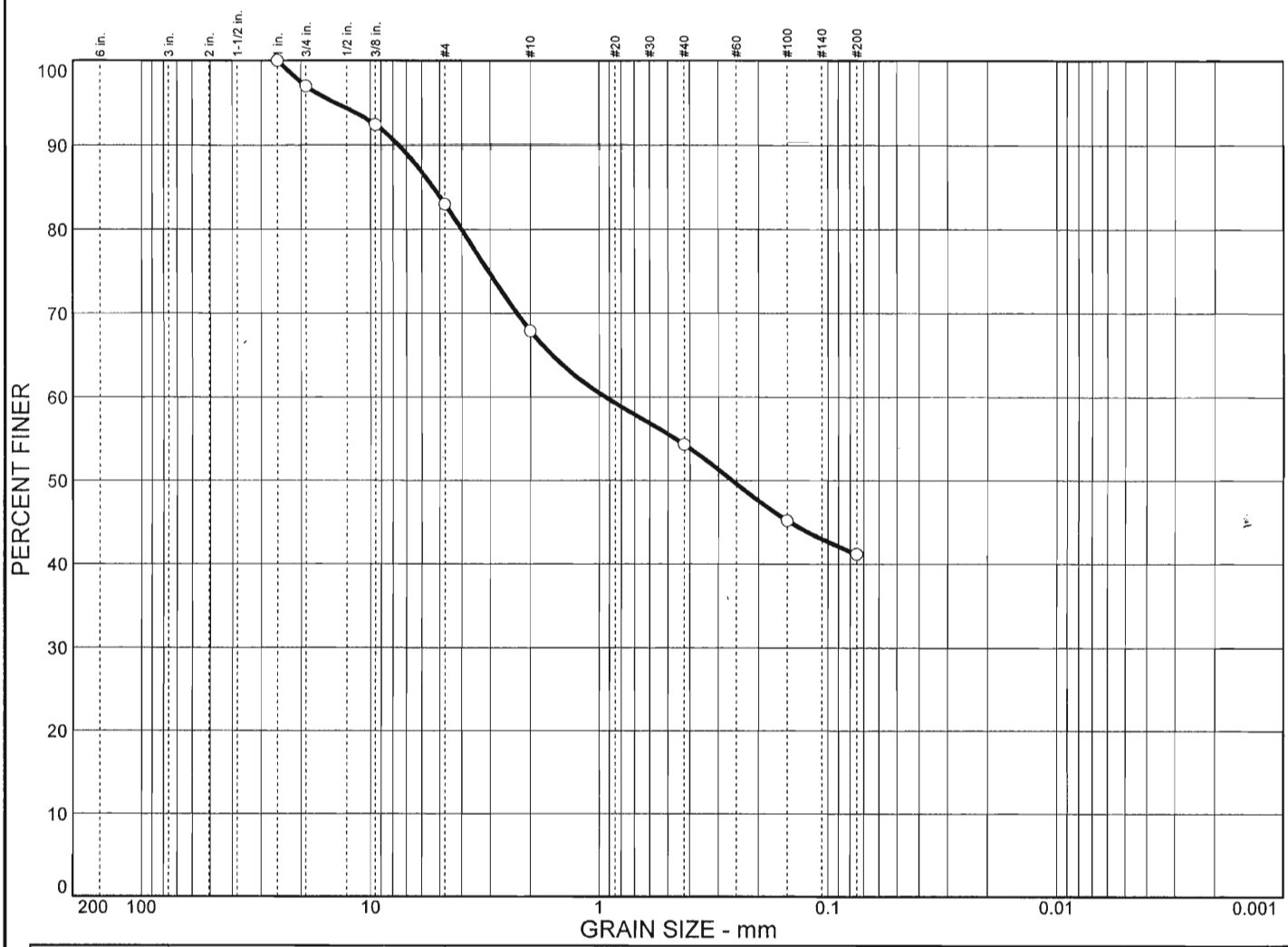
SUMMARY OF LABORATORY TEST DATA

SAMPLE IDENTIFICATION					GRAIN SIZE DISTRIBUTION				PLASTICITY						VOLUMETRIC PROPERTIES			COMPACTION CHARACTERISTICS							
BORING NUMBER	SAMPLE NUMBER	DEPTH (FT.)	ELEVATION (FT.)	SOIL GROUP (USCS SYSTEM)	GRAVEL (%)	SAND (%)	SILT (%)	CLAY COLLOIDS (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	SPECIFIC GRAVITY (* INDICATES ASSUMED VALUE)	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (PCF) (+ INDICATES REMOLDED SAMPLE)	VOID RATIO	DEGREE OF SATURATION (%)	TYPE OF TEST	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	CALIFORNIA BEARING RATIO-CBR (%)	pH	ORGANIC CONTENT (%)	MAXIMUM DENSITY (PCF)	MINIMUM DENSITY (PCF)
B-1																									
	S-1	1-3		SC	17	42	41		29	20	9	-.48		15.7											
	S-3	5-7		GM	58	29	13							10.5											
	S-5	9-11		GM	43	39	18							15.6											
B-2																									
	S-1	2-4		CL-ML	0	8	92		28	21	7	0.67		25.7											
	S-2	4-6		GM	42	42	16							14.3											
	S-3	6-8		GP-GM	52	40	8							11.2											
	S-4	8-10		GC	46	38	16		43	22	21	-.39		13.8											
	S-5	10-12												21.6											
	S-6	15-17		SM	24	62	14							14.0											

RECEIVED
AUG 21 2006
LBG INC

SITE-Blauvelt Engineers, Inc.	DRAWN: RNR DATE: 8/17/2006	CAMP MEETING AVENUE OVER TRENTON LINE	FILE NO. NJ11330
	CHECKED: DATE:	SOMERSET COUNTY, MONTGOMERY TWP, NJ	TABLE NO. 1

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	17.0	41.8	41.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	29	20	5.35	0.942	0.262					

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN C/M/F SAND AND SILT LITTLE F/C GRAVEL	SC	A-4(1)

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-1 **Sample No.:** S-1 **Elev./Depth:** 1-3

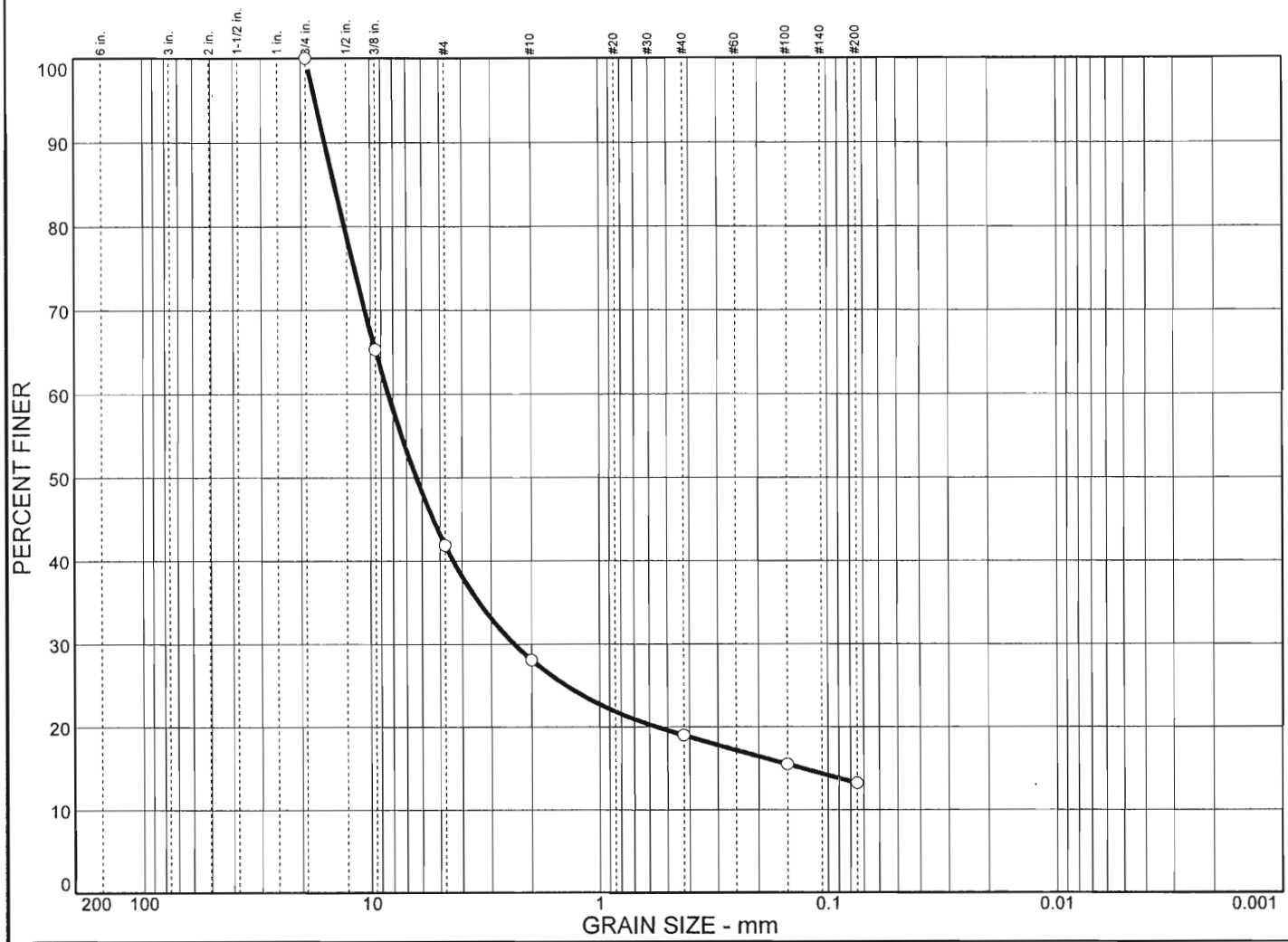
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 1

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	58.1	28.7	13.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			14.3	8.38	6.34	2.38	0.129			

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN FINE GRAVEL SOME C/M/F SAND LITTLE SILT	GM	A-1-a

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-1 **Sample No.:** S-3 **Elev./Depth:** 5-7

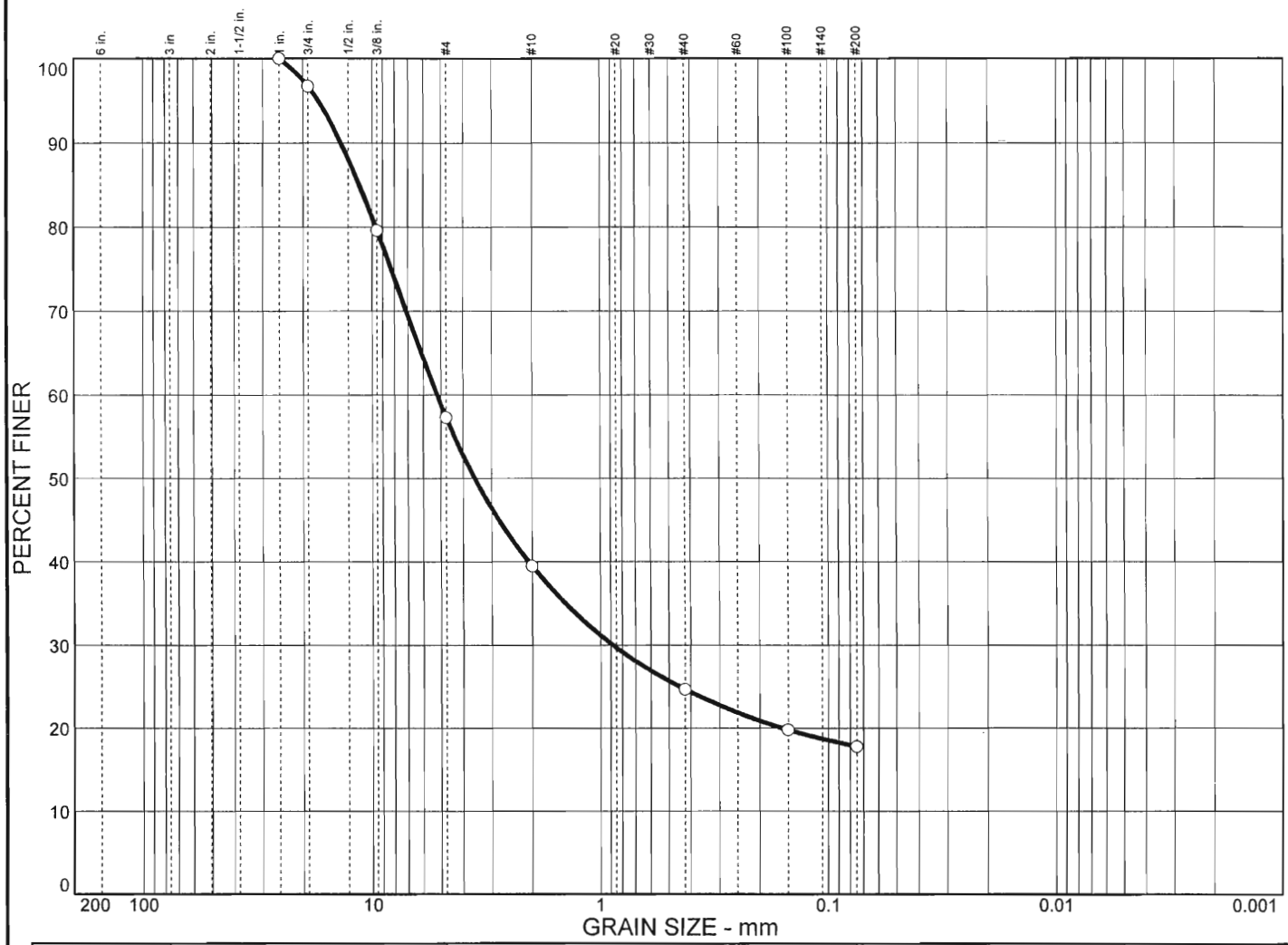
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 2

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	42.7	39.5	17.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.4	5.21	3.56	0.882				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN F/C GRAVEL AND C/M/F SAND LITTLE SILT	GM	A-1-b

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-1 **Sample No.:** S-5 **Elev./Depth:** 9-11

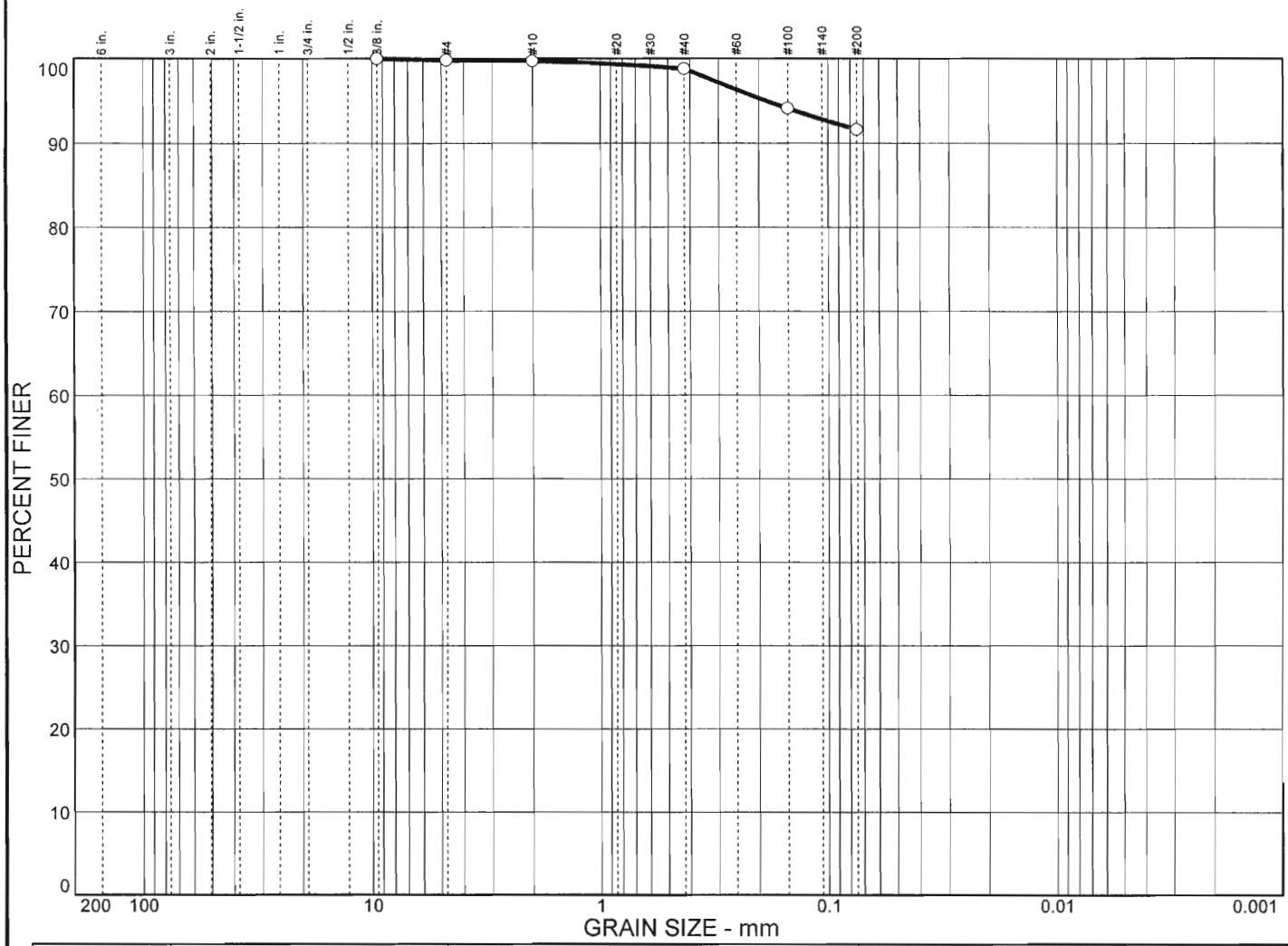
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 3

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.2	8.2	91.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	28	21								

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILT FEW F/M SAND	CL-ML	A-4(6)

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-2 **Sample No.:** S-1 **Elev./Depth:** 2-4

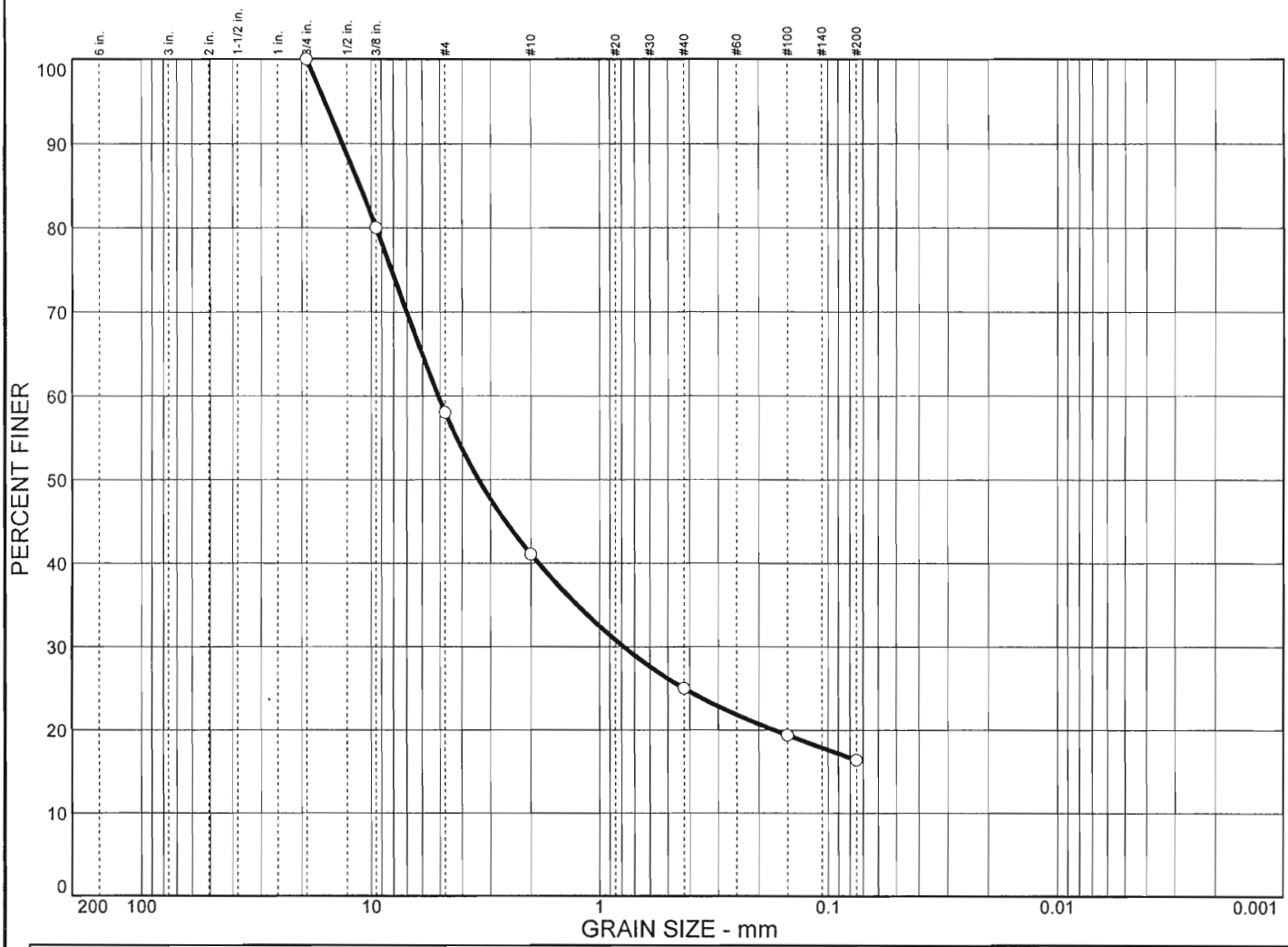
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 4

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	42.0	41.6	16.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.2	5.10	3.39	0.785				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN FINE GRAVEL AND C/M/F SAND LITTLE SILT	GM	A-1-b

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-2 **Sample No.:** S-2 **Elev./Depth:** 4-6

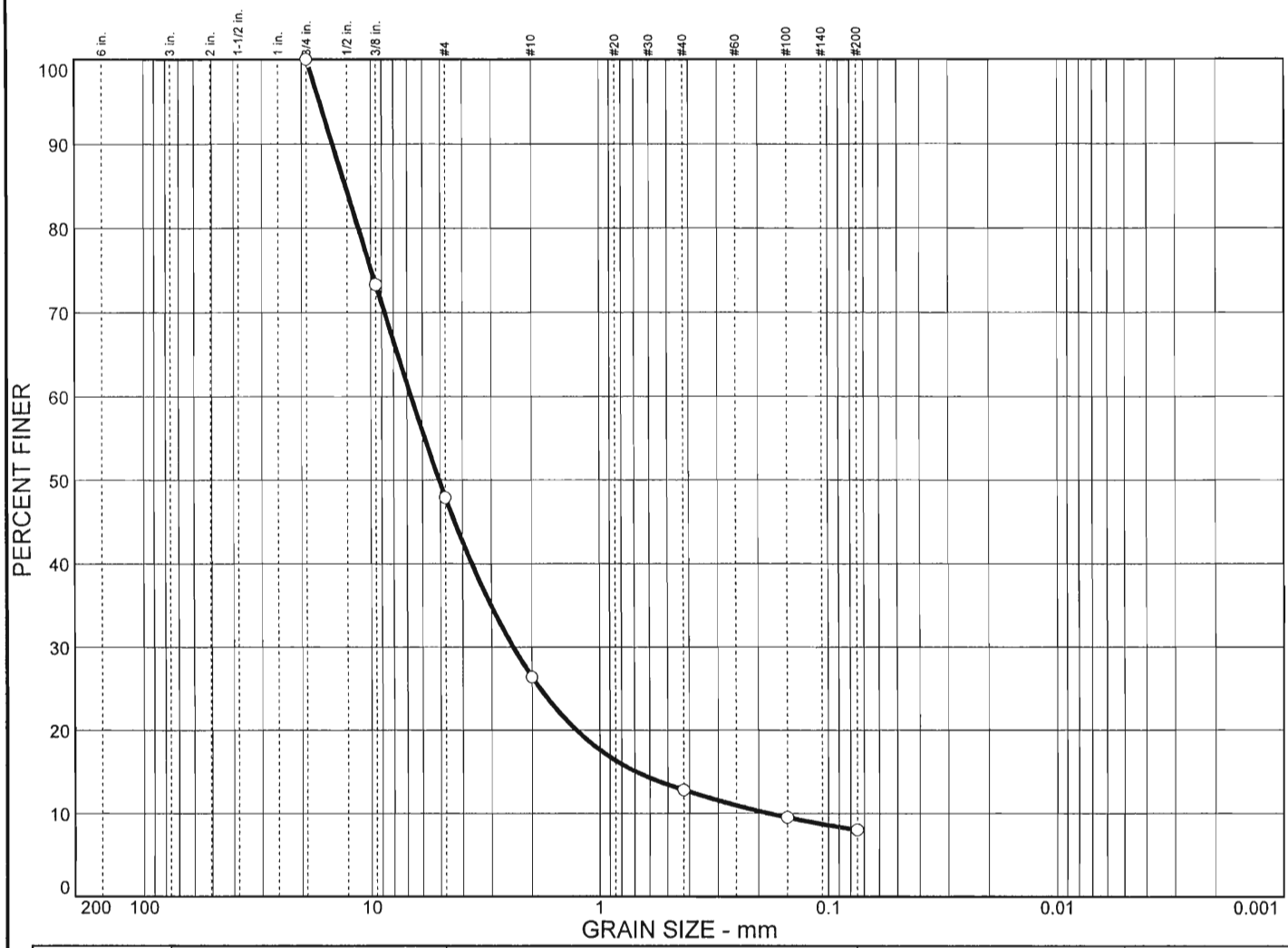
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 5

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	52.1	39.9	8.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			12.9	6.71	5.06	2.41	0.688	0.182	4.78	36.94

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN C/M/F SANDY FINE GRAVEL FEW SILT	GP-GM	A-1-a

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-2 **Sample No.:** S-3 **Elev./Depth:** 6-8

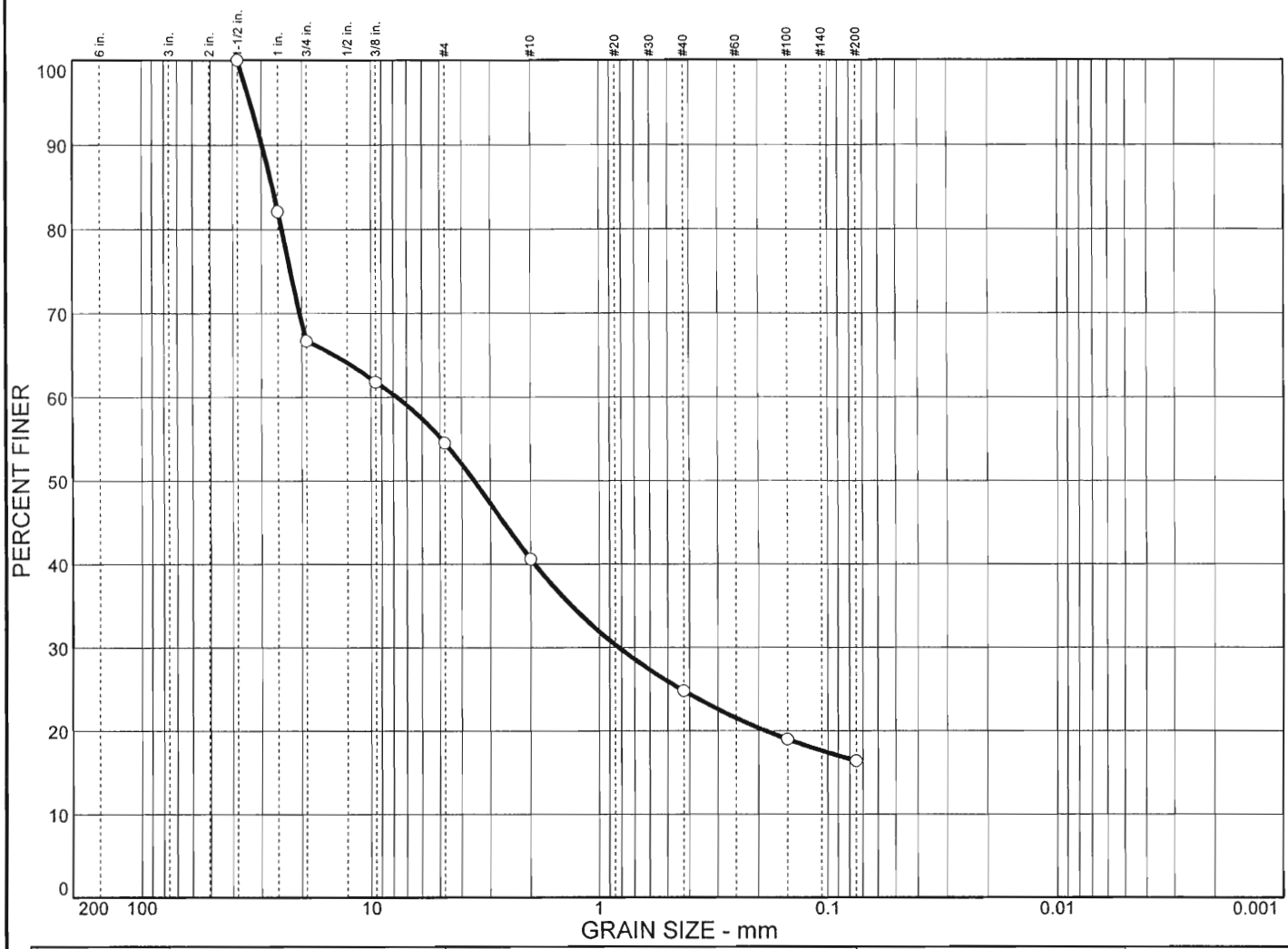
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 6

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	45.5	38.1	16.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	43	22	26.8	7.72	3.54	0.825				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN C/F GRAVEL AND M/C/F SAND LITTLE SILT	GC	A-2-7(0)

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-2 **Sample No.:** S-4 **Elev./Depth:** 8-10

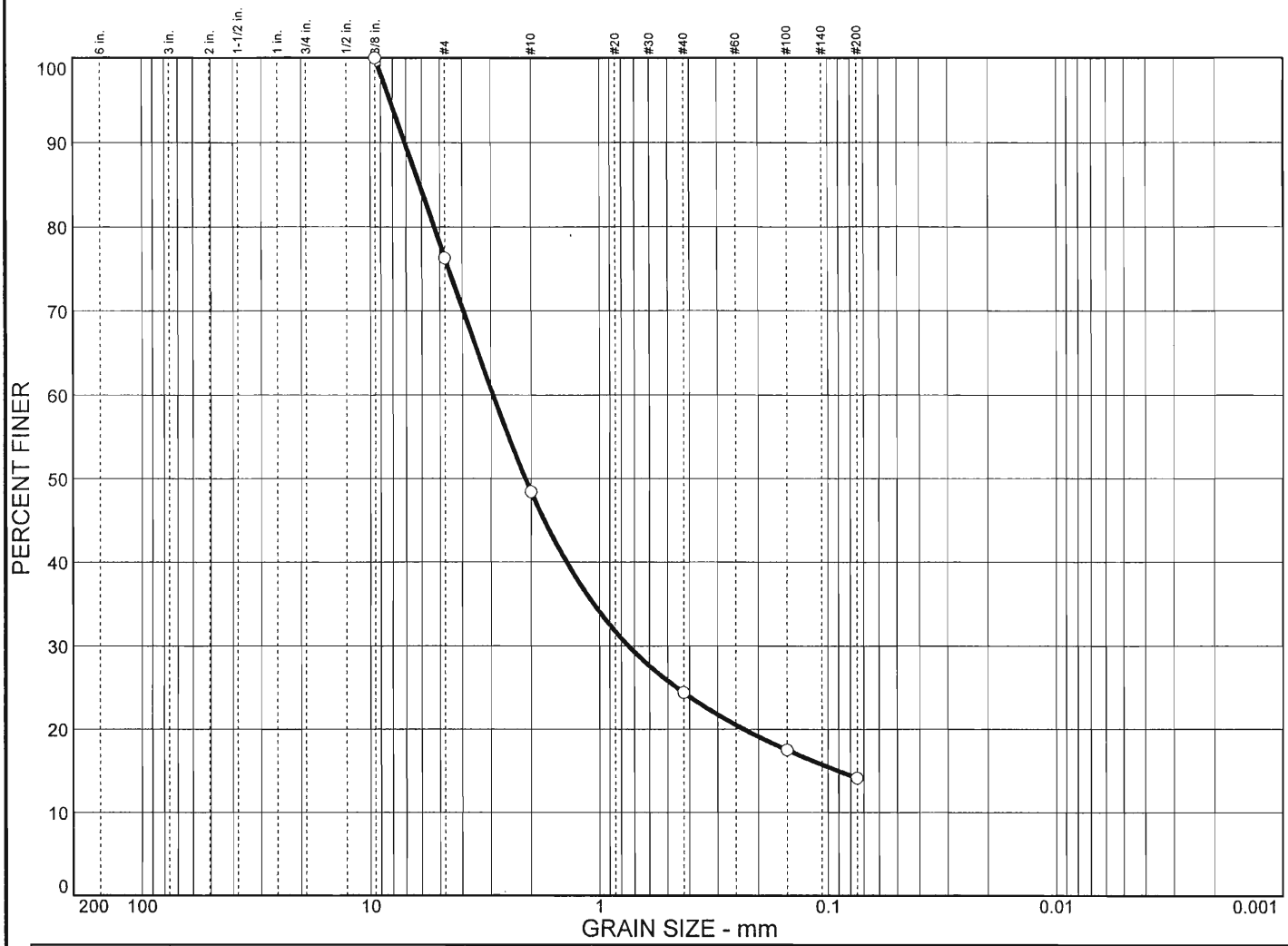
Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 7

Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	23.7	62.2	14.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.12	2.94	2.12	0.746	0.0908			

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN C/M/F SAND LITTLE FINE GRAVEL LITTLE SILT	SM	A-1-a

Project No. NJ 11330 **Client:** THE LOUIS BERGER GROUP, INC.

Project: CAMP MEETING AVENUE OVER TRENTON LINE
SOMERSET COUNTY

○ **Source:** B-2 **Sample No.:** S-6 **Elev./Depth:** 15-17

Remarks:
○

Particle Size Distribution Report

SITE-BLAUVELT ENGINEERS, INC.

Figure 8

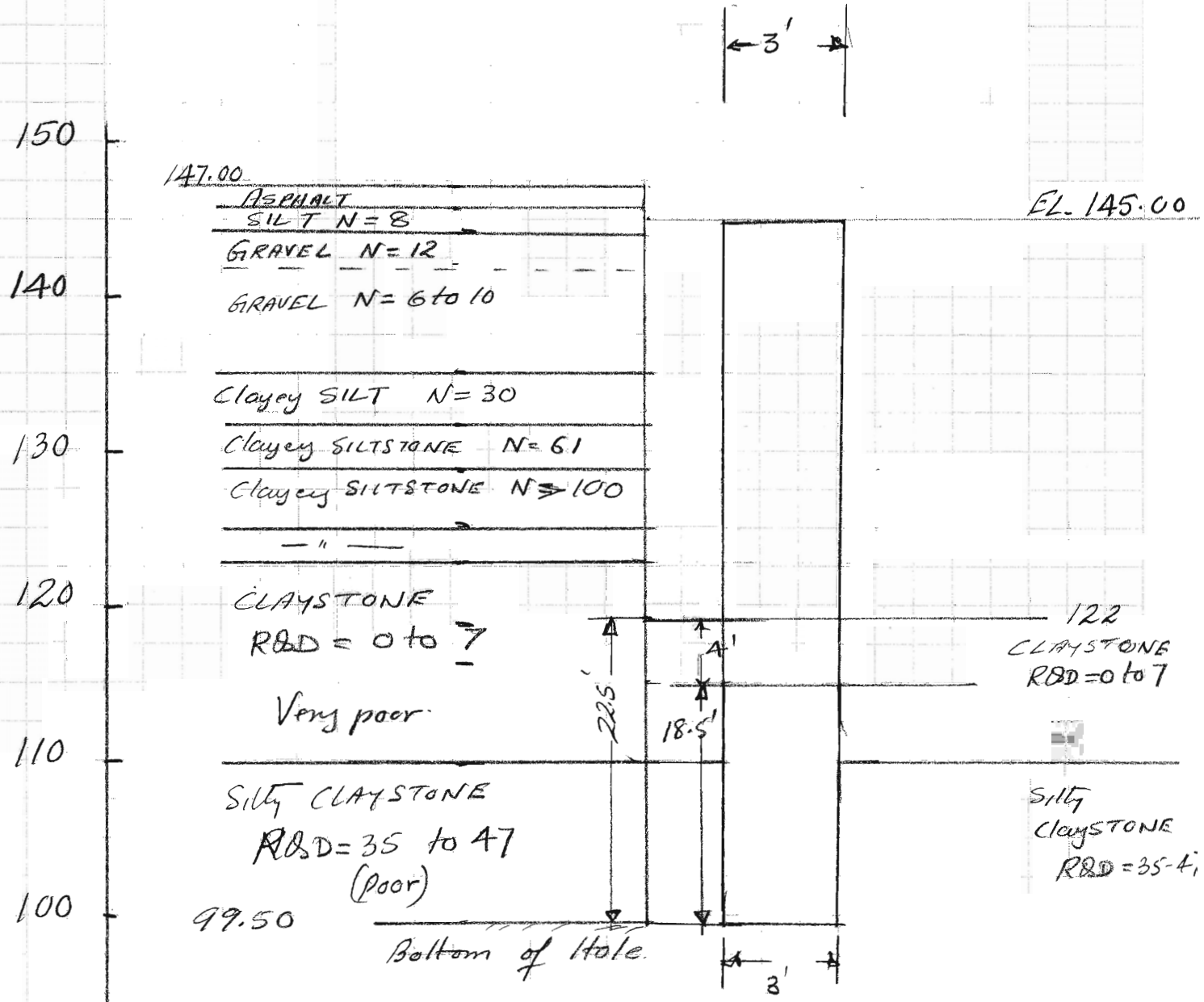
THE LOUIS BERGER GROUP, INC.

PREPARED BY Pc DATE 09/15/06 SHEET NO. ____ OF ____

CHECKED BY ____ DATE ____ CAMP MEETING AVENUE PROJECT CC-1081

SUBJECT SHAFT ANALYSIS - AXIAL & LATERAL CAPACITY ANALYSIS

TYPICAL SUBSURFACE CONDITIONS
Reference Boring - B-1



DATE 4/15/05

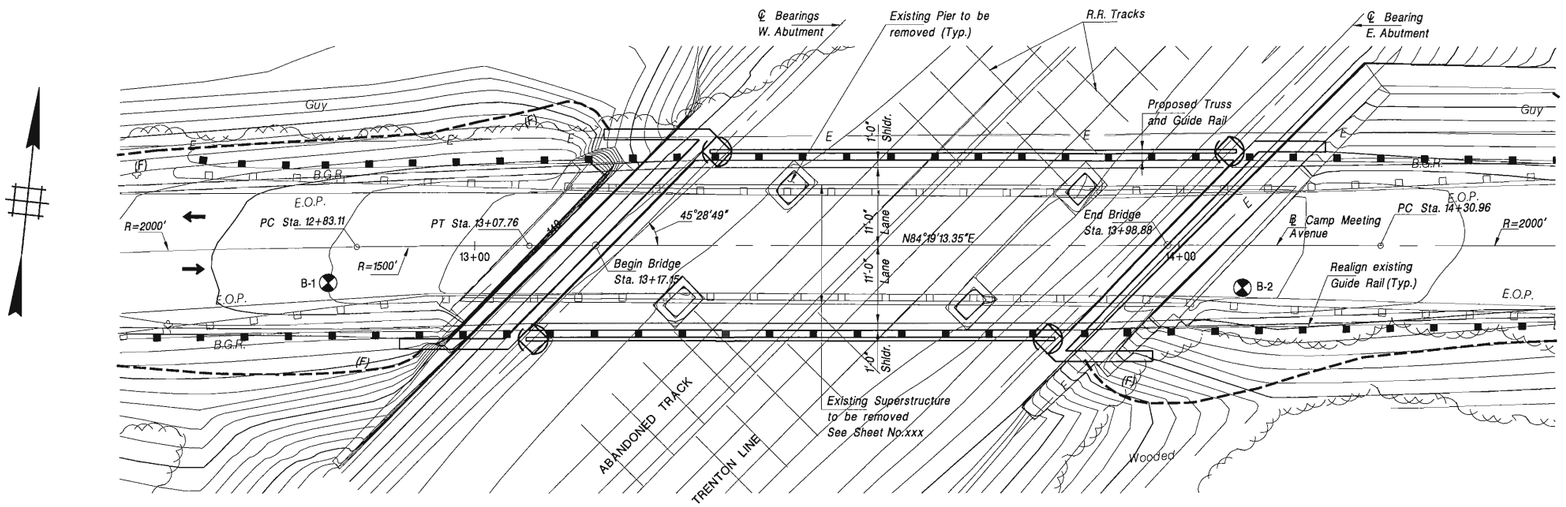
PROPOSED BRIDGE DRAWINGS

STATE	FEDERAL PROJECT	SHEET	TOTAL SHEETS
NJ			

STRUCTURE NO. 1850-160

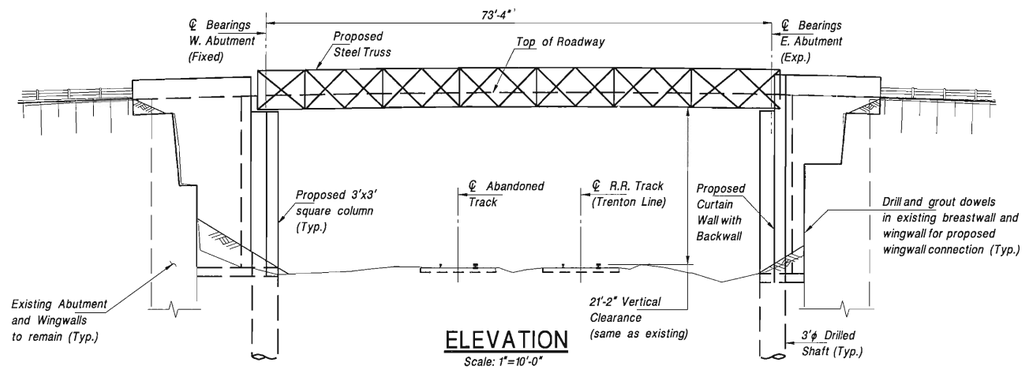
STRUCTURE NAME
CAMP MEETING AVENUE OVER TRENTON LINE (CSX)

TOWNSHIP OF MONTGOMERY **COUNTY OF SOMERSET**



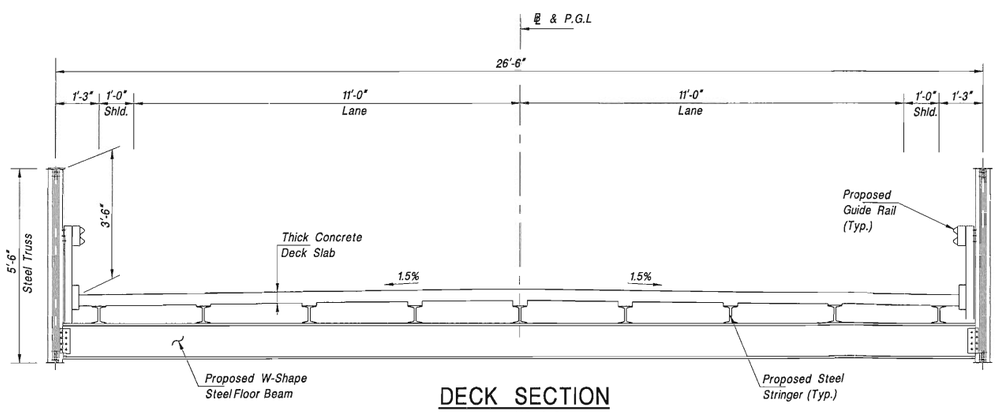
PLAN

Scale: 1"=10'-0"



ELEVATION

Scale: 1"=10'-0"



DECK SECTION

Scale: ½"=1'-0"

GENERAL NOTES

1. Design Specifications
   (a) 2004 AASHTO LRFD Bridge Design Specifications Second Edition, with current Interims, as modified by Section 3 of the NJDOT Design Manual for Bridges and Structures.
2. Construction Specifications
   (a) 2001 NJDOT Standard Specifications for Road and Bridge Construction as modified by the Special Provisions.
3. Live Load
   (a) AASHTO designated HL-93 or NJDOT Permit Vehicle, whichever governs.
4. Concrete Design Stresses
   (a) Specified Design Compressive Strength (f'c)
   (In accordance with the Retest Limit for Pay-Adjustment Items as specified in Table 914-4 of the NJDOT Standard Specifications and as may be modified by the Special Provisions)
   Class A ..... 4,000 psi
   Class B ..... 3,000 psi
   (The retest limit for non-pay-adjustment items shall be as specified on the last line of Table 914-4 of the NJDOT Standard Specifications and as may be modified by the Special Provisions)
5. Reinforcement Steel
   (a) ASTM A615M (Grade 60) (fs) = 20 ksi
6. Superstructure
   (a) Dead load includes a 30 psf provision for a future 2" thick concrete overlay protective system on the bridge deck.
   (b) Structural Steel: "Steadfast Bridges"
   Link Style Truss or equivalent, AASHTO A572 painted.
   The floor will be a 20 gage galvanized composite floor deck.

NOTES:
1. Vertical Datum is based on 1988 NAVD.

LEGEND:
- - - - - - Toe of Slope
B-2 Boring Location

CONTROL SECTION		JOB NO.	
DES. BY		CHK. BY	
DWN. BY		CHK. BY	
EST. BY		CHK. BY	
SPEC'S BY			
IN CHARGE OF			

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

GENERAL PLAN & ELEVATION
SHEET 1

CR 602
CAMP MEETING AVENUE
MONTGOMERY TOWNSHIP

RR MP 45.95
SOMERSET COUNTY

REVISION	BY	C'K'D.	DATE

LOUIS BERGER GROUP, INC.
JULIUS HAAS
P.E. N.J. LIC. NO. 32169

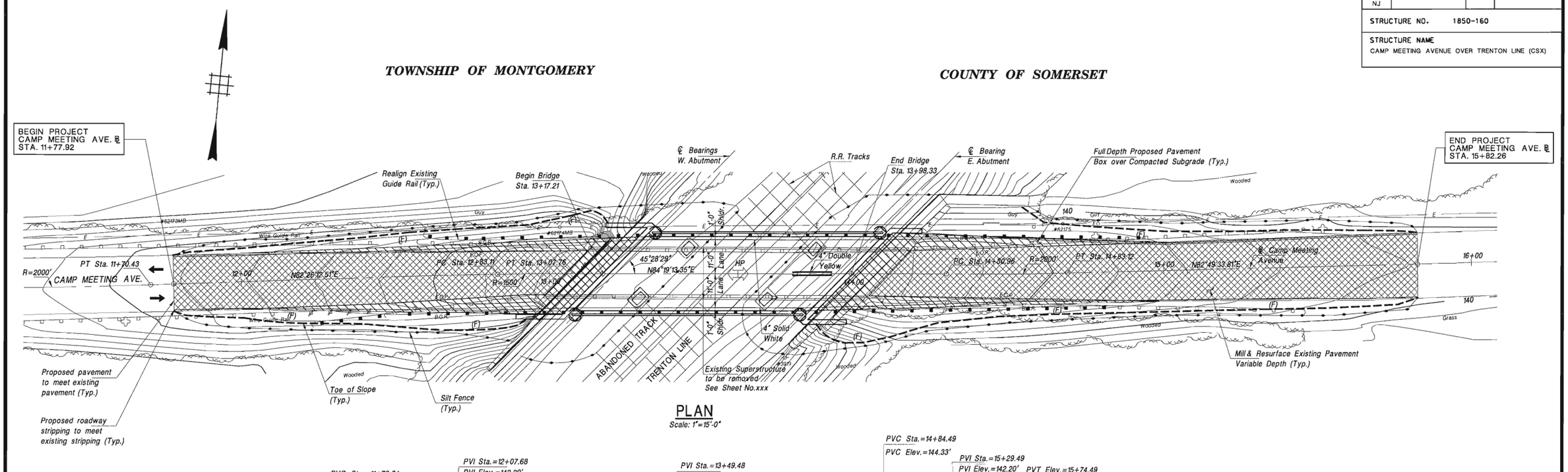
BRIDGE SHEET NO. 1 OF 2

mhusain 10/4/2006 P:\CC1081\desn\1081GPE01.dgn

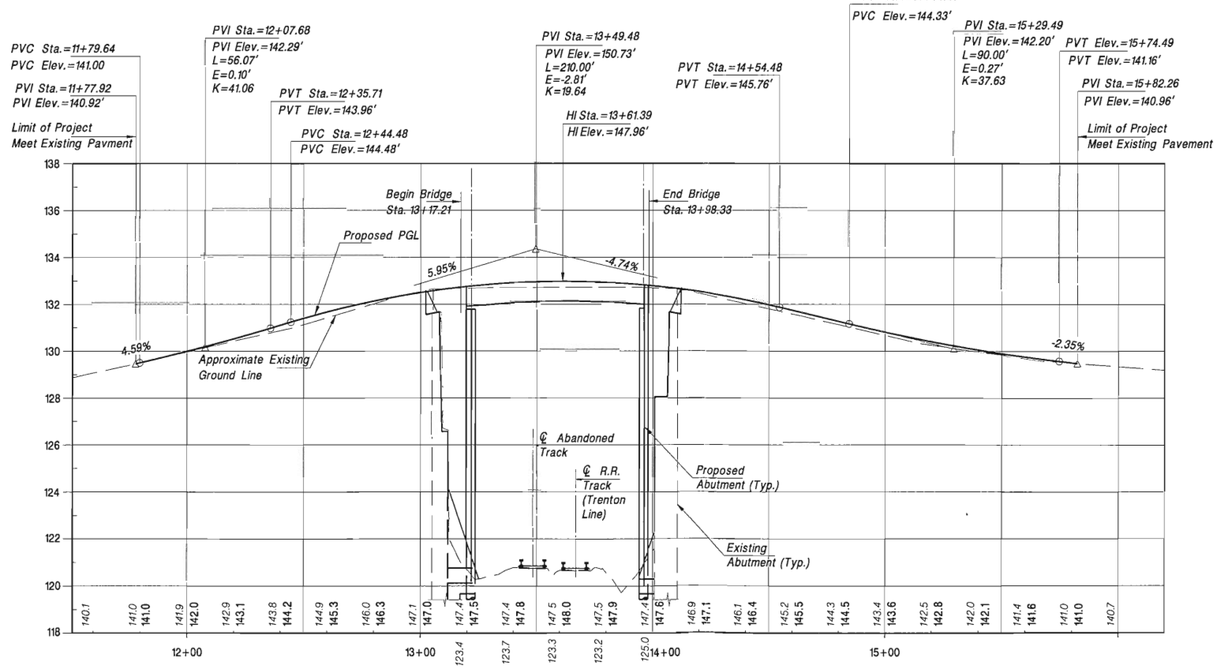
STATE	FEDERAL PROJECT	SHEET	TOTAL SHEETS
NJ			

STRUCTURE NO. 1850-160

STRUCTURE NAME
CAMP MEETING AVENUE OVER TRENTON LINE (CSX)



PLAN
Scale: 1"=15'-0"



CAMP MEETING AVENUE PROFILE
(DESIGN SPEED V=30 MPH)
Scale: Hor. 1"=30'-0"
Scale: Ver. 1"=3'-0"

LEGEND:
- Milling
- Proposed Full Depth Pavement
- Toe of Slope
- Silt Fence
- Proposed Guide Rail
- Existing Guide Rail

CONTROL SECTION		JOB NO.	
DES. BY		CHK. BY	
DWN. BY		CHK. BY	
EST. BY		CHK. BY	
SPEC'S BY			
IN CHARGE OF			

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

CONSTRUCTION PLAN
SHEET 1

CR 602
CAMP MEETING AVENUE
MONTGOMERY TOWNSHIP

RR MP 45.95
SOMERSET COUNTY

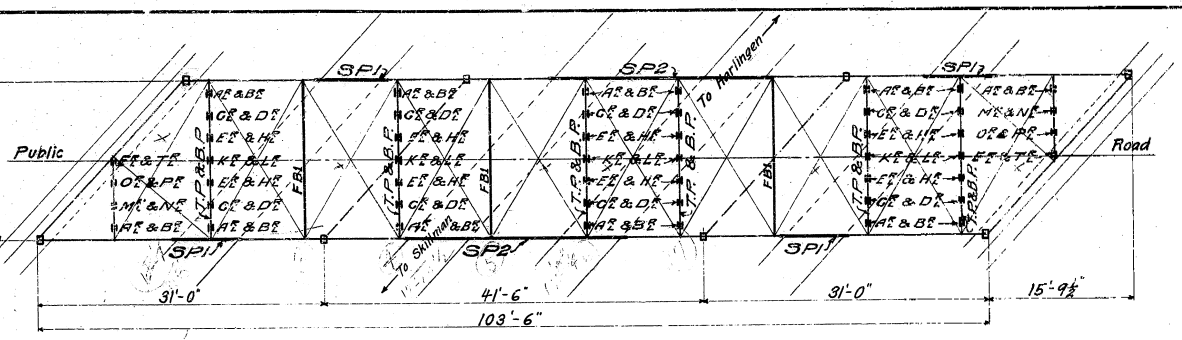
REVISION	BY	C'K'D.	DATE

LOUIS BERGER GROUP, INC.
JULIUS HAAS
P.E. N.J. LIC. NO. 32169

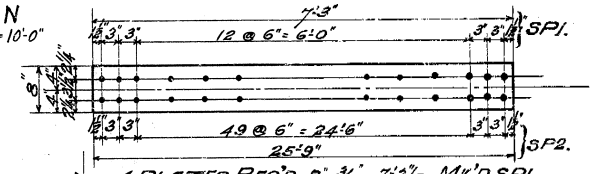
BRIDGE SHEET NO. 2 OF 2

$USER$ $DATE$ $FILEL$

APPENDIX D –
As-Built Plans

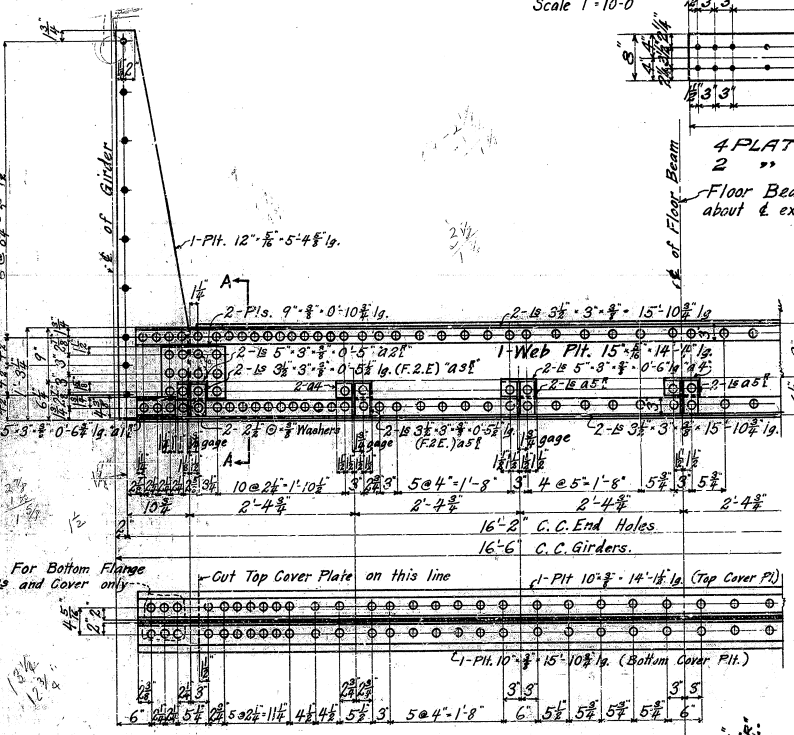


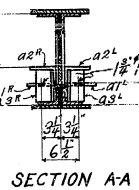
PLAN
Scale 1"=10'-0"



4 PLATES REQ'D 8" × 3/8" × 7'-3 1/8" Mk'D SP1.
2 " " 8" × 3/8" × 25'-9 1/8" " SP2.

Floor Beam Symmetrical about ℄ except for as L.

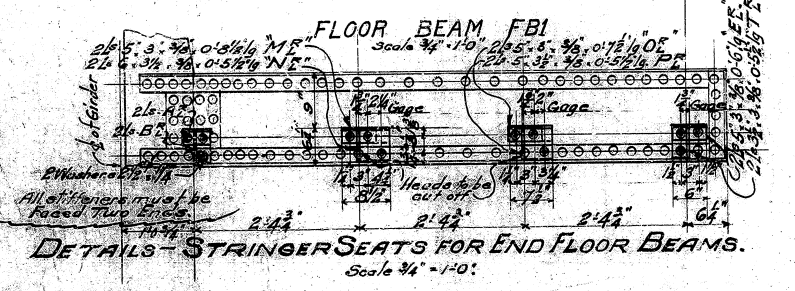




SECTION A-A

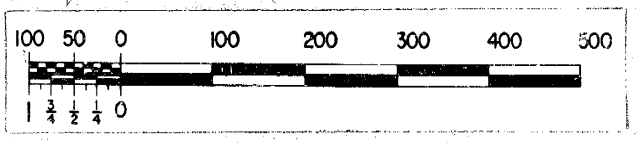
MATERIAL REQ'D.

3 Floorbeams Marked		FB1.
4 Blast Plates	"	SP1.
2 " "	"	SP2.
6 Top Cover Plates	"	T.P.
6 Bolt " "	"	B.P.
28 Angles	"	AL.
26 "	"	BL.
24 "	"	CL.
24 "	"	DL.
28 "	"	EL.
24 "	"	HL.
12 "	"	KL.
12 "	"	LL.
4 "	"	ML.
4 "	"	NL.
4 "	"	OL.
4 "	"	PL.
4 "	"	TL.
28 Washers 2½" × 1/4" tk.		
1775 Rivets	3/4"	2 1/8" lg. U.H.
45 "	3/4"	2 3/8" "
20 "	3/4"	5" "
85 "	3/4"	3 3/8" "
35 "	3/4"	3 7/8" "

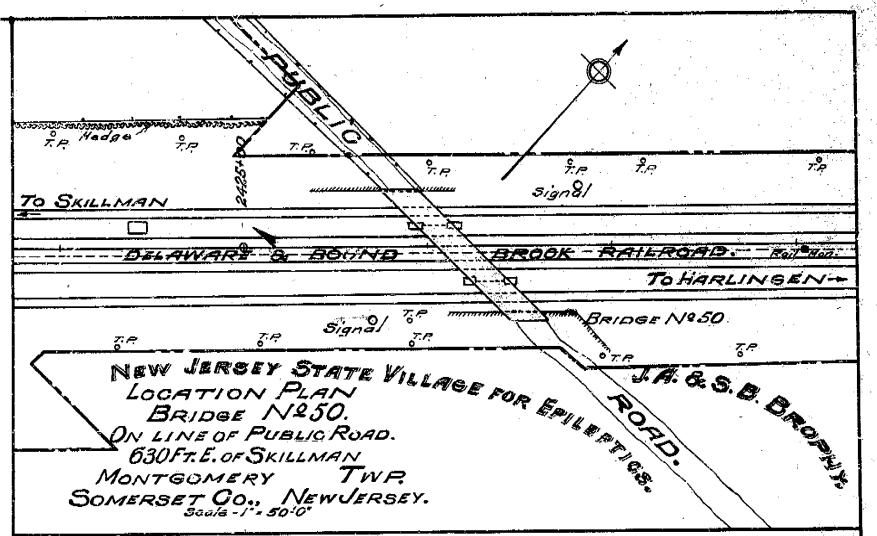


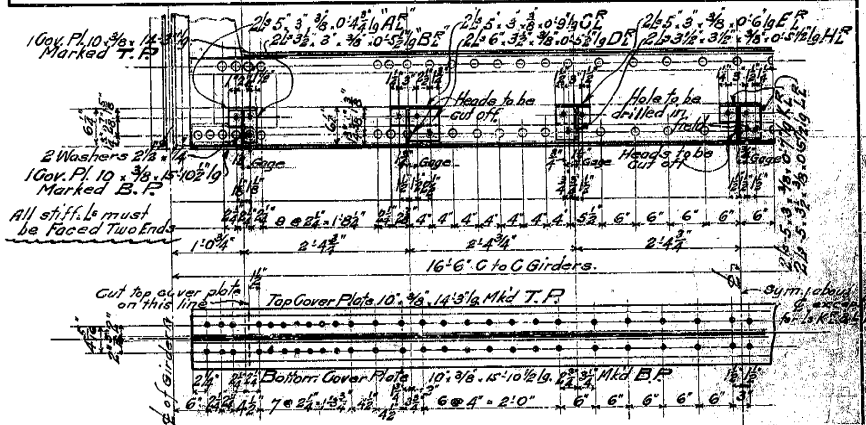
DETAILS - STRINGER SEATS FOR END FLOOR BEAMS.
Scale 3/4" = 1'-0"

RIVETS 3/4" diam.
HOLES 13/16" diam.
Paint one shop coat of Red Lead and Pure Linseed Oil.



Valuation Section 7 N.J. (ML).
REPAIRS TO FLOORBEAMS.





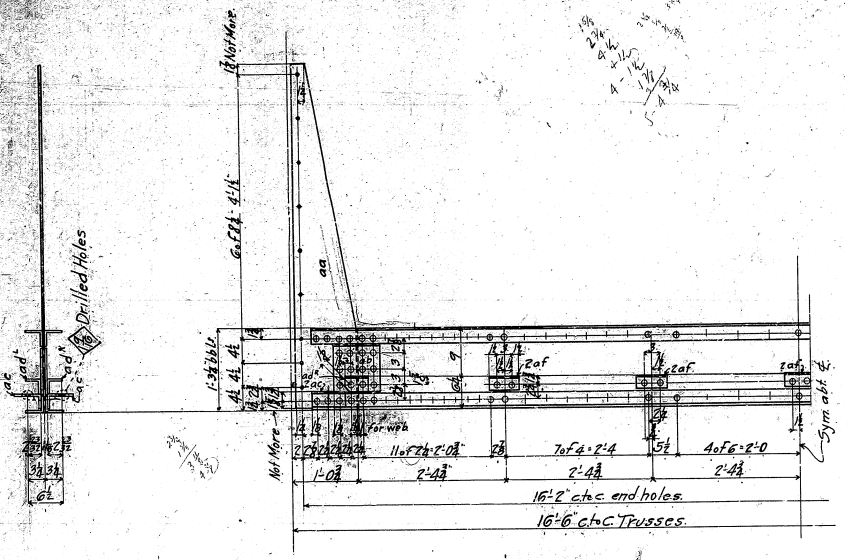
DETAILS OF STRINGER SEATS & COVER PLATES.
Intermediate Floorbeams
Scale 3/4" = 1'-0"

MF 140490

REPAIRS TO BRIDGE No. 50.
ON LINE OF PUBLIC ROAD.
EAST OF SKILLMAN
NEW YORK BRANCH
N.Y. DIV'N. P&R.R'Y.
August 7 - 1922
Scales as noted.

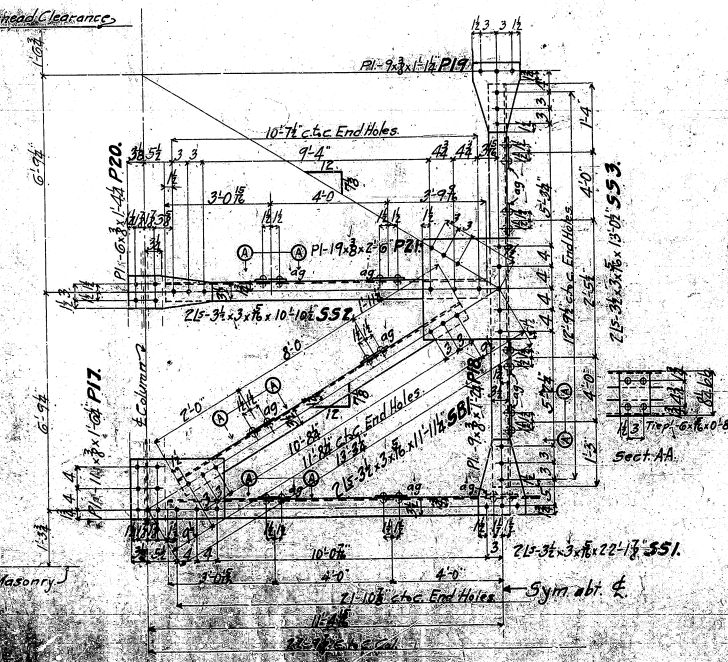
45.95

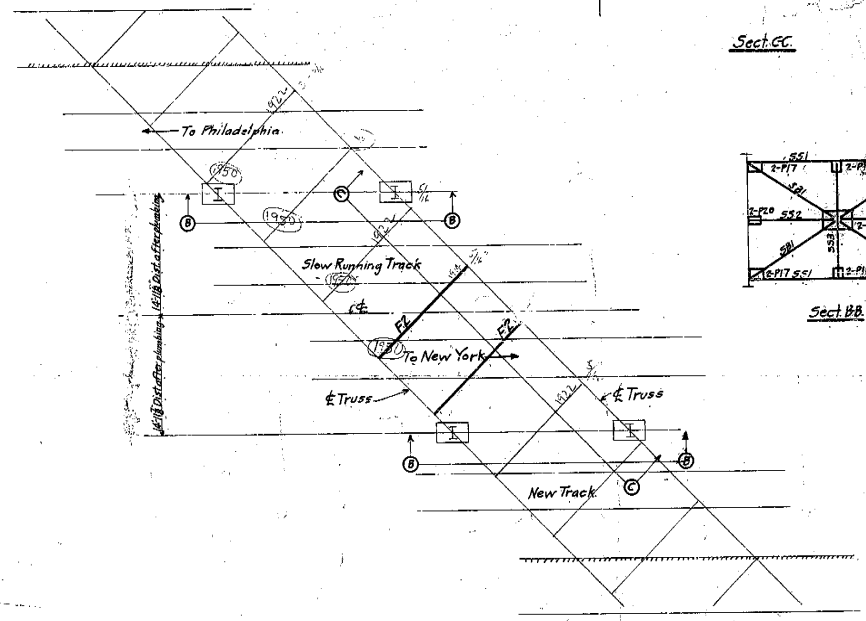
CHIEF ENGINEER'S OFFICE PHILADELPHIA

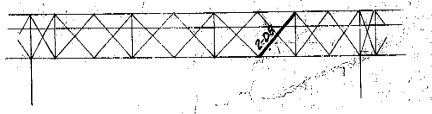


FLOOR BEAM – F2.

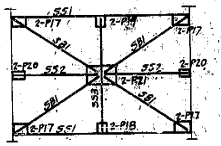
4 Ls-3½"x3½"x⅜"x15'-10½"
1 Web-15"x⅜"x14'-4½"
2 Pls-12"x⅜"x5'-4½" aa
4 Sp'l. Pls. 9"x⅜"x0'-9" ab.
4 Ls-5"x3½"x⅜"x0'-6½" ac.
4 Ls-3"x3"x⅜"x0'-4½" ad
10 Ls-3"x3"x⅜"x0'-6" af.







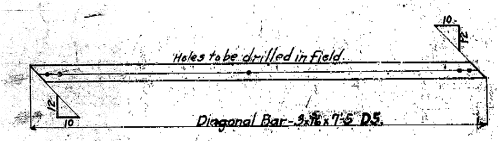
Sect. CC.



Sect. BB.

Marking Diagram.

NOTE TO ERECTOR:–
Holes to be drilled in field in columns to match new column bracing.



	REQUIRED	
2	FLOOR BEAMS	F2
4	SWAY STRUTS	S51
4	" "	S52
2	" "	S53
8	BRACES	S18
16	PLATES	P17
8	"	P20
4	"	P21
4	"	P19
4	"	P18
2	DIAGONAL BARS	D5

AS, 95

mf 140495

NOTES. MATERIAL. O. H. Steel. Abs. Card 756 Struct.
SPECIFICATIONS. P. & R. Ry. Co. 1909
INSPECTION. R. W. Hunt & Co.
ERECTION. A. B. Co.
RIVETS ¾" dia.
OPEN HOLES 15/16" dia.
REARING Rust
SHOP DWG. PAGE NO. S1-2
SKIRMING MEB. A. R.

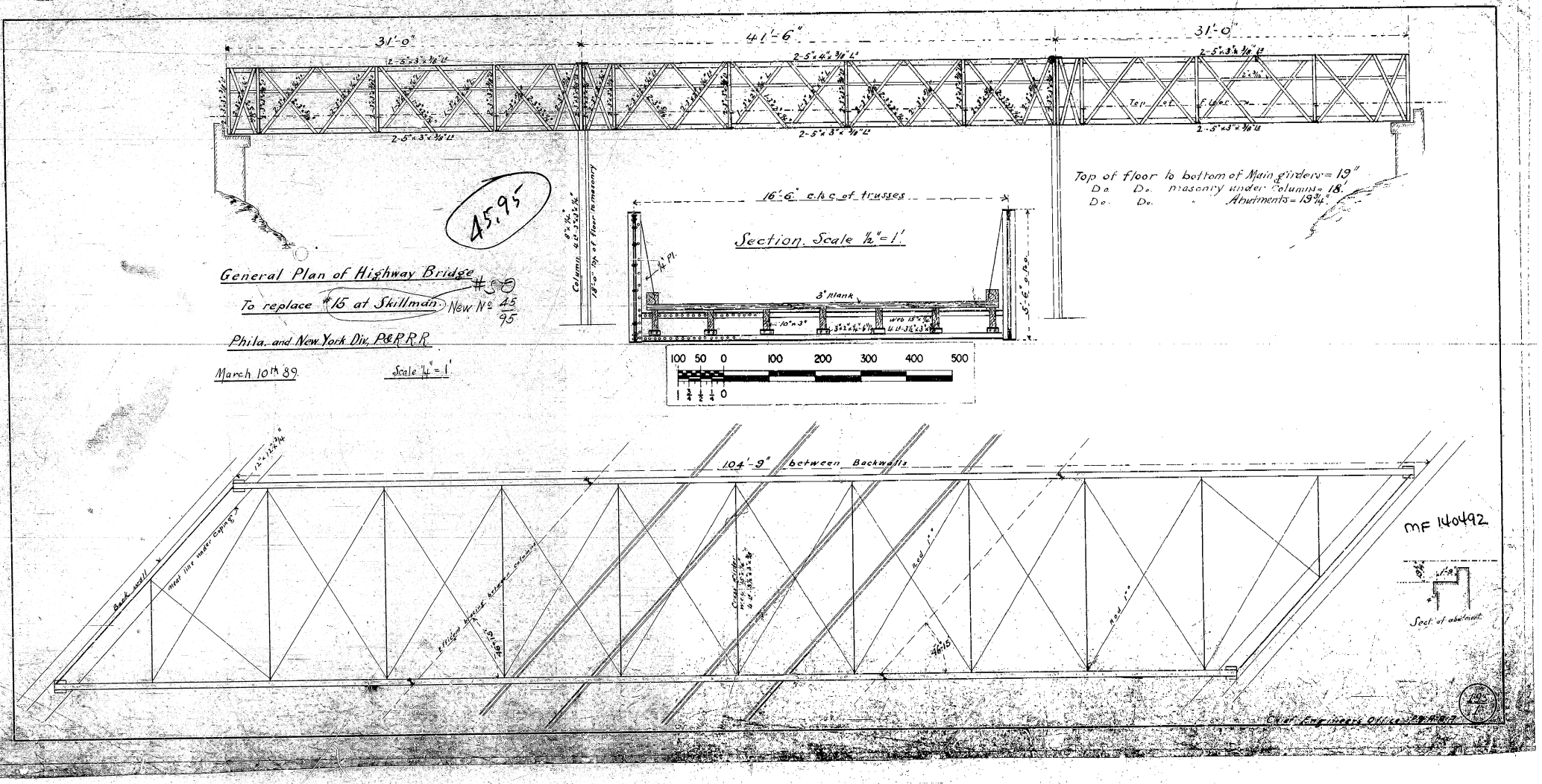
45
145

P. & R. RY. CO.
N. Y. Branch N. Y. Div.
Repairs to Bridge No. 50
East of Skillman
SCALE 1 in. = 1 ft.

AMERICAN BRIDGE CO.
AMBRIDGE PLANT

Dwg. made at Ambridge Pa. by [illegible]
Dwg. checked by [illegible]
Date [illegible]
Dwg. checked by [illegible]
Date [illegible]
DRAWING C-6096 SHEET [illegible]

100 50 0 100 200 300 400 500
1 ¾ ½ ¼ 0


31'-0"
41'-6"
31'-0"
2-5"x3"x3/8" L's
Top of floor to bottom of Main girders = 19"
Do Do masonry under columns = 18"
Do Do " Abutments = 19¾"
16'-6" c.to c. of trusses
Section. Scale ½" = 1'
3" plank
104'-9" between Backwalls
Back wall
Seat of abutment
45.95
General Plan of Highway Bridge
To replace #15 at Skillman
New No. 45/95
Phila. and New York Div. P&R.R.R.
March 10th 89.
Scale ¼" = 1'
MF 140492
Chief Engineers Office

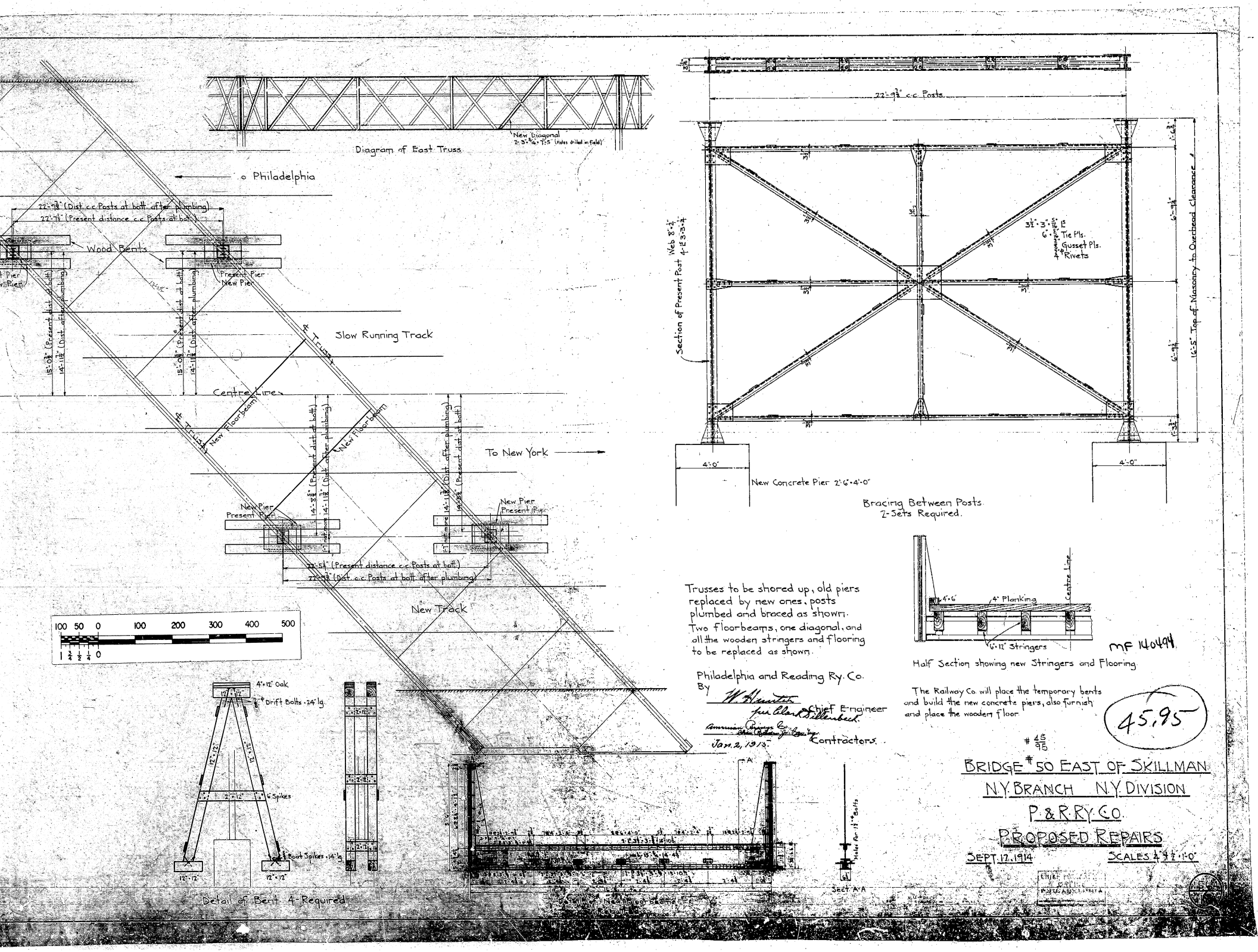


Diagram of East Truss
New Diagonal
2-3"×3/8"×7'-5" (Holes drilled in field)
Philadelphia
22'-9 3/8" (Dist c.c Posts at bolt after plumbing)
22'-7 1/2" (Present distance c.c Posts at bolt)
Wood Bents
Present Pier
New Pier
Slow Running Track
℄ Truss
Centre Line
New Floor beam
To New York
New Pier
Present Pier
22'-5 1/4" (Present distance c.c Posts at bolt)
22'-9 3/8" (Dist. c.c Posts at bolt after plumbing)
New Track
100 50 0 100 200 300 400 500
1 3/4 1 1/2 1/4 0
22'-9 3/8" c.c Posts
Section of Present Post
Web 8"-2"
4-L 3"-3"-1/4
3 1/2"·3"·5/16 Ls
6"·1/4" Tie Pls.
Gusset Pls.
3/4" Rivets
6'-9 1/4"
16'-5" Top of Masonry to Overhead Clearance
4'-0"
New Concrete Pier 2'-6"·4'-0"
Bracing Between Posts.
2-Sets Required.
4"·6"
4" Planking
Centre Line
6"·12" Stringers
Half Section showing new Stringers and Flooring
4"·12" Oak
3/4" Drift Bolts - 24" lg.
6" Spikes
Root Spikes - 14" lg.
12"·12"
Detail of Bent 4 Required
Holes for 1 1/8" Bolts
Sect A-A
Trusses to be shored up, old piers replaced by new ones, posts plumbed and braced as shown. Two floorbeams, one diagonal, and all the wooden stringers and flooring to be replaced as shown.
Philadelphia and Reading Ry. Co.
By
Chief Engineer
Contractors
Jan. 2, 1913
The Railway Co. will place the temporary bents and build the new concrete piers, also furnish and place the wooden floor.
MF 140494
45.95
45/95
BRIDGE # 50 EAST OF SKILLMAN
N.Y. BRANCH N.Y. DIVISION
P. & R. RY. CO.
PROPOSED REPAIRS
SEPT. 17, 1914
SCALES 1/4" = 1'-0"

Bridge Seats of Masonry of new Bridge

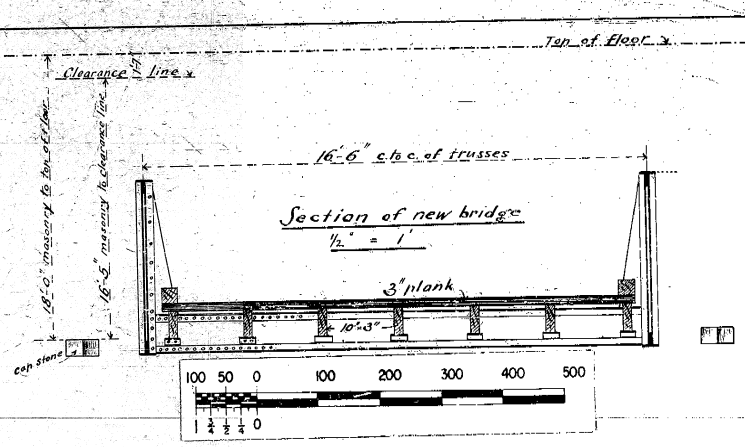
To replace (#15) 50 New No 45/95 at Skillman

Phila. and New York Div. P.&R.R.R.

March 10th 89.

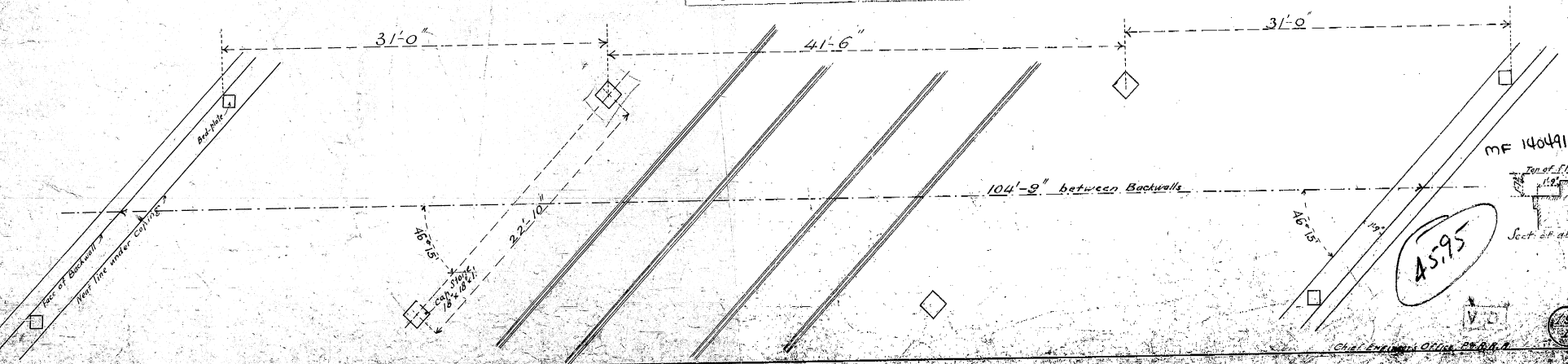
Scale 1/4" = 1'

45,95

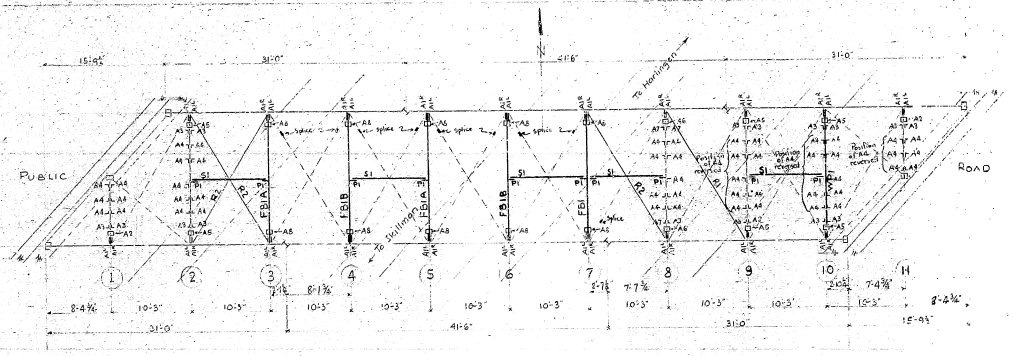


Top of floor to bottom of Main girders = 19"
Do. Do. masonry under Columns = 18'
Do. Do. " Abutments = 19 1/4"

Note: Floor of new bridge will be straight; not wharped like present floor.

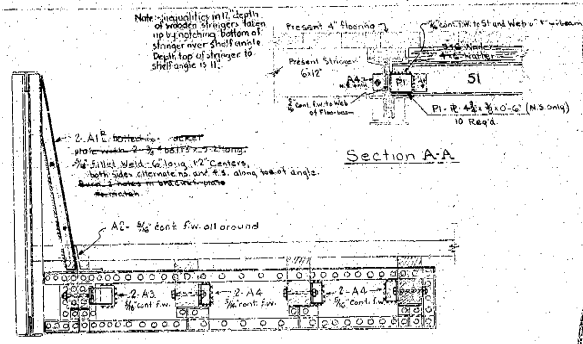


MF 140491



PLAN

Scale: ⅛" = 1'-0"

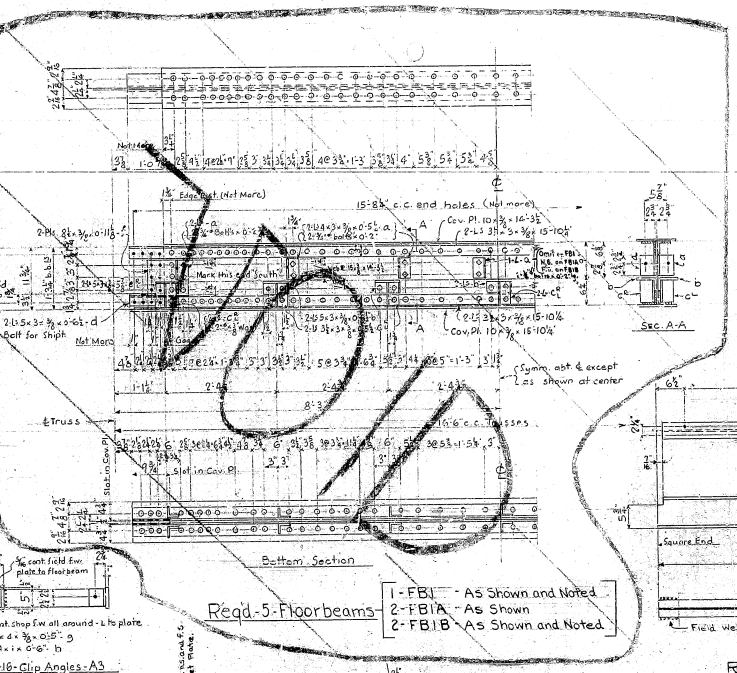


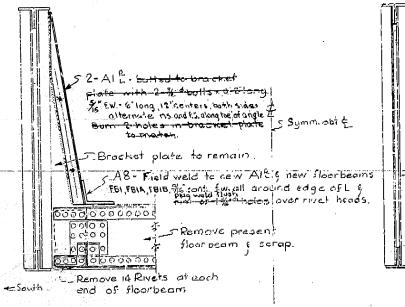
Section A-A

Detail of present floorbeam ①

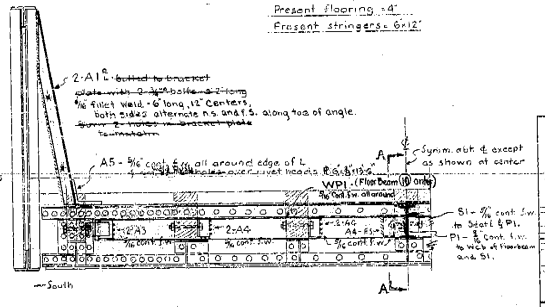
(Present floorbeam ⑪ same)

No.	Description	Mark	Remarks
20	L 3½ x 3½ x 15/16 x 6'-10½"		
5	Web Pls. 15 x ⅜ x 16'-3½"		
3	Cov. Pl. 10 x ⅜ x 14'-3½"		
5	Cov. Pls. 10 x ⅜ x 15'-10½"		
64	L 4 x 3 x ⅜ x 2'-5½" a		
50	L 5 x 3 x ⅜ x 6'-6" b		FB1 2-FB1A 2-FB1B
20	L 3 x 3 x ⅜ x 6'-3½" c		
20	L 3 x 3 x ⅜ x 5'-8½" d		
20	Pls. 8½ x ⅜ x 0'-5½" e		
48	¾" Bolts x 2"		Sq. H.& N.
80	¾" Bolts x 0'-3½"		do
28	Washers 2½" x ⅜" Thick		Cut ¾" hole
5	PL 23 x 10-½"	S1	Sq. Ends
10	PL 4½ x ⅜ x 0'-6"	P1	
40	L 3½ x 3½ x ⅜ x 4'-1½"	A1	
2	Bent Pls. 9 x ⅜ x 1'-0"	A2	
16	L 6 x 4 x ⅜ x 0'-5½" g	A3	
16	Pls. 4 x 1'-0" x ⅜ h		
48	L 4 x 3 x ⅜ x 0'-5	A4	
6	Bent Pls. 9 x ⅜ x 0'-11½"	A5	
2	do. do. x 1'-1"	A6	
10	do. do. x 1'-1½"	A8	
4	L 4 x 3 x ⅜ x 0'-5½"	A7	
4	1" Rods x 1'-3½"		Fit the ¾ L.H. Thd. 1¾" Upset end and R.H. Thd. 1¾ L.H. Thd.
8	Std. Clevises - 1¾" Thd.	R1	
6	½" Bolts x 3½"		Hex. Hd. & Nut
132	¾" Bolts x 7½"	Std. Nut Together	Wood Stringer Work
100	¾" Bolts x 2" Std. Cut Together	Std. Nut Together	Shop Nut - Field Use
40	¾" Bolts x 2½" Std. Nut Together		Shop Nut - Field Use
32	¾" Bolts x 2½" do		Washers to S1
20	¾" Bolts x 2" do		Field Use



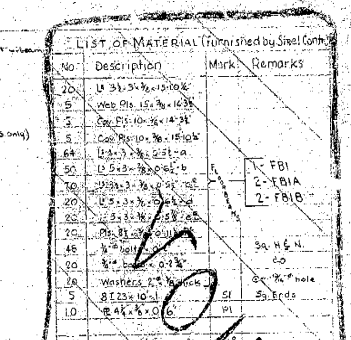


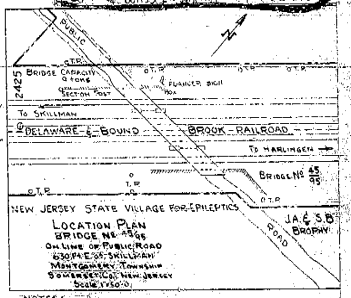
Detail of present floorbeams ③④⑤⑥ & ⑦



Detail of present floorbeams ②⑨ as shown

do. do. do. ⑩ - opp. hand





NOTES:

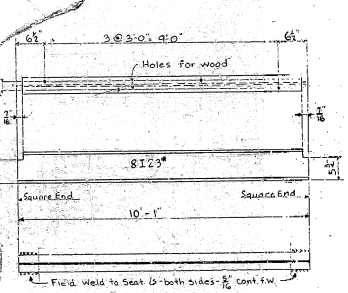
Reading Co. to arrange for all detours and place all necessary barricades, signs and markers.

Reading Co. will remove present flooring and portion of wood stringers to allow placing of new steelwork. Present flooring and wood stringers removed to be re-used. Reading Co. will replace.

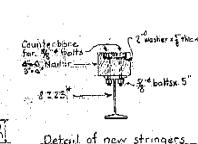
Reading Co. will furnish and place nailing pieces on top of new floorbeams FB1, FB1A, FB1B and Stringers S1.

Reading Co. will place ¾" bolts (furnished by Steel Contractor and included in List of Material) for fastening wood stringers to new clip angles.

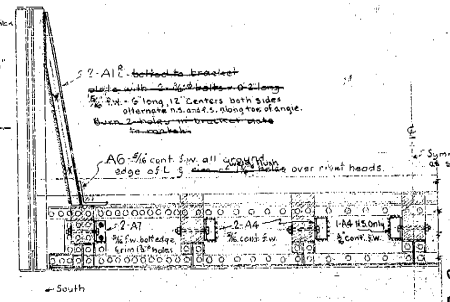
NOTE: A WELDED SECTION OR ROLLED SECTION OF EQUAL STRENGTH MAY BE SUBSTITUTED IN PLACE OF RIVETED SECTION SHOWN PROVIDED THE UNDERCLEARANCE IS NOT ENCROACHED UPON.



Req'd.-5-Stringers-S1

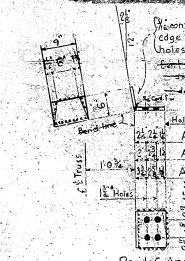


Detail of new stringers S1



Detail of present floorbeam ⑧

MF 140496
Pl. 45.95



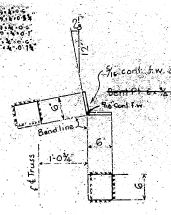
Req'd.-20-Angles-A1 as shown

do. 20- do. A1 opp. hand

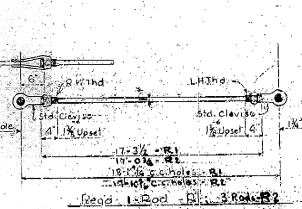
Req'd.-6-Angles-A5

do. -2- do. -A6

do. -10- do. -A8



Req'd. 2-Angles-A2



Req'd. 1-Rod - R1 - 3 Rods - R2

Complete with 1½" Bolt x 3½" lg. Hex. Hd. & Nut on each end.

Structural Steel Notes:

Rivets = ¾"

Open holes = ¾" Unless noted.

Nuts on all ¾" bolts used in New Floor beam Connections to prevent trusses from being LOSNA ELASTIC STOP NUTS as manufactured by Elastic Stop Nut Corporation of America Union, N.J.

Nuts on ¾" bolts used to connect Clip L's (g) to New Floor beams FB1, FB1A, FB1B to be checked in field after being drawn up tight.

All new steelwork to receive shop coat of Red Lead & linseed Oil paint.

All surfaces to be welded in field to be thoroughly cleaned before welding commences. All field welds to be painted by Steel Contractor.

Removal of present floor beams & erection of new steelwork by Steel Contractor.

Final coats of paint by Reading Co.

Ex. indicates fillet weld. Heavy lines & Ex. indicates fillet welds for ⅜" ⅜".

100 50 0 100 200 300 400 500

REPAIRS TO SUPERSTRUCTURE

BRIDGE No. 45/98

ON LINE OF PUBLIC ROAD ~ EAST OF SKILLMAN

NEW YORK BRANCH

PHILADELPHIA DIVISION ~ READING COMPANY

Scale: as noted

October 26, 1950

Chief Engineer's Office

Philadelphia, Pa.

3499 / 95

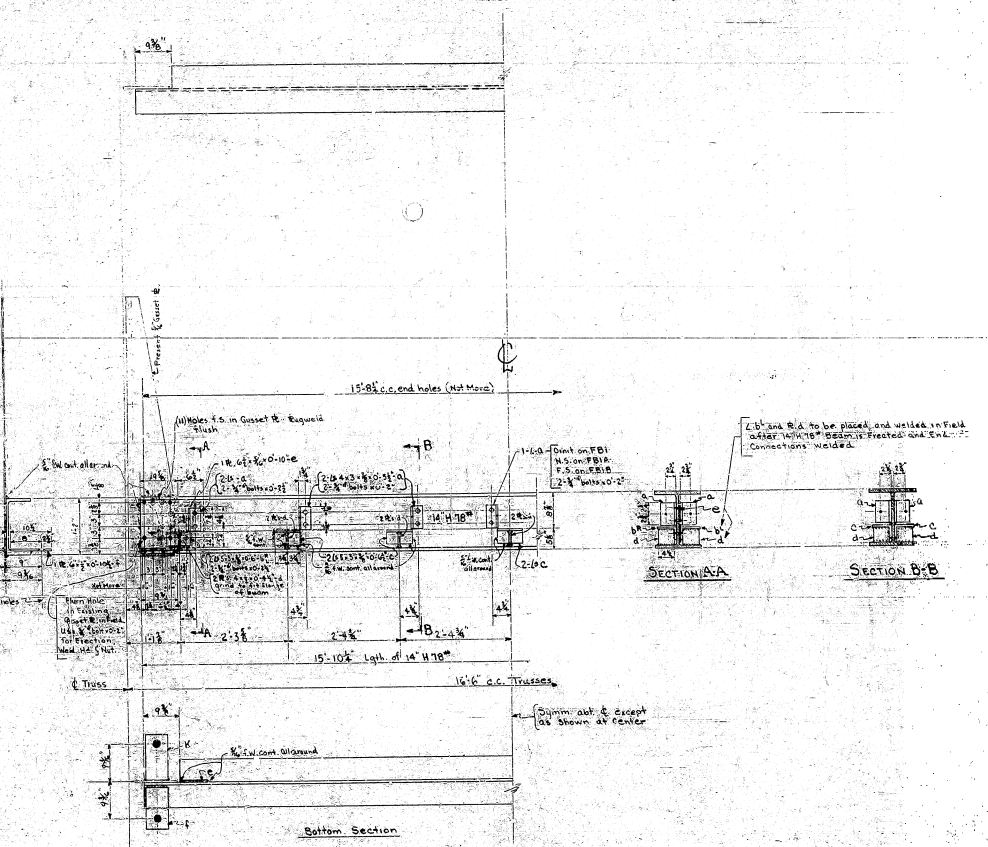
Vol. Sec. 7N (M.L.)

Refer to Dwg. No. 3432A 96

As Built 12-20-50

Dwn by R.C.P.

4-28 by L.E.T.



Req'd 5 Floorbeams
1 - FB1 - As Shown and Noted
2 - FB1A - As Shown
2 - FB1B - As Shown and Noted

No	Description	Mark	Remarks
1	14" H 78# x 15'-10½"	FB1	
2	14" H 78# x 15'-10½"	FB1A	
2	14" H 78# x 15'-10½"	FB1B	
64	L 4 x 3 x ⅜ x 0'-9¾"	a	
20	L 5 x 3½ x ⅜ x 0'-6"	b	
50	L 5 x 3½ x ⅜ x 0'-6¾"	c	
70	⅝" ø x 1¼" x 0'-4½"	d	
10	⅝" ø x ⅜" x 0'-10"	e	
10	⅝" ø x 1¼" x 2'-0-10½"	f	
16	⅝" ø x 1¼" x 0'-11⅝"	K	
78	⅝" ø Lines x 0'-2½"		SQ HEN
40	⅝" ø Lines x 0'-2½"		60°
5	8" I 23 x 10'-1"	S1	1 Sq Ends
10	PL 4 x ⅜ x 0'-6	P1	
40	L 4 x 3½ x ⅜ x 4'-1¾"	A1	
2	Bent PL 6 x ¾ x 1'-0"	A2	
16	L 6 x 4 x ⅜ x 0'-5'-9	A3	
16	Pls. 4 x 1 x 0'-6'-6		
48	L 4 x 3 x ⅜ x 0'-5	A4	
6	~~Bent Pl. 4 x ¾ x 1'-1¾"~~	A5	
2	~~do do x 1'-1"~~	A6	
10	~~do do x 1'-1¾"~~	A7	
4	L 4 x 3 x ⅜ x 0'-3¾"	A8	
1	1" ø Rod x 17'-3½"		
2	Std. Clevises 1⅛" rod	R1	
2	1½" ø bolts x 3½"		Hex Hd. & Nut
3	1" ø Rods x 17'-0¾"		
6	Std. Clevises 1⅛" rod	R2	
6	1" ø bolts x 3½"		Hex Hd. & Nut
132	¾" ø x 1'-9½"		Hex Head & Nut, Washer
32	⅝" ø bolts x 0'-5"		Hex Head & Nut
32	Washers 2" ø x ⅜" thick		For ⅝" ø hole
40	¾" ø bolts x 2'-3½"		Hex Head & Nut
1	PL ⅜ x 7½ x 6'-10½" long	WP1	
16	½" ø bolts x 3½"	Hex Head & Nut	

Extra work

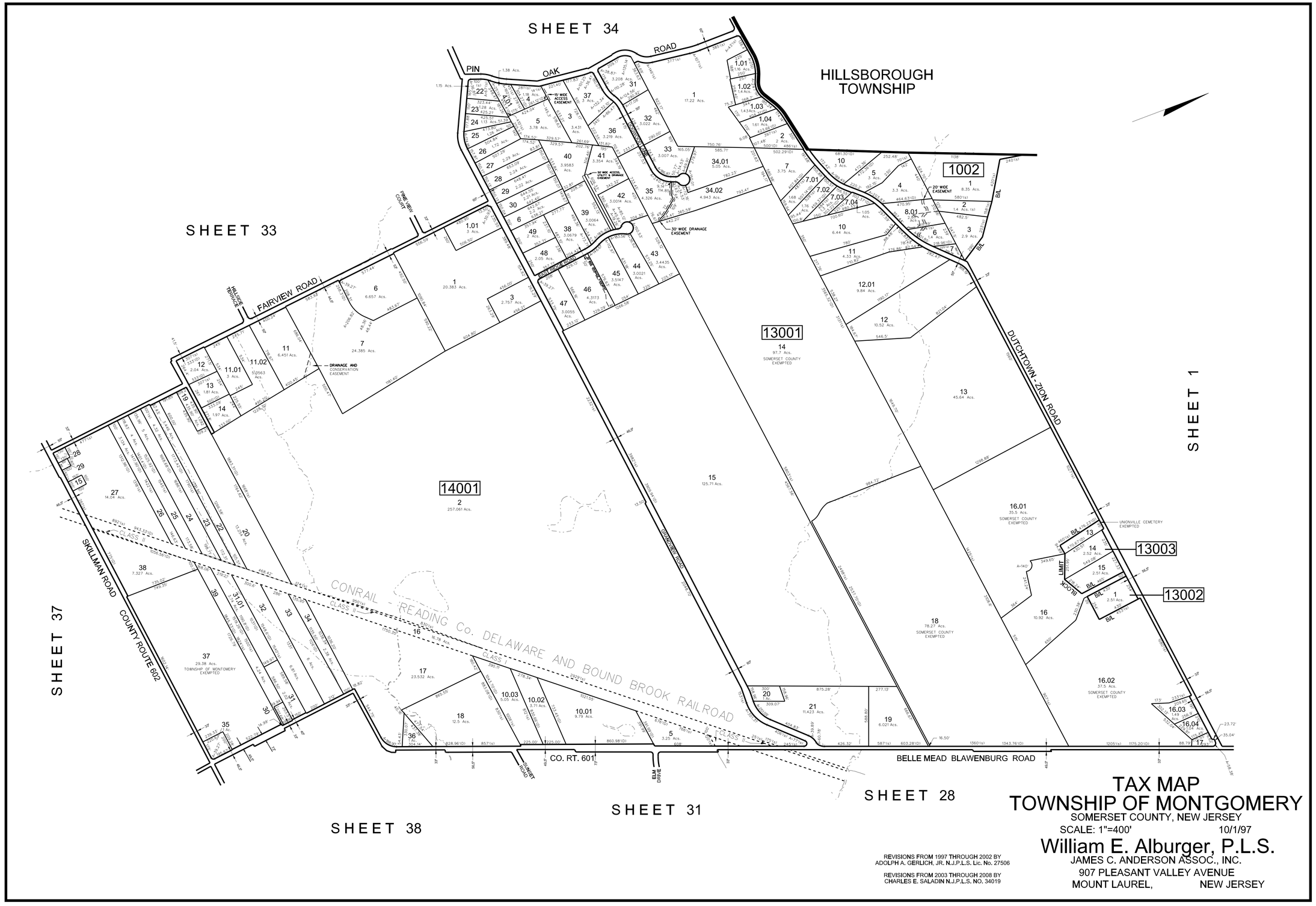
MF 140493
Br 45.95
AS BUILT 12-20-50

REPAIRS TO SUPERSTRUCTURE

BRIDGE No. 8
ON LINE OF PUBLIC ROAD EAST OF SKILLMAN
NEW YORK BRANCH
PHILADELPHIA DIVISION — READING COMPANY

Chief Engineer

APPENDIX E –
Tax Maps



REVISIONS FROM 1997 THROUGH 2002 BY
ADOLPH A. GERLICH, JR. N.J.P.L.S. Lic. No. 27506

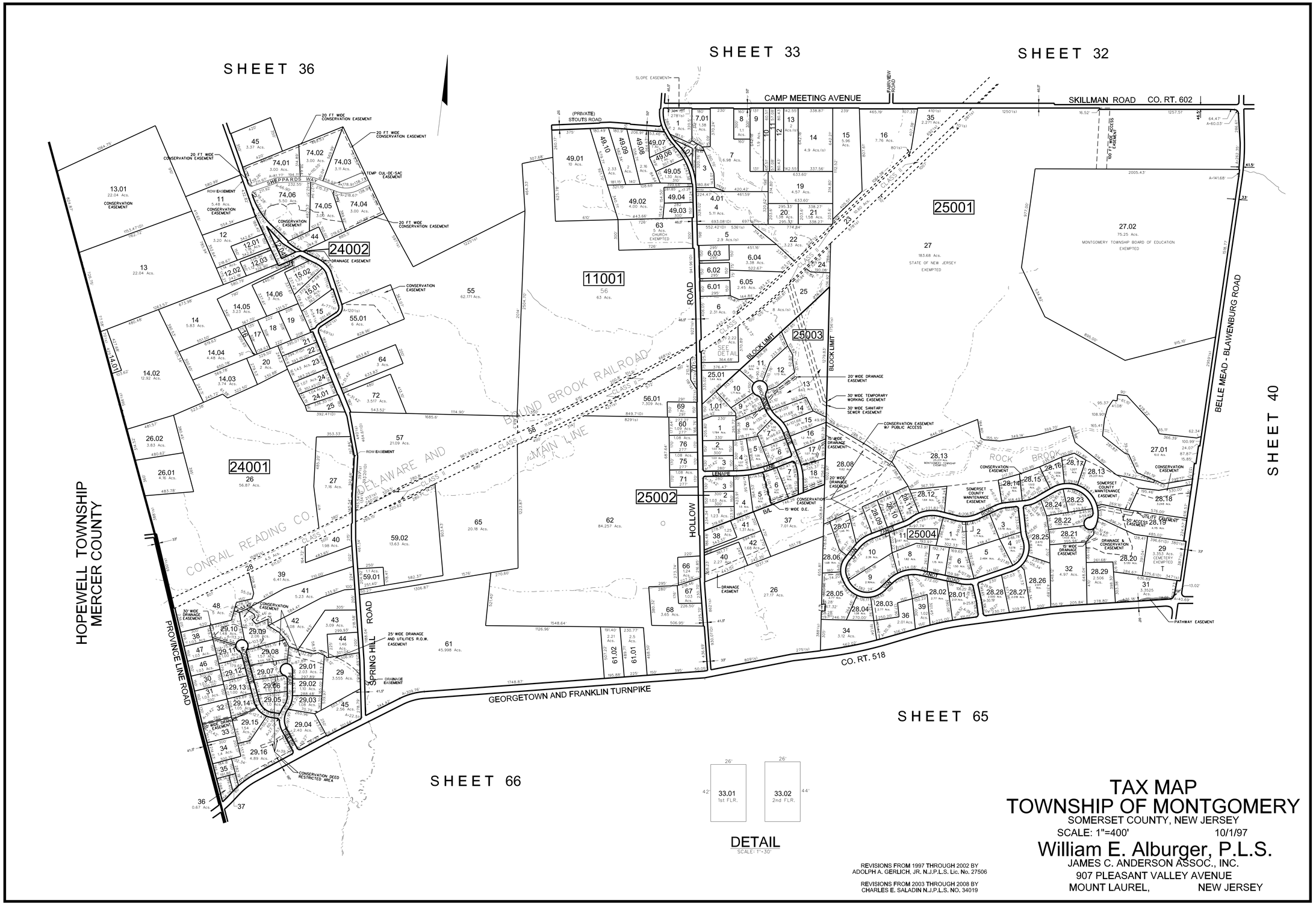
REVISIONS FROM 2003 THROUGH 2008 BY
CHARLES E. SALADIN N.J.P.L.S. NO. 34019

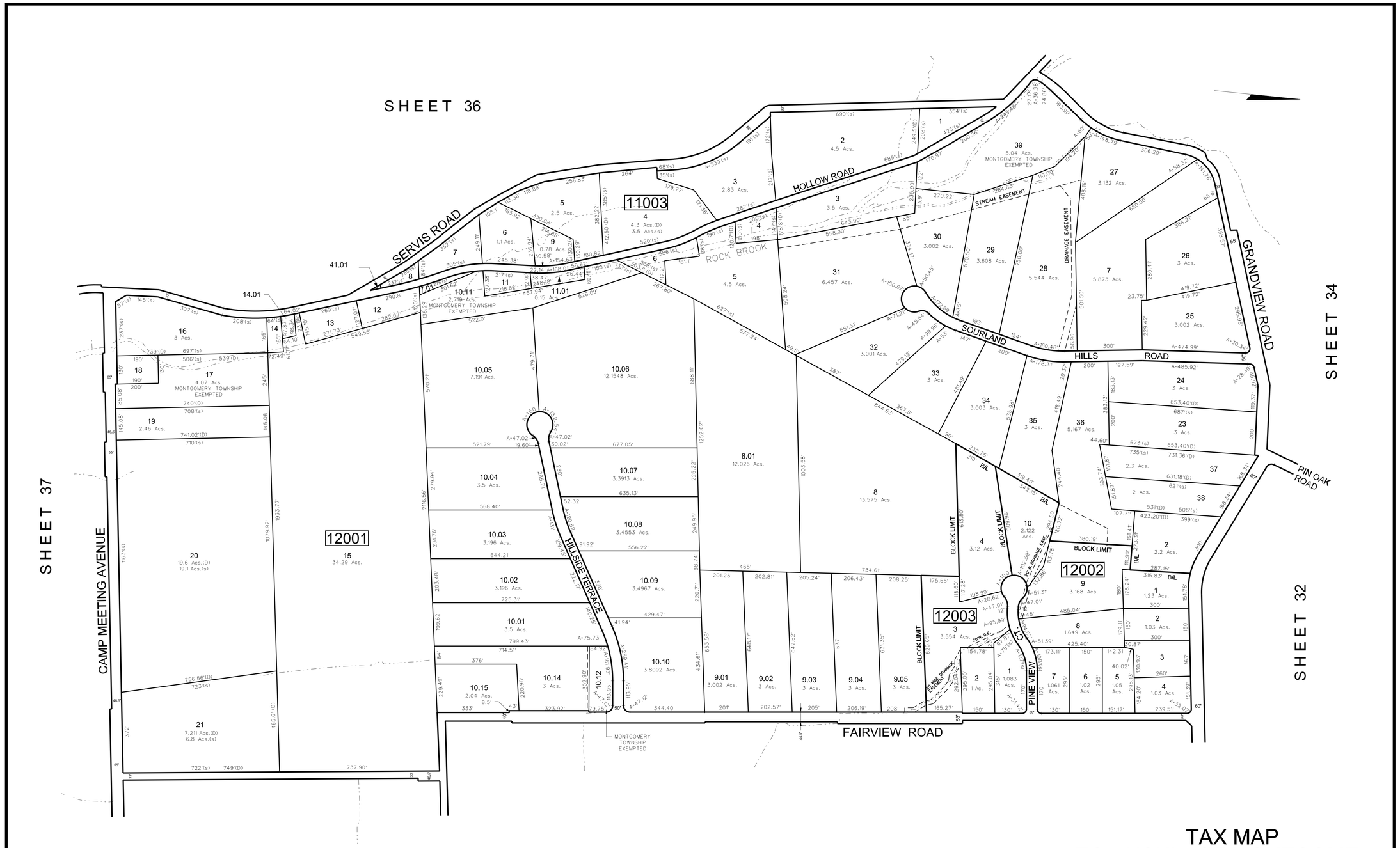
TAX MAP
TOWNSHIP OF MONTGOMERY

SOMERSET COUNTY, NEW JERSEY

SCALE: 1"=400' 10/1/97

William E. Alburger, P.L.S.
JAMES C. ANDERSON ASSOC., INC.
907 PLEASANT VALLEY AVENUE
MOUNT LAUREL, NEW JERSEY


SHEET 36
SHEET 33
SHEET 32
SHEET 40
SHEET 65
SHEET 66
HOPEWELL TOWNSHIP
MERCER COUNTY
CAMP MEETING AVENUE
SKILLMAN ROAD CO. RT. 602
BELLE MEAD - BLAWENBURG ROAD
CO. RT. 518
GEORGETOWN AND FRANKLIN TURNPIKE
PROVINCE LINE ROAD
SPRING HILL ROAD
HOLLOW ROAD
(PRIVATE) STOUTS ROAD
SHEPPARDS WAY
BOUND BROOK RAILROAD
DELAWARE AND
CONRAIL READING CO.
ROCK BROOK
24001
24002
11001
25001
25002
25003
25004
DETAIL
33.01
1st FLR.
33.02
2nd FLR.
TAX MAP
TOWNSHIP OF MONTGOMERY
SOMERSET COUNTY, NEW JERSEY
SCALE: 1"=400'
10/1/97
William E. Alburger, P.L.S.
JAMES C. ANDERSON ASSOC., INC.
907 PLEASANT VALLEY AVENUE
MOUNT LAUREL, NEW JERSEY
REVISIONS FROM 1997 THROUGH 2002 BY
ADOLPH A. GERLICH, JR. N.J.P.L.S. Lic. No. 27506
REVISIONS FROM 2003 THROUGH 2008 BY
CHARLES E. SALADIN N.J.P.L.S. NO. 34019



TAX MAP
TOWNSHIP OF MONTGOMERY

SOMERSET COUNTY, NEW JERSEY

SCALE: 1"=200' 10/1/97

William E. Alburger, P.L.S.
JAMES C. ANDERSON ASSOC., INC.
907 PLEASANT VALLEY AVENUE
MOUNT LAUREL, NEW JERSEY

REVISIONS FROM 1997 THROUGH 2002 BY
ADOLPH A. GERLICH, JR. N.J.P.L.S. Lic. No. 27506

REVISIONS FROM 2003 THROUGH 2008 BY
CHARLES E. SALADIN N.J.P.L.S. NO. 34019

APPENDIX F –
Crash Data

CRASH SUMMARY

Camp Meeting Avenue (MP -0.6 to MP 0.5)
Montgomery Township, Somerset County
01/01/2007 THRU 12/31/12

YEAR	COUNT	% of TOTAL
2007	2	16.7%
2008	5	41.7%
2009	4	33.3%
2010	0	0.0%
2011	0	0.0%
2012	1	8.3%
TOTAL	12	100%

MONTH	COUNT	% of TOTAL
January	1	8.3%
February	1	8.3%
March	2	16.7%
April	2	16.7%
May	1	8.3%
June	0	0.0%
July	2	16.7%
August	0	0.0%
September	2	16.7%
October	0	0.0%
November	0	0.0%
December	1	8.3%
TOTAL	12	100%

DAY OF WEEK	COUNT	% of TOTAL
Monday	1	8.3%
Tuesday	4	33.3%
Wednesday	1	8.3%
Thursday	2	16.7%
Friday	1	8.3%
Saturday	0	0.0%
Sunday	3	25.0%
TOTAL	12	100%

SEVERITY	COUNT	% of TOTAL
Fatal	0	0.0%
Injury	1	8.3%
Property Damage	11	91.7%
TOTAL	12	100%

COLLISION TYPE	COUNT	% of TOTAL
Same Direction-Rear End	0	0.0%
Same Direction-Sideswipe	0	0.0%
Opposite Direction-Sideswipe	2	16.7%
Angle	1	8.3%
Head On	2	16.7%
Parked Vehicle	1	8.3%
Left Turn/ U Turn	0	0.0%
Backing	1	8.3%
Encroachment	0	0.0%
Overturned	0	0.0%
Fixed Object	2	16.7%
Animal	3	25.0%
Pedestrian	0	0.0%
Non-Fixed Object	0	0.0%
Railcar-Vehicle	0	0.0%
Unknown	0	0.0%
Other	0	0.0%
TOTAL	12	100%

INTERSECTION	COUNT	% of TOTAL
At signalized Intersection	0	0.0%
At Unsignalized Intersection	2	16.7%
Between Intersections	10	83.3%
Railroad Crossing	0	0.0%
TOTAL	12	100%

SURFACE CONDITION	COUNT	% of TOTAL
Dry	10	83.3%
Wet Surface	2	16.7%
Snow	0	0.0%
Ice	0	0.0%
Unknown	0	0.0%
Other	0	0.0%
TOTAL	12	100.00%

LIGHT	COUNT	% of TOTAL
Day	7	58.3%
Dusk	1	8.3%
Night	4	33.3%
Dawn	0	0.0%
Unknown	0	0.0%
TOTAL	12	100%

New Jersey Department of Transportation
Bureau of Safety Programs
Crash Summary

Crash Summary For Municipal Road System

For calendar year 2011

Total Crashes: 79886

Severity	Count	% of Total
Fatal	106	0.13%
Injury - Maj	339	0.42%
Injury - Mod	3213	4.02%
Injury - Min	12711	15.91%
Property Damage	63517	79.51%

Intersection	Count	% of Total
At Signalized	5953	7.45%
At Unsignalized	20560	25.74%
Between Intersections	53336	66.77%
Railroad Crossing	37	0.05%

Collision Type	Count	% of Total
Same Dir- Rear End	11572	14.49%
Same Dir- Sideswipe	7308	9.15%
Angle	13929	17.44%
Head On	2842	3.56%
Parked Vehicle	21130	26.45%
Left Turn / U Turn	1640	2.05%
Backing	6221	7.79%
Encroachment	245	0.31%
Overturned	408	0.51%
Fixed Object	8882	11.12%
Animal	1429	1.79%
Pedestrian	2413	3.02%
Pedalcycle	888	1.11%
Non-Fixed Object	383	0.48%
Railcar - Vehicle	20	0.03%
Unknown	98	0.12%
Other	478	0.60%

Surface Condition	Count	% of Total
Dry	60331	75.52%
Wet Surface	13110	16.41%
Snow	3035	3.80%
Ice	2025	2.53%
Unknown	664	0.83%
Other	721	0.90%

Light	Count	% of Total
Day	53852	67.41%
Dusk	1864	2.33%
Night	21897	27.41%
Dawn	815	1.02%
Unknown	1458	1.83%

APPENDIX G –
Traffic Counts

Intersection Turning Movement Count Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and CR 602 / Skillman Road**
Date: 2/4/2010

BEGIN TIME	Northbound				Southbound				Westbound				Eastbound				TOTAL
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 602 / Skillman Road*				*CR 602 / Camp Meeting Ave*				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
6:00 AM	0	54	2	0	1	11	1	0	1	0	3	0	0	2	1	0	76
6:15 AM	3	74	5	0	0	22	1	0	4	0	1	0	0	1	1	0	112
6:30 AM	1	88	4	0	1	49	0	0	7	0	1	0	0	1	0	0	152
6:45 AM	7	98	5	0	2	59	6	0	21	5	3	0	4	5	2	0	217
7:00 AM	8	170	37	0	1	118	10	0	75	26	4	0	3	5	4	0	461
7:15 AM	2	197	43	0	5	228	26	0	77	38	3	0	25	32	16	0	692
7:30 AM	2	163	25	1	5	215	16	0	19	5	8	0	11	25	8	0	502
7:45 AM	0	171	27	0	0	181	2	0	13	1	2	0	2	9	12	0	420
8:00 AM	7	198	19	0	2	170	4	0	25	3	3	0	4	20	12	0	467
8:15 AM	5	150	7	0	6	205	3	0	37	5	12	0	12	22	18	0	482
8:30 AM	6	158	10	0	8	183	1	0	15	0	4	0	5	11	9	0	410
8:45 AM	3	140	12	0	5	131	5	0	14	9	3	0	6	9	8	0	345
9:00 AM	17	91	10	0	7	117	2	0	11	4	2	0	3	11	7	0	282
9:15 AM	3	91	7	0	3	107	3	0	11	3	1	0	0	3	3	0	235
9:30 AM	2	83	4	0	6	75	5	0	5	7	5	0	3	3	0	0	198
9:45 AM	0	51	5	0	1	47	4	0	8	5	2	0	4	3	5	0	135
AM PEAK HR 7:15 AM - 8:15 AM	11	729	114	1	12	794	48	0	134	47	16	0	42	86	48	0	2081
PHF	0.39	0.92	0.66		0.60	0.87	0.46		0.44	0.31	0.50		0.42	0.67	0.75		

BEGIN TIME	Northbound				Southbound				Westbound				Eastbound				TOTAL
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 602 / Skillman Road*				*CR 602 / Camp Meeting Ave*				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
2:00 PM	6	21	15	0	1	52	5	0	8	11	5	0	3	6	1	0	134
2:15 PM	1	26	18	1	2	56	6	0	9	14	6	0	4	7	2	0	151
2:30 PM	8	32	20	0	3	66	7	0	10	16	7	0	5	10	3	0	187
2:45 PM	11	41	24	0	3	75	8	0	13	20	10	0	9	12	3	0	229
3:00 PM	14	61	34	2	1	55	7	0	21	10	8	0	6	9	3	0	229
3:15 PM	7	72	24	1	5	82	4	0	33	12	8	0	1	4	3	0	255
3:30 PM	9	64	28	0	1	132	6	0	50	10	6	0	5	4	1	0	316
3:45 PM	2	90	19	0	2	100	8	0	28	5	10	0	4	7	4	0	279
4:00 PM	2	72	50	1	6	107	7	0	34	12	8	0	6	13	3	0	320
4:15 PM	5	77	31	0	5	105	3	0	32	14	2	0	3	9	2	0	288
4:30 PM	1	118	25	0	7	101	4	0	28	10	11	0	3	14	4	0	326
4:45 PM	5	125	27	2	2	106	9	0	23	10	7	0	9	12	2	0	337
5:00 PM	4	139	40	0	6	145	6	0	29	15	6	1	6	17	10	0	423
5:15 PM	7	122	33	1	6	157	6	0	35	23	3	0	1	12	5	0	410
5:30 PM	4	173	42	0	3	143	4	0	16	9	3	0	3	6	10	0	416
5:45 PM	6	136	17	0	4	126	3	0	13	23	2	0	1	16	8	0	355
6:00 PM	3	145	12	3	3	117	7	0	18	12	4	0	6	12	4	0	343
6:15 PM	12	116	18	0	2	126	4	0	18	16	6	0	5	6	8	0	337
6:30 PM	5	74	17	0	1	125	8	0	16	8	1	0	2	2	0	0	259
6:45 PM	6	81	16	0	3	133	12	0	81	17	1	0	6	11	7	0	374
PM PEAK HOUR 5:00 PM - 6:00 PM	21	570	132	1	19	571	19	0	93	70	14	1	11	51	33	0	1604
PHF	0.75	0.82	0.79		0.79	0.91	0.79		0.66	0.76	0.58		0.46	0.75	0.83		

Gannett Fleming
Your Trusted Advisor Since 1915

South Plainfield, NJ

O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\05_WORKING\TRAFFIC\REPORT\DATA COLLE\Forced Peaks\Int #1_CR 601 and CR 602.xls

N
CR 602 / Camp Meeting Ave
CR 601 / Belle Mead Blawenburg Road
48 [19]
794 [571]
12 [19]
16 [14]
47 [70]
134 [93]
[11] 42
[51] 86
[33] 48
11 [21]
729 [570]
114 [132]
Legend
XXX Morning Peak Hour
[XXX] Evening Peak Hour
Morning Peak Hour
7:15 AM - 8:15 AM
Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and CR 602 / Skillman Road**
Date: 2/4/2010

AM PEAK HR	Northbound				Southbound				Westbound				Eastbound			
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 602 / Skillman Road*				*CR 602 / Camp Meeting Ave*			
7:15 AM - 8:15 AM	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL
AUTOS	8	706	110	824	8	784	48	840	121	43	14	178	38	84	47	169
HEAVY TRUCKS	0	2	0	2	0	6	0	6	0	1	0	1	0	0	1	1
LIGHT TRUCKS	2	19	4	25	1	4	0	5	10	2	1	13	1	0	0	1
BUSES	1	2	0	3	3	0	0	3	3	1	1	5	3	2	0	5
TOTAL	**11**	**729**	**114**	**854**	**12**	**794**	**48**	**854**	**134**	**47**	**16**	**197**	**42**	**86**	**48**	**176**
AUTOS	73%	97%	96%	96%	67%	99%	100%	98%	90%	91%	88%	90%	90%	98%	98%	96%
HEAVY TRUCKS	0%	0%	0%	0%	0%	1%	0%	1%	0%	2%	0%	1%	0%	0%	2%	1%
LIGHT TRUCKS	18%	3%	4%	3%	8%	1%	0%	1%	7%	4%	6%	7%	2%	0%	0%	1%
BUSES	9%	0%	0%	0%	25%	0%	0%	0%	2%	2%	6%	3%	7%	2%	0%	3%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and CR 602 / Skillman Road**
Date: 2/4/2010

PM PEAK HOUR 5:00 PM - 6:00 PM	Northbound				Southbound				Westbound				Eastbound			
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 602 / Skillman Road*				*CR 602 / Camp Meeting Ave*			
	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL
AUTOS	21	568	129	718	19	556	19	594	93	70	13	176	10	50	33	93
HEAVY TRUCKS	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0
LIGHT TRUCKS	0	2	2	4	0	11	0	11	0	0	1	1	1	0	0	1
BUSES	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	**21**	**570**	**132**	**723**	**19**	**571**	**19**	**609**	**93**	**70**	**14**	**177**	**11**	**51**	**33**	**95**
AUTOS	100%	100%	98%	99%	100%	97%	100%	98%	100%	100%	93%	99%	91%	98%	100%	98%
HEAVY TRUCKS	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
LIGHT TRUCKS	0%	0%	2%	1%	0%	2%	0%	2%	0%	0%	7%	1%	9%	0%	0%	1%
BUSES	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	1%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Intersection Turning Movement Count Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and CR 518 / Georgetown and Franklin Turnpike**
Date: 2/4/2010

BEGIN TIME	Northbound				Southbound				Westbound				Eastbound				TOTAL
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 518 / Georgetown and Franklin Turnpike*				*CR 518 / Georgetown and Franklin Turnpike*				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
6:00 AM	4	40	8	0	3	8	6	0	1	3	0	0	12	45	3	0	133
6:15 AM	3	55	11	0	2	10	8	0	2	6	5	0	9	46	10	0	167
6:30 AM	3	72	10	0	1	36	19	0	4	21	4	0	26	70	9	0	275
6:45 AM	3	101	19	0	4	47	14	0	5	15	19	0	46	63	19	0	355
7:00 AM	2	139	17	0	8	60	28	0	14	21	38	0	47	74	18	0	466
7:15 AM	7	144	20	0	29	71	32	0	24	44	74	0	54	114	18	0	631
7:30 AM	12	100	30	0	44	124	53	0	32	46	18	0	52	112	47	0	670
7:45 AM	14	116	47	0	25	110	50	0	18	43	11	0	72	136	31	0	673
8:00 AM	19	140	30	0	17	95	51	0	15	47	18	0	73	142	27	0	674
8:15 AM	16	109	25	0	21	115	78	0	20	56	22	0	51	137	27	0	677
8:30 AM	7	103	34	0	19	103	51	0	17	50	12	0	58	135	21	0	610
8:45 AM	4	98	30	0	14	84	32	0	5	47	16	0	40	106	21	0	497
9:00 AM	3	88	36	0	11	68	35	0	16	34	13	0	32	67	29	0	432
9:15 AM	10	68	21	0	14	60	32	0	13	34	7	0	17	58	18	0	352
9:30 AM	6	78	12	0	9	39	17	0	13	26	7	0	19	55	10	0	291
9:45 AM	3	50	13	0	10	33	15	0	12	35	6	0	20	42	20	0	259
AM PEAK HR 7:15 AM - 8:15 AM	52	500	127	0	115	400	186	0	89	180	121	0	251	504	123	0	2648
PHF	0.68	0.87	0.68		0.65	0.81	0.88		0.70	0.96	0.41		0.86	0.89	0.65		

BEGIN TIME	Northbound				Southbound				Westbound				Eastbound				TOTAL
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 518 / Georgetown and Franklin Turnpike*				*CR 518 / Georgetown and Franklin Turnpike*				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
2:00 PM	9	27	11	0	12	45	13	0	10	35	15	0	11	36	15	2	239
2:15 PM	18	51	14	0	24	56	24	0	16	44	12	0	11	44	10	0	324
2:30 PM	15	40	12	0	34	60	28	0	14	35	11	0	15	32	15	0	311
2:45 PM	17	30	18	1	15	79	37	0	27	45	12	1	18	50	5	0	353
3:00 PM	14	39	25	0	25	49	17	0	25	52	10	0	24	41	14	0	335
3:15 PM	22	53	15	3	16	67	37	0	12	40	11	0	11	41	8	0	333
3:30 PM	43	53	21	1	18	90	60	0	15	28	13	0	10	39	4	0	394
3:45 PM	22	52	17	0	29	67	48	0	26	70	6	0	21	57	6	0	421
4:00 PM	34	51	15	1	33	90	63	0	29	33	19	0	15	50	5	0	437
4:15 PM	25	74	21	0	22	84	42	0	26	69	9	0	15	59	10	0	456
4:30 PM	32	74	22	0	23	96	61	0	29	51	6	0	14	52	4	0	464
4:45 PM	32	75	14	0	30	78	54	0	29	80	17	0	26	62	5	0	502
5:00 PM	33	71	15	0	32	101	67	0	32	67	24	0	18	69	8	1	537
5:15 PM	35	91	23	0	36	102	94	0	41	90	18	0	24	87	6	0	647
5:30 PM	36	114	21	0	32	90	62	0	42	77	13	0	33	70	5	0	595
5:45 PM	36	80	11	0	28	87	30	0	37	77	17	0	38	73	8	0	522
6:00 PM	40	93	17	0	20	71	42	0	28	73	14	0	20	65	5	0	488
6:15 PM	16	61	14	0	25	66	45	0	29	58	13	0	23	59	5	0	414
6:30 PM	26	76	14	0	21	75	27	2	21	59	11	0	19	47	3	0	399
6:45 PM	34	81	9	0	19	94	53	0	20	33	28	0	14	48	4	0	437
PM PEAK HOUR 5:00 PM - 6:00 PM	140	356	70	0	128	380	253	0	152	311	72	0	113	299	27	1	2301
PHF	0.97	0.78	0.76		0.89	0.93	0.67		0.90	0.86	0.75		0.74	0.86	0.84		

N
CR 518 / Georgetown and Franklin Turnpike
CR 601 / Belle Mead Blawenburg Road
186 [253]
400 [380]
115 [128]
121 [72]
180 [311]
89 [152]
[113] 251
[299] 504
[27] 123
52 [140]
500 [356]
127 [70]
Legend
XXX Morning Peak Hour
[XXX] Evening Peak Hour
Morning Peak Hour
7:15 AM - 8:15 AM
Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and CR 518 / Georgetown and Franklin Turnpike**
Date: 2/4/2010

AM PEAK HR 7:15 AM - 8:15 AM	Northbound				Southbound				Westbound				Eastbound			
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 518 / Georgetown and Franklin Turnpike*				*CR 518 / Georgetown and Franklin Turnpike*			
	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL
AUTOS	50	489	117	656	109	383	179	671	79	155	119	353	247	482	117	846
HEAVY TRUCKS	1	0	0	1	0	8	1	9	1	5	1	7	1	7	2	10
LIGHT TRUCKS	1	6	5	12	4	5	5	14	5	13	1	19	3	9	4	16
BUSES	0	5	5	10	2	4	1	7	4	7	0	11	0	6	0	6
TOTAL	**52**	**500**	**127**	**679**	**115**	**400**	**186**	**701**	**89**	**180**	**121**	**390**	**251**	**504**	**123**	**878**
AUTOS	96%	98%	92%	97%	95%	96%	96%	96%	89%	86%	98%	91%	98%	96%	95%	96%
HEAVY TRUCKS	2%	0%	0%	0%	0%	2%	1%	1%	1%	3%	1%	2%	0%	1%	2%	1%
LIGHT TRUCKS	2%	1%	4%	2%	3%	1%	3%	2%	6%	7%	1%	5%	1%	2%	3%	2%
BUSES	0%	1%	4%	1%	2%	1%	1%	1%	4%	4%	0%	3%	0%	1%	0%	1%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and CR 518 / Georgetown and Franklin Turnpike**
Date: 2/4/2010

PM PEAK HOUR 5:00 PM - 6:00 PM	Northbound				Southbound				Westbound				Eastbound			
	CR 601 / Belle Mead Blawenburg Road				*CR 601 / Belle Mead Blawenburg Road*				*CR 518 / Georgetown and Franklin Turnpike*				*CR 518 / Georgetown and Franklin Turnpike*			
	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL APPROACH	Left	Thru	Right	TOTAL
AUTOS	140	355	69	564	128	374	247	749	151	310	69	530	113	298	27	438
HEAVY TRUCKS	0	0	1	1	0	2	2	4	0	0	0	0	0	0	0	0
LIGHT TRUCKS	0	1	0	1	0	3	4	7	1	1	0	2	0	1	0	1
BUSES	0	0	0	0	0	1	0	1	0	0	3	3	0	0	0	0
TOTAL	**140**	**356**	**70**	**566**	**128**	**380**	**253**	**761**	**152**	**311**	**72**	**535**	**113**	**299**	**27**	**439**
AUTOS	100%	100%	99%	100%	100%	98%	98%	98%	99%	100%	96%	99%	100%	100%	100%	100%
HEAVY TRUCKS	0%	0%	1%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
LIGHT TRUCKS	0%	0%	0%	0%	0%	1%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%
BUSES	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	1%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Intersection Turning Movement Count Summary

Intersection: **Hollow Road and CR 518 / Georgetown and Franklin Turnpike**
Date: 2/4/2010

BEGIN TIME	Southbound			Westbound			Eastbound				TOTAL
	Hollow Road			*CR 518 / Georgetown and Franklin Turnpike*			*CR 518 / Georgetown and Franklin Turnpike*				
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Right	Peds	
6:00 AM	2	1	0	13	0	0	1	56	0	0	73
6:15 AM	4	1	0	16	0	0	2	62	0	0	85
6:30 AM	2	8	0	41	2	0	3	108	0	0	164
6:45 AM	5	4	1	29	0	0	9	120	0	0	167
7:00 AM	6	7	0	49	2	0	17	129	0	0	210
7:15 AM	9	4	0	73	5	0	38	184	0	0	313
7:30 AM	8	23	0	103	2	0	24	210	0	0	370
7:45 AM	9	18	0	107	2	0	33	220	0	0	389
8:00 AM	13	14	0	111	5	0	23	217	0	0	383
8:15 AM	6	17	0	146	6	0	41	200	0	0	416
8:30 AM	8	13	0	113	1	0	22	199	0	0	356
8:45 AM	7	5	0	81	3	0	23	156	0	0	275
9:00 AM	5	2	0	72	3	0	13	119	0	0	214
9:15 AM	4	9	0	72	5	0	14	87	0	0	191
9:30 AM	3	6	0	47	4	0	10	79	0	0	149
9:45 AM	7	4	0	49	5	0	9	71	0	0	145
AM PEAK HR 7:15 AM - 8:15 AM	39	59	0	394	14	0	118	831	0	0	1455
PHF	0.75	0.64		0.89	0.70		0.78	0.94			

BEGIN TIME	Southbound			Westbound			Eastbound				TOTAL
	Hollow Road			*CR 518 / Georgetown and Franklin Turnpike*			*CR 518 / Georgetown and Franklin Turnpike*				
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Right	Peds	
2:00 PM	1	3	0	57	2	0	3	59	0	0	126
2:15 PM	2	5	0	84	3	0	7	60	0	0	161
2:30 PM	3	10	0	68	4	0	9	60	0	0	154
2:45 PM	4	5	0	89	9	0	3	65	0	0	175
3:00 PM	4	5	0	77	4	0	6	72	0	0	168
3:15 PM	4	13	0	96	6	0	5	53	0	0	177
3:30 PM	5	14	0	127	8	0	4	41	0	0	199
3:45 PM	5	12	0	133	7	0	6	74	0	0	237
4:00 PM	3	11	1	120	11	0	5	62	0	0	212
4:15 PM	10	12	0	131	8	0	5	73	0	0	239
4:30 PM	1	25	0	143	6	0	14	68	0	0	257
4:45 PM	3	22	0	159	10	0	10	87	0	0	291
5:00 PM	5	21	0	160	15	0	10	87	0	0	298
5:15 PM	3	28	0	213	9	0	10	109	0	0	372
5:30 PM	6	26	0	169	12	0	9	96	0	0	318
5:45 PM	8	25	0	144	4	0	12	105	0	0	298
6:00 PM	0	24	0	147	13	0	4	86	0	0	274
6:15 PM	5	11	0	116	7	0	5	79	0	0	223
6:30 PM	4	9	0	112	5	0	4	64	0	0	198
6:45 PM	7	5	0	113	10	0	7	57	0	0	199
PM PEAK HOUR 5:00 PM - 6:00 PM	22	100	0	686	40	0	41	397	0	0	1286
PHF	0.69	0.89		0.81	0.67		0.85	0.91			

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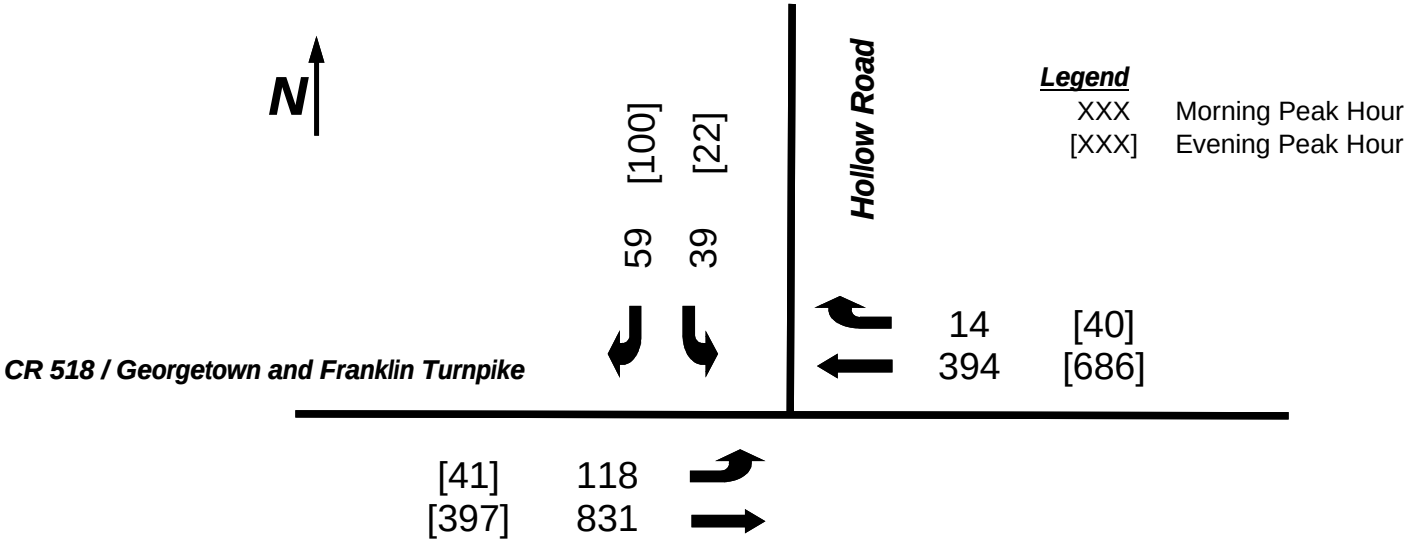
O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\05_WORKING\TRAFFIC\REPORT\DATA COLLE\Forced Peaks\Int #3_Hollow Rd and CR 518.xls



Legend

XXX Morning Peak Hour
[XXX] Evening Peak Hour

Morning Peak Hour
7:15 AM - 8:15 AM

Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: **Hollow Road and CR 518 / Georgetown and Franklin Turnpike**
Date: 2/4/2010

AM PEAK HR 7:15 AM - 8:15 AM	Southbound			Westbound			Eastbound		
	Hollow Road			*CR 518 / Georgetown and Franklin Turnpike*			*CR 518 / Georgetown and Franklin Turnpike*		
	Left	Right	TOTAL APPROACH	Thru	Right	TOTAL APPROACH	Left	Thru	TOTAL
AUTOS	36	55	91	370	12	382	118	808	926
HEAVY TRUCKS	0	0	0	7	0	7	0	8	8
LIGHT TRUCKS	3	4	7	17	2	19	0	15	15
BUSES	0	0	0	0	0	0	0	0	0
TOTAL	**39**	**59**	**98**	**394**	**14**	**408**	**118**	**831**	**949**
AUTOS	92%	93%	93%	94%	86%	94%	100%	97%	98%
HEAVY TRUCKS	0%	0%	0%	2%	0%	2%	0%	1%	1%
LIGHT TRUCKS	8%	7%	7%	4%	14%	5%	0%	2%	2%
BUSES	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: **Hollow Road and CR 518 / Georgetown and Franklin Turnpike**
Date: 2/4/2010

PM PEAK HOUR 5:00 PM - 6:00 PM	Southbound			Westbound			Eastbound		
	Hollow Road			*CR 518 / Georgetown and Franklin Turnpike*			*CR 518 / Georgetown and Franklin Turnpike*		
	Left	Right	TOTAL APPROACH	Thru	Right	TOTAL APPROACH	Left	Thru	TOTAL
AUTOS	22	100	122	677	40	717	40	392	432
HEAVY TRUCKS	0	0	0	0	0	0	0	3	3
LIGHT TRUCKS	0	0	0	9	0	9	1	2	3
BUSES	0	0	0	0	0	0	0	0	0
TOTAL	**22**	**100**	**122**	**686**	**40**	**726**	**41**	**397**	**438**
AUTOS	100%	100%	100%	99%	100%	99%	98%	99%	99%
HEAVY TRUCKS	0%	0%	0%	0%	0%	0%	0%	1%	1%
LIGHT TRUCKS	0%	0%	0%	1%	0%	1%	2%	1%	1%
BUSES	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Intersection Turning Movement Count Summary

Intersection: **Hollow Road and Camp Meeting Avenue**
Date: 2/4/2010

BEGIN TIME	Northbound			Southbound			Westbound			TOTAL
	Hollow Road			*Hollow Road*			*Camp Meeting Avenue*			
	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	
6:00 AM	1	1	0	0	3	0	0	0	0	5
6:15 AM	1	0	0	0	5	0	0	0	0	6
6:30 AM	5	0	0	0	10	0	0	0	0	15
6:45 AM	8	1	0	4	9	0	0	1	0	23
7:00 AM	10	10	0	10	11	0	1	1	0	43
7:15 AM	22	23	0	19	9	0	5	5	0	83
7:30 AM	16	9	0	6	21	0	9	2	0	63
7:45 AM	27	10	0	22	17	0	9	0	0	85
8:00 AM	19	10	0	26	19	0	7	2	0	83
8:15 AM	30	15	0	10	16	0	7	2	0	80
8:30 AM	21	3	0	10	15	0	5	4	0	58
8:45 AM	19	8	0	9	8	0	3	6	0	53
9:00 AM	13	3	0	5	7	0	0	0	0	28
9:15 AM	17	1	0	2	9	2	4	1	0	34
9:30 AM	12	1	0	3	6	0	3	1	0	26
9:45 AM	11	2	0	0	10	0	1	0	0	24
AM PEAK HR 7:15 AM - 8:15 AM	84	52	0	73	66	0	30	9	0	314
PHF	0.78	0.57		0.70	0.79		0.83	0.45		

BEGIN TIME	Northbound			Southbound			Westbound			TOTAL
	Hollow Road			*Hollow Road*			*Camp Meeting Avenue*			
	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	
2:00 PM	5	0	0	0	5	0	0	0	0	10
2:15 PM	10	0	0	0	7	0	0	0	0	17
2:30 PM	13	0	0	0	13	0	0	0	0	26
2:45 PM	12	0	1	0	9	0	0	0	0	21
3:00 PM	10	0	3	0	9	0	0	0	0	19
3:15 PM	11	0	1	1	16	1	0	0	0	28
3:30 PM	11	1	0	0	17	0	1	0	0	30
3:45 PM	11	1	0	0	16	0	0	0	1	28
4:00 PM	17	0	0	0	14	0	0	1	0	32
4:15 PM	14	0	0	0	21	0	0	0	0	35
4:30 PM	19	0	0	0	25	0	0	0	0	44
4:45 PM	19	0	2	0	24	0	0	1	0	44
5:00 PM	24	0	0	0	25	0	7	2	0	58
5:15 PM	20	0	0	0	30	0	8	4	1	62
5:30 PM	21	1	0	0	31	0	6	6	0	65
5:45 PM	17	0	0	0	32	0	5	3	0	57
6:00 PM	18	0	0	2	21	0	2	0	0	43
6:15 PM	11	1	0	2	16	0	0	0	0	30
6:30 PM	8	1	0	0	12	0	0	0	0	21
6:45 PM	14	0	0	1	12	0	1	0	0	28
PM PEAK HOUR 5:00 PM - 6:00 PM	82	1	0	0	118	0	26	15	1	242
PHF	0.85	0.25			0.92		0.81	0.63		

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O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\05_WORKING\TRAFFIC\REPORT\DATA COLLE\Forced Peaks\Int #4_Hollow Rd and Camp Meeting Ave.xls

N
Legend
XXX Morning Peak Hour
[XXX] Evening Peak Hour
66 [118]
73 [0]
9 [15]
30 [26]
Camp Meeting Avenue
84 [82]
52 [1]
Hollow Road
Morning Peak Hour
7:15 AM - 8:15 AM
Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: **Hollow Road and Camp Meeting Avenue**
Date: 2/4/2010

AM PEAK HR	Northbound			Southbound			Westbound		
	Hollow Road			*Hollow Road*			*Camp Meeting Avenue*		
7:15 AM - 8:15 AM	Thru	Right	TOTAL APPROACH	Left	Thru	TOTAL APPROACH	Left	Right	TOTAL APPROACH
AUTOS	83	51	134	72	63	135	28	7	35
HEAVY TRUCKS	0	0	0	1	0	1	0	0	0
LIGHT TRUCKS	1	1	2	0	3	3	2	2	4
BUSES	0	0	0	0	0	0	0	0	0
TOTAL	**84**	**52**	**136**	**73**	**66**	**139**	**30**	**9**	**39**
AUTOS	99%	98%	99%	99%	95%	97%	93%	78%	90%
HEAVY TRUCKS	0%	0%	0%	1%	0%	1%	0%	0%	0%
LIGHT TRUCKS	1%	2%	1%	0%	5%	2%	7%	22%	10%
BUSES	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: **Hollow Road and Camp Meeting Avenue**
Date: 2/4/2010

PM PEAK HOUR 5:00 PM - 6:00 PM	Northbound			Southbound			Westbound		
	Hollow Road			*Hollow Road*			*Camp Meeting Avenue*		
	Thru	Right	TOTAL APPROACH	Left	Thru	TOTAL APPROACH	Left	Right	TOTAL APPROACH
AUTOS	82	1	83	0	118	118	26	15	41
HEAVY TRUCKS	0	0	0	0	0	0	0	0	0
LIGHT TRUCKS	0	0	0	0	0	0	0	0	0
BUSES	0	0	0	0	0	0	0	0	0
TOTAL	**82**	**1**	**83**	**0**	**118**	**118**	**26**	**15**	**41**
AUTOS	100%	100%	100%	#####	100%	100%	100%	100%	100%
HEAVY TRUCKS	0%	0%	0%	#####	0%	0%	0%	0%	0%
LIGHT TRUCKS	0%	0%	0%	#####	0%	0%	0%	0%	0%
BUSES	0%	0%	0%	#####	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**#####**	**100%**	**100%**	**100%**	**100%**	**100%**

Intersection Turning Movement Count Summary

Intersection: **Hollow Road and Grandview Road**
Date: 2/4/2010

BEGIN TIME	Northbound			Southbound			Westbound			TOTAL
	Hollow Road			*Hollow Road*			*Grandview Road*			
	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	
6:00 AM	1	1	0	3	2	0	1	3	0	11
6:15 AM	1	0	0	2	3	0	2	4	0	13
6:30 AM	1	4	0	4	5	0	5	1	0	20
6:45 AM	2	7	0	4	11	0	2	1	0	27
7:00 AM	2	9	1	7	17	0	5	0	0	40
7:15 AM	8	18	0	10	21	0	6	2	0	65
7:30 AM	1	16	2	20	20	0	6	0	0	63
7:45 AM	1	27	0	24	36	0	2	0	0	90
8:00 AM	6	16	0	16	40	0	4	0	0	82
8:15 AM	1	31	0	20	16	0	9	0	0	77
8:30 AM	5	19	1	26	15	0	9	0	0	74
8:45 AM	3	21	0	18	15	0	3	4	0	64
9:00 AM	0	14	0	6	9	0	3	0	0	32
9:15 AM	6	12	0	6	11	0	0	2	0	37
9:30 AM	4	8	0	4	9	0	0	0	0	25
9:45 AM	0	11	0	2	7	1	3	1	1	24
AM PEAK HR 7:15 AM - 8:15 AM	16	77	2	70	117	0	18	2	0	300
PHF	0.50	0.71		0.73	0.73		0.75	0.25		

BEGIN TIME	Northbound			Southbound			Westbound			TOTAL
	Hollow Road			*Hollow Road*			*Grandview Road*			
	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	
2:00 PM	4	1	0	0	2	0	3	0	0	11
2:15 PM	6	4	1	4	7	0	0	3	0	24
2:30 PM	8	4	0	1	13	0	1	3	1	30
2:45 PM	10	2	0	0	8	0	1	2	2	23
3:00 PM	9	1	0	1	8	0	1	2	0	22
3:15 PM	9	2	0	1	14	0	4	4	0	34
3:30 PM	9	2	0	0	11	0	6	3	0	31
3:45 PM	11	1	2	1	10	0	7	2	0	32
4:00 PM	17	1	0	0	7	0	8	8	0	41
4:15 PM	11	4	1	1	13	0	9	8	0	46
4:30 PM	19	1	0	1	18	0	8	12	0	59
4:45 PM	19	1	0	3	18	0	7	8	0	56
5:00 PM	21	4	2	2	12	0	13	20	0	72
5:15 PM	17	3	0	1	11	0	20	17	0	69
5:30 PM	21	2	0	2	16	0	16	18	0	75
5:45 PM	18	1	0	1	20	0	13	20	0	73
6:00 PM	15	3	0	1	14	1	9	15	0	57
6:15 PM	8	3	0	0	11	0	7	10	0	39
6:30 PM	7	1	0	1	7	0	5	5	0	26
6:45 PM	12	2	0	0	8	0	5	5	0	32
PM PEAK HOUR 5:00 PM - 6:00 PM	77	10	2	6	59	0	62	75	0	289
PHF	0.92	0.63		0.75	0.74		0.78	0.94		

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O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\05_WORKING\TRAFFIC\REPORT\DATA COLLE\Forced Peaks\Int #5_Hollow Rd and Grandview Rd.xls

N
Legend
XXX Morning Peak Hour
[XXX] Evening Peak Hour
117 [59]
70 [6]
2 [75]
18 [62]
Grandview Road
16 [77]
77 [10]
Hollow Road
Morning Peak Hour
7:15 AM - 8:15 AM
Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: **Hollow Road and Grandview Road**
Date: 2/4/2010

AM PEAK HR	Northbound			Southbound			Westbound		
	Hollow Road			*Hollow Road*			*Grandview Road*		
7:15 AM - 8:15 AM	Thru	Right	TOTAL APPROACH	Left	Thru	TOTAL APPROACH	Left	Right	TOTAL APPROACH
AUTOS	13	77	90	69	115	184	16	1	17
HEAVY TRUCKS	0	0	0	0	0	0	0	0	0
LIGHT TRUCKS	3	0	3	1	2	3	2	1	3
BUSES	0	0	0	0	0	0	0	0	0
TOTAL	**16**	**77**	**93**	**70**	**117**	**187**	**18**	**2**	**20**
AUTOS	81%	100%	97%	99%	98%	98%	89%	50%	85%
HEAVY TRUCKS	0%	0%	0%	0%	0%	0%	0%	0%	0%
LIGHT TRUCKS	19%	0%	3%	1%	2%	2%	11%	50%	15%
BUSES	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: **Hollow Road and Grandview Road**
Date: 2/4/2010

PM PEAK HOUR 5:00 PM - 6:00 PM	Northbound			Southbound			Westbound		
	Hollow Road			*Hollow Road*			*Grandview Road*		
	Thru	Right	TOTAL APPROACH	Left	Thru	TOTAL APPROACH	Left	Right	TOTAL APPROACH
AUTOS	77	10	87	6	59	65	62	75	137
HEAVY TRUCKS	0	0	0	0	0	0	0	0	0
LIGHT TRUCKS	0	0	0	0	0	0	0	0	0
BUSES	0	0	0	0	0	0	0	0	0
TOTAL	**77**	**10**	**87**	**6**	**59**	**65**	**62**	**75**	**137**
AUTOS	100%	100%	100%	100%	100%	100%	100%	100%	100%
HEAVY TRUCKS	0%	0%	0%	0%	0%	0%	0%	0%	0%
LIGHT TRUCKS	0%	0%	0%	0%	0%	0%	0%	0%	0%
BUSES	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Intersection Turning Movement Count Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and Grandview Road**
Date: 2/4/2010

BEGIN TIME	Northbound			Southbound			Eastbound			TOTAL
	CR 601 / Belle Mead Blawenburg Road			*CR 601 / Belle Mead Blawenburg Road*			*Grandview Road*			
	Left	Thru	Peds	Thru	Right	Peds	Left	Right	Peds	
6:00 AM	12	35	0	12	15	0	2	2	0	78
6:15 AM	14	56	0	20	14	0	3	3	0	110
6:30 AM	13	66	0	44	16	0	2	5	0	146
6:45 AM	14	79	0	58	22	0	1	10	0	184
7:00 AM	23	144	0	123	38	0	3	12	0	343
7:15 AM	26	176	0	230	65	0	4	19	0	520
7:30 AM	33	137	0	225	62	0	3	23	0	483
7:45 AM	42	150	0	159	52	0	2	30	0	435
8:00 AM	53	169	0	161	58	0	3	22	0	466
8:15 AM	55	131	0	189	53	0	4	27	0	459
8:30 AM	65	133	0	179	45	0	5	20	0	447
8:45 AM	44	116	0	125	43	0	3	20	0	351
9:00 AM	34	68	0	116	32	1	2	15	0	267
9:15 AM	32	72	0	96	21	0	3	12	0	236
9:30 AM	22	62	0	80	11	0	2	8	0	185
9:45 AM	11	33	0	48	12	0	1	5	0	110
AM PEAK HR 7:15 AM - 8:15 AM	154	632	0	775	237	0	12	94	0	1904
PHF	0.73	0.90		0.84	0.91		0.75	0.78		

BEGIN TIME	Northbound			Southbound			Eastbound			TOTAL
	CR 601 / Belle Mead Blawenburg Road			*CR 601 / Belle Mead Blawenburg Road*			*Grandview Road*			
	Left	Thru	Peds	Thru	Right	Peds	Left	Right	Peds	
2:00 PM	3	27	0	39	2	0	12	15	0	98
2:15 PM	6	31	0	64	2	0	16	9	0	128
2:30 PM	3	45	0	53	12	0	13	8	0	134
2:45 PM	5	50	0	69	5	0	9	11	0	149
3:00 PM	6	67	0	61	6	0	15	6	0	161
3:15 PM	3	77	0	77	7	0	13	20	0	197
3:30 PM	8	72	0	98	6	0	23	12	0	219
3:45 PM	11	89	0	109	6	0	20	16	0	251
4:00 PM	4	76	0	88	5	0	24	31	0	229
4:15 PM	4	78	0	101	6	0	28	29	0	246
4:30 PM	5	124	0	104	5	0	49	21	0	308
4:45 PM	13	126	0	97	8	1	47	20	0	311
5:00 PM	10	139	0	112	5	0	51	42	0	359
5:15 PM	10	116	0	126	6	0	59	45	0	362
5:30 PM	6	165	0	101	8	0	59	50	0	389
5:45 PM	7	134	0	88	8	0	46	56	0	339
6:00 PM	5	150	0	129	12	0	46	33	0	375
6:15 PM	6	117	0	116	5	0	38	32	0	316
6:30 PM	5	76	0	101	6	0	21	24	0	233
6:45 PM	2	83	0	98	21	0	27	19	0	251
PM PEAK HOUR 5:00 PM - 6:00 PM	33	554	0	427	27	0	215	193	0	1449
PHF	0.83	0.84		0.85	0.84		0.91	0.86		

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O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\05_WORKING\TRAFFIC\REPORT\DATA COLLE\Forced Peaks\Int #6_CR 601 and Grandview Rd.xls

Legend

XXX	Morning Peak Hour
[XXX]	Evening Peak Hour

Morning Peak Hour
7:15 AM - 8:15 AM

Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and Grandview Road**
Date: 2/4/2010

AM PEAK HR	Northbound			Southbound			Eastbound		
	CR 601 / Belle Mead Blawenburg Road			*CR 601 / Belle Mead Blawenburg Road*			*Grandview Road*		
7:15 AM - 8:15 AM	Left	Thru	TOTAL APPROACH	Thru	Right	TOTAL APPROACH	Left	Right	TOTAL
AUTOS	152	622	774	769	236	1005	12	94	106
HEAVY TRUCKS	0	0	0	0	0	0	0	0	0
LIGHT TRUCKS	1	5	6	3	1	4	0	0	0
BUSES	1	5	6	3	0	3	0	0	0
TOTAL	**154**	**632**	**786**	**775**	**237**	**1012**	**12**	**94**	**106**
AUTOS	99%	98%	98%	99%	100%	99%	100%	100%	100%
HEAVY TRUCKS	0%	0%	0%	0%	0%	0%	0%	0%	0%
LIGHT TRUCKS	1%	1%	1%	0%	0%	0%	0%	0%	0%
BUSES	1%	1%	1%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: **CR 601 / Belle Mead Blawenburg Road and Grandview Road**
Date: 2/4/2010

PM PEAK HOUR 5:00 PM - 6:00 PM	Northbound			Southbound			Eastbound		
	CR 601 / Belle Mead Blawenburg Road			*CR 601 / Belle Mead Blawenburg Road*			*Grandview Road*		
	Left	Thru	TOTAL APPROACH	Thru	Right	TOTAL APPROACH	Left	Right	TOTAL
AUTOS	33	550	583	422	27	449	214	193	407
HEAVY TRUCKS	0	0	0	3	0	3	0	0	0
LIGHT TRUCKS	0	1	1	2	0	2	1	0	1
BUSES	0	3	3	0	0	0	0	0	0
TOTAL	**33**	**554**	**587**	**427**	**27**	**454**	**215**	**193**	**408**
AUTOS	100%	99%	99%	99%	100%	99%	100%	100%	100%
HEAVY TRUCKS	0%	0%	0%	1%	0%	1%	0%	0%	0%
LIGHT TRUCKS	0%	0%	0%	0%	0%	0%	0%	0%	0%
BUSES	0%	1%	1%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Intersection Turning Movement Count Summary

Intersection: **Community Center Driveway and Camp Meeting Avenue**
Date: 2/4/2010

BEGIN TIME	Southbound			Westbound		Eastbound		TOTAL
	mmunity Center Drivew			*mp Meeting Ave*		*mp Meeting Ave*		
	Left	Right	Peds	Right	Peds	Left	Peds	
6:00 AM	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	1	0	0	0	1
7:15 AM	0	1	0	1	0	0	0	2
7:30 AM	0	0	0	1	0	0	0	1
7:45 AM	1	0	0	0	0	2	0	3
8:00 AM	0	0	0	1	0	1	0	2
8:15 AM	1	0	0	1	0	1	0	3
8:30 AM	0	0	0	1	0	0	0	1
8:45 AM	1	0	0	0	0	0	0	1
9:00 AM	0	0	0	6	0	0	0	6
9:15 AM	0	1	0	1	0	0	0	2
9:30 AM	0	0	0	2	0	0	0	2
9:45 AM	0	0	0	2	0	0	0	2
AM PEAK HR 7:15 AM - 8:15 AM	1	1	0	3	0	3	0	8
PHF	0.25	0.25		0.75		0.38		

BEGIN TIME	Southbound			Westbound		Eastbound		TOTAL
	mmunity Center Drivew			*mp Meeting Ave*		*mp Meeting Ave*		
	Left	Right	Peds	Right	Peds	Left	Peds	
2:00 PM	1	0	0	0	0	0	0	1
2:15 PM	4	0	0	3	0	1	0	8
2:30 PM	0	1	0	4	0	0	0	5
2:45 PM	2	0	0	1	0	0	0	3
3:00 PM	1	0	0	1	1	0	0	2
3:15 PM	1	0	0	1	0	0	0	2
3:30 PM	1	0	1	3	0	0	0	4
3:45 PM	4	0	2	4	1	0	0	8
4:00 PM	2	0	4	2	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	1	1	0	0	0	0	0	2
4:45 PM	0	1	0	4	0	0	0	5
5:00 PM	8	0	0	2	0	0	0	10
5:15 PM	0	1	1	1	0	0	0	2
5:30 PM	1	0	0	0	2	0	0	1
5:45 PM	2	1	0	4	0	0	0	7
6:00 PM	4	0	0	3	0	0	0	7
6:15 PM	0	1	0	6	0	0	0	7
6:30 PM	0	0	0	2	0	0	0	2
6:45 PM	0	0	0	6	0	0	0	6
PM PEAK HOUR 5:00 PM - 6:00 PM	11	2	1	7	2	0	0	20
PHF	0.34	0.50		0.44				

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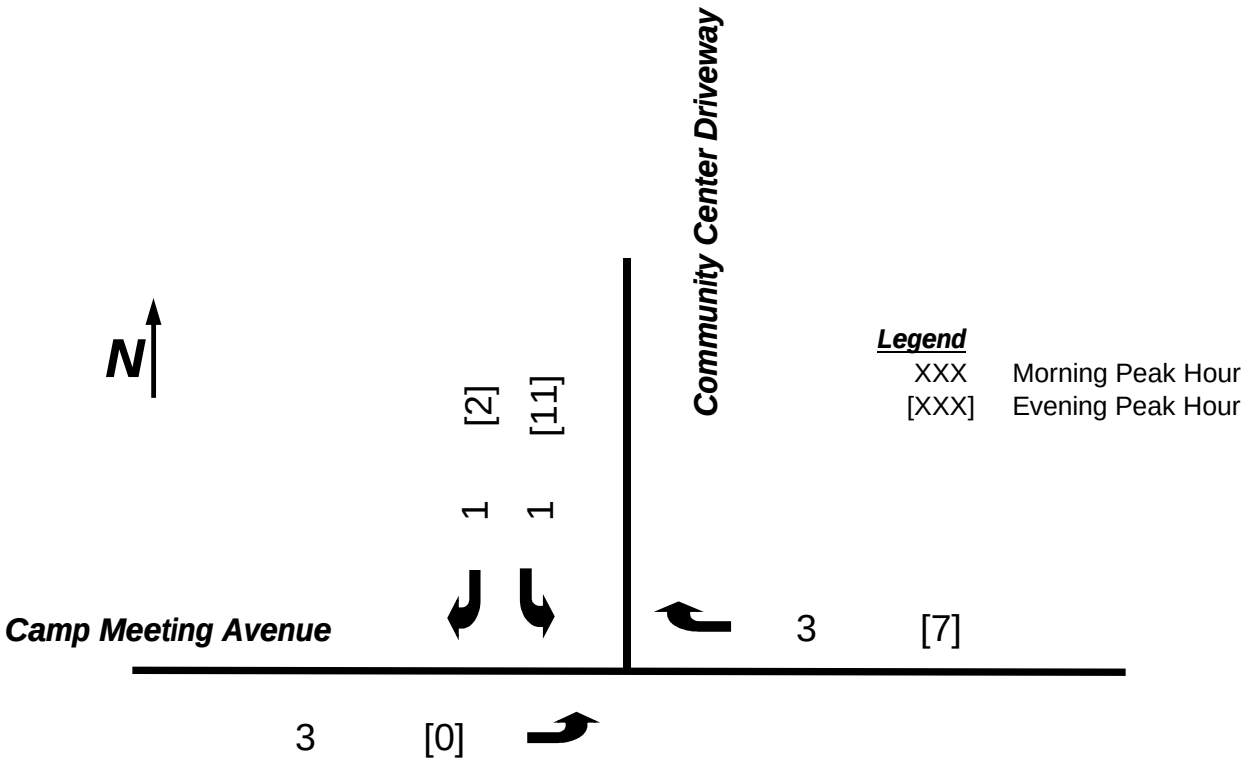


Legend

XXX	Morning Peak Hour
[XXX]	Evening Peak Hour

Morning Peak Hour
7:15 AM - 8:15 AM

Evening Peak Hour
5:00 PM - 6:00 PM

AM Peak Classification Summary

Intersection: Community Center Driveway and Camp Meeting Avenue
Date: ######

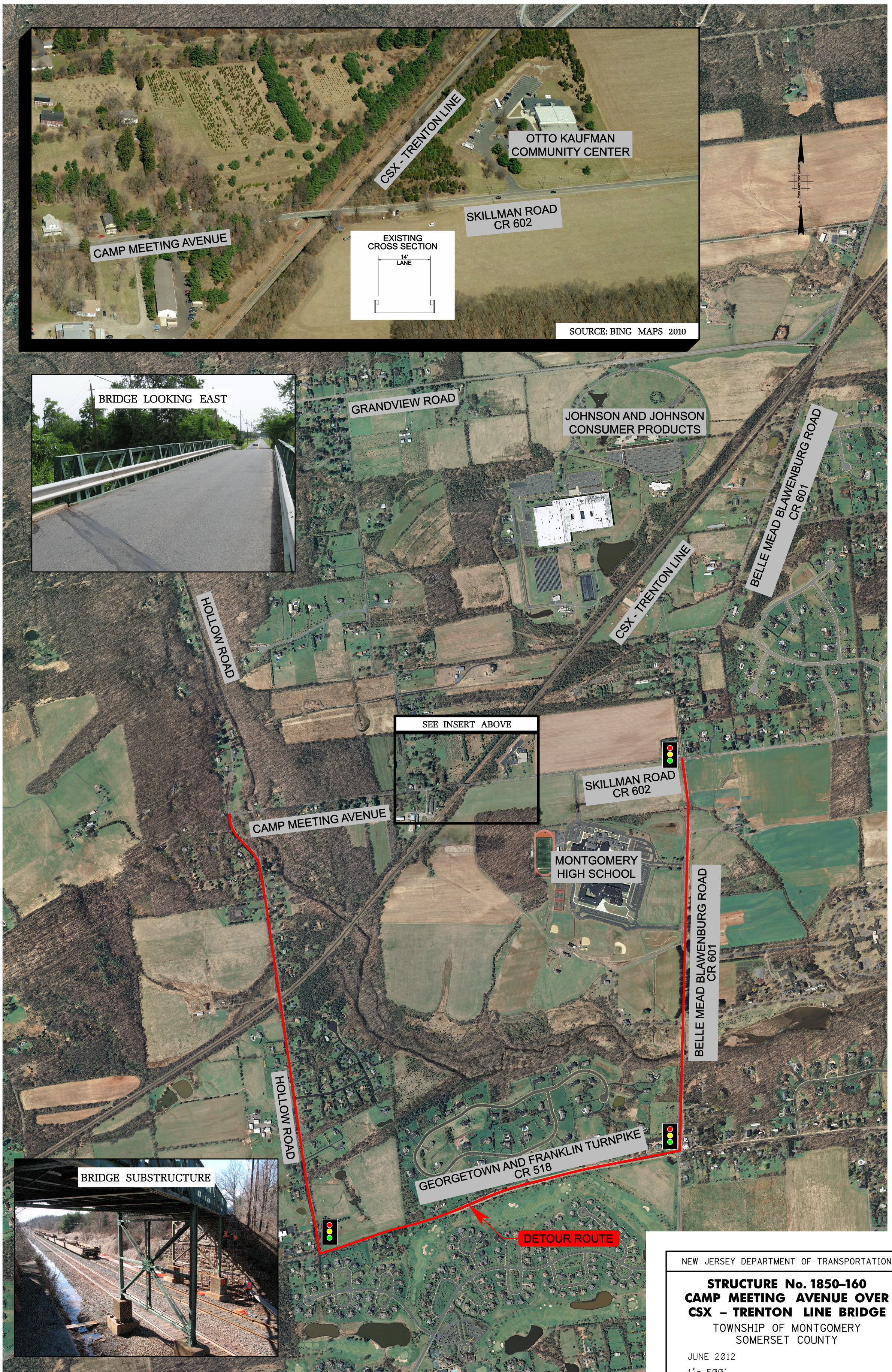
AM PEAK HR	Southbound			Westbound		Eastbound	
	Community Center Driveway			*Camp Meeting Avenue*		*mp Meeting Aven*	
7:15 AM - 8:15 AM	Left	Right	TOTAL APPROACH	Right	TOTAL APPROACH	Left	TOTAL
AUTOS	0	0	0	1	1	3	3
HEAVY TRUCKS	1	0	1	1	1	0	0
LIGHT TRUCKS	0	1	1	1	1	0	0
BUSES	0	0	0	0	0	0	0
TOTAL	**1**	**1**	**2**	**3**	**3**	**3**	**3**
AUTOS	0%	0%	0%	33%	33%	100%	100%
HEAVY TRUCKS	100%	0%	50%	33%	33%	0%	0%
LIGHT TRUCKS	0%	100%	50%	33%	33%	0%	0%
BUSES	0%	0%	0%	0%	0%	0%	0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

PM Peak Classification Summary

Intersection: Community Center Driveway and Camp Meeting Avenue
Date: ######

PM PEAK HOUR 5:00 PM - 6:00 PM	Southbound			Westbound		Eastbound	
	Community Center Driveway			*Camp Meeting Avenue*		*mp Meeting Aven*	
	Left	Right	TOTAL APPROACH	Right	TOTAL APPROACH	Left	TOTAL
AUTOS	10	2	12	7	7	0	0
HEAVY TRUCKS	1	0	1	0	0	0	0
LIGHT TRUCKS	0	0	0	0	0	0	0
BUSES	0	0	0	0	0	0	0
TOTAL	**11**	**2**	**13**	**7**	**7**	**0**	**0**
AUTOS	91%	100%	92%	100%	100%	#####	#DIV/0!
HEAVY TRUCKS	9%	0%	8%	0%	0%	#####	#DIV/0!
LIGHT TRUCKS	0%	0%	0%	0%	0%	#####	#DIV/0!
BUSES	0%	0%	0%	0%	0%	#####	#DIV/0!
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**#####**	**#DIV/0!**

APPENDIX H –
Aerial Plan and Photographs



SOURCE: NJ 2007 ORTHOPHOTOGRAPHY

NEW JERSEY DEPARTMENT OF TRANSPORTATION

STRUCTURE No. 1850–160
CAMP MEETING AVENUE OVER
CSX – TRENTON LINE BRIDGE

TOWNSHIP OF MONTGOMERY
SOMERSET COUNTY

JUNE 2012

1"= 500'

SOURCE: NJ 2007 ORTHOPHOTOGRAPHY

NEW JERSEY DEPARTMENT OF TRANSPORTATION

STRUCTURE No. 1850-160
CAMP MEETING AVENUE OVER
CSX - TRENTON LINE BRIDGE

TOWNSHIP OF MONTGOMERY
SOMERSET COUNTY

SEPTEMBER 2010

1"= 50'

HILL
BLOCKS
VIEW
15
M. P. H.

WEIGHT
LIMIT
10T
16T
20T

WEIGHT
LIMIT
10T
16T
20T

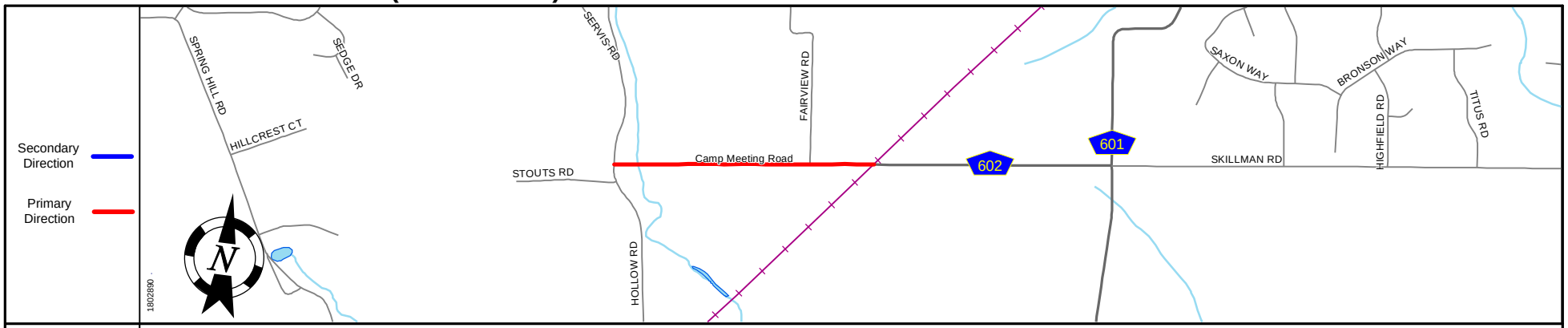
SPEED
LIMIT
30

YIELD
TO
ONCOMING
TRAFFIC

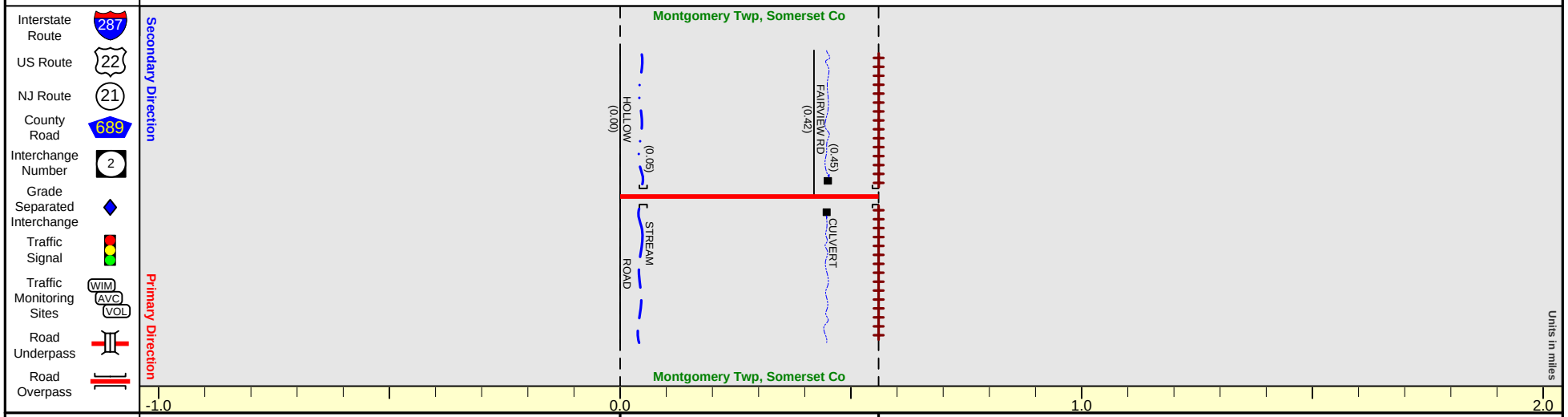
APPENDIX I –
Straight Line Diagrams

CAMP MEETING RD (West to East)

Mile Posts: 0.000 - 0.560



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name		Camp Meeting Road	
Jurisdiction		Municipal	
Functional Class		Rural Local	
Federal Aid - NHS Sy		Non-Federal Aid	
Control Section			
Speed Limit		35 | 30	
Number of Lanes		2	
Med. Type		None	
Med. Width		0	
Pavement		21	
Shoulder		0	
Traffic Volume			
Traffic Sta. ID			
Structure No.			
Enlarged Views			

Begin Camp Meeting Rd MP=0

End Camp Meeting Rd MP=0.56

Page Created: May 2010

SRI = 18131011__

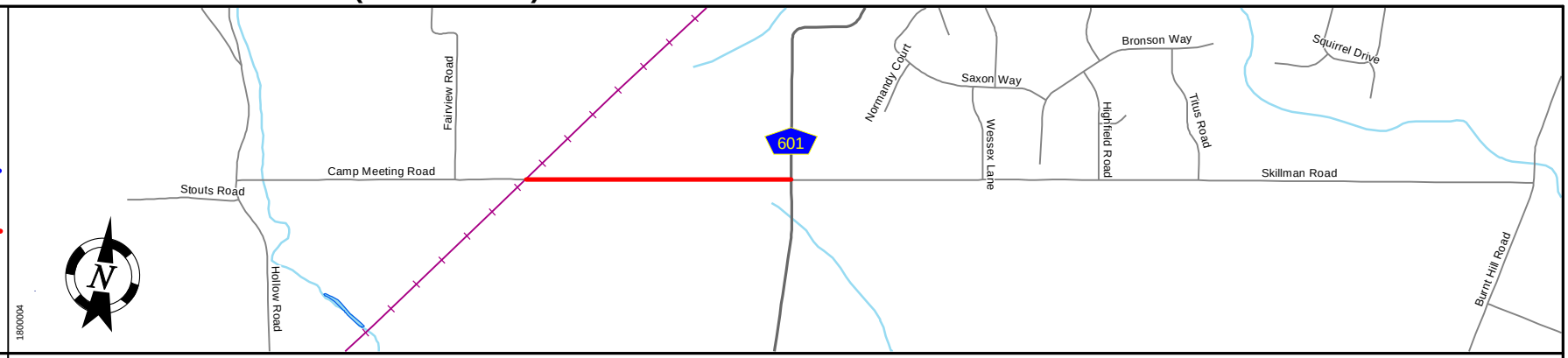
Date last inventoried: July 2000

SOMERSET COUNTY 602 (West to East)

Mile Posts: 0.000 - 0.520

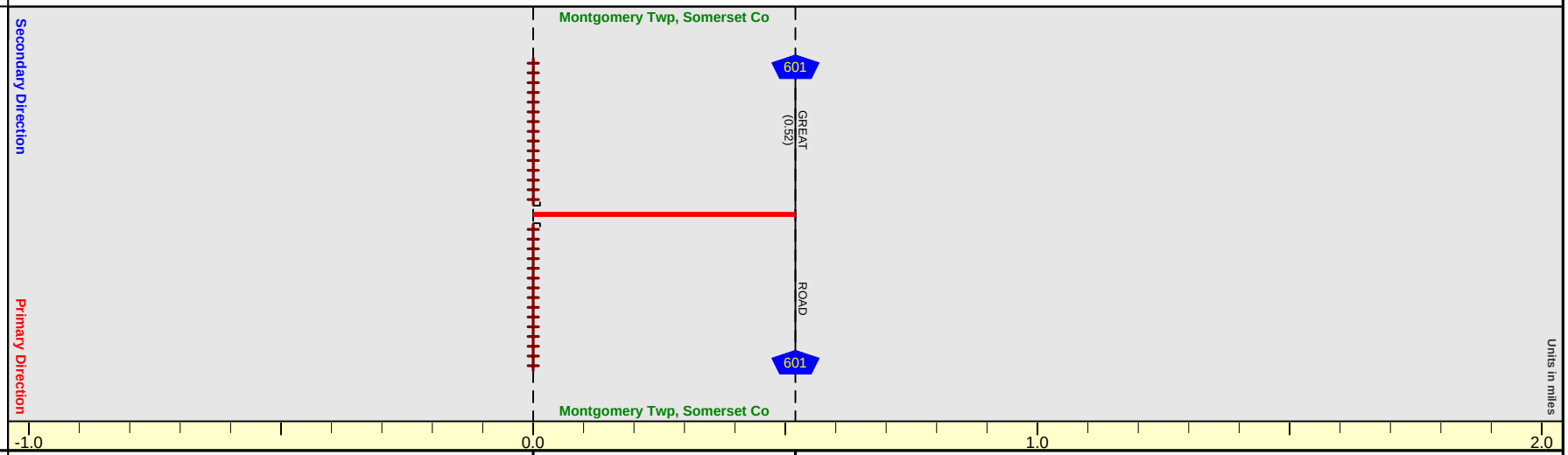
Secondary Direction

Primary Direction



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route 287
US Route 22
NJ Route 21
County Road 689
Interchange Number 2
Grade Separated Interchange
Traffic Signal
Traffic Monitoring Sites WIM AVC VOL
Road Underpass
Road Overpass



Street Name		Skillman Road	
Jurisdiction		County	
Functional Class		Rural Local	
Federal Aid - NHS Sy		Non-Federal Aid	
Control Section			
Speed Limit		30	
Number of Lanes		2	
Med. Type		None	
Med. Width		0	
Pavement		20	
Shoulder		1	
Traffic Volume			
Traffic Sta. ID			
Structure No.			
Enlarged Views			

Begin Somerset County 602 MP=0

End Somerset County 602 MP=0.52

Page Created: May 2009

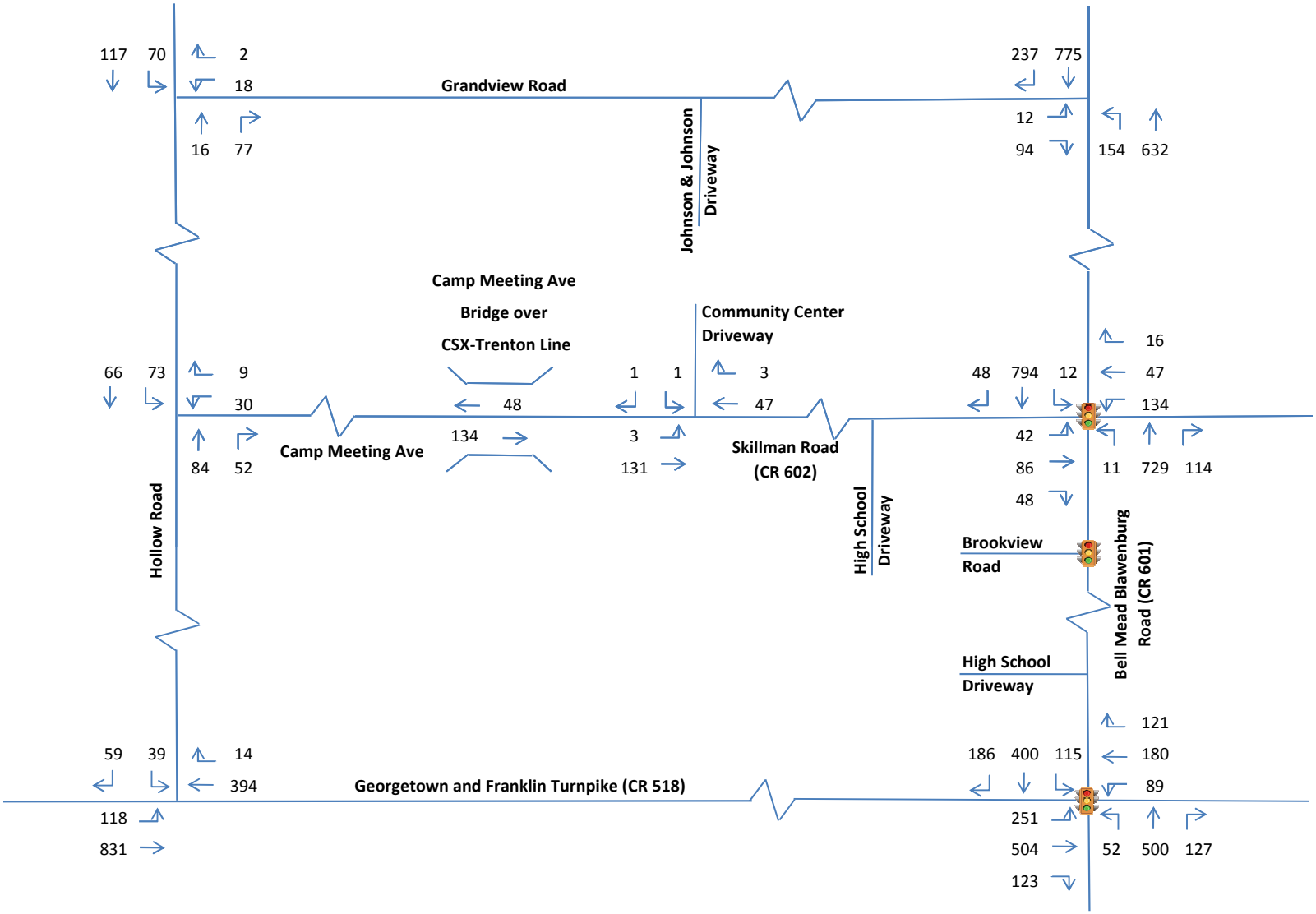
SRI = 18000602__

Date last inventoried: July 2000

APPENDIX J –
Traffic Volumes (VPH) Graph

Gannett Fleming
Your Trusted Advisor Since 1915

CAMP MEETING AVENUE OVER CSX-TRENTON LINE BRIDGE
CONCEPT DEVELOPMENT ACTIVITIES

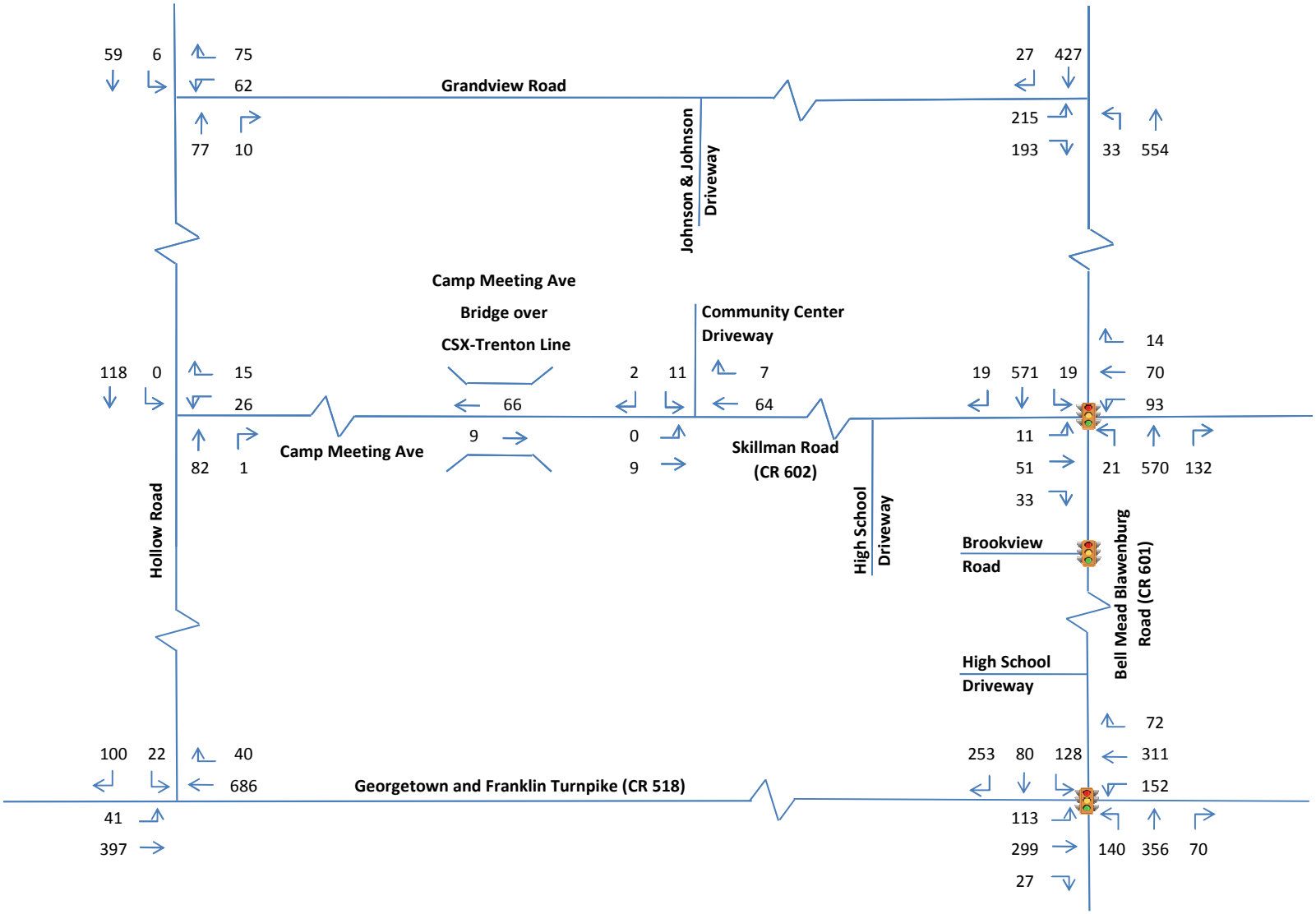


NOT TO SCALE

2010 EXISTING TRAFFIC VOLUMES
MORNING PEAK HOUR (7:15 - 8:15 AM)

Gannett Fleming
Your Trusted Advisor Since 1915

CAMP MEETING AVENUE OVER CSX-TRENTON LINE BRIDGE
CONCEPT DEVELOPMENT ACTIVITIES

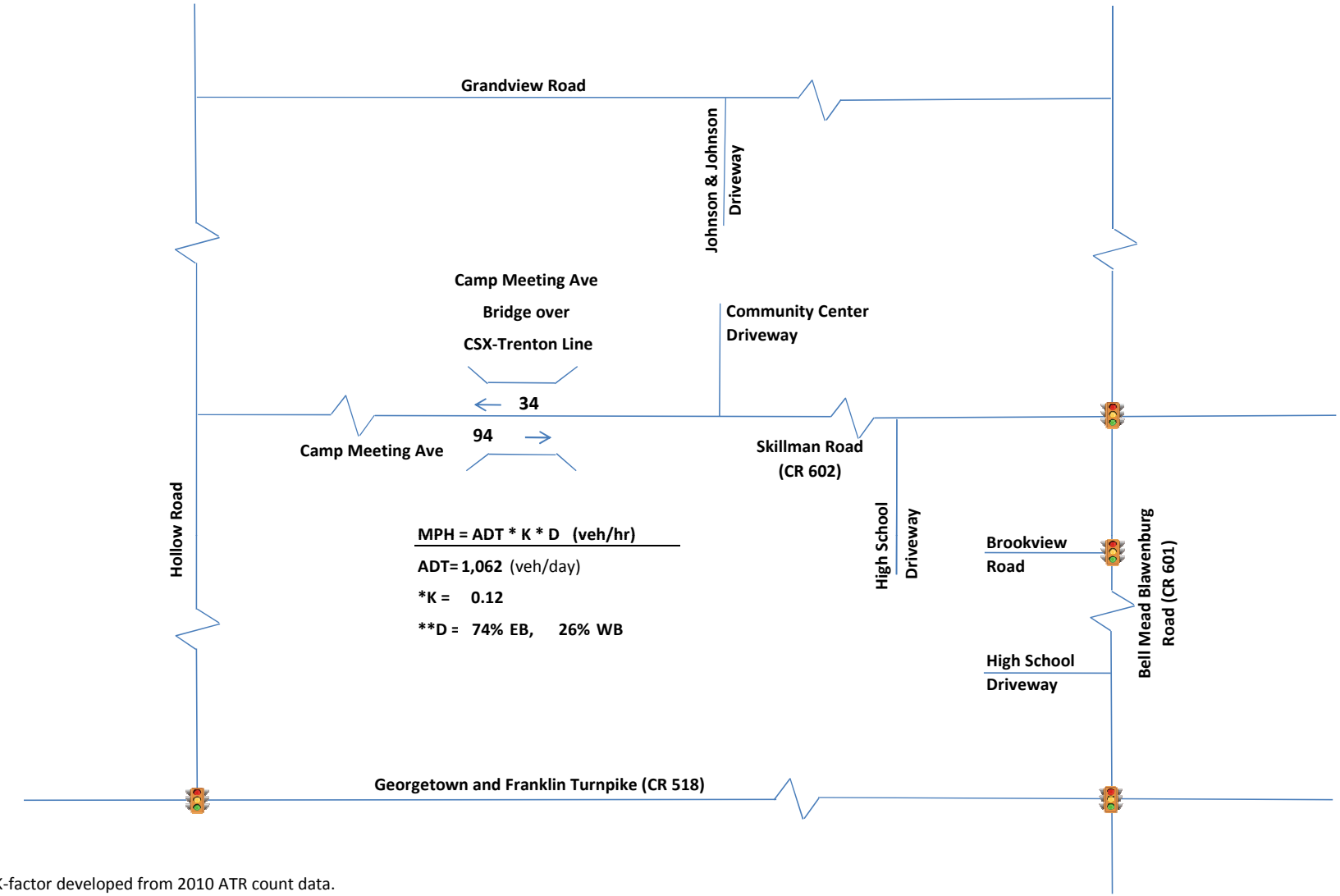


NOT TO SCALE

2010 EXISTING TRAFFIC VOLUMES
EVENING PEAK HOUR (5:00 - 6:00 PM)

Gannett Fleming
Your Trusted Advisor Since 1915

CAMP MEETING AVENUE OVER CSX-TRENTON LINE BRIDGE
CONCEPT DEVELOPMENT ACTIVITIES



MPH = ADT * K * D (veh/hr)

ADT= 1,062 (veh/day)

*K = 0.12

**D = 74% EB, 26% WB

*K-factor developed from 2010 ATR count data.

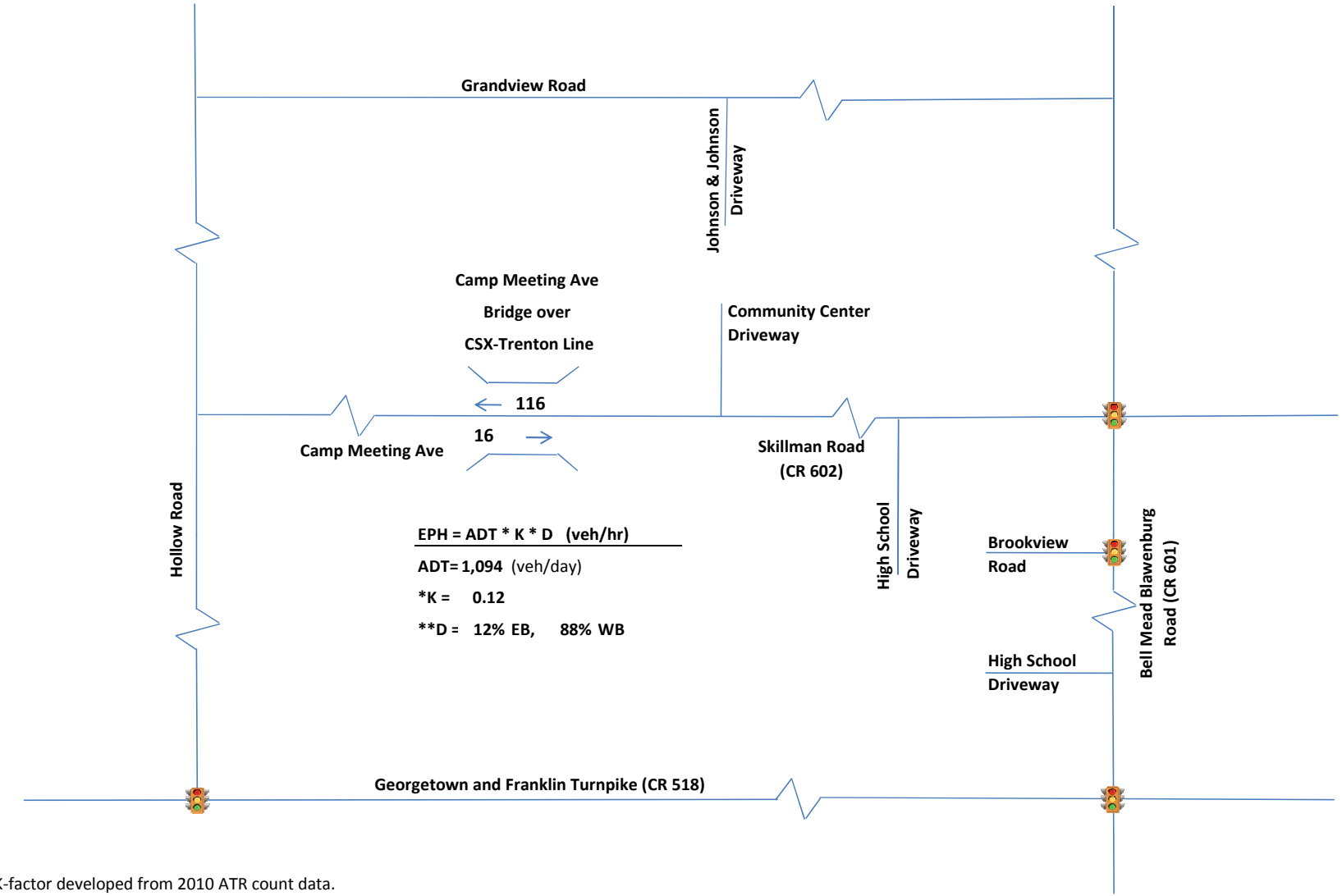
**D-factor obtained from 2010 manual count distribution.

2013 BUILD TRAFFIC VOLUMES
MORNING PEAK HOUR (7:15 - 8:15 AM)

NOT TO SCALE

Gannett Fleming
Your Trusted Advisor Since 1915

CAMP MEETING AVENUE OVER CSX-TRENTON LINE BRIDGE
CONCEPT DEVELOPMENT ACTIVITIES



EPH = ADT * K * D (veh/hr)

ADT= 1,094 (veh/day)

*K = 0.12

**D = 12% EB, 88% WB

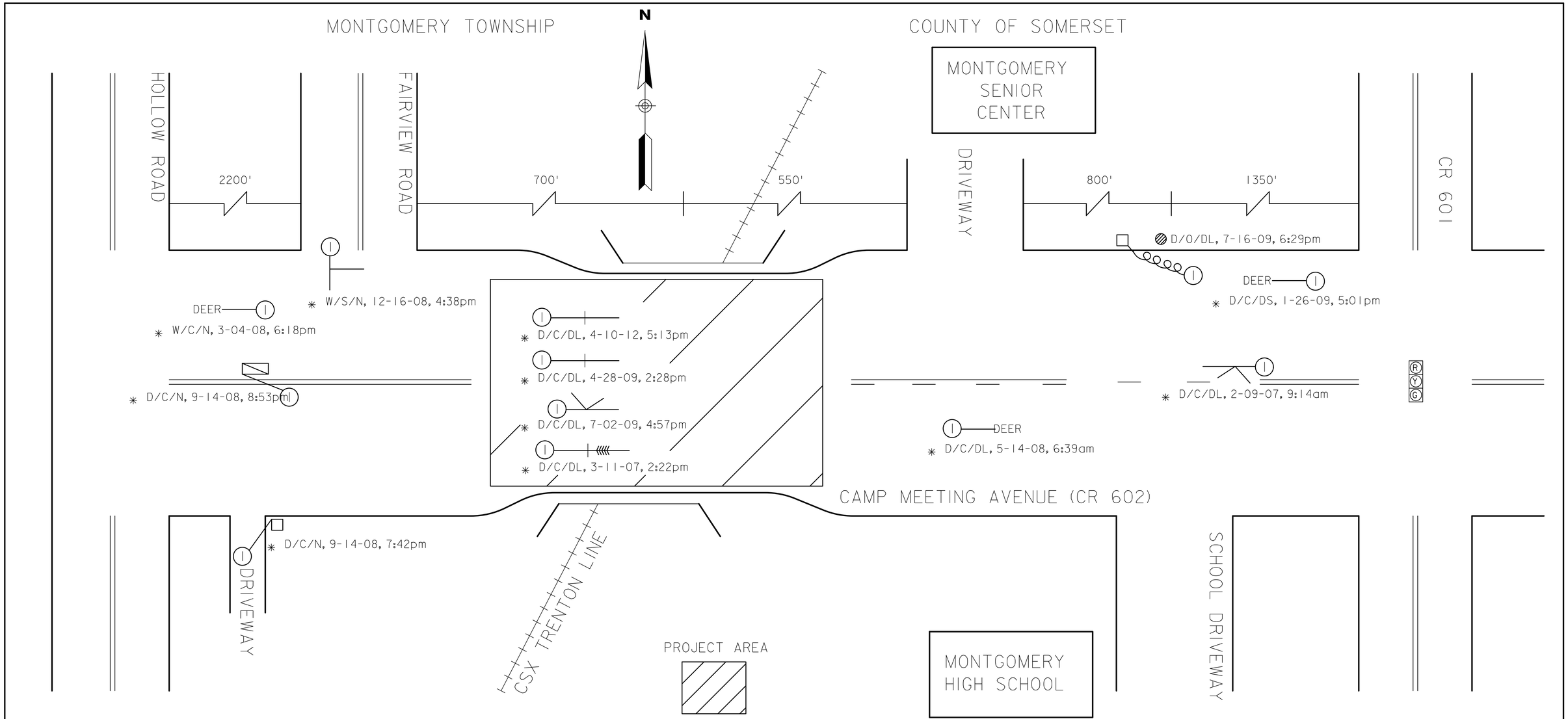
*K-factor developed from 2010 ATR count data.

**D-factor obtained from 2010 manual count distribution.

2013 BUILD TRAFFIC VOLUMES
EVENING PEAK HOUR (5:00 - 6:00 PM)

NOT TO SCALE

APPENDIX K –
Collision Diagram



SYMBOLS	PAVEMENT/WEATHER/LIGHTING			TYPES OF COLLISIONS
MOVING VEHICLE	PAVEMENT CONDITION	D	DRY	HEAD ON
BACKING VEHICLE		W	WET	ANGLE
PEDESTRIAN		S	SNOWY, ICY	REAR END
PARKED VEHICLE	WEATHER CONDITION	C	CLEAR	COLLISION WITH OBJECT
PROPERTY DAMAGE ONLY		R	RAIN	SAME DIRECTION SIDESWIPE
INJURY		S	SNOW	COLLISION WITH PARKED VEHICLE
FATALITY		F	FOGGY	OPPOSITE DIRECTION SIDESWIPE
FIXED OBJECT		O	OTHER	
OUT OF CONTROL	LIGHTING CONDITION	DL	DAYLIGHT	
NUMBER OF ACCIDENTS		DS	DUSK	
		N	DARK - NO LIGHTS	
		L	DARK - LIGHTED	

NOT TO SCALE

NEW JERSEY DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE (MP -0.6 TO 0.5)
MONTGOMERY TOWNSHIP, SOMERSET COUNTY

1/1/07 THRU 12/31/12

NOVEMBER 2013 | GANNETT FLEMING

GANNETT FLEMING, INC., NEW JERSEY

APPENDIX L –
Environmental Screening

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL SCREENING

Revised April 27, 2006

Date:	November 12, 2009
Request for this screening made by:	Ray Jacek
Project Name:	Camp Meeting Road Bridge over CSX RR
Project Description:	Tier 2 Screening
County and Municipality:	Somerset County, Montgomery Township

ENVIRONMENTAL CONSTRAINTS/OPPORTUNITIES:

Cultural Resources	**Yes / No**
Are there any 50+ year old structures in the project study area?	Y
Are there known buildings or structures on or eligible for the State and /or National Register of Historic Places in the project study area?	Y
Is there involvement with a historic bridge or culvert?	Y
Is the project located in a known or potential Historic District?	Y
Are there any undisturbed areas, old foundations or building rubble in the project study area?	Y
Are there any known archaeological sites or potential underground cultural resources within the project study area?	N
Enhancement Opportunities: If the bridge is to be replaced, it is recommended that the proposed structure be designed to be keeping with the scale, materials, and character defining features of the existing bridge. Design of the new structure should include a superstructure with prefabricated trusses of a similar configuration and appearance to those of the present Howe trusses.	
Comments: On October 31, 2005, the NJHPO issued an opinion that the bridge is eligible for listing on the National Register of Historic Places under Criteria A and C. Additionally, in a letter dated September 9, 2005, the NJHPO issued an opinion that the Delaware and Bound Brook (Reading) Railroad Historic District is eligible for listing, with the bridge identified as a contributing resource to the district. The area surrounding the bridge is currently undeveloped. The bridge is considered eligible as one of the few examples of this bridge type (Howe pony truss) in NJ and the oldest remaining railroad bridge in Somerset County.	

Section 4(f) Properties	Yes / No
Are there any recreational facilities within the project study area?	N
Is there publicly owned open space in the project study area?	Y
Is there a Wildlife Refuge or Wildlife Management Area in the project study area?	N
Is there a school or school athletic fields in the project study area?	Y
Is there a community park or parkland within the project study area?	N
Enhancement Opportunities:	
Comments: Montgomery High School is located within the project area. There are signs posted for state owned land adjacent to Montgomery High School. This land may be dedicated open space or farm land.	

Air/Noise	Yes / No
Are there any sensitive receptors (i.e. residences, schools, hospitals, and churches) within 300 feet of the project?	Y
Will the project change the vertical or horizontal alignment of the roadway?	N
Does the project provide for a significant increase in vehicle operating speeds of roadway capacity?	N
Is the project in a non-attainment area for Carbon Monoxide?	N
Is an intersection Carbon monoxide analysis required?	N
Is the project in a non-attainment area for PM2.5?	Y
Is a PM2.5 hot-spot analysis required?	N
Is the project in a non-attainment area for PM10?	N
Is a PM10 hot-spot analysis required?	N
Mitigation Opportunities:	
Comments: The land use in the area includes a high school, senior center and residences. If a significant change in the alignment of the bridge and roadway occur, a noise study may be required. The project description for the project should not refer to a "one lane bridge". The bridge and roadway are two way facilities with the bridge being too narrow to accommodate both directions of travel at the same time. If the term one lane bridge is used, it implies that the bridge will be widened an additional lane and not just widened to truly accommodate the two way facility.	

Ecology	Yes / No
Are there any wetlands, floodplains, sole source aquifer, stream crossings or wildlife habitat in the project study area?	Y
Are there any Category 1 waters or Wild and Scenic rivers in the project study area?	N
Are there any potential or know vernal pool habitats with the project study area?	
Are there any trout maintenance or trout production streams within the project study area?	N
Is there any potential for rare, threatened or endangered species or their habitats within the project study area?	Y
Are there any environmentally-sensitive areas that are possible project design constraints?	Y
Are there any potential stormwater management mitigation areas in project area or upstream of project area?	Unknown

Describe ecology in the project study area: (ie heavily forested, urban, residential, etcetera) The project area consists primarily of undeveloped wooded land and a railroad corridor.

The following environmental permits and interagency coordination may be necessary:

U.S. Coast Guard (Bridge)		NJDEP Freshwater Wetlands	
USACOE Section 404		P.L. 2001 Chapter 10 Reforestation	Y
USACOE Section 10 (Navigable Waters)		NJDEP Waterfront Development	
CAFRA		NJDEP Stream Encroachment	
NJPDES Construction Stormwater	Y	NJDEP Riparian	
NJDEP Coastal Wetlands		USEPA-Sole Source Aquifer	
NJDEP Water Quality Certificate		Essential Fish Habitat	
Pinelands Commission		Category One waters	
D & R Canal Commission		NJDEP Stormwater Management Rules	Y
Meadowlands Commission		Delaware River Bridge Commission	

Comments: There are flooded swales adjacent to the railroad tracks within the project corridor. These may be regulated as wetlands/state open waters by NJDEP. There are wooded areas which are identified as habitat for several species of concern (Barred owl, Bobcat, Canada warbler, Coopers hawk, Eastern box turtle, Great blue heron, Hooded warbler, Red headed woodpecker, Veery, Wood thrush and Worm-eating warbler). Efforts should be made to reduce impact to these areas. Depending on the scope of the project, NJDEP approval may be required for compliance with NJ Stormwater Rules and Reforestation Regulations. Consultation with NJDEP will be required during the permitting process.

Socioeconomics	Yes / No
Will the project affect farmland or community facilities?	Y
Based on the proposed improvements for this project, will there be possible displacement of businesses or residences?	N
Will the project affect access to community facilities, bus stop shelters, playgrounds or parks or gardens?	Unknown
Are there any observable safety issues or concerns in the project study area?	Y
Does project have potential for Environmental Justice involvement?	N
There is a farmland/open space, a school and a senior center within the project vicinity. Access to these facilities may be affect by the project. Observable safety issues within the study area include a narrow bridge crossing unable to accommodate two vehicles crossing at the same time.	

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?	Y
Are there active or abandoned industries, service stations or repair shops within the project study area?	N
Is there evidence of potential contamination (monitoring wells, stained soils, etc.)?	N
Are there railroad or rail yards located in the project study area?	Y
Enhancement Opportunities:	
Comments: The proposed project vicinity includes a railroad corridor. Fill associated with railroads typically comes from an unknown source, and therefore may contain contaminants. Further investigations will be required.	

Environmental Screening Summary: The bridge is eligible for listing on the National Register of Historic Places and is a contributing resource to an eligible historic district. There are community facilities (open space, senior center, high school) which should be considered while developing the proposed project. There is also the potential for involvement with suitable wildlife habitat and hazardous waste. Significant consultation with various NJDEP divisions will be required.

Prepared & Recommended By:

Amy B. Plachak	11/12/09	5-5353
E-Team Screening Coordinator	Date	Phone
Pamela Garrett	11/12/09	5-2721
Environmental Team Leader	Date	Phone

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

CHRIS CHRISTIE
Governor
KIM GUADAGNO
Lt. Governor

JAMES S. SIMPSON
Commissioner

April 12, 2012

Camp Meeting Avenue Bridge over CSX (Conrail)
CDI/APE/Consulting Parties and Parties with an Interest/PIAP
Montgomery Township, Somerset County

Mr. Daniel D. Saunders
Acting Administrator and Deputy State Historic Preservation Officer
Mail Code 501-04B
Department of Environmental Protection
Historic Preservation Office
PO Box 420
Trenton, NJ 08625-0420

Attn: Ms Michelle Hughes, Transportation and Planning Group

Dear Mr. Saunders:

The purpose of this letter is to initiate the Section 106 process per 36CFR800.3; to propose participants in a public involvement plan per 36CFR800.2; to propose an Area of Potential Effects per 36CFR800.3; and identify historic properties per 36CFR800.4.

Project Description

The New Jersey Department of Transportation has initiated a project to construct a two lane roadway in place of the structurally deficient Camp Meeting Avenue Bridge over CSX Line of Conrail-NY Central railroad line, in Somerset County. This is a single lane, orphan bridge, construction date of 1889, described as 3 span, metal, Pony Warren Truss, type structure, 104 feet in length with stone abutments. The project limits for the bridge, DOT Structure No. 1850-160, have been noted for this local road (CR602), as mileposts .5 to .6, by the Montgomery Township police.

Enclosed are: an excerpt copy of the USGS Rocky Hill quadrangle map; a road map, aerial views of the site; and a copy of the *New Jersey Historic Bridge Survey* sheets for this structure.

Introduction

The Section 106 regulations allow for a level of effort for conducting and evaluating cultural resources to be commensurate with the undertaking. All cultural resources work will be conducted in compliance with the requirements of Section 106 of the National Historic Preservation Act of 1966 (as amended), implemented by the regulations described in 36CFR800.

Identification of Consulting Parties and Public Involvement (36CFR800.2)

The following entities have been identified as those with an interest in history and historic preservation; these groups/people will be invited to participate in the Section 106 process:

1. Montgomery Township Landmarks Commission
   Montgomery Township Municipal Building
   2261 Van Horne Road- Route 206 North
   Belle Mead, NJ 08502
   Attention: Chairman E-mail: landmarks@twp.montgomery.nj.us

2. The Van Harlingen Historical Society Of Montgomery, Inc.
   P.O. Box 23
   Belle Mead, NJ 08502
   Attention: Ms. Ursula Brecknell

3. Somerset County Historical Society
   The Van Veghten House
   9 Van Veghten Drive
   Bridgewater, NJ 08807
   Attention: Ms. Dorothy Stratford E-mail: schs@earthlink.net

4. Somerset County Cultural and Heritage Commission
   Somerset County Administration Building
   20 Grove Street, Somerville, NJ 08876
   Attention: Don Esposito, President E-mail: desposito@ssbjcc.org

5. Jersey Central Railroad Historical Society, Jersey Central Chapter NRHS
   P.O. Box 700
   Clark, NJ 07066
   Attn: Mitchell Dakelman, Historian E-mail: dakelmanm@aol.com

6. Conrail Historical Society, Inc
   PO Box 97
   Marysville, PA 17053
   Attn: Sean McDonnell, Secretary, E-mail: Sean.McDonnell@TheCRHS.org

Public involvement occurs during the life of the project at various stages of project development: NJDOT will contact people knowledgeable in the history/prehistory of the area; per Section 106, the consulting parties are invited to review the cultural resources reports and make suggestions on effects and mitigation, if necessary; and per NJDOT Public Involvement Action Plan (PIAP) procedures, the public will be invited to attend a Public Information Center(s) and any meeting(s) specifically conducted to discuss historic preservation.

Our Section 106 public involvement action plan for this project is consistent with the NJDOT's Public Involvement Action Plan procedures. The policy promotes an on-going public partnership through early, frequent, and continuous consultation with the public by committing to public notification to the affected parties; citizen input in the identification of the solutions; and dedication on the part of NJDOT to make the public's input meaningful through follow through. Cultural resource information is presented to the public and established organizations, such as historical societies, at every opportunity.

Delineation of the Area of Potential Effects (36CFR800.3)

Archaeology:

The archaeological APE will be the area of anticipated ground disturbances. The archaeology APE was agreed to, at the meeting noted below, to be within an area of 50 feet on either side of the bridge. Please inform us if you are aware of any archaeological resources for this location.

Architecture:

The architecture APE was proposed and determined in meetings on Feb. 9th and 23rd (Michelle Hughes, Dave Mudge, and Nan Adrian attending). The boundary of the APE consists of the adjacent tax parcels surrounding the bridge, five in number, as shown on tax map portion enclosed, and restricted to a reasonable line of sight distance from the bridge. Furthermore, it was decided that the architectural APE will not need an intensive level survey due to the unlikelihood of the presence of eligible resources. The area was investigated initially and photographs from this location have been attached to the enclosed tax map excerpt. No other structures were observed to be within sight of the bridge and the nearest property is a community center of modern construction.

Also, the bridge structure and its setting was studied by The Louis Berger Group and the report, dated Oct. 2006, subtitled "Bridge Rehabilitation Report and SHPO Documentation", is attached.

Identification of Historic Properties (36CFR800.4)

This bridge Structure No. 1850-160 over the Conrail CSX railroad line is located on Camp Meeting Road (County Route 602) in Montgomery Township. Apart from the bridge itself, there are no standing resources existing at this locality. The Skillman train station, once located nearby, no longer exists. The bridge was nominated as Individually Eligible in 2005 and the nomination form is attached.

We at DOT look forward to co-ordinating with you and all the consulting parties on the Camp Meeting Avenue Bridge and ask that you please let us know when you are available for a meeting to review and discuss this project.

Very truly yours,

David C. Mudge

Supervising Environmental Specialist
Bureau of Landscape Architecture and Environmental Solutions

enclosures
cc: Tina Shutz, DOT En'l Team Leader w/ enclosures
Robert Verner, DOT Project Manager w/ enclosures
Shaun O'Hanlan, FHWA Area Engineer w/ enclosures
:na-acv/cdv

HPO Log # 12-1211-1
HPO-E2012-216

State of New Jersey
MAIL CODE 501-04B
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATURAL & HISTORIC RESOURCES
HISTORIC PRESERVATION OFFICE
P.O. Box 420
Trenton, NJ 08625-0420
TEL. (609) 984-0176 FAX (609) 984-0578

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

May 16, 2012

Mr. David C. Mudge
Environmental Team Leader
Division of Environmental Resources
New Jersey Department of Transportation
1035 Parkway Avenue
Post Office Box 600
Trenton, New Jersey 08625-0600

Dear Mr. Mudge:

In accordance with 36 CFR Part 800: Protection of Historic Properties, as published with amendments in the Federal Register on 6 July 2004 (69 FR 40544-40555), I am providing comments on the intiation of Section 106 consultation for the following proposed undertaking:

Somerset County, Montgomery Township
Camp Meeting Avenue Bridge over CSX Line of Conrail-NY Central Railroad Line

800.3 Initiation of the Section 106 Process

The HPO concurs with the Area of Potential Effect (APE), public involvement plan, and the consulting and interested party list for this project.

Additional Comments

The HPO would like to clarify that the Camp Meeting Avenue Bridge over CSX Line of Conrail-NY Central Railroad Line was recommended eligible for listing on the New Jersey and National Registers of Historic Places by the New Jersey Department of Transportation's Historic Bridge Survey in 1995 and was given a formal SHPO Opinion on 10/31/2005. It is not currently listed on the New Jersey or National Registers of Historic Places.

If you have any questions regarding this letter, please contact Michelle Hughes at (609) 984-6018. If additional consultation with the HPO is needed for this undertaking, please reference

the HPO project number 12-1211 in any future calls, emails, or written correspondence to help expedite your review and response. Thank you.

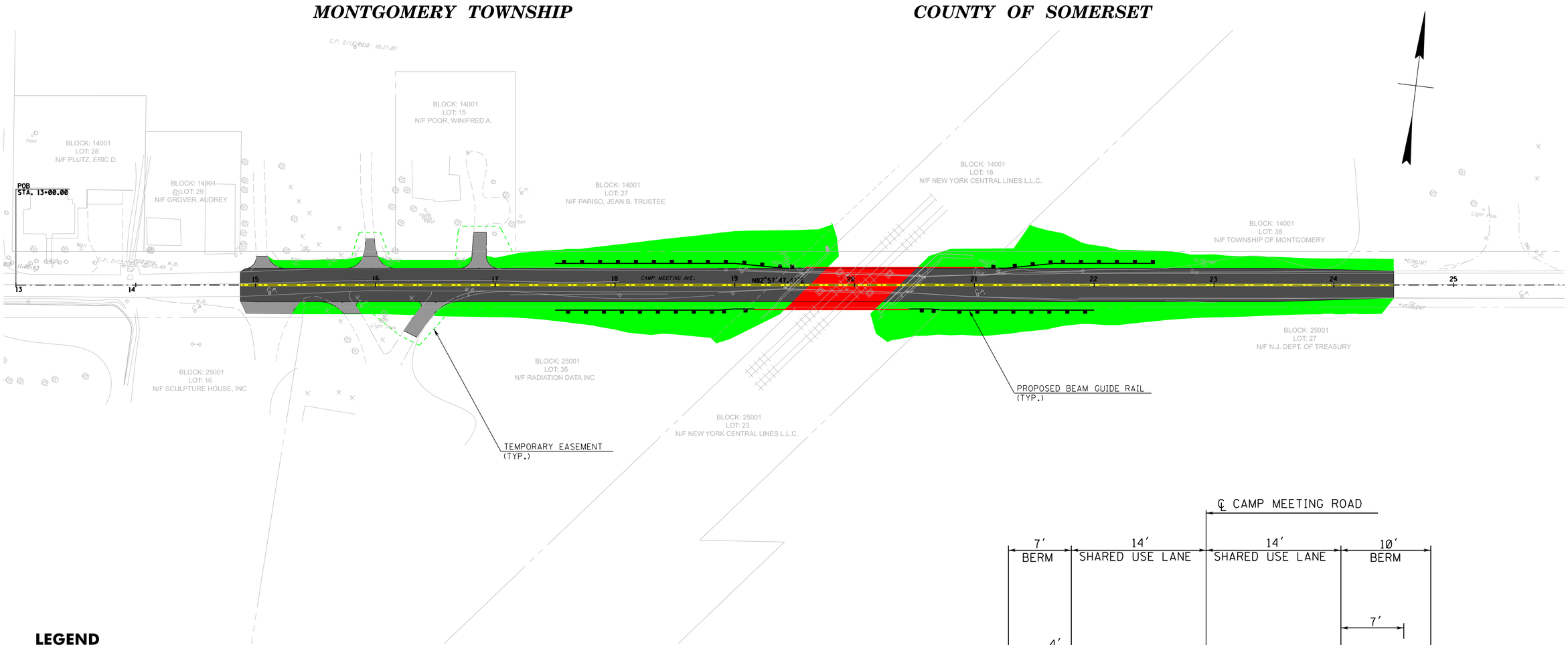
Sincerely,

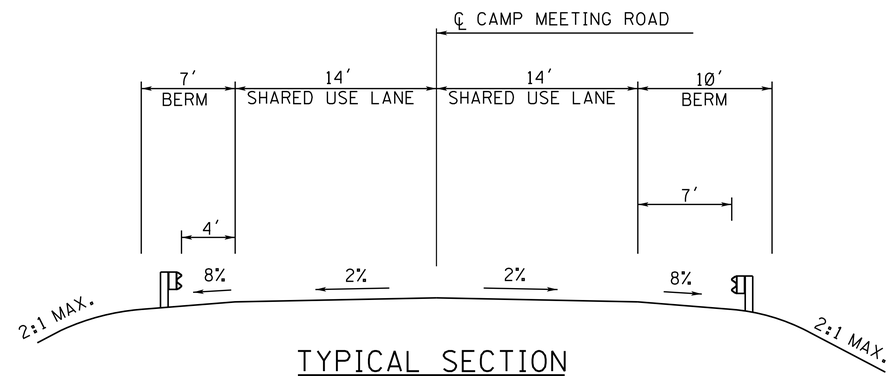
Daniel D. Saunders
Deputy State Hsitoric
Preservation Officer

CC: Montgomery Township Landmarks Commission
The Van Harlingen Historical Society of Montgomery, Inc.
Somerset County Historic Society
Somerset County Cultural and Heritage Commission
Jersey Central Railroad Historical Society, Jersey Central Chapter NRHS
Conrail Historical Society, Inc.

APPENDIX M –

Conceptual Alignments, Right of Way Impacts, Environmental Constraints, Bridge Staging, Profile and Local Detour





TYPICAL SECTION

N.T.S

LEGEND

- **PAVING LIMITS**
- **EARTHWORK LIMITS**
- **STRUCTURE LIMITS**
- **GRAVEL DRIVEWAY LIMITS**

POSTED SPEED = 30 MPH
DESIGN SPEED = 35 MPH
NET IMPERVIOUS = 8,800+/- (0.20 Ac. +/-) MAXIMUM
TOTAL DISTURBANCE = 59,400+/- S.F. (1.36 Ac.+/-) MAXIMUM

ALTERNATIVE 1

MAINTAIN EXISTING VERTICAL CLEARANCE
(21 FT 2 IN. OVER ABANDONED TRACK &
21 FT 6 IN. OVER TRENTON LINE)
SIDEWALK ON SOUTHERN SIDE OF BRIDGE ONLY
NO SIDEWALKS ON EITHER APPROACH

Gannett Fleming

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ALTERNATIVE 1

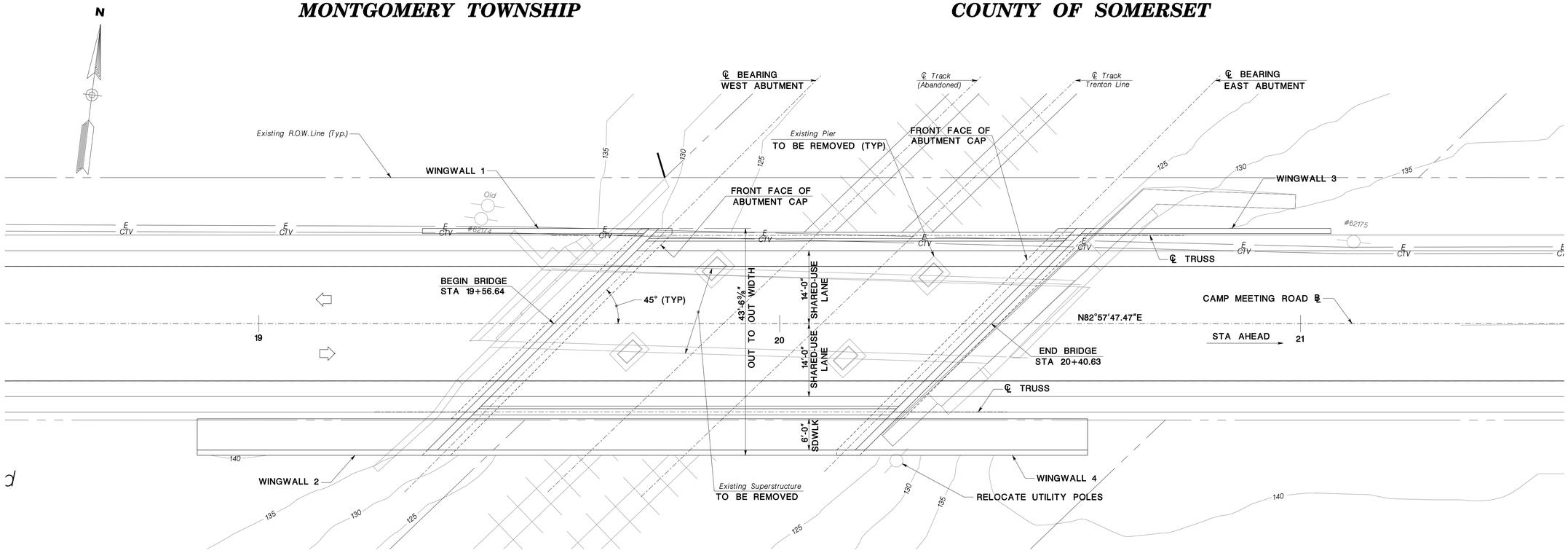
CONSTRUCTION PLAN

CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

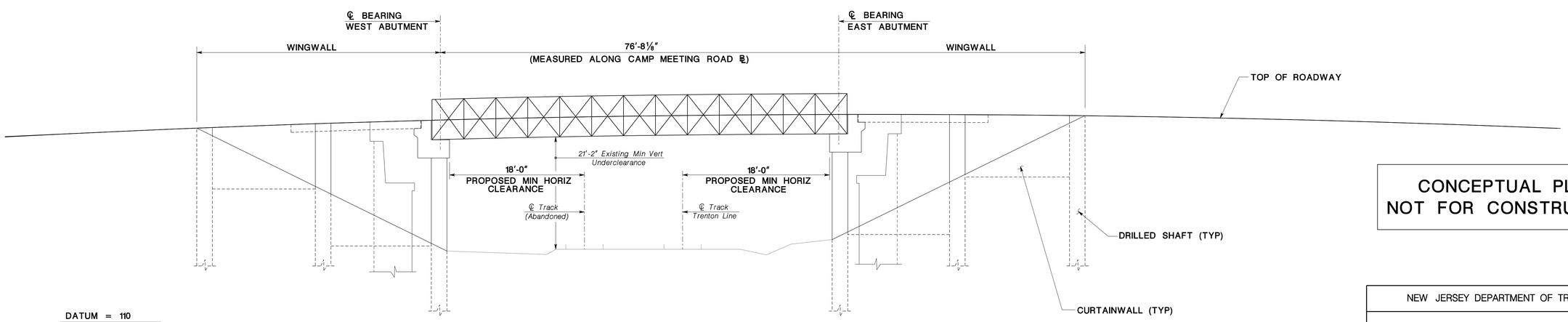
1"=40' 6/2012

GANNETT FLEMING, INC., NEW JERSEY

MONTGOMERY TOWNSHIP **COUNTY OF SOMERSET**



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 10'

CONCEPTUAL PLAN
NOT FOR CONSTRUCTION

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ALTERNATIVE 1A

CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

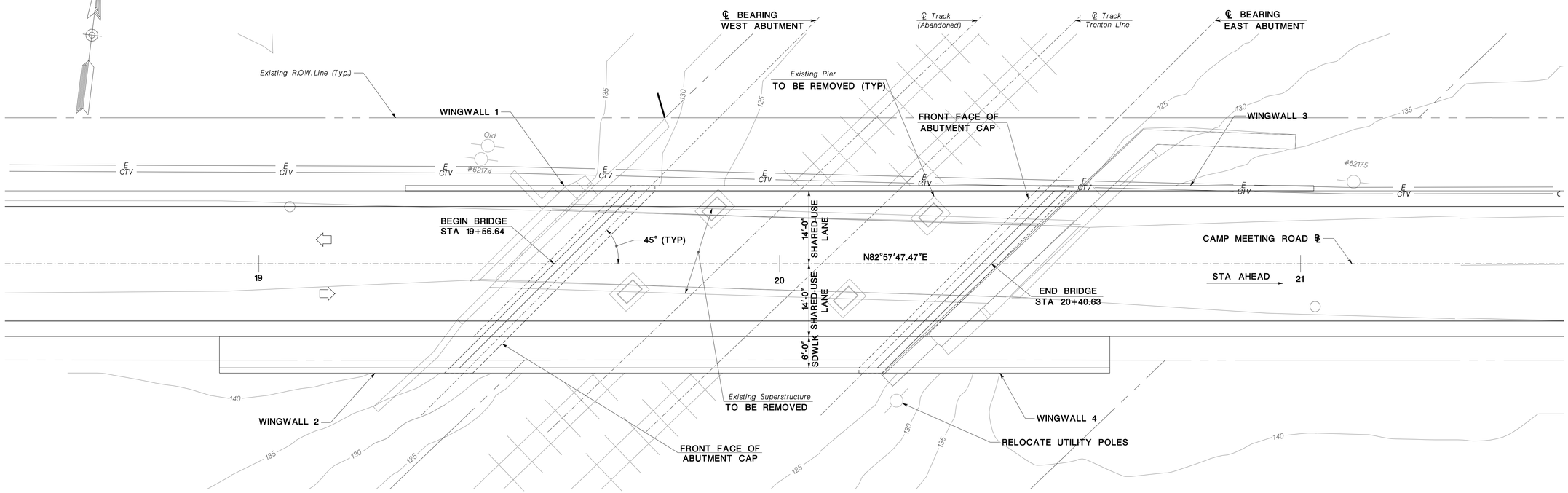
SCALE: AS NOTED 10/2011

Gannett Fleming

GANNETT FLEMING, INC., NEW JERSEY

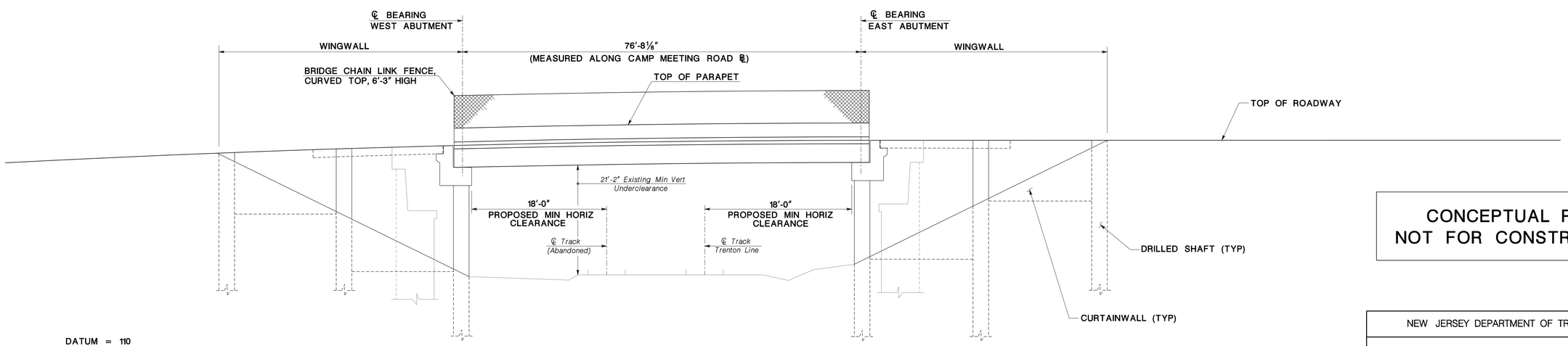
MONTGOMERY TOWNSHIP

COUNTY OF SOMERSET



PLAN

SCALE: 1" = 10'



ELEVATION

SCALE: 1" = 10'

CONCEPTUAL PLAN
NOT FOR CONSTRUCTION

NEW JERSEY DEPARTMENT OF TRANSPORTATION

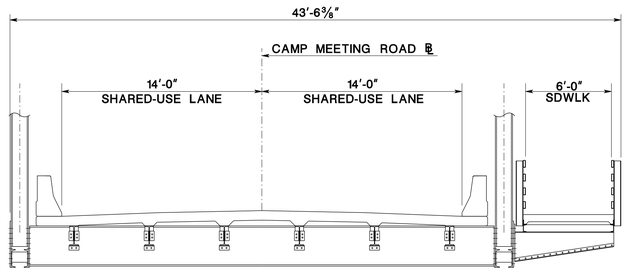
ALTERNATIVE 1B & 1C

CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

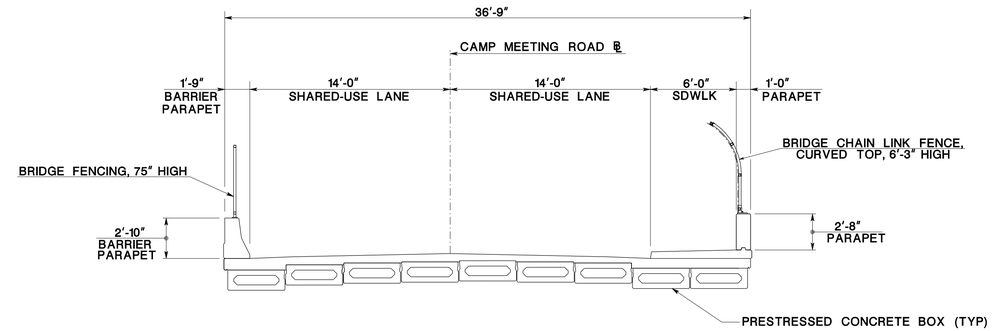
SCALE: AS NOTED 10/2011

Gannett Fleming

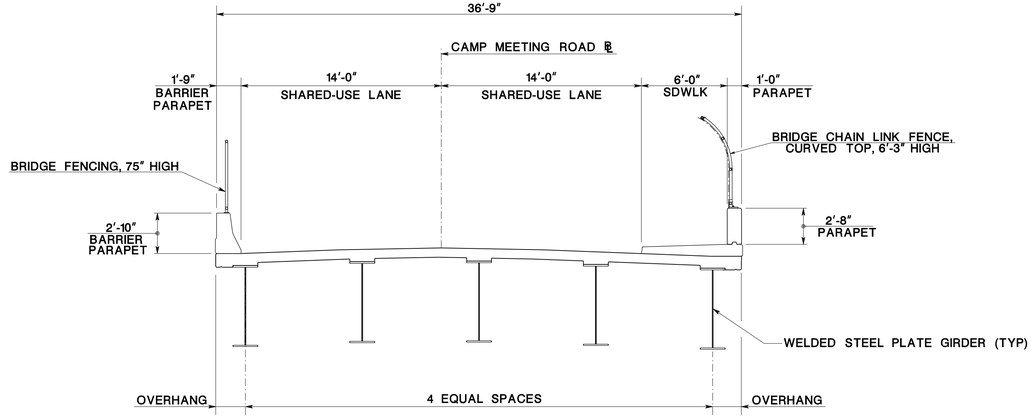
GANNETT FLEMING, INC., NEW JERSEY



ALTERNATIVE 1A & 2A -
TYPICAL STEEL TRUSS SECTION
NOT TO SCALE



ALTERNATIVE 1B & 2B -
TYPICAL PRESTRESS CONCRETE BEAM SECTION
NOT TO SCALE



ALTERNATIVE 1C & 2C -
TYPICAL STEEL GIRDER SECTION
NOT TO SCALE

CONCEPTUAL
NOT FOR CONSTRUCTION

NEW JERSEY DEPARTMENT OF TRANSPORTATION

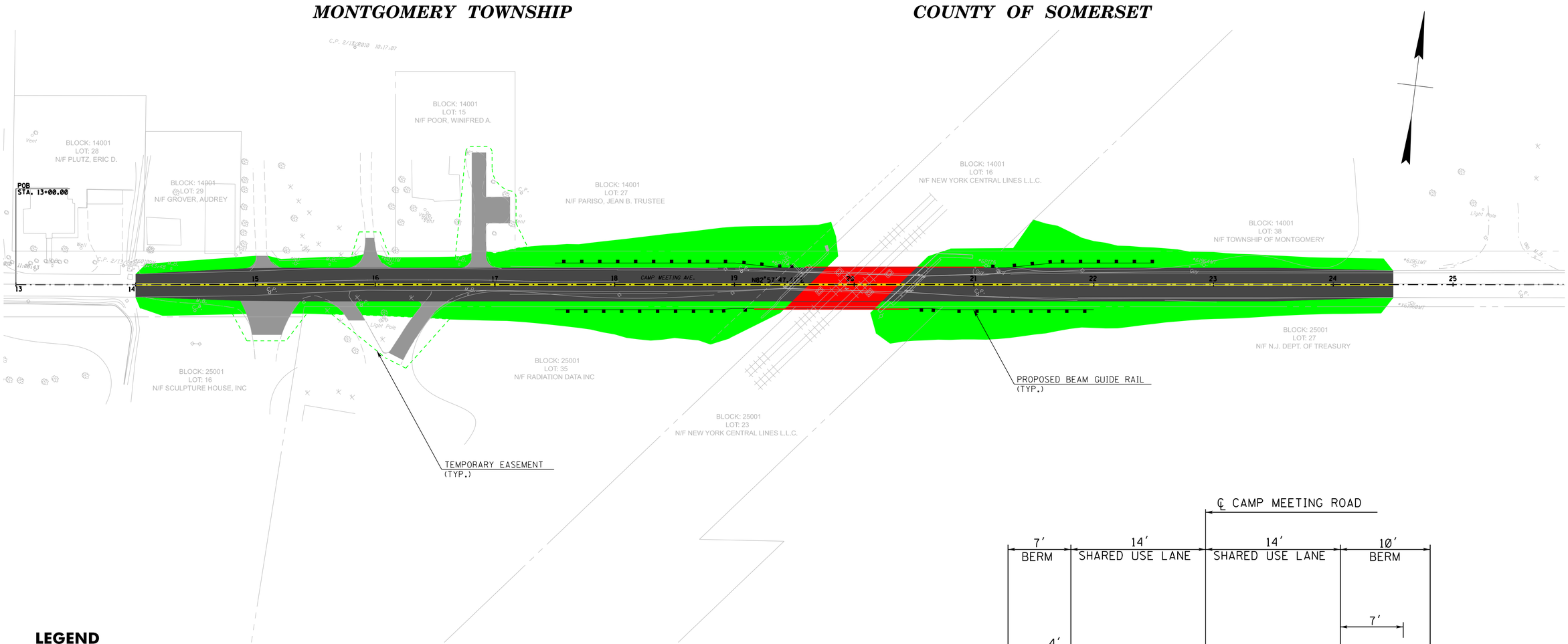
SUPERSTRUCTURE CROSS-SECTIONS

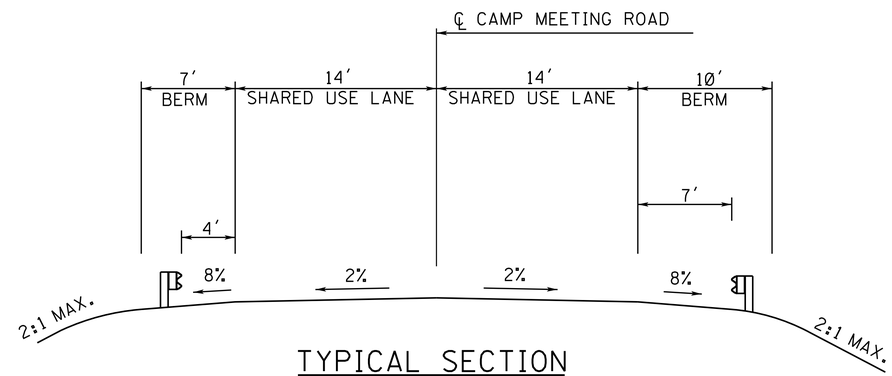
CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

Gannett Fleming

SCALE: AS NOTED 10/2011

GANNETT FLEMING, INC., NEW JERSEY





TYPICAL SECTION

N.T.S

LEGEND

- **PAVING LIMITS**
- **EARTHWORK LIMITS**
- **STRUCTURE LIMITS**
- **GRAVEL DRIVEWAY LIMITS**

POSTED SPEED = 30 MPH
DESIGN SPEED = 35 MPH
NET IMPERVIOUS = 8,800+/- (0.20 Ac. +/-)
TOTAL DISTURBANCE = 71,500+/- S.F. (1.64 Ac.+/-)

ALTERNATIVE 2

PROVIDE MIN. REQUIRED VERTICAL CLEARANCE
(23 FT. OVER TRENTON LINE)
SIDEWALK ON SOUTHERN SIDE OF BRIDGE ONLY
NO SIDEWALK ON EITHER APPROACH

Gannett Fleming

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ALTERNATIVE 2

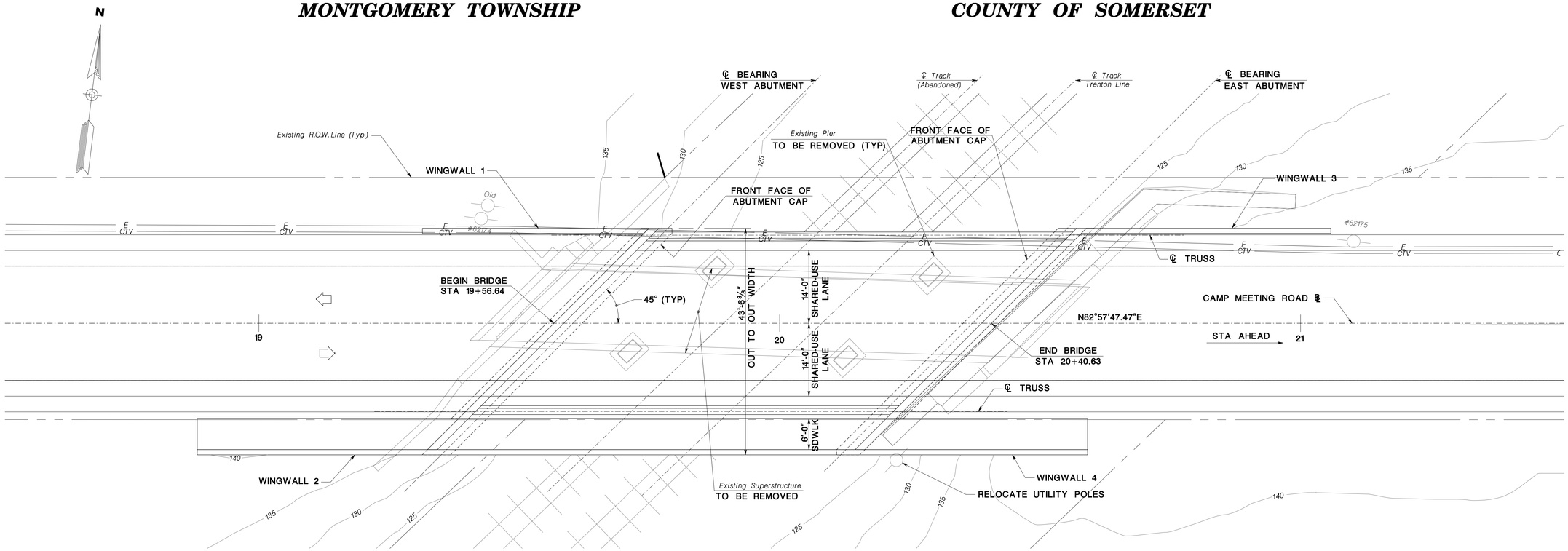
CONSTRUCTION PLAN

CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

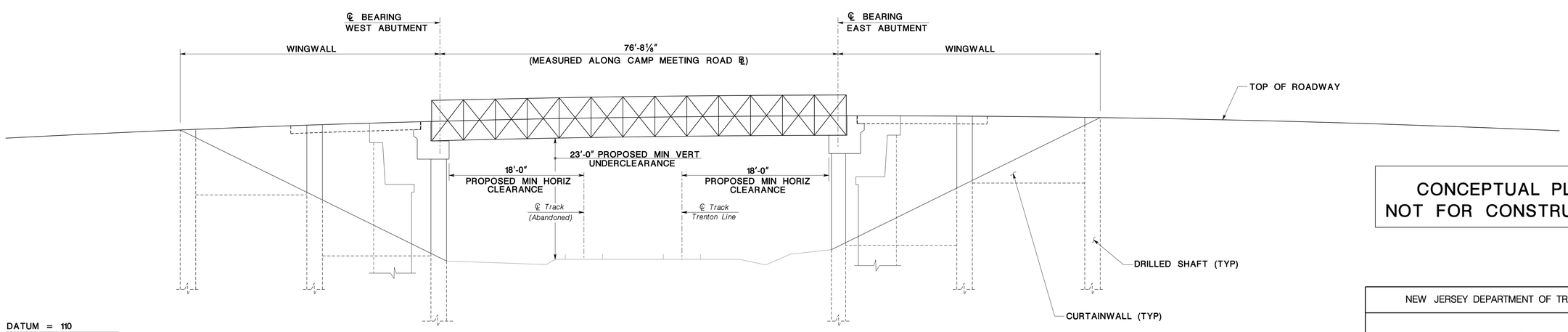
1"=40' 6/2012

GANNETT FLEMING, INC., NEW JERSEY

MONTGOMERY TOWNSHIP **COUNTY OF SOMERSET**



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 10'

CONCEPTUAL PLAN
NOT FOR CONSTRUCTION

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ALTERNATIVE 2A

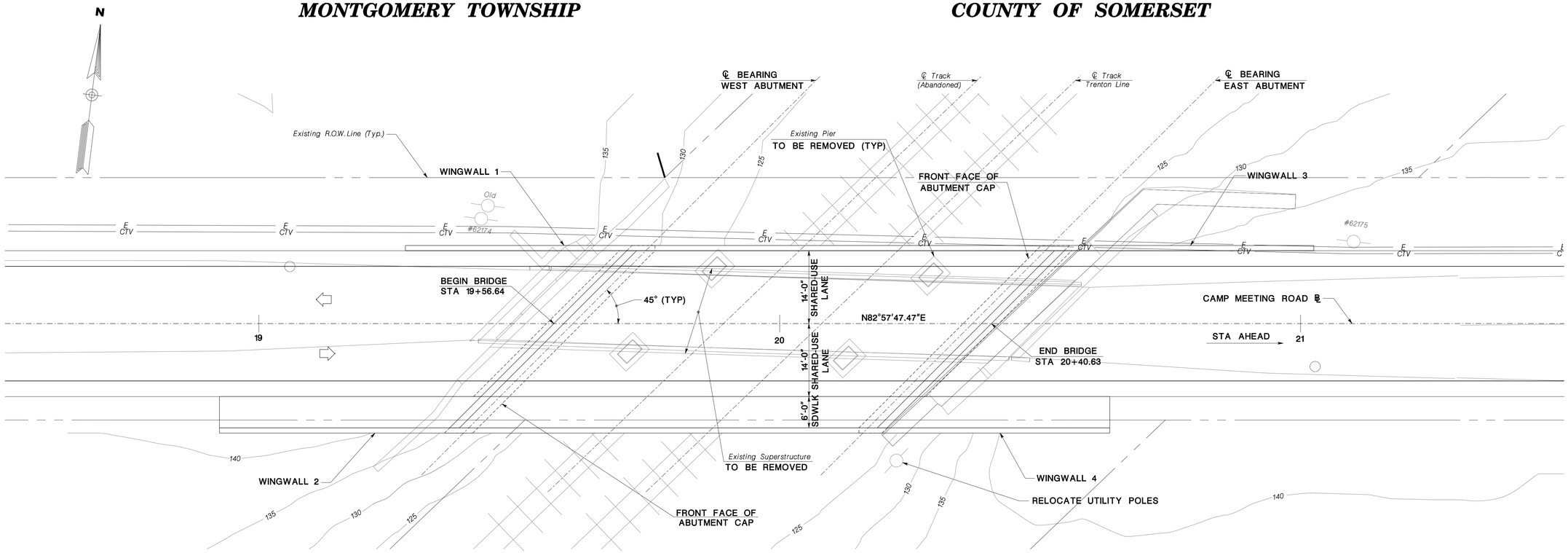
CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

SCALE: AS NOTED 10/2011

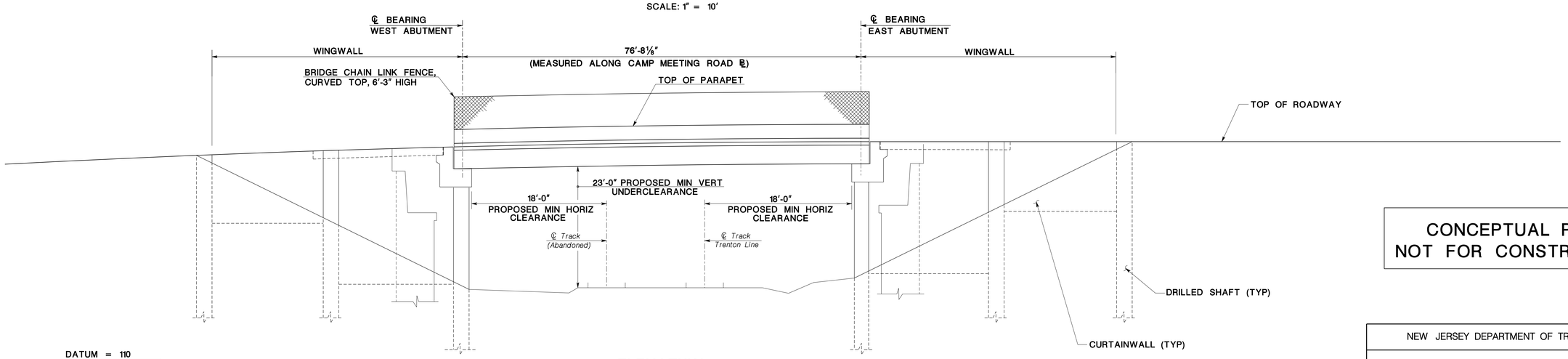
Gannett Fleming

GANNETT FLEMING, INC., NEW JERSEY

MONTGOMERY TOWNSHIP **COUNTY OF SOMERSET**



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 10'

CONCEPTUAL PLAN
NOT FOR CONSTRUCTION

NEW JERSEY DEPARTMENT OF TRANSPORTATION

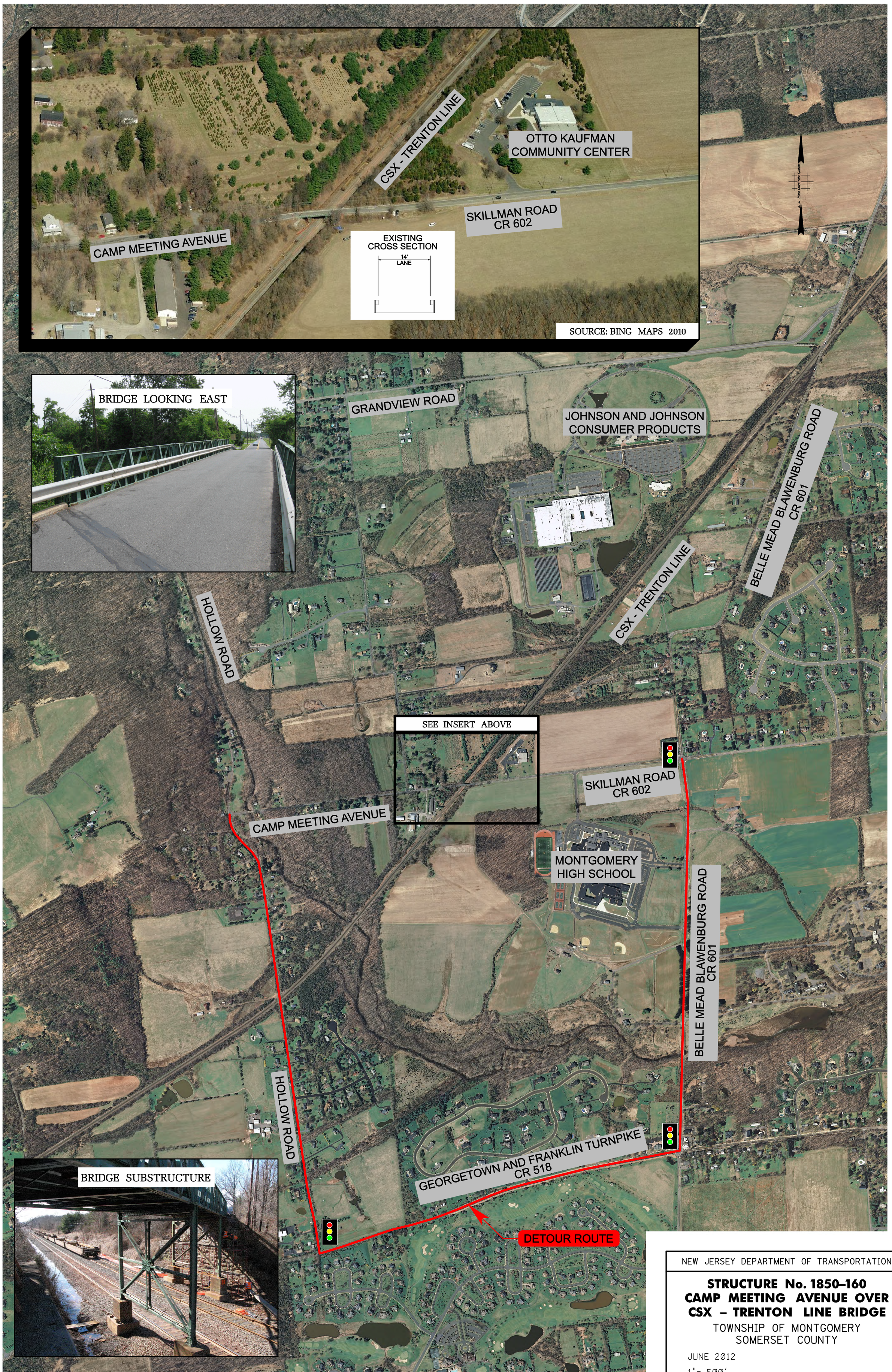
ALTERNATIVE 2B & 2C

CAMP MEETING AVENUE OVER
CSX-TRENTON LINE BRIDGE
REPLACEMENT

SCALE: AS NOTED 10/2011

Gannett Fleming

GANNETT FLEMING, INC., NEW JERSEY



SOURCE: NJ 2007 ORTHOPHOTOGRAPHY

NEW JERSEY DEPARTMENT OF TRANSPORTATION

STRUCTURE No. 1850–160
CAMP MEETING AVENUE OVER
CSX – TRENTON LINE BRIDGE

TOWNSHIP OF MONTGOMERY
SOMERSET COUNTY

JUNE 2012

1"= 500'

APPENDIX N –
Public Communications

Suite 205
Southfield Center
One Cragwood Road
South Plainfield, NJ 07080
Tel: (908) 755-0040
Fax: (908) 755-9849

Gannett Fleming

Minutes of Meeting

Date & Time: November 19, 2010 at 9:00 AM

Location: Montgomery Township Municipal Building, Belle Mead, NJ

Project: **New Jersey Department of Transportation (NJDOT)**
Camp Meeting Avenue over CSX-Trenton Line Bridge

Attending:

Michael Morgan (MM) –	Gannett Fleming (GF) PM	T: (908) 755-0040
Glenn Stevens (GSt) –	GF Deputy PM/Traffic	T: (908) 755-0040
Gary Leach (GL) –	NJDOT Planning	T: (609) 530-2075
Thomas Anzabi (TA) –	NJDOT Planning	T: (609) 530-2388
Donato Nieman (DN) –	Montgomery Township Administrator	T: (908) 359-8211
Gail Smith (GSm) –	Montgomery Township Engineer	T: (908) 359-8211
Robert Palmer (RP) –	Montgomery Township Police	T: (908) 359-8211
Robert Mitchell (RM) –	Montgomery Township Police	T: (908) 359-3222
Art Villano (AV) –	Montgomery Township Public Works	T: (908) 874-3144
Robyn Friedlander (RF) –	Montgomery Township School Transp.	T: (609) 466-7601

Purpose: **Public Officials Briefing Meeting**

1. Attendees introduced themselves.

2. GL and TA gave an introduction of project and introduced MM as GF's Project Manager.

3. MM stated the purpose of the meeting was for GF to present findings, problems and issues determined from the data collection efforts to date, and to solicit Montgomery Township input on the Project needs and objectives.

4. GSt distributed and summarized the items contained in the Project Fact Sheet.

   - The Camp Meeting Avenue bridge over CSX-Trenton Line is functionally obsolete due to inadequate bridge deck geometry (14' wide) and lateral underclearance (21'2") to the railroad tracks.
   - The NJDOT recently completed wingwall and structural steel repairs to the bridge.
   - Camp Meeting Avenue/Skillman Road over the bridge consists of one 14-foot travel lane with no shoulders or sidewalks. Only one direction of travel at a time is allowed and visibility of approaching traffic on the bridge is difficult.
   - The existing wire cable type guiderail and its lengths approaching the bridge on both sides of Camp Meeting Avenue/Skillman Road are currently substandard.
   - The bridge is currently posted for a weight limit of 10 tons for a Type 3 truck.

- The structure and the rail corridor are eligible for listing on the National Register of Historic Places.
- Three crashes occurred in the immediate vicinity of the bridge between Years 2007 and 2009 (opposite direction/sideswipe, head-on, and backing).
- No major site developments are currently planned in the immediate project area.
- The Average Daily Traffic (ADT) is approximately 1,030 vehicles per day.
- The weekday morning peak hour occurs between 7:15 AM to 8:15 AM and the evening peak hour occurs between 5:00 PM to 6:00 PM.
- The bridge operates with reserve capacity during the morning and evening peak hours.

5. DN questioned the project schedule. GL indicated that the current schedule is approximately between two and three years in order to complete the conceptual development, the preliminary and final design documents, and to obtain the environmental permits.

6. Montgomery Township is in favor of a two-lane solution. DN indicated that a resolution of project support would be provided if and when requested by NJDOT. The Township will coordinate with Somerset County. The Township expressed opposition to any one-lane option.

7. Montgomery Township indicated that pedestrians (Montgomery High School's cross country track team was specifically mentioned) and bicyclists traverse the structure and recommended that sidewalks be included in any bridge improvement scheme. GSm indicated that the Township has a Pathways Program as part of their Master Plan. [GSm provided a copy of the Pathways Program in a subsequent e-mail following the meeting.]

8. DN indicated that due to the historic nature of the bridge, coordination with the Landmarks Commission and the Harlingen Historical Society should be completed.

9. RF stated that seven (7) buses per day utilize Camp Meeting Avenue/Skillman Road.

10. GSt asked for input related to potential detours during construction staging. Montgomery Township acknowledged that detours will likely be unavoidable and was in general agreement with the potential routes. RF expressed concerns related to the detour routes for the school buses and recommended that the bridge work and detours be completed during the summer.

11. Montgomery Township was in support of the project and indicated that they believed the Camp Meeting Bridge improvements would provide regional travel alternatives to alleviate Route 206 congestion.

We believe the foregoing to be an accurate summary of discussions and related decisions. We would appreciate notification of exceptions or corrections to the minutes within five (5) working days of receipt. Without notification, we will consider these minutes to be record of fact.

Glenn B. Stevens, P.E., P.T.O.E
DPM/Lead Traffic Engineer

Cc: Attendees

ACTION ITEMS

ACTION	***RESPONSIBILITY***	***DATE DUE***	***COMPLETED***
Resolution of Support	Montgomery Township		

O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\04_PROJECT MANAGEMENT\02-MEETING_MINUTES\20101119_NJDOT-Statewide Scoping_Camp Meeting_Public Officials Minutes_DRAFT.doc

Suite 205
Southfield Center
One Cragwood Road
South Plainfield, NJ 07080
Tel: (908) 755-0040
Fax: (908) 755-9849

Gannett Fleming

Minutes of Meeting

Date & Time: June 25, 2012 at 2:00 PM

Location: Montgomery Township Municipal Building, Belle Mead, NJ

Project: **New Jersey Department of Transportation (NJDOT)**
Camp Meeting Avenue over CSX-Trenton Line Bridge

Attending:

Michael Morgan (MM) –	Gannett Fleming (GF) PM	T: (908) 755-0040
Glenn Stevens (GSt) –	GF Deputy PM/Traffic	T: (908) 755-0040
Samir Shah (SS) –	NJDOT Project Management	T: (609) 530-5693
Thomas Anzabi (TA) –	NJDOT Project Management	T: (609) 530-2388
Donato Nieman (DN) –	Montgomery Township Administrator	T: (908) 359-8211
Gail Smith (GSm) –	Montgomery Township Engineer	T: (908) 359-8211
Robert Palmer (RP) –	Montgomery Township Police	T: (908) 359-2311
Andrew Perry (AP) –	Montgomery Township Police	T: (908) 359-3222
Guy Fillebrown (GFi) –	Montgomery Township Police	T: (908) 359-3222
Art Villano (AV) –	Montgomery Township Public Works	T: (908) 874-3144

Purpose: **Public Officials Briefing Meeting**

1. Attendees introduced themselves.

2. TA gave an introduction of project and explained that NJDOT had further developed the project and was here to present the Initially Preferred Alternative.

3. GSt reviewed the existing conditions of the Camp Meeting Avenue structure.

   - The Camp Meeting Avenue bridge over CSX-Trenton Line is functionally obsolete due to inadequate bridge deck geometry (14’ wide) and lateral underclearance (21’2”) to the railroad tracks.
   - The NJDOT recently completed wingwall and structural steel repairs to the bridge.
   - Camp Meeting Avenue/Skillman Road over the bridge consists of one 14-foot travel lane with no shoulders or sidewalks. Only one direction of travel at a time is allowed and visibility of approaching traffic on the bridge is difficult.
   - The existing wire cable type guiderail and its lengths approaching the bridge on both sides of Camp Meeting Avenue/Skillman Road are currently substandard.
   - The bridge is currently posted for a weight limit of 10 tons for a Type 3 truck.

4. GSt reviewed the Initially Preferred Alternative.

    - The existing bridge will be removed and be fully replaced with a single-span structure having a vertical clearance of 21'2" to the rail line. Multiple structure types are still being considered and will be finalized in the design phase of the project.
    - The bridge will have two bicycle-compatible 14-foot wide lanes with a 6-foot wide sidewalk on the southern side of the structure.
    - A wider berm will be provided on the southern side of the bridge approaches to accommodate a future sidewalk.
    - Beam guide rail is proposed on all four quadrants of the structure.
    - The vertical profile of the roadway will be improved to provide proper sight distance. Due to the vertical profile change, regrading of driveways west of the structure will be required.
    - A full roadway closure and detour will be implemented to construct the new bridge. The detour route will be along Hollow Road, Georgetown and Franklin Turnpike (CR 518), and Belle Mead Blawenburg Road (CR 601).

5. DN stated that the impact to the school is a concern.

6. GSm questioned the project schedule and if the project was funded. TA indicated that construction is currently scheduled to begin in 2015 and at this point the project is only funded for design.

7. DN liked the two 14-foot lanes and the sidewalk inclusion on the structure.

8. GSm indicated that the municipality may want a sidewalk included throughout the project limits. [Following the meeting, Montgomery Township stated that in order to provide a Resolution of Project Support, sidewalks needed to be included throughout the project limits.]

9. RP questioned if public input would be sought for this project. GSt indicated that one of the next steps is to schedule a Public Information Center to obtain public comments of the Initially Preferred Alternative.

10. TA stated that a Resolution of Project Support will be requested from Montgomery Township

11. GSm requested an electronic copy of the plans and cross sections of the structure.

12. SS stated that a meeting with Somerset County will be scheduled to discuss the project.

We believe the foregoing to be an accurate summary of discussions and related decisions. We would appreciate notification of exceptions or corrections to the minutes within five (5) working days of receipt. Without notification, we will consider these minutes to be record of fact.

Glenn B. Stevens, P.E., P.T.O.E
DPM/Lead Traffic Engineer

Cc: Attendees

ACTION ITEMS

ACTION	***RESPONSIBILITY***	***DATE DUE***	***COMPLETED***
Resolution of Support	Montgomery Township		
Provide plans and cross sections	GF		

O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO#4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\04_PROJECT MANAGEMENT\02-MEETING_MINUTES\20101119_NJDOT-Statewide Scoping_Camp Meeting_Public Officials Minutes_DRAFT.doc

Suite 205
Southfield Center
One Cragwood Road
South Plainfield, NJ 07080
Tel: (908) 755-0040
Fax: (908) 755-9849

Gannett Fleming

Minutes of Meeting

Date & Time: July 25, 2012 at 10:30 AM

Location: Somerset County Administration Building, Somerville, NJ

Project: **New Jersey Department of Transportation (NJDOT)**
Camp Meeting Avenue over CSX-Trenton Line Bridge

Attending:

Michael Morgan (MM) –	Gannett Fleming (GF) PM	T: (908) 755-0040
Glenn Stevens (GS) –	GF Deputy PM/Traffic	T: (908) 755-0040
Thomas Anzabi (TA) –	NJDOT Project Management	T: (609) 530-2388
Meredith Hammond (MH)	NJDOT Community Relations	T: (609) 530-4555
Joseph Fishinger (JF) –	Somerset County – Traffic	T: (908) 231-7619
Brian Maurer (BM) –	Somerset County – Structures	T: (908) 203-6021

Purpose: **Public Officials Briefing Meeting**

1. Attendees introduced themselves.

2. TA gave an introduction of the project and explained that NJDOT has met with Montgomery Township and was here to present the Initially Preferred Alternative.

3. GS reviewed the existing conditions of the Camp Meeting Avenue structure.

   - The Camp Meeting Avenue bridge over CSX-Trenton Line is functionally obsolete due to inadequate bridge deck geometry (14' wide) and lateral clearance (6'2") from the piers to the railroad tracks.
   - In 2008 and 2010, the NJDOT completed wingwall and structural steel repairs to the bridge.
   - Camp Meeting Avenue/Skillman Road on the bridge consists of one 14-foot travel lane and no shoulders or sidewalks. Only one direction of travel at a time is allowed on the bridge, and the profiles of each approach roadway significantly impair visibility of traffic approaching the bridge from the opposite direction. This sight distance deficiency has resulted in accidents on the bridge and its approaches.
   - The existing wire cable type guiderail on the approaches to the bridge on both sides of Camp Meeting Avenue/Skillman Road are currently substandard.
   - The bridge is currently posted for a weight limit of 10 tons for a Type 3 truck.

4. GS reviewed the Initially Preferred Alternative.

    - The existing bridge will be removed and be fully replaced with a single-span structure maintaining a vertical clearance of 21’2” to the rail line. Multiple structure types are still being considered and will be finalized in the design phase of the project.
    - The bridge will have two bicycle-compatible 14-foot wide lanes with a 6-foot wide sidewalk on the southern side of the structure.
    - A wider berm will be provided on the southern side of the bridge approaches to accommodate a future sidewalk construction by others.
    - Beam guide rail is proposed on all four quadrants of the structure.
    - The vertical profile of the roadway will be improved to provide proper sight distance. Due to the vertical profile change, regrading of driveways west of the structure will be required.
    - A full roadway closure and detour will be implemented to construct the new bridge. The detour route will be along Hollow Road, Georgetown and Franklin Turnpike (CR 518), and Belle Mead Blawenburg Road (CR 601).

5. JF indicated he recently spoke to the Montgomery Township Engineer Gail Smith. JF is aware of the project-wide sidewalk request made by Montgomery Township. If sidewalks are not going to be included on the approaches to the bridge, Somerset County requested NJDOT provide justification for not complying with the NJDOT Complete Streets policy.

6. JF informed all attendees that CSX has a speed restriction through the project area to accommodate double-stacked train cars and therefore CSX may have an issue with maintaining the existing vertical clearance.

7. MM indicated that due to the bridge’s light traffic volume and significant impacts, a parallel alignment alternative was not appropriate and was dismissed from further consideration. Somerset County agreed with this decision.

8. BM questioned the span length of the proposed structure. MM indicated that the span length will be approximately 75 to 80 feet.

9. Somerset County recognizes that the bridge needs to be replaced and supports full replacement.

10. JF requested that the specifications should include the notification of construction, road closures, and detours to the Somerset County Traffic Department. Somerset County will be willing to temporarily modify signal timing along the detour route during construction to account for additional volume, if required.

11. Somerset County requested that NJDOT continue to work with Montgomery Township to resolve the sidewalk issue.

12. NJDOT requested that Somerset County provide a Resolution of Project Support. JF indicated that it typically takes approximately six weeks to obtain a Resolution of Support. MH will work with JF.

13. JF questioned the project schedule. TA indicated that construction is currently scheduled to begin in 2015.

14. TA and JF discussed jurisdiction of the new structure. JF indicated that a possible agreement could be that NJDOT maintains the structure, Somerset County maintains the pavement, and Montgomery Township maintains the sidewalk and plows the roadway. NJDOT and Somerset County will continue to discuss an appropriate jurisdictional agreement as the project moves into design.

We believe the foregoing to be an accurate summary of discussions and related decisions. We would appreciate notification of exceptions or corrections to the minutes within five (5) working days of receipt. Without notification, we will consider these minutes to be record of fact.

Glenn B. Stevens, P.E., P.T.O.E
DPM/Lead Traffic Engineer

Cc: Attendees

ACTION ITEMS

ACTION	***RESPONSIBILITY***	***DATE DUE***	***COMPLETED***
Resolution of Support	Somerset County		
Jurisdictional Agreement	NJDOT and Somerset Co.		

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Suite 205
Southfield Center
One Cragwood Road
South Plainfield, NJ 07080
Tel: (908) 755-0040
Fax: (908) 755-9849

Gannett Fleming

Minutes of Meeting

Date & Time: November 20, 2012 at 3:45 PM to 6:45 PM

Location: Montgomery Township Council Chambers, Belle Mead, NJ

Project: **New Jersey Department of Transportation (NJDOT)**
Camp Meeting Avenue Bridge over CSX West Trenton Line

Attending: See Attached List

Purpose: **Public Information Center**

1. Two boards exhibiting the proposed bridge/roadway improvements and the construction detour were on display. Copies of the Public Information Center handout were available for members of the public at the sign-in table which was staffed by a NJDOT representative.

2. A number of people attended the Public Information Center and had no major issues and were in support of the proposed project. One concern that was stated was in regard to potential speeding along Camp Meeting Road once the project is completed.

We believe the foregoing to be an accurate summary of discussions and related decisions. We would appreciate notification of exceptions or corrections to the minutes within five (5) working days of receipt. Without notification, we will consider these minutes to be record of fact.

Glenn B. Stevens, P.E., P.T.O.E
Deputy Project Manager

O:\51546_NJDOT-DPD Term Agreement_(Morgan)\05_WORKING -ALL TOs\TO No 4 - Str No 1850-160 Camp Meeting Ave over CSX-Trenton Line Bridge\04_PROJECT MANAGEMENT\02-MEETING_MINUTES\20121120_NJDOT-Statewide Scoping_Camp Meeting_PIC Minutes.doc

APPENDIX O –
Design Communications Report (DCR)

Design Communications Report

for

Camp Meeting Avenue over CSX-West Trenton Line Bridge

Program Manager: **Mark Rollo**

Project Manager: **Samir Shah**

Designer: **Gannett Fleming, Inc.**

UPC: **994050**

Date: **November 15, 2013**

Design Activity No. 6590	**Date: June 23, 2010**	**DCR Entry No. 1** **Traffic**
Glenn Stevens (Gannett Fleming) and Al Tavares (NJDOT-)		
Background Traffic Growth Rate		
Al Tavares approved the proposed background traffic growth rate of 1% per year and gave the go ahead to develop future traffic volumes.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: October 28, 2010	**DCR Entry No. 2** **Project Schedule**
Michael Morgan (Gannett Fleming) and Gaelle Clerge (NJDOT-PM)		
Project Schedule – Work Stoppage		
On October 1, 2010, NJDOT's Commisioner Simpson directed that all work be suspended for state-funded projects due to the State Legislature's failure to approve a routine bond sale to fund previously authorized work. The bond sale subsequently was completed and GF was directed by NJDOT-DPD via email to resume work on October 28, 2010.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: May 5, 2011	**DCR Entry No. 3** **ITS**
Glenn Stevens (Gannett Fleming) and Ramchandra Patel (NJDOT-ITS)		
ITS		
Ram Patel informed Glenn Stevens via email that ITS has no involvement in this minor bridge project and therefore a Systems Engineering Review Form (SERF) will not be required.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: May 10, 2012	**DCR Entry No. 4** **Core Group Meeting**
NJDOT Core Group		
Selection of Preliminary Preferred Alternative (PPA)		
Two alternatives were presented to the NJDOT Core Group. The Core Group unanimously supported making Alternative #1 (Existing Vertical Clearance (21'-2") over CSX Tracks) the PPA.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: June 6, 2012	**DCR Entry No. 5**
Glenn Stevens (Gannett Fleming) and Tom Anzabi (NJDOT-DPM)		
Roadway Speed Profile		
Tom informed Glenn Stevens via email that the Speed Profile over the proposed bridge cannot be lowered. NJDOT cannot drop the speed/change the profile in order to tie-down to the nearest driveway west of the bridge. The impacted driveway has to be re-graded even if it requires R.O.W. acquisition.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: October 16, 2012	**DCR Entry No. 6**
Glenn Stevens (Gannett Fleming) and Tom Anzabi (NJDOT-DPM)		
Approach Sidewalk		
Tom informed Glenn Stevens via email that the approach sidewalk requested by Montgomery Township will not be included in the project. The sidewalk will be included on the structure.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: October 8, 2013	**DCR Entry No. 7**
Tina Shutz (NJDOT – E Team) and Michelle Hughes (NJDEP – HPO)		
SHPO Coordination		
Michelle informed Tina via e-mail that SHPO is satisfied with the level of coordination during the CD phase of the project and requests that the preliminary designer investigate mounting the current trusses as non-functioning facades to the new bridge.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

	Date: November 4, 2013	**DCR Entry No. 8**
Glenn Stevens (Gannett Fleming) and George Kevgas (CSX Consultant)		
CSX Coordination		
George indicated that he could not approve a substandard vertical clearance option at this time. In addition, CSX requires four levels of approvals to accept substandard vertical clearance, and this approval process typically occurs at the beginning of Preliminary Engineering.		

Approval Status: ☐ **APPROVED** **BY:** **DATE:**
☑ **PENDING APPROVAL**

APPENDIX P –
Resolutions of Support

COUNTY OF SOMERSET
DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

County Administration Building
20 Grove Street
P.O. Box 3000
Somerville, New Jersey 08876-1262
www.co.somerset.nj.us

Director of Public Works
PAUL L. McCALL
(908) 231-7024
Fax (908) 231-7170

County Engineer
MATTHEW D. LOPER
(908) 231-7024

Assistant County Engineer
DAVID L. LORIMER
(908) 231-7024

Facilities & Services Director
STEPHEN J. KRACHUN

Supervisor of Roads & Bridges
VINCENZO RUSSO

Director of Planning
ROBERT P. BZIK

Recycling Superintendent
JOHN T. KENDZULAK, JR.

Supervisor, Traffic Safety Services
KEVIN C. WALTER

Transportation Director
YVONNE C. MANFRA

Vehicle Maintenance Supervisor
STEPHEN A. MATIS

Somerset Union Soil Conservation
District Manager
FRANK CALO

August 29, 2012

Meredith Hammond
Office of Community Relations
New Jersey Department of Transportation
1035 Parkway Avenue, PO Box 600
Trenton, NJ 08625-0600

RE: Resolution of Support
Camp Meeting Avenue Bridge over CSX-Trenton Line Bridge
Montgomery Township, Somerset County, NJ

Dear Ms. Hammond:

Please find attached a sealed copy of Somerset County Resolution #R12-512, which supports NJDOT's planned improvements to the Camp Meeting Avenue Bridge in Montgomery Township for your records.

If you have any questions, please feel free to contact me at 908-231-7619 or via email at fishinger@co.somerset.nj.us.

Sincerely,

Joseph A. Fishinger, Jr., P.E., P.T.O.E.
Principal Engineer (Traffic)

Attachment

Cc: M. Loper, D. Lorimer, B. Maurer
T. Anzabi (via email, w/ attachment, tom.anzabi@dot.state.nj.us)
G. Smith (via email, w/ attachment, gsmith@twp.montgomery.nj.us)
M. Morgan (via email, w/ attachment, mmorgan@gfnet.com)
G. Stevens (via email, w/ attachment,gstevens@gfnet.com)
File: 602-010

- Mission Statement -
The County of Somerset is committed to excellence and innovation in public service, promoting the well-being of all residents and communities by providing effective, efficient and responsive leadership.

Somerset County Is An Equal Opportunity Employer

R12-512

RESOLUTION SUPPORTING NJDOT IMPROVEMENTS TO THE
CAMP MEETING AVENUE BRIDGE OVER CSX-TRENTON RAILROAD LINE
MONTGOMERY TOWNSHIP, SOMERSET COUNTY

WHEREAS, the Camp Meeting Avenue Bridge over CSX-Trenton Railroad Line is an orphan bridge currently maintained by the New Jersey Department of Transportation; and

WHEREAS, The New Jersey Department of Transportation has proposed to replace the Camp Meeting Avenue Bridge to address vehicle safety and structural concerns including widening to provide one travel lane in each direction; and

WHEREAS, The New Jersey Department of Transportation has solicited input from Montgomery Township and Somerset County with regard to the design of the project; and

WHEREAS, The New Jersey Department of Transportation has requested that Somerset County provide a Resolution of Support for the project before it can proceed into preliminary design.

NOW, THEREFORE, BE IT RESOLVED that the Somerset County Board of Chosen Freeholders supports the replacement of the Camp Meeting Avenue Bridge over CSX-Trenton Railroad Line as currently proposed by the New Jersey Department of Transportation, wholeheartedly encourages NJDOT to proceed with the design and construction of this project and continue to work with both Somerset County and Montgomery Township to address any concerns that may arise; and

BE IT FURTHER RESOLVED that this Resolution be transmitted to Somerset County's State Legislative Delegation, The New Jersey Department of Transportation, the Township of Montgomery, the Somerset County Engineer, the Somerset County Planning Board and the North Jersey Transportation Authority.

I, Kathryn Quick, Deputy Clerk of the Board of Chosen Freeholders of the County of Somerset in the State of New Jersey, do hereby certify that the foregoing is a true copy of a Resolution adopted by said Board of Chosen Freeholders at its regularly convened meeting of August 28, 2012.

Kathryn Quick

Kathryn Quick, Deputy Clerk of the Board

Approved as to Form and Legality
Somerset County Counsel

By: _____

APPENDIX Q –
NJDOT Communications

Vladica Krstic

From: Glenn Stevens
Sent: Monday, November 25, 2013 2:29 PM
To: Vladica Krstic
Subject: FW: RE: Camp Meeting Road
Attachments: RE: Camp Meeting Road (28.6 KB)

From: Tina Shutz [mailto:Tina.Shutz@dot.state.nj.us]
Sent: Tuesday, October 08, 2013 11:43 AM
To: brett.steinberg@dot.gov; Laura Adams; Nancy Adrian; Samir Shah; gstevens@gfnet.com
Subject: Fwd: RE: Camp Meeting Road

Hi Brett,

In order to satisfy Task 2400, I sent the attached email with an electronic copy of the cd report to Michelle Hughes of the NJDEP Historic Preservation Office to explain the project and why we propose a new structure as opposed to rehabilitation. Michelle responded that she is satisfied with the level of coordination and requests that we look into using an option of a new structure that has the current trusses mounted as non-functioning facades in design. I spoke to Glenn Stevens with Gannett Fleming, Inc. and he said we are currently looking into this option as well as mimicking the current look of the structure. We will continue to work with Michelle Hughes as design continues in order to come up with the best design option for this bridge, as well as, to complete the Section 106 coordination. Please let me know if the email that was sent to Michelle along with her response is sufficient to satisfy your concerns regarding permit agency coordination.

Please let me know if you have any additional questions.

Thank you,
Tina

NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Margaret Palmer
District Program Manager
Right of Way and Access Management

FROM: Mark W. Foss
Realty Specialist 3, Right of Way and Access Management

DATE: July 23, 2013

PHONE: 732-625-4258

SUBJECT: Right of Way Cost Estimate
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168 PAECETrak Project ID No. 529

Comments: The map provided with this cost estimate does not clearly show the impacts and the required takings. The estimate is based on areas and takings as provided in the email of July 13, 2013 from Glenn B. Stevens, P.E., P.T.O.E., Senior Project Engineer of Gannett Fleming, Inc. as well as the original matrix provided for the Fee Areas.

Types of Takings; In Mr. Stevens email, he gave a single area for Slope/Grading Easements. A Slope Easement is a permanent easement to construct and maintain a slope while a Grading Easement is a temporary easement only. These need to be separated on the IPMs and GPPMs with a separate area for each.

Attached is the report requested.

Alternative 1
Estimated amount is **$360,000**
Relocation: $0.00

Alternative 2
Estimated amount is **$465,500**
Relocation: $0.00

RIGHT OF WAY COST ESTIMATE
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168
PAECETrak Project ID No. 529

ALTERNATIVE 1

BLOCK & LOT	OWNERS	ACQUISITION ACRES/SF	ESTIMATED VALUE
Block 14001 Lot 15	Winifred A. Poor	Grading/Slope Easement 810 s/f	500
Block 14001 Lot 27	Jean B. Pariso Trustee	Utility Easement 2,590 s/f Grading/Slope Easement 390 s/f	5,200 800
Block 14001 Lot 16	New York Central Lines, LLC	Utility Easement 2835 s/f	5,700
Block 14001 Lot 38	Township of Montgomery	Utility Easement 1,300 s/f Grading/Slope Easement 134 s/f	2,600 300
Block 25001 Lot 35	Radiation Data, Inc	Grading/Slope Easement 4,696 s/f	9,400
Block 25001 Lot 23	New York Central Lines, LLC	Fee 1,100 s/f Temporary Utility Easement 800 s/f for 1 year Grading/Slope Easement 1,150 s/f	2,200 1,600 2,300
Block 25001 Lot 27	NJ Department of Treasury	Fee 1,032 s/f Temporary Utility Easement 22,932 s/f for 1 year Grading/Slope Easement 4,139	8,300 44,000 8,300
		TOTAL	91200
		SAY	**91200**

RIGHT OF WAY COST ESTIMATE SUMMARY
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168
PAECETrak Project ID No. 529

ALTERNATIVE 1

RIGHT OF WAY COSTS		**$**	91,200
REPLACEMEMT HOUSING OWNER		**$**	0
REPLACEMENT HOUSING TENANT		**$**	0
RESIDENTIAL MOVING PAYMENT		**$**	0
BUSINESS AND FARM PAYMENTS		**$**	0
SIGNS & BILLBOARDS note included in estimate		**$**	0
DEMOLITION COSTS		**$**	0
LAST RESORT HOUSING		**$**	0
APPRAISAL FEES (7) SPECIALIST(0)		**$**	10,500
AWARDS & JUDGEMENTS (50 %)		**$**	45,600
CONTINGENCIES (3%)		**$**	3,000
TOTAL		**$**	150,300
COST TO ACQUIRE (35k)	210,000		
RELOCATION SERVICES COST	0		
INCIDENTAL COSTS		**$**	210,000
GRAND TOTAL CAPITAL & INCIDENTALS		**$**	**360,300**
SAY		**$**	**360,000**

RIGHT OF WAY COST ESTIMATE
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168
PAECETrak Project ID No. 529

ALTERNATIVE 2

BLOCK & LOT	OWNERS	ACQUISITION ACRES/SF	ESTIMATED VALUE

Block 14001 Lot 15	Winifred A. Poor	Grading/Slope Easement 3,655 s/f	7,300
Block 14001 Lot 27	Jean B. Pariso Trustee	Utility Easement 2,590 s/f Grading/Slope Easement 1,250 s/f	5,200 2,500
Block 14001 Lot 16	New York Central Lines, LLC	Utility Easement 2,835s/f	5,700
Block 14001 Lot 38	Township of Montgomery	Utility Easement 1,300 s/f Grading/Slope Easement 316 s/f	2,600 600
Block 25001 Lot 16	Sculpture House, Inc.	Grading/Slope Easement 910 s/f	1,800
Block 25001 Lot 35	Radiation Data, Inc	Grading/Slope Easement 5,230 s/f	10,500
Block 25001 Lot 23	New York Central Lines, LLC	Fee 1,100 s/f Temporary Utility Easement 800 s/f for 1 year Grading/Slope Easement 1,206	8,800 1,600 2,400
Block 25001 Lot 27	NJ Department of Treasury	Fee 1,032 s/f Grading/Slope Easement 4,852 s/f Temporary Utility Easement 22,932 s/f for 1 year	8,300 9,700 45,900
		TOTAL	112,900
		SAY	**113,000**

RIGHT OF WAY COST ESTIMATE SUMMARY
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168
PAECETrak Project ID No. 529

ALTERNATIVE 2

RIGHT OF WAY COSTS		**$**	113,000
REPLACEMEMT HOUSING OWNER		**$**	0
REPLACEMENT HOUSING TENANT		**$**	0
RESIDENTIAL MOVING PAYMENT		**$**	0
BUSINESS AND FARM PAYMENTS		**$**	0
SIGNS & BILLBOARDS note included in estimate		**$**	0
DEMOLITION COSTS		**$**	0
LAST RESORT HOUSING		**$**	0
APPRAISAL FEES (8) SPECIALIST(0)		**$**	12,000
AWARDS & JUDGEMENTS (50 %)		**$**	56,500
CONTINGENCIES (3%)		**$**	4,000
TOTAL		**$**	185,500
COST TO ACQUIRE (35k)	280,000		
RELOCATION SERVICES COST	0		
INCIDENTAL COSTS		**$**	280,000
GRAND TOTAL CAPITAL & INCIDENTALS		**$**	**465,500**
SAY		**$**	**465,500**

Relocation Cost Estimate
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168
PAECETrak Project ID No. 529

Block /Lot Parcel	Owner	Housing Payment Owner	Housing Payment Tenant	Moving Payment	Business Payment	Signs Billboards	Demolition	Last Resort Housing
Total								

* All Signs and Billboards are included in the acquisition estimate.

RELOCATION RECAPITULATION
Camp Meeting Road over CSX Rail Road Bridge Replacement
Montgomery Township
Somerset County
Job No. 2200168
PAECETrak Project ID No. 529

NO. OF PAYMENTS	TYPE OF RELOCATION	RELO CODE	AMOUNT
0	REPLACEMENT HOUSING PAYMENT --OWNERS	RHO	0
0	REPLACEMENT HOUSING PAYMENT-- TENANT	RHT	0
0	RESIDENTIAL MOVING PAYMENT	RMP	0
0	BUSINESS OR FARM PAYMENT	BFP	0
0	SIGNS & BILLBOARDS RELOCATION	SBR	
		SUB TOTAL	0
	RELOCATION SERVICE COSTS	RSC	
		TOTAL	*
	DEMOLITION COSTS	DEMO	0
	LAST RESORT HOUSING	LRH	0

OCCUPANTS TO BE RELOCATED		BUILDINGS TO BE DEMOLISHED	0
RESIDENTIAL OWNERS	0	DWELLINGS	0
RESIDENTIAL TENANTS	0	GARAGES & BARNS	0
BUSINESSES	-0-	SHEDS	0
NON-PROFIT ORGANIZATIONS	-0-	COMMERCIAL BUILDINGS	0
TOTAL		TOTAL	0
		BILLBOARDS TO BE PURCHASED	0
		SIGNS TO BE RELOCATED	0

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, March 01, 2010 2:43 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: 1850-160 (camp meeting over CSX)
Attachments: 1850-160-0001.TIF; 1850-160-0002.TIF; 1850-160-0003.TIF; 1850-160-0004.TIF; 1850-160-0005.TIF; 1850-160-0006.TIF; 1850-160-0007.TIF

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Monday, March 01, 2010 1:33 PM
To: Morgan, Michael A.
Cc: Joshua Idowu
Subject: Fwd: 1850-160 (camp meeting over CSX)

The following is from our records/document control unit.

>>> Brad Hafner 3/1/2010 11:05 AM >>>
ray,

Attached are the plans you requested for 1850-160. We have no construction plans since this bridge was built by the Railroad.

Brad J. Hafner
Engineering Tech 2
Engineering Documents Unit
N.J.D.O.T.
(609) 530-5629

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:20 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: Camp Meeting Avenue (CR 602) over CSX Trenton Line Structure # 1850-160

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Wednesday, April 07, 2010 8:20 AM
To: Morgan, Michael A.
Subject: Fwd: Camp Meeting Avenue (CR 602) over CSX Trenton Line Structure # 1850-160

Transportation Data Development info

>>> Anthony Varone 4/7/2010 8:10 AM >>>
Ray,
As indicated in the Straight Line Diagram (SLD) page for County Route 602 in Somerset County the functional class is
Rural Local. There are no available counts or truck data for Co. 602.
Should you need any other information/data please let us know.
Anthony

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:19 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: Re: Camp Meeting Road over CSX RR Management System Request

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Wednesday, April 07, 2010 8:19 AM
To: Morgan, Michael A.
Subject: Fwd: Re: Camp Meeting Road over CSX RR Management System Request

pavement management info

>>> Philip Bertucci 4/6/2010 2:10 PM >>>
Ray,

We do not collect road data for County Road 602.

Thanks,
Phil

Philip Bertucci, P.E.
Administrative Analyst 1 (Data Processing)
New Jersey Department of Transportation
Civil Engineering-Pavement Technology Unit
1035 Parkway Avenue, P.O. Box 600
Trenton, NJ 08625
(609) 530-4489
Philip.Bertucci@dot.state.nj.us

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project.
Please provide your input by April 27.
thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:24 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: Camp Meeting Avenue (CR602) Over CSX Trenton Line
Attachments: Reply Rt.CR602 Over CSX Trenton Line Apr10.docx

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Thursday, April 08, 2010 9:39 AM
To: Morgan, Michael A.
Subject: Fwd: Camp Meeting Avenue (CR602) Over CSX Trenton Line

>>> RajendraR Patel 4/8/2010 8:55 AM >>>
Hi,

Attached is Drainage Management Unit's response to your request for the above subject.

Thanks,

Raj Patel
Drainage Unit
5-2198

NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Ray Jacek
Project Engineer
Division of Project Development – Central

FROM: Raj Patel
Drainage Unit
Division of Design Services

DATE: April 08, 2010

PHONE: 609-530- 2198

SUBJECT: Camp Meeting Avenue (CR602) over CSX Trenton Line
Structure # 1850-160
Montgomery Township, Somerset County
Management Systems Input Request

In response to your request dated April 06, 2010, Camp Meeting Avenue (CR602) over CSX Trenton Line, is not in Drainage Management Unit's DMS Ranking List. We do not have DMS Ranking, flooding and Maintenance Crew Expenditure records on file for County Routes.

CC: Manager, K. Chan, file

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 3:17 PM
To: Stevens, Glenn B.; Krstic, Vladica
Subject: FW: Re: Camp Meeting Road over CSX RR Management System Request
Attachments: camp mtg Mgmt Systems request.doc; camp mtg mgmt sys.pdf

Please download this soil info so we have it until we get structures up to speed/on board.

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Friday, April 09, 2010 10:41 AM
To: Morgan, Michael A.
Subject: Fwd: Re: Camp Meeting Road over CSX RR Management System Request

here's some good info

>>> John Jamerson 4/9/2010 10:30 AM >>>
Good morning Ray-
In response to your request, Geotechnical Engineering has checked our 2 management systems for relevant data for the referenced CD screening. Our Rockfall Hazard Management System shows no rock cuts within the project limits; however, our Geotechnical Data Management System does indicate existing soil boring information available at the specific project location. If so desired, this information may be accessed through the Department's home page or through the following link:
www.state.nj.us/transportation/refdata/geologic/

Please contact our office at 5-3730 if you have any questions.
John

John P. Jamerson
Project Engineer, Geology
Geotechnical Engineering
NJ Department Of Transportation
office: 609.530.3733
cell: 609.273.5631
fax: 609.530.2704
email: John.Jamerson@dot.state.nj.us

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project.
Please provide your input by April 27.
thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:09 PM
To: Stevens, Glenn B.; Krstic, Vladica
Subject: FW: CIA Screening Report for Camp Meeting Road
Attachments: Camp Meeting Avenue Draft Community Profile (02-16-10).doc

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Friday, March 19, 2010 1:38 PM
To: Morgan, Michael A.
Subject: Fwd: CIA Screening Report for Camp Meeting Road

Mike
Attached is the Community Impact Assessment for the Camp meeting project..
ray

>>> Anthony Davis 3/10/2010 10:09 AM >>>
Ray, please find attached the CIA report on the subject project! If you have any questions, please let me know!

Tony Davis

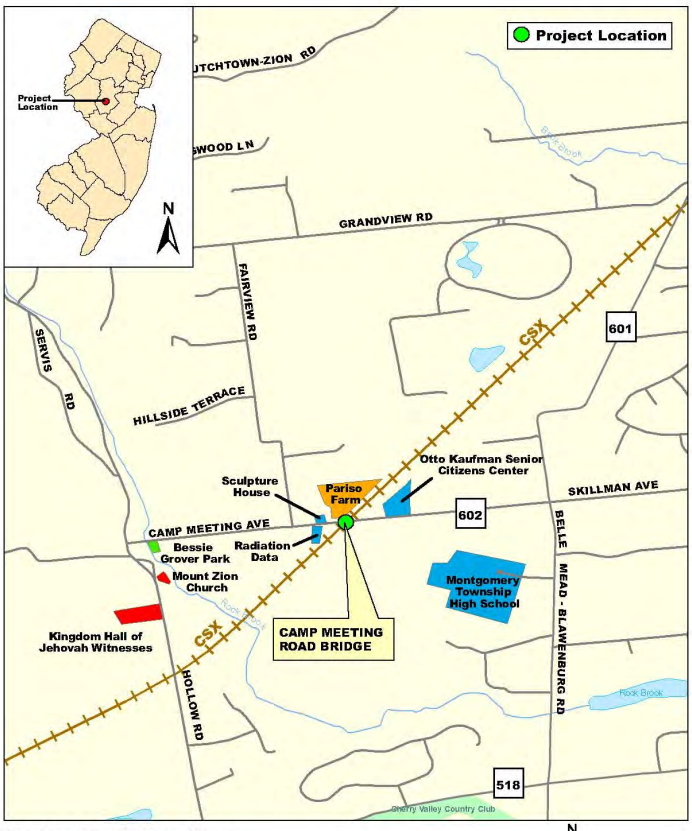
Camp Meeting Avenue

Bridge Replacement Project
Skillman, Montgomery Township
Somerset County, New Jersey

CIA Screening and Data Collection Activities

Study Area

The study area is located in Skillman, an unincorporated hamlet of Montgomery Township, in Somerset County, New Jersey. The project area has been defined by a ¼ mile radius from the center of the bridge. The project area is rural, with farmland and agricultural use. The northern section of the project area is home to the Pariso Farm and the Otto Kaufman Senior Citizens Center. South of the bridge is the Bessie Grover Park – a common destination area. West of the bridge is farmland. The eastern part of the project area is farmland, but just outside of the ¼ mile radius is home to the Montgomery Township High School, school district offices and a residential development.



Project Location Map
CAMP MEETING AVENUE BRIDGE
SKILLMAN, MONTGOMERY TOWNSHIP
SOMERSET COUNTY, NJ

N
0 750 1,500 3,000 Feet

The area is not served by mass transit. Southwest of the project area is the Kingdom Hall of the Jehovah Witnesses and Mount Zion Church. Businesses within the project area include The Sculpture House and Radiation Data.

The leading industry in Skillman is Johnson & Johnson Consumer Division.

Project Background

The Camp Meeting Road Bridge is a one-lane wide pony truss structure built in 1889. An October 31, 2005 opinion by the SHPO states the structure is eligible for the National Register of Historic Places. Located on County Route 602 – an east-west facility located between Follow Road and Route 61 – the bridge spans two sets of railroad tracks, one currently in use by CSX. An orphan structure, the bridge has sight-distance and geometric deficiencies on the approaches, and has a 10-ton weight restriction. Somerset County supports replacement of the structure with a new two-lane crossing that provides proper sight distance.

Demographic Data

Demographic data of the Montgomery Township, NJ collected from the US Census (2000) indicated the following:

- a majority of the residents in the area are white (84.6 percent) and 11.5 per are Asian;
- median age is 38.8 years;
- 88 percent of housing is owner occupied;
- median income is for a household is $118,850 and the median income for a family is $129,150; and
- over 84 percent of those commuting to work drove alone.

Additional demographic data will be included as more information is obtained.

Recommended PIAP

There does not appear to be a significant minority population that would require an environmental justice effort on this project. Therefore, we recommend the following PIAP:

- Local Officials Briefing
- Montgomery Township High School Officials Briefing
- Public Information Center

Local Government/Community Contact List

Montgomery Township Municipal Offices
2261 Van Horne Road - Route 206 North
Belle Mead, NJ 08502

Mayor: Mark Caliguire
Deputy Mayor: Kacey Dyer
Member: Louise Wilson
Member: Brad Fay
Member: Thom Carter
Police Captain/Director: Robert E. Palmer

Montgomery Volunteer Fire Co. No. 2
PO Box 267
Blawenburg NJ 08504

Montgomery Volunteer Fire Station #46
529 Route 518
Skillman, NJ 08558

Montgomery Volunteer Fire Co. No. 1
Station 45
35 Griggstown Road
Belle Mead, NJ 08502

Community Facilities

Blawenburg Reformed Church
424 Route 518
Skillman, NJ 08558

Jehovah's Witness
172 Hollow Road
Skillman, NJ 08558

Montgomery High School
374 Burnt Hill Road
Skillman, NJ 08558

Montgomery Township Schools
1014 Route 601
Skillman, NJ 08558

Orchard Hill Elementary
224 Orchard Road
Skillman, NJ 08558

Montgomery Upper Middle School
375 Burnt Hill Road
Skillman, NJ 08558

Mount Zion Church
189 Hollow Road
Skillman, NJ 08558

Otto Kaufman Center
Montgomery Senior Citizens
356 Skillman Road
Skillman, NJ 08558

St. Charles Borromeo RC Church
47 Skillman Road
Skillman, NJ 08558

Solid Rock Pentecostal Church
County Highway 518
Skillman, NJ 08558

Businesses

April Linkroum
715 Montgomery Road
Hillsborough, NJ

Arbonne
272 Skillman Road
Skillman, NJ 08558

Design Concepts, Inc.
12 Vibumum Drive
Skillman, NJ 08558-1430

Hillsborough Landscape, Inc.
329 Grandview Road
Skillman, NJ 08558

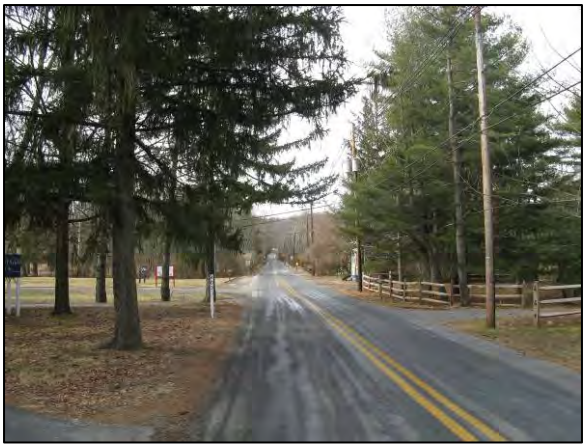
Johnson & Johnson Consumer Products
199 Grandview Road
Skillman, NJ 08558

Maverick Pet Partners
64 Hollow Road
Skillman, NJ 08558

Sculpture House
405 Skillman Road
Skillman, NJ 08558

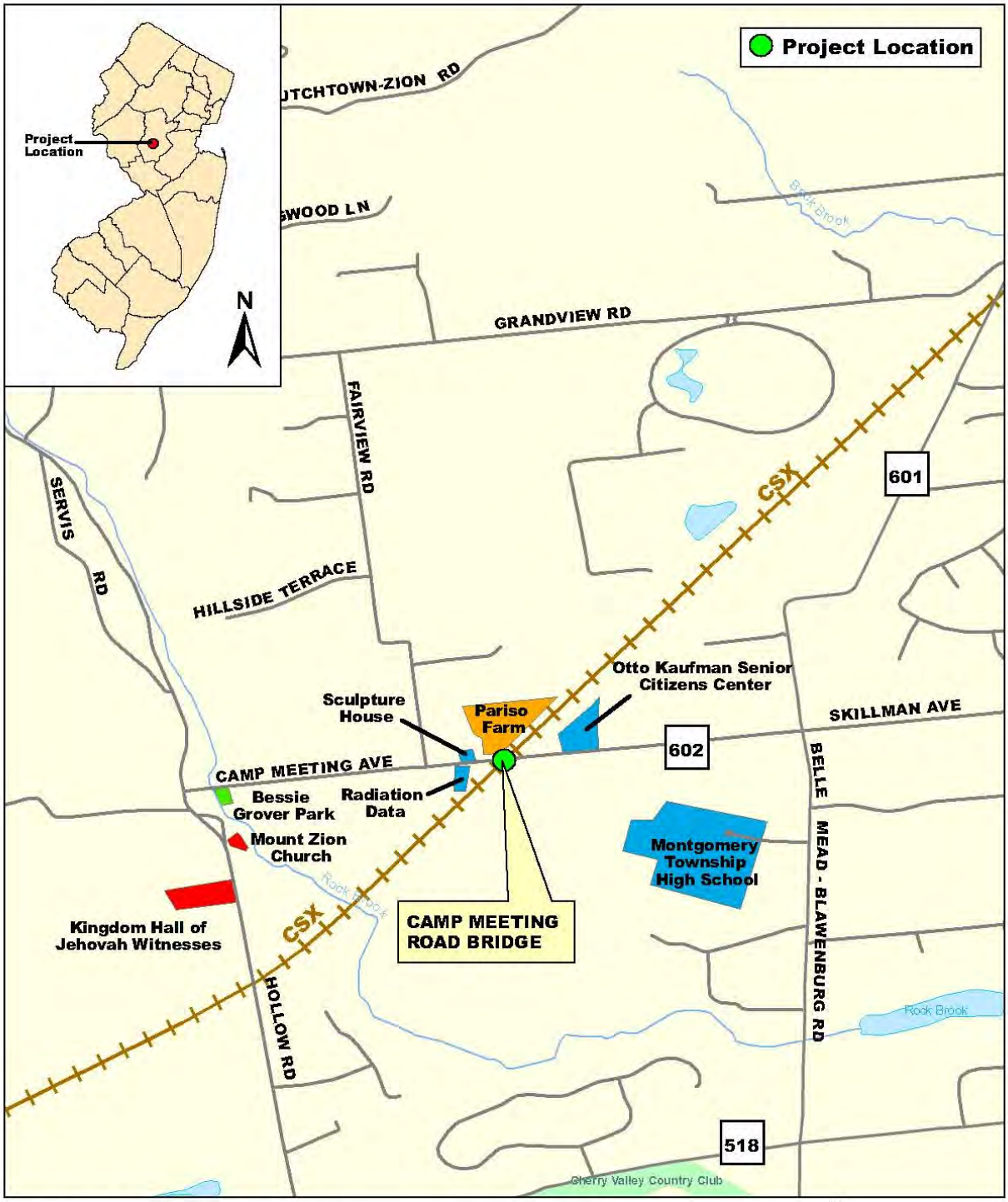
Tahician Noni Juice
715 Montgomery Road
Hillsborough, NJ

Photos



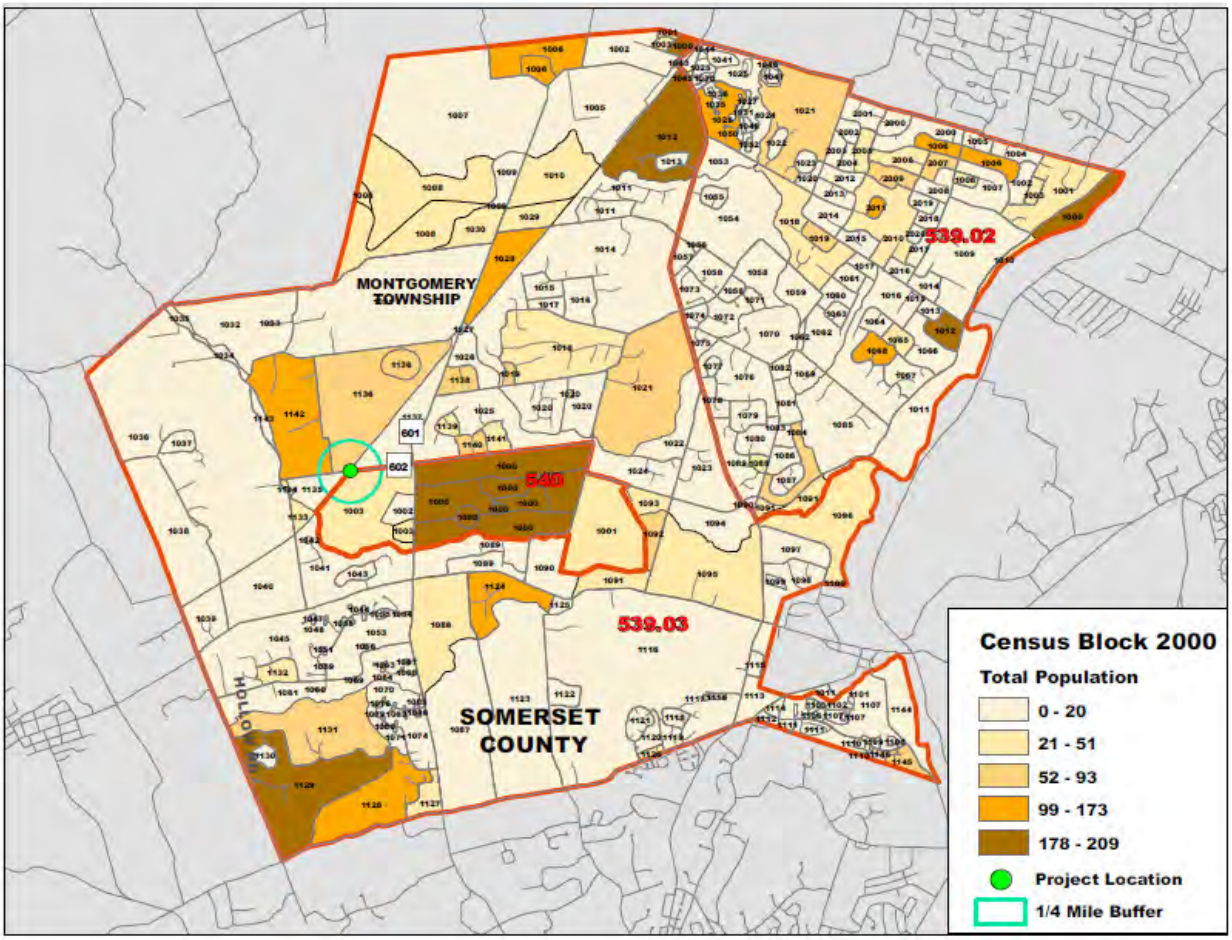
RADIATION
DATA

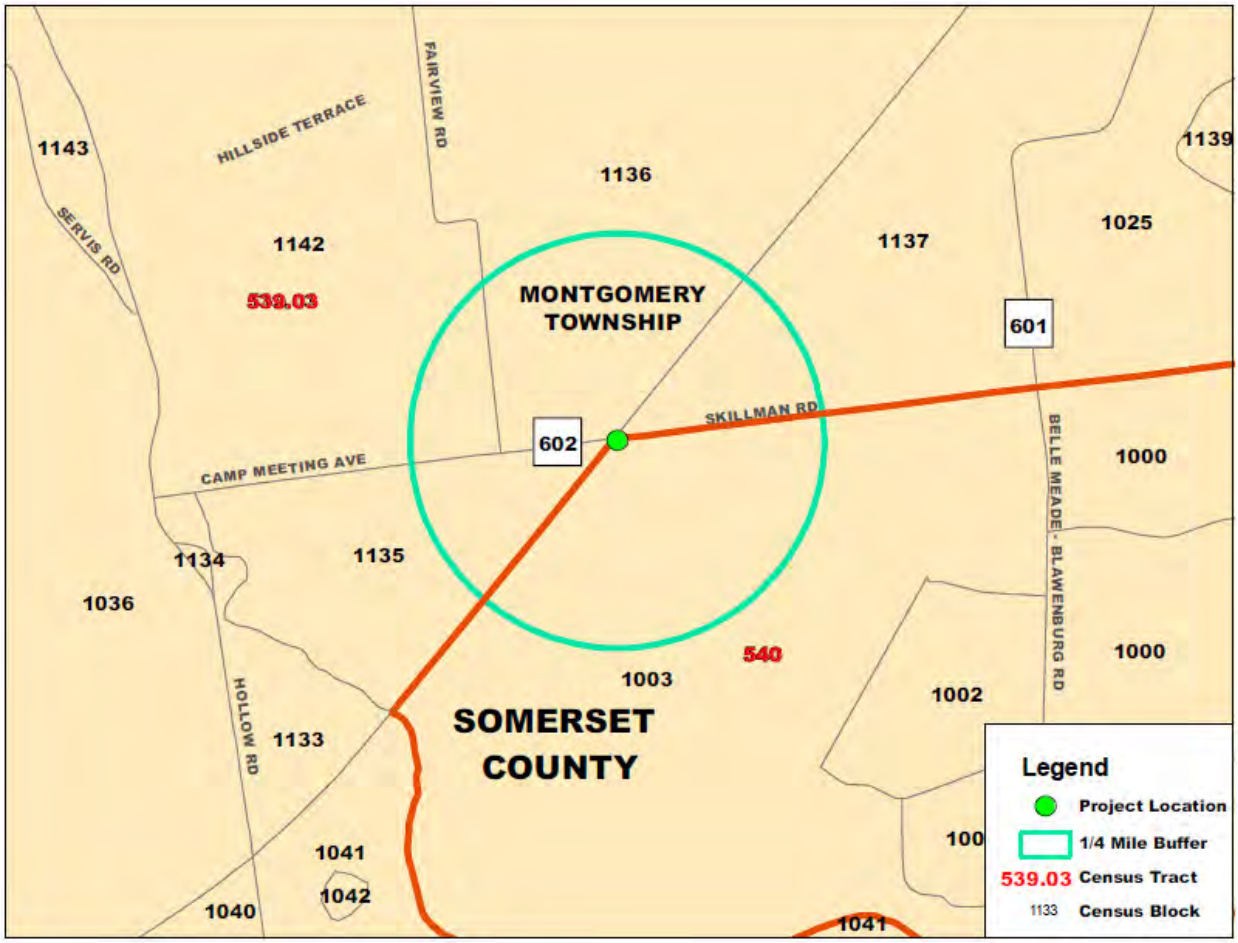
Maps



Project Location Map
CAMP MEETING AVENUE BRIDGE
SKILLMAN, MONTGOMERY TOWNSHIP
SOMERSET COUNTY, NJ

N
0 750 1,500 3,000 Feet


MONTGOMERY TOWNSHIP
SOMERSET COUNTY
HOLLOW
539.02
540
539.03
601
602
Census Block 2000
Total Population
0 - 20
21 - 51
52 - 93
99 - 173
178 - 209
Project Location
1/4 Mile Buffer


HILLSIDE TERRACE
FAIRVIEW RD
SERVIS RD
1143
1136
1139
1142
1137
1025
539.03
MONTGOMERY
TOWNSHIP
601
SKILLMAN RD
602
CAMP MEETING AVE
BELLE MEADE - BLAWENBURG RD
1000
1134
1135
1036
540
1000
1003
1002
HOLLOW RD
1133
SOMERSET
COUNTY
Legend
Project Location
1/4 Mile Buffer
539.03 Census Tract
1133 Census Block
1041
1042
1040
1041

Camp Meeting Road Bridge
Project Location
1/4 Mile Radius Buffer
N
0 300 600 900 1,200
Feet
SERVIS RD
HILLSIDE TERRACE
FAIRVIEW RD
CSX
SAXON WAY
WESSEX LN
601
SKILLMAN RD
Otto Kaufman Senior Citizens Center
Pariso Farm
602
CAMP MEETING AVE
Bessie Grover Park
Radiation Data
Mount Zion Church
Montgomery Township High School
BLAWENBURG BELLE MEAD RD
Kingdom Hall of Jehovah Witnesses
HOLLOW RD
CSX

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Wednesday, April 28, 2010 9:50 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: Fw: Fwd: Camp Meeting Road (CR 602) over CSX RR - Management System Request
Attachments: camp mtg Mgmt Systems request.doc; camp mtg mgmt sys.pdf

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From: Ray Jacek
To: Morgan, Michael A.
Sent: Wed Apr 28 09:32:17 2010
Subject: Fwd: Camp Meeting Road (CR 602) over CSX RR - Management System Request
fyi

>>> Mark Tozzi 4/27/2010 10:13 AM >>>
Ray, a search of our files reveals that Traffic Engineering & Investigations does not have any recent, pending or active work orders in the project area. Call me with any questions, 5-2622 thanks, Mark

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project. Please provide your input by April 27.
thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Friday, September 10, 2010 8:43 AM
To: Stevens, Glenn B.; Nemeth, David S.; Rajagopal, Ramesh; Trickey, Owen; Krstic, Vladica; Jakway, Christopher D.
Subject: FW: Camp Meeting Ave
Attachments: Camp Meeting Ave Bridge screening.DOC

Michael A. Morgan, PE, PP, PTOE
Vice President & Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Tom Anzabi [mailto:Tom.Anzabi@dot.state.nj.us]
Sent: Thursday, September 09, 2010 4:28 PM
To: Morgan, Michael A.
Subject: Camp Meeting Ave

Mike,
I will mail you a copy of the signed one as soon I get it.
Thanks.

609-530-2388
Thomas Anzabi
Principal Engineer
Tom.Anzabi@dot.state.nj.us

>>> Tom Anzabi 9/9/2010 2:36 PM >>>
Mike,
See attached Environmental Screening for the above project.
Thanks.

609-530-2388
Thomas Anzabi
Principal Engineer
Tom.Anzabi@dot.state.nj.us

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL SCREENING

Revised April 27, 2006

Date:	November 12, 2009
Request for this screening made by:	Ray Jacek
Project Name:	Camp Meeting Road Bridge over CSX RR
Project Description:	Tier 2 Screening
County and Municipality:	Somerset County, Montgomery Township

ENVIRONMENTAL CONSTRAINTS/OPPORTUNITIES:

Cultural Resources	**Yes / No**
Are there any 50+ year old structures in the project study area?	Y
Are there known buildings or structures on or eligible for the State and /or National Register of Historic Places in the project study area?	Y
Is there involvement with a historic bridge or culvert?	Y
Is the project located in a known or potential Historic District?	Y
Are there any undisturbed areas, old foundations or building rubble in the project study area?	Y
Are there any known archaeological sites or potential underground cultural resources within the project study area?	N
Enhancement Opportunities: If the bridge is to be replaced, it is recommended that the proposed structure be designed to be keeping with the scale, materials, and character defining features of the existing bridge. Design of the new structure should include a superstructure with prefabricated trusses of a similar configuration and appearance to those of the present Howe trusses.	
Comments: On October 31, 2005, the NJHPO issued an opinion that the bridge is eligible for listing on the National Register of Historic Places under Criteria A and C. Additionally, in a letter dated September 9, 2005, the NJHPO issued an opinion that the Delaware and Bound Brook (Reading) Railroad Historic District is eligible for listing, with the bridge identified as a contributing resource to the district. The area surrounding the bridge is currently undeveloped. The bridge is considered eligible as one of the few examples of this bridge type (Howe pony truss) in NJ and the oldest remaining railroad bridge in Somerset County.	

Section 4(f) Properties	**Yes / No**
Are there any recreational facilities within the project study area?	N
Is there publicly owned open space in the project study area?	Y
Is there a Wildlife Refuge or Wildlife Management Area in the project study area?	N
Is there a school or school athletic fields in the project study area?	Y
Is there a community park or parkland within the project study area?	N
Enhancement Opportunities:	
Comments: Montgomery High School is located within the project area. There are signs posted for state owned land adjacent to Montgomery High School. This land may be dedicated open space or farm land.	

Air/Noise	**Yes / No**
Are there any sensitive receptors (i.e. residences, schools, hospitals, and churches) within 300 feet of the project?	Y
Will the project change the vertical or horizontal alignment of the roadway?	N
Does the project provide for a significant increase in vehicle operating speeds of roadway capacity?	N
Is the project in a non-attainment area for Carbon Monoxide?	N
Is an intersection Carbon monoxide analysis required?	N
Is the project in a non-attainment area for PM2.5?	Y
Is a PM2.5 hot-spot analysis required?	N
Is the project in a non-attainment area for PM10?	N
Is a PM10 hot-spot analysis required?	N
Mitigation Opportunities:	
Comments: The land use in the area includes a high school, senior center and residences. If a significant change in the alignment of the bridge and roadway occur, a noise study may be required. The project description for the project should not refer to a “one lane bridge”. The bridge and roadway are two way facilities with the bridge being too narrow to accommodate both directions of travel at the same time. If the term one lane bridge is used, it implies that the bridge will be widened an additional lane and not just widened to truly accommodate the two way facility.	

Ecology	**Yes / No**
Are there any wetlands, floodplains, sole source aquifer, stream crossings or wildlife habitat in the project study area?	Y
Are there any Category 1 waters or Wild and Scenic rivers in the project study area?	N
Are there any potential or know vernal pool habitats with the project study area?	
Are there any trout maintenance or trout production streams within the project study area?	N
Is there any potential for rare, threatened or endangered species or their habitats within the project study area?	Y
Are there any environmentally-sensitive areas that are possible project design constraints?	Y
Are there any potential stormwater management mitigation areas in project area or upstream of project area?	Unknown

Describe ecology in the project study area: (ie heavily forested, urban, residential, etcetera) The project area consists primarily of undeveloped wooded land and a railroad corridor.

The following environmental permits and interagency coordination may be necessary:

U.S. Coast Guard (Bridge)		NJDEP Freshwater Wetlands	
USACOE Section 404		P.L. 2001 Chapter 10 Reforestation	Y
USACOE Section 10 (Navigable Waters)		NJDEP Waterfront Development	
CAFRA		NJDEP Stream Encroachment	
NJPDES Construction Stormwater	Y	NJDEP Riparian	
NJDEP Coastal Wetlands		USEPA-Sole Source Aquifer	
NJDEP Water Quality Certificate		Essential Fish Habitat	
Pinelands Commission		Category One waters	
D & R Canal Commission		NJDEP Stormwater Management Rules	Y
Meadowlands Commission		Delaware River Bridge Commission	

Comments: There are flooded swales adjacent to the railroad tracks within the project corridor. These may be regulated as wetlands/state open waters by NJDEP. There are wooded areas which are identified as habitat for several species of concern (Barred owl, Bobcat, Canada warbler, Coopers hawk, Eastern box turtle, Great blue heron, Hooded warbler, Red headed woodpecker, Veery, Wood thrush and Worm-eating warbler). Efforts should be made to reduce impact to these areas. Depending on the scope of the project, NJDEP approval may be required for compliance with NJ Stormwater Rules and Reforestation Regulations. Consultation with NJDEP will be required during the permitting process.

Socioeconomics	**Yes / No**
Will the project affect farmland or community facilities?	Y
Based on the proposed improvements for this project, will there be possible displacement of businesses or residences?	N
Will the project affect access to community facilities, bus stop shelters, playgrounds or parks or gardens?	Unknown
Are there any observable safety issues or concerns in the project study area?	Y
Does project have potential for Environmental Justice involvement?	N
There is a farmland/open space, a school and a senior center within the project vicinity. Access to these facilities may be affect by the project. Observable safety issues within the study area include a narrow bridge crossing unable to accommodate two vehicles crossing at the same time.	

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?	Y
Are there active or abandoned industries, service stations or repair shops within the project study area?	N
Is there evidence of potential contamination (monitoring wells, stained soils, etc.)?	N
Are there railroad or rail yards located in the project study area?	Y
Enhancement Opportunities:	
Comments: The proposed project vicinity includes a railroad corridor. Fill associated with railroads typically comes from an unknown source, and therefore may contain contaminants. Further investigations will be required.	

Environmental Screening Summary: The bridge is eligible for listing on the National Register of Historic Places and is a contributing resource to an eligible historic district. There are community facilities (open space, senior center, high school) which should be considered while developing the proposed project. There is also the potential for involvement with suitable wildlife habitat and hazardous waste. Significant consultation with various NJDEP divisions will be required.

Prepared & Recommended By:

E-Team Screening Coordinator	Date	Phone
Environmental Team Leader	Date	Phone

Jakway, Christopher D.

From: Gary Leach [Gary.Leach@dot.state.nj.us]
Sent: Thursday, September 16, 2010 8:06 AM
To: Stevens, Glenn B.
Cc: Tom Anzabi
Subject: Re: Camp Meeting Avenue over CSX DCR

Thanks Glenn, Please change the Project Manager to Thomas Anzabi. He is the Project Manager for this. Likewise all invoices should reflect that as well. Just copy me on the correspondence to Tom.

Gary M. Leach
Project Engineer
Division of Project Development-Central
(609) 530-2075

>>> "Stevens, Glenn B." <gstevens@GFNET.com> 9/15/2010 5:23 PM >>>
Gary,

Please find attached the DCR for the Camp Meeting Avenue over CSX project. Thanks.

-Glenn

Glenn B. Stevens, P.E., P.T.O.E.
Senior Project Engineer
Transportation Engineering and Planning

Gannett Fleming, Inc.
1 Cragwood Road, Suite 205
South Plainfield, New Jersey 07080
Tel: (908) 755-0040
Fax: (908) 755-9849
Email: gstevens@gfnet.com

Jakway, Christopher D.

From: Ramchandra Patel [Ramchandra.Patel@dot.state.nj.us]
Sent: Thursday, May 05, 2011 9:18 AM
To: Stevens, Glenn B.
Cc: Frank Prezioso; Gaelle Clerge; Gary Leach; Mark Smith; Tom Anzabi; Vinny Cortese; Morgan, Michael A.; Trickey, Owen
Subject: Re: Route 88, Route 168, Camp Meeting Avenue

Hi Steve,

Please be advised that ITS has no involvement in the referenced minor bridge projects.

Bonnie,

Please log out this e-mail

Regards,

Ram Patel

>>> "Stevens, Glenn B." <gstevens@GFNET.com> 4/15/2011 4:32 PM >>>
Frank,

Long time no talk. I hope all is well in the ITS Unit. We are currently working on the Concept Development of three bridge projects in different parts of the state. I have attached the Purpose and Need statements for each bridge. I wanted to reach out to you to see if a SERF will be required for these projects. I don't believe that ITS is warranted for these minor bridge projects. Please call Tom, Gaelle, or Gary from NJDOT-DPD or myself if you wish to discuss the projects in more detail. Thanks and have a nice weekend!

-Glenn

Glenn B. Stevens, P.E., P.T.O.E.
Senior Project Engineer
Transportation Engineering and Planning

Gannett Fleming, Inc.
1 Cragwood Road, Suite 205
South Plainfield, New Jersey 07080
Tel: (908) 755-0040
Fax: (908) 755-9849
Email: gstevens@gfnet.com

APPENDIX R –
Cost Estimates

CONCEPT DEVELOPMENT - COST ESTIMATE SUMMARY

Camp Meeting Ave over CSX-Trenton Line
Alternative 1A - 21'2" & 21'6" Vertical Clear, No Sidewalks
Steel Truss System, Full Detour

WORK TYPE	**TOTAL**
Earthwork	$97,200.00
Pavement	$210,879.63
Other Roadway Items	$26,713.33
Signing/Striping	$4,750.00
Bridges	$2,759,000.00
Drainage	$4,000.00
Landscape	$9,900.00
General Items & Utility Work	$250,000.00
PROJECT SUBTOTAL	**$3,362,442.96**
Soil Erosion & Sediment Control	$84,061.07
Maintenance of Traffic	$29,285.00
Training	$3,362.44
Mobilization	$336,244.30
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$226,598.94
PROJECT TOTAL (ROW not included)	**$4,141,995.00**

CONCEPT DEVELOPMENT - COST ESTIMATE SUMMARY

Camp Meeting Ave over CSX-Trenton Line
Alternative 1B - 21'2" & 21'6" Vertical Clear, No Sidewalks
Prestressed Adjacent Box Beams, Full Detour

WORK TYPE	**TOTAL**
Earthwork	$97,200.00
Pavement	$210,879.63
Other Roadway Items	$26,713.33
Signing/Striping	$4,750.00
Bridges	$2,465,000.00
Drainage	$4,000.00
Landscape	$9,900.00
General Items & Utility Work	$250,000.00
PROJECT SUBTOTAL	**$3,068,442.96**
Soil Erosion & Sediment Control	$76,711.07
Maintenance of Traffic	$29,285.00
Training	$3,068.44
Mobilization	$306,844.30
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$217,337.94
PROJECT TOTAL (ROW not included)	**$3,801,690.00**

CONCEPT DEVELOPMENT - COST ESTIMATE SUMMARY

Camp Meeting Ave over CSX-Trenton Line
Alternative 1C - 21'2" & 21'6" Vertical Clear, No Sidewalks
Welded Steel Multi-Girder, Full Detour

WORK TYPE	**TOTAL**
Earthwork	$97,200.00
Pavement	$210,879.63
Other Roadway Items	$26,713.33
Signing/Striping	$4,750.00
Bridges	$2,612,000.00
Drainage	$4,000.00
Landscape	$9,900.00
General Items & Utility Work	$250,000.00
PROJECT SUBTOTAL	**$3,215,442.96**
Soil Erosion & Sediment Control	$80,386.07
Maintenance of Traffic	$29,285.00
Training	$3,215.44
Mobilization	$321,544.30
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$221,968.44
PROJECT TOTAL (ROW not included)	**$3,971,843.00**

CONCEPT DEVELOPMENT - COST ESTIMATE SUMMARY

Camp Meeting Ave over CSX-Trenton Line
Alternative 2A - 23' Vertical Clear, No Sidewalks
Steel Truss System, Full Detour

WORK TYPE	**TOTAL**
Earthwork	$145,600.00
Pavement	$210,879.63
Other Roadway Items	$29,146.67
Signing/Striping	$5,250.00
Bridges	$2,897,000.00
Drainage	$4,000.00
Landscape	$11,401.37
General Items & Utility Work	$250,000.00
PROJECT SUBTOTAL	**$3,553,277.66**
Soil Erosion & Sediment Control	$88,831.94
Maintenance of Traffic	$29,285.00
Training	$3,553.28
Mobilization	$355,327.77
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$245,818.91
PROJECT TOTAL (ROW not included)	**$4,376,095.00**

CONCEPT DEVELOPMENT - COST ESTIMATE SUMMARY

Camp Meeting Ave over CSX-Trenton Line
Alternative 2B - 23' Vertical Clear, No Sidewalks
Prestressed Adjacent Box Beams, Full Detour

WORK TYPE	**TOTAL**
Earthwork	$145,600.00
Pavement	$210,879.63
Other Roadway Items	$29,146.67
Signing/Striping	$5,250.00
Bridges	$2,588,000.00
Drainage	$4,000.00
Landscape	$11,401.37
General Items & Utility Work	$250,000.00
PROJECT SUBTOTAL	**$3,244,277.66**
Soil Erosion & Sediment Control	$81,106.94
Maintenance of Traffic	$29,285.00
Training	$3,244.28
Mobilization	$324,427.77
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$236,085.41
PROJECT TOTAL (ROW not included)	**$4,018,428.00**

CONCEPT DEVELOPMENT - COST ESTIMATE SUMMARY

Camp Meeting Ave over CSX-Trenton Line
Alternative 2C - 23' Vertical Clear, No Sidewalks
Welded Steel Multi-Girder, Full Detour

WORK TYPE	**TOTAL**
Earthwork	$145,600.00
Pavement	$210,879.63
Other Roadway Items	$29,146.67
Signing/Striping	$5,250.00
Bridges	$2,743,000.00
Drainage	$4,000.00
Landscape	$11,401.37
General Items & Utility Work	$250,000.00
PROJECT SUBTOTAL	**$3,399,277.66**
Soil Erosion & Sediment Control	$84,981.94
Maintenance of Traffic	$29,285.00
Training	$3,399.28
Mobilization	$339,927.77
Progress Schedule	$10,000.00
Clearing Site	$40,000.00
Construction Layout	$50,000.00
Contingencies & Escalation	$240,967.91
PROJECT TOTAL (ROW not included)	**$4,197,840.00**

APPENDIX S –
Alternative Comparison Matrices

CAMP MEETING AVENUE OVER CSX-TRENTON LINE ROAD REPLACEMENT ALTERNATIVES COMPARISON MATRIX

	No Build	**Alternative 1** **Maintain 21’2” Vertical Clearance**	**Alternative 2** **Increase to 23’ Vertical Clearance**
Meets Purpose and Need	No	Yes	Yes
Design Criteria	-	NJDOT	NJDOT
Design Standards	-	NJDOT Bridges and Structures Design Manual, NJDOT Roadway Design Manual, NJDOT Standard Specifications, AASHTO	NJDOT Bridges and Structures Design Manual, NJDOT Roadway Design Manual, NJDOT Standard Specifications, AASHTO
Controlling Substandard Design Elements	Bridge Deck Geometry Lateral Clearance Vertical Clearance Vertical Stopping Sight Distance Intersection/Driveway Stopping Sight Distance Shoulder Widths Lane Widths Lack of Sidewalks	Vertical Clearance	None
Bridge Lane Width	(1) 14’ two-way lane	(2) 14’ shared-use lanes	(2) 14’ shared-use lanes
Bridge Shoulder Width	None	None	None
Sidewalks; Min. sidewalk width = 6’ if unprotected from traffic.	No existing sidewalks on bridge.	6’ Sidewalk on Southern Side of Bridge	6’ Sidewalk on Southern Side of Bridge
Approach guiderail lengths; 165’ is required.	55’ and 145’ steel guiderail on and East of bridge, 175’ cable guiderail West of bridge	Greater than 165’ of Roadside Barrier on all Four Quadrants	Greater than 165’ of Roadside Barrier on all Four Quadrants
Cross slopes; 1.5% min. required.	Existing = 6%	Proposed Lanes are 2%	Proposed Lanes are 2%
Structures	-	Maintain 21’ - 2” Vertical Clearance: Steel Truss, Prestressed Adjacent Box Beams, or Welded Steel Multi-Girder	Maintain 23’ - 0” Vertical Clearance: Steel Truss, Prestressed Adjacent Box Beams, or Welded Steel Multi-Girder
Typical Sections	Bridge = 15.9’ out to out	Bridge = 43’- 6 3/8” (Steel Truss) 36’ - 9” (Prestressed Adjacent Box Beam or Steel Girder)	Bridge = 43’- 6 3/8” (Steel Truss) 36’ - 9” (Prestressed Adjacent Box Beam or Steel Girder)

CAMP MEETING AVENUE OVER CSX-TRENTON LINE ROAD
REPLACEMENT ALTERNATIVES COMPARISON MATRIX

	No Build	Alternative 1 Maintain 21'2" Vertical Clearance	Alternative 2 Increase to 23' Vertical Clearance
Safety Improvement	-	Yes	Yes
Complete Streets Policy Compliance	No	Yes	Yes
Utilities relocation and associated costs	-	Relocate four utility poles carrying electric and cable utilities. Cost is included in construction cost	Relocate four utility poles carrying electric and cable utilities. Cost is included in construction cost
Anticipated Environmental Document	-	Categorical Exclusion Freshwater Wetlands General Permit	Categorical Exclusion Freshwater Wetlands General Permit
Limits of Disturbance	-	1.36 Acres	1.64 Acres
Estimate Right-of-Way	-	$360,000	$465,000
Right-of-Way Impacts & Easements	-	Permanent ROW = 3,416 SF (Steel Truss) 2,916 SF (Box Beam or Multi-Girder) Easements = 41,776 SF	Permanent ROW = 3,416 SF (Steel Truss) 2,916 SF (Box Beam or Multi-Girder) Easements = 47,876 SF
Maintenance and Protection of Traffic	-	Full Detour	Full Detour
Operational Issues During Construction	-	Minimal increase in signalized intersection delay	Minimal increase in signalized intersection delay
Construction Duration	-	Steel Truss System = 11 months Prestressed Adjacent Box Beams = 13 months Welded Steel Multi-Girder = 13 months	Steel Truss System = 11 months Prestressed Adjacent Box Beams = 13 months Welded Steel Multi-Girder = 13 months
Constructability	-	Single-phase construction with full detour	Single-phase construction with full detour
Construction Cost (Structure, Roadway and Utilities)	-	$4,142,000 – Steel Truss $3,801,000 – Adjacent Box Beams $3,972,000 – Steel Multi-Girder	$4,376,000 – Steel Truss $4,018,000 – Adjacent Box Beams $4,198,000 – Steel Multi-Girder
Structure Life Cycle Cost (Present Value – 100 year period)	-	$3,892,000 – Steel Truss $2,778,000 – Adjacent Box Beams $3,341,000 – Steel Multi-Girder	$4,030,000 – Steel Truss $2,901,000 – Adjacent Box Beams $3,471,000 – Steel Multi-Girder

APPENDIX T –
Life Cycle Cost Analyses

Gannett Fleming

Project: Camp Meeting Ave Over CSX
Subject: Life Cycle Cost Analysis
Designed By: SYL
Date: April 3, 2012

Job No.: 51546
Revised* by: TGZ
Date: 10/1/2013
Checked by: SYC
Date: 10/1/2013

Steel Truss Alternate

Assumptions:

1. Structure life span =	100 yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$20,200	(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$796,200	
4. FCM Inspection cost* =	$20,000	(Applicable every 2 years)
5. Repainting cost* =	$330,600	(Applicable every 25, Already Included in Redecking)
6. Real Discount Rate =	2.00%	(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
Initial Cost of Structure:	0	$2,758,915	$2,758,915
FCM Inspection Costs:	2	$20,000	$19,223
FCM Inspection Costs:	4	$20,000	$18,477
Maintenance Costs:	5	$20,200	$18,296
FCM Inspection Costs:	6	$20,000	$17,759
FCM Inspection Costs:	8	$20,000	$17,070
FCM Inspection Costs:	10	$20,000	$16,407
FCM Inspection Costs:	12	$20,000	$15,770
FCM Inspection Costs:	14	$20,000	$15,158
Maintenance Costs:	15	$20,200	$15,009
FCM Inspection Costs:	16	$20,000	$14,569
FCM Inspection Costs:	18	$20,000	$14,003
FCM Inspection Costs:	20	$20,000	$13,459
FCM Inspection Costs:	22	$20,000	$12,937
FCM Inspection Costs:	24	$20,000	$12,434
Maintenance Costs:	25	$20,200	$12,313
Repainting Costs:	25	$330,600	$201,511
FCM Inspection Costs:	26	$20,000	$11,952
FCM Inspection Costs:	28	$20,000	$11,487
FCM Inspection Costs:	30	$20,000	$11,041
FCM Inspection Costs:	32	$20,000	$10,613
FCM Inspection Costs:	34	$20,000	$10,201
Maintenance Costs:	35	$20,200	$10,101
FCM Inspection Costs:	36	$20,000	$9,804
FCM Inspection Costs:	38	$20,000	$9,424
FCM Inspection Costs:	40	$20,000	$9,058
FCM Inspection Costs:	42	$20,000	$8,706
FCM Inspection Costs:	44	$20,000	$8,368
Maintenance Costs:	45	$20,200	$8,286
FCM Inspection Costs:	46	$20,000	$8,043

Gannett Fleming

Project: Camp Meeting Ave Over CSX
Subject: Life Cycle Cost Analysis
Designed By: SYL
Date: April 3, 2012

Job No.: 51546
Revised* by: TGZ
Date: 10/1/2013
Checked by: SYC
Date: 10/1/2013

Steel Truss Alternate

Assumptions:

1. Structure life span =	100	yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$20,200		(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$796,200		
4. FCM Inspection cost* =	$20,000		(Applicable every 2 years)
5. Repainting cost* =	$330,600		(Applicable every 25, Already Included in Redecking)
6. Real Discount Rate =	2.00%		(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
FCM Inspection Costs:	48	$20,000	$7,731
FCM Inspection Costs:	50	$20,000	$7,431
Deck Replacement Cost:	50	$796,200	$295,810
FCM Inspection Costs:	52	$20,000	$7,142
FCM Inspection Costs:	54	$20,000	$6,865
Maintenance Costs:	55	$20,200	$6,797
FCM Inspection Costs:	56	$20,000	$6,598
FCM Inspection Costs:	58	$20,000	$6,342
FCM Inspection Costs:	60	$20,000	$6,096
FCM Inspection Costs:	62	$20,000	$5,859
FCM Inspection Costs:	64	$20,000	$5,631
Maintenance Costs:	65	$20,200	$5,576
FCM Inspection Costs:	66	$20,000	$5,413
FCM Inspection Costs:	68	$20,000	$5,203
FCM Inspection Costs:	70	$20,000	$5,001
FCM Inspection Costs:	72	$20,000	$4,806
FCM Inspection Costs:	74	$20,000	$4,620
Maintenance Costs:	75	$20,200	$4,574
Repainting Costs:	75	$330,600	$74,867
FCM Inspection Costs:	76	$20,000	$4,440
FCM Inspection Costs:	78	$20,000	$4,268
FCM Inspection Costs:	80	$20,000	$4,102
FCM Inspection Costs:	82	$20,000	$3,943
FCM Inspection Costs:	84	$20,000	$3,790
Maintenance Costs:	85	$20,200	$3,753
FCM Inspection Costs:	86	$20,000	$3,643
FCM Inspection Costs:	88	$20,000	$3,501
FCM Inspection Costs:	90	$20,000	$3,365
FCM Inspection Costs:	92	$20,000	$3,235
FCM Inspection Costs:	94	$20,000	$3,109

Gannett Fleming

Project:	Camp Meeting Ave Over CSX		
Subject:	Life Cycle Cost Analysis	**Job No.:**	51546
Designed By:	SYL	**Revised* by:**	TGZ
Date:	April 3, 2012	**Date:**	10/1/2013
		Checked by:	SYC
Steel Truss Alternate		**Date:**	10/1/2013

Assumptions:

1. Structure life span =	100	yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$20,200		(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$796,200		
4. FCM Inspection cost* =	$20,000		(Applicable every 2 years)
5. Repainting cost* =	$330,600		(Applicable every 25, Already Included in Redecking)
6. Real Discount Rate =	2.00%		(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
Maintenance Costs:	95	$20,200	$3,078
FCM Inspection Costs:	96	$20,000	$2,988
FCM Inspection Costs:	98	$20,000	$2,872
FCM Inspection Costs:	100	$20,000	$2,761
Repainting Costs:	100	$330,600	$45,634
	100		
TOTALS:		$5,748,915	$3,891,236
TOTAL LIFE CYCLE COST:			$3,891,236 /YEAR
EQUIVALENT UNIFORM ANNUAL COST:			$90,287

*Revisions per FHWA comments

Gannett Fleming

Project:	Camp Meeting Ave Over CSX		
Subject:	Life Cycle Cost Analysis	**Job No.:**	51546
Designed By:	SYL	**Checked by:**	AB
Date:	April 3, 2012	**Date:**	4/5/2012

Steel Truss Alternate

Deck Replacement & Steel Painting Costs:
(Reference quantity calcs and CCE Preparation Manual for PD, 8/25/2004)

Item		**Unit Price**	**Qty**	**Price**
(New Deck)				
Reinforcement Steel, Epoxy Coated	(lb)	$2.80	25,436	$71,221
Concrete Bridge Deck, HPC	(cy)	$1,375.00	62	$85,250
Concrete Bridge Approach	(cy)	$260.00	78	$20,280
Concrete Bridge Sidewalk, HPC	(cy)	$600.00	26	$15,600
Concrete Bridge Parapet, HPC	(lf)	$220.00	355	$78,145
Sawcut Grooved Surface	(sf)	$25.00	369	$9,225
Concrete Removal	(cy)	$300.00	214	$64,107
Painting of Structural Steel *	(sf)	$25.00	11,400	$285,000
			Subtotal:	$628,828
			(3% for striping, signs, etc)	$18,865
			(7% for maintenance of traffic)	$44,018
			(1% for training)	$6,288
			(9% for mobilization)	$56,594
			(construction layout)	$7,000
			(5.5% for utility relocation)	$34,586
			Total for Deck Replacement:	$796,179
			USE:	**$796,200**

*Includes near white blast cleaning & pollution control; assumed quantity is 50% more area than steel option

Maintenance Costs:
(Based on 2009 RS Means for Heavy Construction Cost Data; accounts for potholes, spalls, cracks, etc.)

	Unit Price	**City Cost Index**	**Inflation**	**Adjusted Price**	
Crew C-2A	$2,894.80	1.178	4.00%	$3,836	
Equipment Rental	$500.00	1.178	4.00%	$663	
				$4,498	/day
(Assume 50% roadway area to be repaired at production rate of 300sf/day.)				4	days
			Subtotal:	$17,994	
			*(7% for maintenance of traffic)	$1,260	
			(5% for mobilization)	$900	
			Total for Maintenance:	$20,153	
			USE:	**$20,200**	

* Reference CCE Preparation Manual for PD, 8/25/2004)

Gannett Fleming

Project:	Camp Meeting Ave Over CSX		
Subject:	Life Cycle Cost Analysis	**Job No.:**	51546
Designed By:	SYL	**Checked by:**	AB
Date:	April 3, 2012	**Date:**	4/5/2012

Adjacent Box Alternate

Assumptions:

1. Structure life span =	100	yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$30,300		(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$489,400		
4. Real Discount Rate =	2.00%		(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
Initial Cost of Structure:	0	$2,464,572	$2,464,572
Maintenance Costs:	5	$30,300	$27,444
Maintenance Costs:	15	$30,300	$22,513
Maintenance Costs:	25	$30,300	$18,469
Maintenance Costs:	35	$30,300	$15,151
Maintenance Costs:	45	$30,300	$12,429
Deck Replacement Cost:	50	$489,400	$181,826
Maintenance Costs:	55	$30,300	$10,196
Maintenance Costs:	65	$30,300	$8,364
Maintenance Costs:	75	$30,300	$6,862
Maintenance Costs:	85	$30,300	$5,629
Maintenance Costs:	95	$30,300	$4,618
	100		
TOTALS:		$3,256,972	$2,778,072
TOTAL LIFE CYCLE COST:			$2,778,072
EQUIVALENT UNIFORM ANNUAL COST:			$64,459 /YEAR

Gannett Fleming

Project:	Camp Meeting Ave Over CSX		
Subject:	Life Cycle Cost Analysis	**Job No.:**	51546
Designed By:	SYL	**Checked by:**	AB
Date:	April 3, 2012	**Date:**	4/5/2012

Adjacent Box Alternate

Deck Replacement Costs:
(Reference quantity calcs and CCE Preparation Manual for PD, 8/25/2004)

Item		**Unit Price**	**Qty**	**Price**
(New Deck)				
Reinforcement Steel, Epoxy Coated	(lb)	$2.80	23,799	$66,638
Concrete Bridge Deck, HPC	(cy)	$1,375.00	86	$118,250
Concrete Bridge Approach	(cy)	$260.00	78	$20,280
Concrete Bridge Sidewalk, HPC	(cy)	$600.00	36	$21,600
Concrete Bridge Parapet, HPC	(lf)	$220.00	354	$77,924
Sawcut Grooved Surface	(sf)	$25.00	367	$9,175
Concrete Removal	(cy)	$300.00	235	$70,495
			Subtotal:	$384,361
			(3% for striping, signs, etc)	$11,531
			(7% for maintenance of traffic)	$26,905
			(1% for training)	$3,844
			(9% for mobilization)	$34,593
			(construction layout)	$7,000
			(5.5% for utility relocation)	$21,140
			Total for Deck Replacement:	$489,374
			USE:	**$489,400**

Maintenance Costs:
(Based on 2009 RS Means for Heavy Construction Cost Data; accounts for potholes, spalls, cracks, etc.)

	Unit Price	**City Cost Index**	**Inflation**	**Adjusted Price**	
Crew C-2A	$2,894.80	1.178	4.00%	$3,836	
Equipment Rental	$500.00	1.178	4.00%	$663	
				$4,498	/day
(Assume 50% deck area to be repaired at production rate of 300sf/day.)				6	days
			Subtotal:	$26,990	
			*(7% for maintenance of traffic)	$1,889	
			(5% for mobilization)	$1,350	
			Total for Maintenance:	$30,229	
			USE:	**$30,300**	

* Reference CCE Preparation Manual for PD, 8/25/2004)

Gannett Fleming

Project: Camp Meeting Ave Over CSX
Subject: Life Cycle Cost Analysis
Designed By: SYL
Date: April 3, 2012

Job No.: 51546
Revised* by: TGZ
Date: 10/1/2013
Checked by: SYC
Date: 10/1/2013

Steel Girder Alternate

Assumptions:

1. Structure life span =	100 yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$30,300	(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$737,700	
4. FCM Inspection cost* =	$5,000	(Applicable every 2 years)
5. Repainting cost* =	$220,400	(Applicable every 25, Already Included in Redecking)
6. Real Discount Rate =	2.00%	(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
Initial Cost of Structure:	0	$2,612,504	$2,612,504
FCM Inspection Costs:	2	$5,000	$4,806
FCM Inspection Costs:	4	$5,000	$4,619
Maintenance Costs:	5	$30,300	$27,444
FCM Inspection Costs:	6	$5,000	$4,440
FCM Inspection Costs:	8	$5,000	$4,267
FCM Inspection Costs:	10	$5,000	$4,102
FCM Inspection Costs:	12	$5,000	$3,942
FCM Inspection Costs:	14	$5,000	$3,789
Maintenance Costs:	15	$30,300	$22,513
FCM Inspection Costs:	16	$5,000	$3,642
FCM Inspection Costs:	18	$5,000	$3,501
FCM Inspection Costs:	20	$5,000	$3,365
FCM Inspection Costs:	22	$5,000	$3,234
FCM Inspection Costs:	24	$5,000	$3,109
Maintenance Costs:	25	$30,300	$18,469
Repainting Costs:	25	$220,400	$134,341
FCM Inspection Costs:	26	$5,000	$2,988
FCM Inspection Costs:	28	$5,000	$2,872
FCM Inspection Costs:	30	$5,000	$2,760
FCM Inspection Costs:	32	$5,000	$2,653
FCM Inspection Costs:	34	$5,000	$2,550
Maintenance Costs:	35	$30,300	$15,151
FCM Inspection Costs:	36	$5,000	$2,451
FCM Inspection Costs:	38	$5,000	$2,356
FCM Inspection Costs:	40	$5,000	$2,264
FCM Inspection Costs:	42	$5,000	$2,177
FCM Inspection Costs:	44	$5,000	$2,092
Maintenance Costs:	45	$30,300	$12,429
FCM Inspection Costs:	46	$5,000	$2,011

Gannett Fleming

Project: Camp Meeting Ave Over CSX
Subject: Life Cycle Cost Analysis
Designed By: SYL
Date: April 3, 2012

Job No.: 51546
Revised* by: TGZ
Date: 10/1/2013
Checked by: SYC
Date: 10/1/2013

Steel Girder Alternate

Assumptions:

1. Structure life span =	100	yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$30,300		(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$737,700		
4. FCM Inspection cost* =	$5,000		(Applicable every 2 years)
5. Repainting cost* =	$220,400		(Applicable every 25, Already Included in Redecking)
6. Real Discount Rate =	2.00%		(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
FCM Inspection Costs:	48	$5,000	$1,933
FCM Inspection Costs:	50	$5,000	$1,858
Deck Replacement Cost:	50	$737,700	$274,076
FCM Inspection Costs:	52	$5,000	$1,786
FCM Inspection Costs:	54	$5,000	$1,716
Maintenance Costs:	55	$30,300	$10,196
FCM Inspection Costs:	56	$5,000	$1,650
FCM Inspection Costs:	58	$5,000	$1,585
FCM Inspection Costs:	60	$5,000	$1,524
FCM Inspection Costs:	62	$5,000	$1,465
FCM Inspection Costs:	64	$5,000	$1,408
Maintenance Costs:	65	$30,300	$8,364
FCM Inspection Costs:	66	$5,000	$1,353
FCM Inspection Costs:	68	$5,000	$1,301
FCM Inspection Costs:	70	$5,000	$1,250
FCM Inspection Costs:	72	$5,000	$1,202
FCM Inspection Costs:	74	$5,000	$1,155
Maintenance Costs:	75	$30,300	$6,862
Repainting Costs:	75	$220,400	$49,911
FCM Inspection Costs:	76	$5,000	$1,110
FCM Inspection Costs:	78	$5,000	$1,067
FCM Inspection Costs:	80	$5,000	$1,026
FCM Inspection Costs:	82	$5,000	$986
FCM Inspection Costs:	84	$5,000	$947
Maintenance Costs:	85	$30,300	$5,629
FCM Inspection Costs:	86	$5,000	$911
FCM Inspection Costs:	88	$5,000	$875
FCM Inspection Costs:	90	$5,000	$841
FCM Inspection Costs:	92	$5,000	$809
FCM Inspection Costs:	94	$5,000	$777

Gannett Fleming

Project:	Camp Meeting Ave Over CSX		
Subject:	Life Cycle Cost Analysis	**Job No.:**	51546
Designed By:	SYL	**Revised* by:**	TGZ
Date:	April 3, 2012	**Date:**	10/1/2013
		Checked by:	SYC
Steel Girder Alternate		**Date:**	10/1/2013

Assumptions:

1. Structure life span =	100	yrs	(NJDOT Design Manual, Section 5.4)
2. Maintenance cost =	$30,300		(Applicable every 10 years after the first 5 years.)
3. Deck replacement cost =	$737,700		
4. FCM Inspection cost* =	$5,000		(Applicable every 2 years)
5. Repainting cost* =	$220,400		(Applicable every 25, Already Included in Redecking)
6. Real Discount Rate =	2.00%		(Office of Management & Budget, Circular A-94; See attachment)

	Year n	Cost ($) n=0	Present Value ($)
Maintenance Costs:	95	$30,300	$4,618
FCM Inspection Costs:	96	$5,000	$747
FCM Inspection Costs:	98	$5,000	$718
FCM Inspection Costs:	100	$5,000	$690
Repainting Costs:	100	$220,400	$30,422
FCM Inspection Costs:	100	$5,000	$690
TOTALS:		$4,569,404	$3,340,298
TOTAL LIFE CYCLE COST:			$3,340,298
EQUIVALENT UNIFORM ANNUAL COST:			$77,504 /YEAR

*Revisions per FHWA comments

Gannett Fleming

Project:	Camp Meeting Ave Over CSX		
Subject:	Life Cycle Cost Analysis	**Job No.:**	51546
Designed By:	SYL	**Checked by:**	AB
Date:	April 3, 2012	**Date:**	4/5/2012

Steel Girder Alternate

Deck Replacement & Steel Painting Costs:
(Reference quantity calcs and CCE Preparation Manual for PD, 8/25/2004)

Item		**Unit Price**	**Qty**	**Price**
(New Deck)				
Reinforcement Steel, Epoxy Coated	(lb)	$2.80	27,805	$77,854
Concrete Bridge Deck, HPC	(cy)	$1,375.00	87	$119,625
Concrete Bridge Approach	(cy)	$260.00	78	$20,280
Concrete Bridge Sidewalk, HPC	(cy)	$600.00	30	$18,000
Concrete Bridge Parapet, HPC	(lf)	$220.00	355	$78,144
Sawcut Grooved Surface	(sf)	$25.00	369	$9,225
Concrete Removal	(cy)	$300.00	230	$69,024
Painting of Structural Steel *	(sf)	$25.00	7,600	$190,000
			Subtotal:	$582,153
		(3% for striping, signs, etc)		$17,465
		(7% for maintenance of traffic)		$40,751
		(1% for training)		$5,822
		(9% for mobilization)		$52,394
		(construction layout)		$7,000
		(5.5% for utility relocation)		$32,018
		Total for Deck Replacement:		$737,602
			USE:	**$737,700**

*Includes near white blast cleaning & pollution control; assumed quantity

Maintenance Costs:
(Reference adjacent box beam alternate for cost.)

APPENDIX U –
Systems Engineering Review Form

(Not required for this project)

APPENDIX V –
Project Management Plan

State of New Jersey
Department of Transportation

Project Management Plan

Camp Meeting Avenue over CSX
West Trenton Line
Bridge Replacement Project
UPC # 994050

Prepared by

Division of Project Management

October 2012

Document Information and Revision History

File Name	Camp Meeting Avenue over CSX West Trenton Line Bridge Replacement Project
Original Author(s)	Tom Anzabi - Project Engineer Division of Project Management
Current Revision Author(s)	

Version	Date	Author(s)	Revision Notes

Approval of the Project Management Plan

Concept Development	
Approved By:	Samir Shah
Title	Project Manager- Division of Project Management
Signature	
Date of Approval	
Preliminary Engineering	
Approved By:	
Title	Regional Manager, Division of Project Management
Signature	
Date of Approval	
Final Design	
Approved By:	
Title	
Signature	
Date of Approval	

Table of Contents

1.0 Project Overview 1
2.0 Project Management Processes and Approaches 1
2.1 Integration Management 1
2.2 Scope Management 1
2.3 Schedule Management 1
2.4 Cost Management 2
2.5 Quality Management 2
2.6 Human Resource Managment 2
2.7 Communications Management 2
2.8 Risk Management 2
2.9 Procurement Management 2

1.0 Project Overview

Existing Condition:

The existing Camp Meeting Avenue Bridge over CSX-West Trenton Line is 104 feet long by 15.9 feet wide. The superstructure consists of a rivet-connected Howe pony truss with one main span and two approach spans. The bridge is supported by two built-up bent type piers on concrete pedestals and ashlar abutments. Two railroad tracks owned by CSX Transportation, Inc. lies beneath the main span of the structure. The concrete deck is overlaid with a bituminous concrete wearing surface. The thru-truss superstructure is approximately 24 inches deep. Piers and abutments are parallel and are skewed at approximately 46 degrees to the roadway baseline above. The original bridge was built in 1889 and was rehabilitated in 1914, 1922, 1950, 2008 and 2010. The work completed in 2008 and 2010 included interim repairs as recommended in the 2008, 12th Cycle, Bridge Re-Evaluation Survey Report.

The bridge was determined to be structurally deficient in the latest Bridge Re-evaluation Report (Cycle No. 13, dated August 19, 2010), due to its poor overall condition and low load ratings for both inventory and operating levels. The report states that the bridge is "deficient and functionally obsolete, requiring high-priority replacement." Existing steel members exhibit extensive section loss, moderate to severe rusting, impact damage, and local buckling.

Camp Meeting Avenue/Skillman Road in the project area provides one 10-foot travel lane with no shoulders or sidewalks in each direction; this cross section reduces to only one, "yield-controlled" 14-foot lane with no shoulders or sidewalks on the bridge. The vertical sight distance is insufficient to see vehicles approaching from the opposite side of the bridge. Posted speed limit is 30 mph with an advisory speed warning sign for 15 mph approaching the bridge from either direction.

Proposed Improvements:

The work efforts performed during the Concept Development process determined the structure is in need of total replacement. The purpose of the project is to replace the structurally deficient and functionally obsolete bridge and to improve a small portion of the adjacent approach roadway to eliminate the substandard vertical sight distance.

The roadway is proposed to be widened along the existing centerline. The proposed cross section will consist of two bicycle-compatible 14' wide travel lanes with a 6' sidewalk on the southern side of the bridge. An umbrella section with a 7' berm is proposed on the northern side of the roadway and a 10' berm on the southern side of the roadway is proposed to accommodate a future sidewalk. Beam guide rail is proposed on all four quadrants of the structure. The vertical profile of the roadway would be improved to provide proper vertical sight distance. Due to the revisions of the vertical profile, six driveways west of the structure would require regrading to meet the new profile.

2.0 Project Management Processes and Approaches

It is anticipated that the current Preliminary Engineering Phases will address the standard activities as required.

2.1 Integration Management

The existing Preliminary Engineering process will involve coordination with various state agencies, local officials as well as with internal Subject Matter Experts. Coordination meetings will be held throughout the process.

2.2 Scope Management

It is anticipated that the current Preliminary Engineering (PE) Phases will address the standard activities as required. Design Communications Reports (DCR) initiated in the Concept Development (CD) phase will be required as the project advances through PE.

2.3 Schedule Management

Primavera based scheduling will be utilized to track progress. Progress meetings will be held periodically to discuss the project schedule.

2.4 Cost Management

The work efforts associated with the PE phase will be negotiated at the conclusion of the CD Phase and an agreement in place prior to the commencement of PE. Invoicing which includes monthly progress reports as well as coordination meetings during the PE process will provide opportunities to track costs.

2.5 Quality Management

The existing processes address the Quality Management requirements and it is anticipated that this will be sufficient in addressing this issue.

Additional Quality Requirements

N/A

2.6 Human Resource Management

The consultant selection process for PE will be done so as to retain the appropriate firms to address these needs.

2.7 Communications Management

It is anticipated that the existing PE process includes outreach and coordination efforts as necessary to address these needs

2.8 Risk Management

It is not anticipated that this project is of high risk requiring anything beyond what is provided in the existing process.

Additional Risk Requirements

N/A

2.9 Procurement Management

It is anticipated that consultants will be required to assist in addressing the PE efforts. It will be paramount to ensure that a diverse team of consultants is retained to complete the tasks as defined in the Scope of Services. This project does not require anything beyond the traditional procurement process.

Additional Procurement Requirements

N/A

APPENDIX W –
NJDOT Reference Material Data

NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: LIST

FROM: Ray Jacek
Project Engineer
Division of Project Development – Central

DATE: April 6, 2010

PHONE: 5-5880

SUBJECT: Camp Meeting Avenue (CR 602) over CSX Trenton Line
Structure # 1850-160
Montgomery Township, Somerset County
Management Systems Input Request

The Division of Project Development (DPD) is collecting data for the Concept Development phase of the Camp Meeting Avenue over the CSX Trenton Line bridge project. To ensure all available information is included in the study analyses, the DPPD requests your Management System input. Attached are a Location Map and an aerial of the area.

The subject bridge, structure #1850-160, is one lane wide (14 feet). It is an orphan structure over two sets of rails. The Structural Rating is 6.5 (2009), thus it is load restricted.

Camp Meeting Avenue is also known as Skillman Road (CR 602). The posted speed is 30 mph. The roadway approaches to the bridge have substandard vertical geometry elements which result in poor sight distances eastbound and westbound.

The Howe pony truss design structure was built in 1889. It is eligible for listing on the National Register of Historic Places. Also, the area around the bridge is part of the Delaware and Bound Brook Railroad Historic District. The bridge is also near the Montgomery High School.

The DPD is requesting any input/information that may be relevant to the project's Purpose and Need Statement. Items such as the following as they pertain to your office would be helpful in the investigation:

- Relative ranking on the management systems
- Available traffic
- Recently completed work-orders/projects
- Other relevant information…….

In addition, the DPD is specifically looking to obtain the following information from each of your areas of expertise.

NJDOT Contact List	**Unit and Management System**	**Data requested**
Ira Levinton	Systems Planning ***Congestion Management System (CMS)***	Ranking on CMS (priority)
Phil Bertucci	Pavement Management & Technology ***Pavement Management System (PMS)***	pavement condition, ARAN, skid test results
Greg Renman	Structural Evaluation ***Bridge Management System (BMS)***	SIA input, recent repairs, etc.
Kiong Chan	Pavement Management & Tech. ***Drainage Management System (DMS)***	Are there any drainage projects in area; Ranking on DMS
Rich Shaw	Operations Support ***Maintenance Management System (MMS)***	Ranking on MMS; recent, pending or active work, etc.
John Jamerson	Geotechnical Engineering ***Rockfall Hazard Rating System***	Rockfall Hazard Rating Underground Strata information
Dave Martin	Traffic Engineering and Investigations	Recent, pending or active work orders in project area, etc.
Doug Bartlett	Transportation Data Development	Functional classification; Existing traffic counts, truck %, etc.

A response by April 27, 2010 would be appreciated. Thank you in advance for your cooperation. If you have any questions, please contact me at 5-5880.

attach

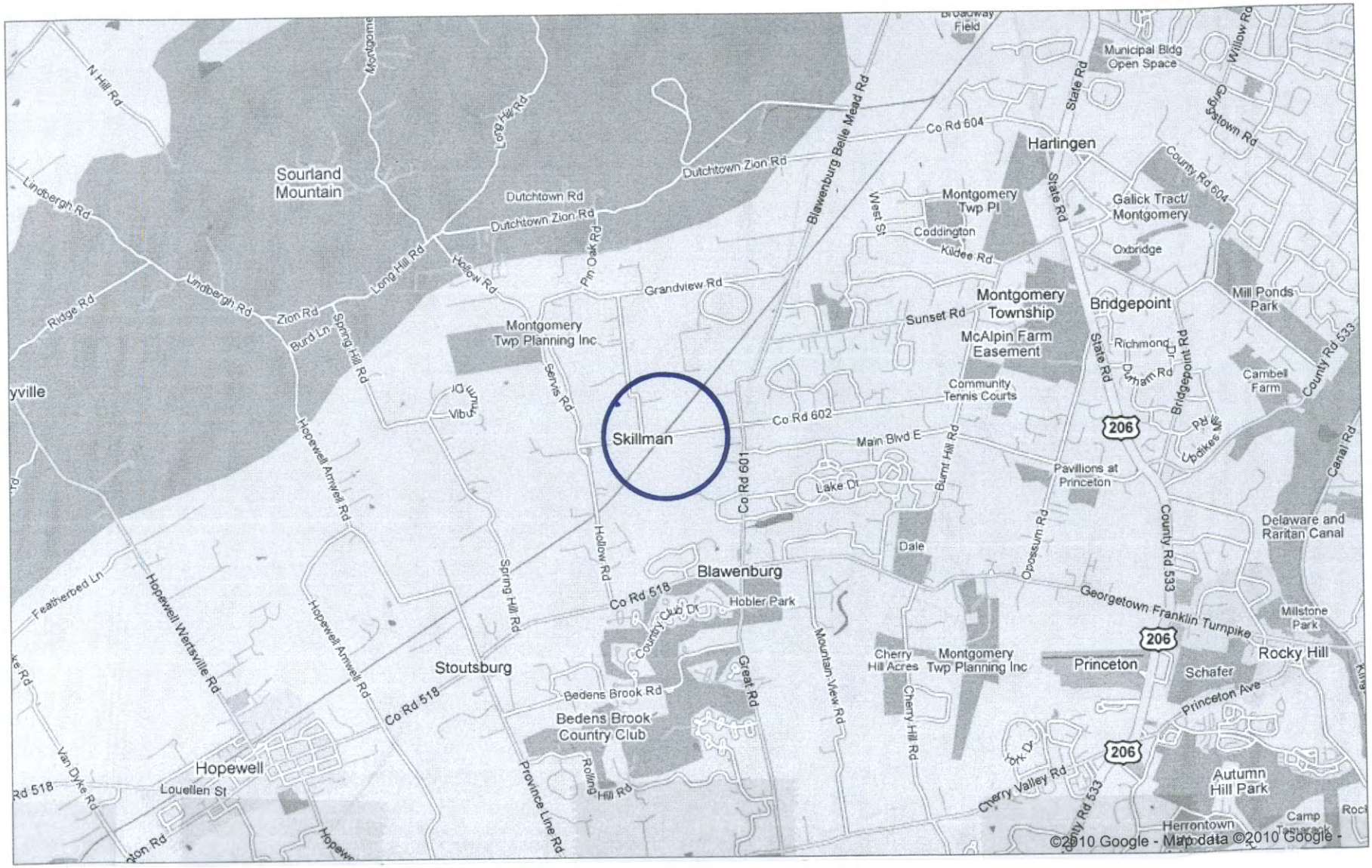
c:	John Allen	Systems Planning
	Neha Galgali	Systems Planning
	Sue Gresavage	Pavement and Drainage Management
	Joe Beke	Pavement Management
	Dick Dunne	Structural Engineering
	Pat Ott	Traffic Engineering and Safety
	Kuang Yu Yang	Geotechnical Engineering
	Bob Marshall	Project Planning and Development
	Joshua Idowu	Project Planning and Development
	Mike Morgan	Gannett Fleming

c:mydocuments/projects/Camp Mtg mgmt systems request

Google maps

To see all the details that are visible on the screen,use the "Print" link next to the map.

Print Send Link



Location Map

Google maps Address

To see all the details that are visible on the screen,use the "Print" link next to the map.

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:18 PM
To: Stevens, Glenn B.; Krstic, Vladica
Subject: FW: Re: Camp Meeting Road over CSX RR Management System Request

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Tuesday, April 06, 2010 2:15 PM
To: Morgan, Michael A.
Subject: Fwd: Re: Camp Meeting Road over CSX RR Management System Request

>>> Ira Levinton 4/6/2010 1:56 PM >>>
Ray,

We do not have data in the CMS for this roadway. Only a limited number of County roads have CMS data. Most management systems primarily have data for only the State and higher level highways.

Ira

Ira Levinton
Project Engineer, Planning
Bureau of Systems Development & Analysis
1035 Parkway Ave
Trenton, NJ 08625
(609) 530-2846
FAX: (609) 530-3723

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project.
Please provide your input by April 27.
thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:20 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: Camp Meeting Avenue (CR 602) over CSX Trenton Line Structure # 1850-160

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
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(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Wednesday, April 07, 2010 8:20 AM
To: Morgan, Michael A.
Subject: Fwd: Camp Meeting Avenue (CR 602) over CSX Trenton Line Structure # 1850-160

Transportation Data Development info

>>> Anthony Varone 4/7/2010 8:10 AM >>>
Ray,
As indicated in the Straight Line Diagram (SLD) page for County Route 602 in Somerset County the functional class is
Rural Local. There are no available counts or truck data for Co. 602.
Should you need any other information/data please let us know.
Anthony

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:19 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: Re: Camp Meeting Road over CSX RR Management System Request

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Wednesday, April 07, 2010 8:19 AM
To: Morgan, Michael A.
Subject: Fwd: Re: Camp Meeting Road over CSX RR Management System Request

pavement management info

>>> Philip Bertucci 4/6/2010 2:10 PM >>>
Ray,

We do not collect road data for County Road 602.

Thanks,
Phil

Philip Bertucci, P.E.
Administrative Analyst 1 (Data Processing)
New Jersey Department of Transportation
Civil Engineering-Pavement Technology Unit
1035 Parkway Avenue, P.O. Box 600
Trenton, NJ 08625
(609) 530-4489
Philip.Bertucci@dot.state.nj.us

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project.
Please provide your input by April 27.

thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 2:24 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: FW: Camp Meeting Avenue (CR602) Over CSX Trenton Line
Attachments: Reply Rt.CR602 Over CSX Trenton Line Apr10.docx

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Thursday, April 08, 2010 9:39 AM
To: Morgan, Michael A.
Subject: Fwd: Camp Meeting Avenue (CR602) Over CSX Trenton Line

>>> RajendraR Patel 4/8/2010 8:55 AM >>>
Hi,

Attached is Drainage Management Unit's response to your request for the above subject.

Thanks,

Raj Patel
Drainage Unit
5-2198

NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Ray Jacek
Project Engineer
Division of Project Development – Central

FROM: Raj Patel
Drainage Unit
Division of Design Services

DATE: April 08, 2010

PHONE: 609-530- 2198

SUBJECT: Camp Meeting Avenue (CR602) over CSX Trenton Line
Structure # 1850-160
Montgomery Township, Somerset County
Management Systems Input Request

In response to your request dated April 06, 2010, Camp Meeting Avenue (CR602) over CSX Trenton Line, is not in Drainage Management Unit's DMS Ranking List. We do not have DMS Ranking, flooding and Maintenance Crew Expenditure records on file for County Routes.

CC: Manager, K. Chan, file

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Monday, April 12, 2010 3:17 PM
To: Stevens, Glenn B.; Krstic, Vladica
Subject: FW: Re: Camp Meeting Road over CSX RR Management System Request
Attachments: camp mtg Mgmt Systems request.doc; camp mtg mgmt sys.pdf

Please download this soil info so we have it until we get structures up to speed/on board.

Michael A. Morgan, PE, PP, PTOE
Department Manager-Transportation Engineering & Planning

Gannett Fleming, Inc.
Southfield Center-Suite 205
One Cragwood Road
South Plainfield, NJ 07080
(P) 908-755-0040
(F) 908-755-9849
(C) 908-419-6359

From: Ray Jacek [mailto:Ray.Jacek@dot.state.nj.us]
Sent: Friday, April 09, 2010 10:41 AM
To: Morgan, Michael A.
Subject: Fwd: Re: Camp Meeting Road over CSX RR Management System Request

here's some good info

>>> John Jamerson 4/9/2010 10:30 AM >>>
Good morning Ray-
In response to your request, Geotechnical Engineering has checked our 2 management systems for relevant data for the referenced CD screening. Our Rockfall Hazard Management System shows no rock cuts within the project limits; however, our Geotechnical Data Management System does indicate existing soil boring information available at the specific project location. If so desired, this information may be accessed through the Department's home page or through the following link:
www.state.nj.us/transportation/refdata/geologic/

Please contact our office at 5-3730 if you have any questions.
John

John P. Jamerson
Project Engineer, Geology
Geotechnical Engineering
NJ Department Of Transportation
office: 609.530.3733
cell: 609.273.5631
fax: 609.530.2704
email: John.Jamerson@dot.state.nj.us

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project.
Please provide your input by April 27.
thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 115

Station 910+00 | Offset 40'L | Reference Line BL I-95 | Ground Line Elevation: 128.76

Borings made by: J. Perillo | Date Started: 10/1/70 | El. G.W.T. 122.7 | Date: 10/2/70

Inspector: J. McGregor | Date Completed: 10/1/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	8	S-1	0.0	1.5	3	5	7	16"	Brown SILT, Some F-Sand	
	16									
	13									
	18									
5	30				M					5.0
		C-1	5.0	10.0	4	CORE		6"	Red Highly Fractured SHALE, Silt Lenses	
					5	Rec		10%		
					5	RQD		0%		
					6					
10					6					10.0
									Bottom of Hole 10.0'	
15										
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks:

Type of Core Drill: AX

Core Diameter: 1 3/16"

SHEET 1 OF 1

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 116

Station 912+25 | Offset BL | Reference Line BL I-95 | Ground Line Elevation: 133.18

Borings made by: J. Perillo | Date Started: 10/1/70 | El. G.W.T. 125.68 | Date: 10/2/70

Inspector: J. McGregor | Date Completed: 10/1/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	8	S-1	0.0	1.5	4	8	6	12"	Brown Clayey SILT, Little Sand	
	9									
	10									
	13									
5	19	S-2	5.0	6.0	38	58	-	12"	Red Brown SILT, Little Sand, Trace F-Gravel (Shale Fragments)	6.0
	25				M					
		C-1	6.0	11.0	5	CORE		8"	Red Highly Fractured SHALE, Silt Lenses	
					6	Rec		13%		
					6	RQD		0%		
10					5					
					7					11.0
									Bottom of Hole 11.0'	
15										
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks:

Type of Core Drill: AX

Core Diameter: 1 3/16"

SHEET 1 OF 1

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 117

Station 915+00 | Offset 60'Rt | Reference Line BL I-95 | Ground Line Elevation: 136.30

Borings made by J. Perillo | Date Started: 9/30/70 | El. G.W.T. 129.3 | Date: 10/1/70

Inspector J. McGregor | Date Completed: 9/30/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	8	S-1	0.0	1.5	4	7	8	16"	Brown SILT, Some Sand	
	10									
	13									
	18									
5	20	S-1	5.0	6.5	8	18	20	12"	Brown SILT, Some Sand, Trace F-Gravel (Shale Fragments)	
	33									
	59				M					7.0
		C-1	7.0	12.0	5	CORE		8"	Red SHALE (Highly Fractured)	
					6	Rec		13%		
10					6	RQD		0%		
					5					
					7					12.0
									Bottom of Hole 12.0'	
15										
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks:

Type of Core Drill AX

Core Diameter 1 3/16"

SHEET 1 OF 1

JOB NO. Contract

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood'

Section: | Route: I-95 | BORING NO. 118

Station 14+35 | Offset 20'Rt | Reference Line BL Camp Meeting Ave. | Ground Line Elevation: 133.13

Borings made by: J. Powers | Date Started: 9/30/70 | El. G.W.T. 121.1 | Date: *9/30/70

Inspector: J. McGregor | Date Completed: 9/30/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	12	S-1	0.0	1.5	5	6	7	14"	Red Brown SILT, Some F-Sand	
	14									
	20									
	23									
5	25	S-2	5.0	6.5	12	17	19	13"	SAME	
	20									
	29									
	84									
	71									
10	59	S-3	10.0	11.5	12	19	41	8"	SAME	
	67									
	189				M					12.0
		C-1	12.0	17.0	5	CORE		12"	Red Weathered SHALE (Highly Fractured)	
					7	Rec		20%		
15					7	RQD		0%		
					9					
					6					17.0
									Bottom of Hole 17.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: *Hole Filled, in Dangerous Location

Type of Core Drill: AX

Core Diameter: 1 3/16"

SHEET 1 OF 1

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 119

Station 14+50 | Offset 20' Lt | Reference Line BL Camp Meeting Ave. | Ground Line Elevation: 134.37

Borings made by J. Powers | Date Started: 9/30/70 | El. G.W.T. 125.37 | Date: 10/1/70

Inspector J. McGregor | Date Completed: 9/30/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	12	S-1	0.0	1.5	5	7	7	16"	Red Brown SILT, Some F-Sand	
	14									
	14									
	49									
5	48	S-2	5.0	6.5	18	22	31	15"	SAME	
	29									
	42									
	54									
	59									
10	59	S-3	10.0	11.5	29	42	44	10"	SAME	
	67									
	189				M					12.0
		C-1	12.0	17.0	5	CORE		17"	Red Weathered SHALE (Highly Fractured)	
					7	Rec		28%		
15					6	RQD		0%		
					5					
					6					17.0
									Bottom of Hole 17.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks:

Type of Core Drill AX

Core Diameter 1 3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract

Sprague and Henwood

Section: Route: I-95 BORING NO. 331

Station 17+00 Offset 25' Lt. Reference Line BL Camp Meeting Ave. Ground Line Elevation: 127.0[illegible]

Borings made by J. Powers Date Started: 9-29-70 El. G.W.T. 122.2 Date: 9-30-70

Inspector J. McGregor Date Completed: 9-29-70 El. G.W.T. (Auger): 125.47 Date: 12-14-70

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	89	S-1	0.0	1.6	29	47	52	11"	Misc. Fill, Stones, Cinders, Gravel, etc. (Railroad Ballast)	
	131									
	254									
	266				M					4.0
5		C-1	4.0	9.0	9	CORE		32"	Red Weathered SHALE	
					10	Rec		53%		
					14	RQD		0%		
					12					
					13					
10		C-2	9.0	14.0	7	CORE		40"	Same	
					9	Rec		66%		
					9	RQD		7%		
					10					
					9					14.0
15									Bottom of Hole 14.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	3-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: * Well point installed

Type of Core Drill NX

Core Diameter 1-3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract

Sprague and Henwood

Section: Route: I-95 BORING NO. 330

Station 16+50 Offset 25' Rt. Reference Line B.R. BL Camp Meeting Rd. Ground Line Elevation: 127.21

Borings made by J. Powers Date Started: 9-30-70 El. G.W.T. 122.2 Date: *9-30-70

Inspector J. McGregor Date Completed: 9-30-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	59	S-1	0.0	1.5	47	61	86	13"	Misc. Fill GRAVEL, sm. Stones, Sm. Cinders	
	72								(Railroad Ballast)	2.0
	81									
	110									
5	67				M				Gray F-SNAD sm. Silt, sm F-Gravel	5.0
		C-1	5.0	6.0	18	CORE		12"	RQD-0% Trap Rock Boulder	
		C-2	6.0	11.0	5	CORE		10"	Red Gray SHALE	
					7	Rec		16%		
					7	RQD		0%		
10					6					
					7					11.0
									Bottom of Hole 11.0'	
15										
20										
25										
30										
35										
40										

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: * Hole filled, in dangerous area.

Type of Core Drill AX

Core Diameter 1-3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract

Sprague and Henwood

Section: Route: I-95 BORING NO. 328

Station 17+10 Offset 25' Rt. Reference Line BL Camp Meeting Ave. Ground Line Elevation: 127.13

Borings made by G. Miller Date Started: 10-1-70 El. G.W.T. 126.0* Date: 10-2-70

Inspector W. Fink Date Completed: 10-1-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6 6/12 12/18			Rec.	Sample Identification and Profile Change	
	210	S-1	0.0	1.5	No Sample*				Trap Rock, Some C-F Gravel (Railroad Ballast)	
	287									
	465									
	250									
5	186	S-2	5.0	6.5	19	26	34	7"	Red Brown F-SAND and Silt	5.1
	194									
	300+				M					
		C-1	7.0	12.0	8	CORE		15"	Red SHALE	7.0
					8	Rec		25%		
10					10	RQD		0%		
					11					
					12					12.0
									Bottom of Hole 12.0'	
15										
20										
25										
30										
35										
40										

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: * Water trapped in hole

Type of Core Drill AX

Core Diameter 1-3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract

Sprague and Henwood

Section: Route: I-93 BORING NO. 309

Station: 17+50 Offset: 25' Lt. Reference Line: BL Camp Meeting Rd. Ground Line Elevation: 127.10

Borings made by: G. Miller Date Started: 10-2-70 El. G.W.T. 122.8 Date: 10-3-70

Inspector: W. Pink Date Completed: 10-2-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6 6/12 12/18		Rec.	Sample Identification and Profile Change	
	260	S-1	0.0	1.5	No	Sample*		Trap Rock BALLAST & Cinders	
	320								
	268								
	294								4.0
5	300+				M			Weathered Red SHALE	
		C-1	5.0	10.0	7	CORE	12"	Red SHALE	
					7	Rec	20%		
					9	RQD	0%		
					8				
10					9				10.0
								Bottom of Hole 10.0'	
15									
20									
25									
30									
35									
40									

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Type of Core Drill: AX

Core Diameter: 1-9/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract

Sprague and Henwood

Section: Route: I-95 BORING NO. 326

Station 18+40 Offset 25' Rt Reference Line BL Camp Meeting Ave. Ground Line Elevation: 139.06

Borings made by J. Perillo Date Started: 9-28-70 El. G.W.T. 139.06 Date: 9-29-70

Inspector J. McGregor Date Completed: 9-28-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	16	S-1	0.0	1.5	6	11	9	13"	Red Brown SILT, and F Sand	
	23									
	23									
	61									
5	53	S-2	5.0	6.5	13	19	23	10"	Same	
	65									
	9									
	60									8.0
		S-3	8.0	9.5	23	-	-	2"	Red Weathered SHALE	
10		C-1	8.5	13.5	N/6	CORE		9"	Same	
					7	Rec		15"		
					8	RQD		0%		
					9					
		C-2	13.5	18.5	9	CORE		1[illegible]"	Same	
15					10	Rec		2[illegible]"		
					9	RQD		0%		
					12					
					10					18.5
					12					
20									Bottom of hole 18.5'	
25										
30										
35										
40										

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Type of Core Drill AX

Core Diameter 1-3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract A

Sprague and Henwood

Section: Route: I-95 BORING NO. 32

Station 18+86 Offset 25' Lt. Reference Line BL Camp Meeting Rd. Ground Line Elevation: 139.18

Borings made by J. Perillo Date Started: 9-29-70 El. G.W.T. 130.18 Date: 9-30-70

Inspector J. McGregor Date Completed: 9-29-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	8	S-1	0.0	1.5	4	6	8	13"	Moist Red Brown Clayey SILT, Trace F Sand	
	10									
	13									
	16									
5	18	S-2	5.0	6.5	9	20	23	10"	Red Brown SILT, Some F Sand (Weathered Shale)	
	28									
	39				M					7.0
		C-1	7.0	12.0	6	CORE		15"	Red Highly Fractured SHALE, Lenses of Silt	
					5	Rec		25%		
10					7	RQD		0%		
					3					
					7					
		C-2	12.0	17.0	6	CORE		20"	Same	
					9	Rec		33%		
15					8	RQD		0%		
					7					
					7					17.0
									Bottom of Hole 17.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Type of Core Drill AX

Core Diameter 1-3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract A

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 324

Station: 19+76 | Offset: 25' Rt | Reference Line: BL Camp Meeting Ave. | Ground Line Elevation: 138.98

Borings made by: J. Powers | Date Started: 9-28-70 | El. G.W.T. 130.6 | Date: 9-30-70

Inspector: J. McGregor | Date Completed: 9-29-70 | El. G.W.T. (Auger): *128.56 | Date: 12-14-70

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	8	S-1	0.0	1.5	2	3	3	14"	Top Soil, Veg. 12"	
	11								Red Brown F SAND, Some Silt	
	19									
	22									
5	23	S-2	5.0	6.5	8	9	12	13"	Same	
	29									
	41									
	47									8.5
	89/6"				M					
10		C-1	8.5	13.5	5	CORE		22"	Red Highly Fractured SHALE Silt Lenses	
					10	Rec		36%		
					12	RQD		0%		
					10					
					9					
15		C-2	13.5	18.5	7	CORE		43"	Same	
					10	Rec		71%		
					11	RQD		8%		
					13					
					10					18.5
20									Bottom of Hole 18.5'	
25										
30										
35										
40										

Inside Dia. of Casing	3 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 lbs
" " " " Spoon	140 lbs
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: * well point installed

Type of Core Drill: NX

Core Diameter: 2 1/8"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract

Sprague and Henwood

Section: Route: I-95 BORING NO. 325

Station 20+27 Offset 23' Lt Reference Line BL Camp Meeting Ave. Ground Line Elevation: 138.66

Borings made by J. Perillo Date Started: 9-30-70 El. G.W.T. 131.1 Date: 9-31-70

Inspector J. McGregor Date Completed: 9-30-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	8	S-1	0.0	1.5	4	7	8	16"	Brown SILT, Some F Sand	
	10									
	12									
	16									
5	26	S-2	5.0	6.5	9	12	15	14"	Red Brown SILT, Some F Sand, Trace M-F Gravel (Shale Fragments)	
	23									
	34									
	48									
	59				M					9.0
10		C-1	9.0	14.0	9	CORE		8"	Red weathered SHALE, Silt Lenses	
					8	Rec		13%		
					6	RQD		0%		
					7					
					9					
15		C-2	14.0	19.0	10	CORE		20"	Same	
					11	Rec		33%		
					10	RQD		0%		
					9					
					9					19.0
20									Bottom of Hole 19.0'	
25										
30										
35										
40										

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Type of Core Drill AX

Core Diameter 1-3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. Contract A

Sprague and Henwood

Section: Route: I-95 BORING NO. 322

Station 21+13 Offset 25' Rt. Reference Line Rt. Camp Meeting Ave. Ground Line Elevation: 138.8

Borings made by J. Powers Date Started 9-28-70 El. G.W.T. 126.3 Date: *9-28-70

Inspector J. McGregor Date Completed: 9-28-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	5	S-1	0.0	1.5	3	3	4	16"	Red Brown SILT and F Sand	
	7									
	12									
	1[illegible]									
5	22	S-2	5.0	6.5	19	21	30	13"	Same	
	41									
	29									
	67									
	189				M					9.0
10		C-1	9.0	14.0	6	CORE		0"	Red Weathered SHALE, Silt Lenses	
					8	Rec		0%		
					10	RQD		0%		
					14					
					7					
15		C-2	14.0	19.0	6	CORE		23"	Same	
					5	Rec		38%		
					7	RQD		0%		
					7					
					9					19.0
20									Bottom of Hole 19.0'	
25										
30										
35										
40										

Inside Dia. of Casing	2-1/2"
" " " Spoon	1-3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Type of Core Drill AX

Core Diameter 1-3/16"

Remarks: * Hole filled, in dangerous location.

SHEET 1 OF 1

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: Route: I-95 **BORING NO.** 323

Station 21+64 Offset 25'Lt Reference Line BL Camp Meeting Ave. Ground Line Elevation: 138.90

Borings made by J. Perillo Date Started: 9-29-70 El. G.W.T. 130.7 Date: 9-30-70

Inspector J. McGregor Date Completed: 9-29-70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	16	S-1	0.0	1.5	6	8	10	8"	Red Brown F SAND, and Silt	
	18									
	21									
	24									
5	35	S-2	5.0	6.5	8	10	17	10"	Red Brown F SAND, and Silt, Trace F-Gravel (Shale Fragments)	
	38									
	45									
	60				M					8.0
		C-1	8.0	13.0	6	CORE		4"	Red Weathered SHALE, Silt Lenses	
10					5	Rec		7%		
					7	RQD		0%		
					7					
					8					
		C-2	13.0	18.0	10	CORE		18"	Same	
15					9	Rec		30%		
					11	RQD		0%		
					8					
					12					18.0
									Bottom of Hole 18.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 lbs
" " " " Spoon	140 lbs
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks:

Type of Core Drill AX

Core Diameter 1 3/16"

SHEET 1 OF 1

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

JOB NO. ~~Contract A~~

Section: ~~Sprague and Henwood~~ Route: I-95 BORING NO. 120

Station 23+20 Offset 20' Rt. Reference Line BL Camp Meeting Road Ground Line Elevation: 138.84

Borings made by J. Powers Date Started: 9/25/70 El. G.W.T. 128.8 Date: *9/25/70

Inspector J. McGregor Date Completed: 9/25/70 El. G.W.T. (Auger): Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	4	S-1	0.0	1.5	3	3	5	10"	Red Brown SILT, Some F-Sand	
	7									
	9									
	13									
5	19	S-2	5.0	6.5	19	22	40	14"	Reddish Brown SILT, Some F-Sand, Little F-Gravel (Shale Fragments)	
	55									
	140									
	192									
	227				M					9.0
10		C-1	9.0	14.0	7	CORE		26"	Red (Highly Fractured) Shale	
					12	Rec		43%		
					14	RQD		0%		
					15					
					10					14.0
15									Bottom of Hole 14.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: * Hole filled, in dangerous location

Type of Core Drill AX

Core Diameter 1 3/16"

SHEET 1 OF 1

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 121

Station 921+10 | Offset BL | Reference Line BL I-95 | Ground Line Elevation: 136.80

Borings made by G. Miller | Date Started: 11/4/70 | El. G.W.T. * | Date: 11/4/70

Inspector W. Fink | Date Completed: 11/4/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	6	S-1	0.0	1.5	1	1	3	14"	Red Brown SILT, Little Sand, Little F-Gravel (Shale Fragments)	
	9									
	14									
	27									
5	83	S-2	5.0	6.5	22	27	43	11"	SAME	
	117									
	265									
	300+				M					8.0
		C-1	8.0	13.0	10	CORE		8"	Red SHALE	
10					14	Rec		13%		
					11	RQD		0%		
					13					
					15					13.0
									Bottom of Hole 13.0'	
15										
20										
25										
30										
35										
40										

Inside Dia. of Casing	3 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

Remarks: * Lost Water, could not obtain GWT EL.

Type of Core Drill NX

Core Diameter 2 1/8"

SHEET 1 OF 1

JOB NO. Contract A

FREDERIC R. HARRIS, INC.
SUBSURFACE EXPLORATION LOG

Sprague and Henwood

Section: | Route: I-95 | BORING NO. 120A

Station 25+00 | Offset 30' Lt | Reference Line BL Camp Meeting Road | Ground Line Elevation: 137.60

Borings made by G. Miller | Date Started: 11/4/70 | El. G.W.T. 132.18 | Date: 11/5/70

Inspector W. Fink | Date Completed: 11/4/70 | El. G.W.T. (Auger): | Date:

Depth in Feet	Casing Blows	Sample No.	Depth		Blows on Spoon 0/6	6/12	12/18	Rec.	Sample Identification and Profile Change	
	6	S-1	0.0	1.5	1	1	2	14"	Red Brown CF-Sand, Little Silt, Little F-Gravel (Shale Fragments)	
	8									
	13									
	24									
5	56	S-2	5.0	6.5	11	15	29	17"	SAME	
	69									
	87									
	138									
	214									
10	300+				M					10.0
		C-1	10.0	15.0	8	CORE		12"	Red SHALE	
					9	Rec		20%		
					11	RQD		0%		
					10					
15					10					15.0
									Bottom of Hole 15.0'	
20										
25										
30										
35										
40										

Inside Dia. of Casing	2 1/2"
" " " Spoon	1 3/8"
Weight of Hammer on Casing	300 Lbs.
" " " " Spoon	140 Lbs.
Drop of Hammer on Casing	24"
" " " " Spoon	30"

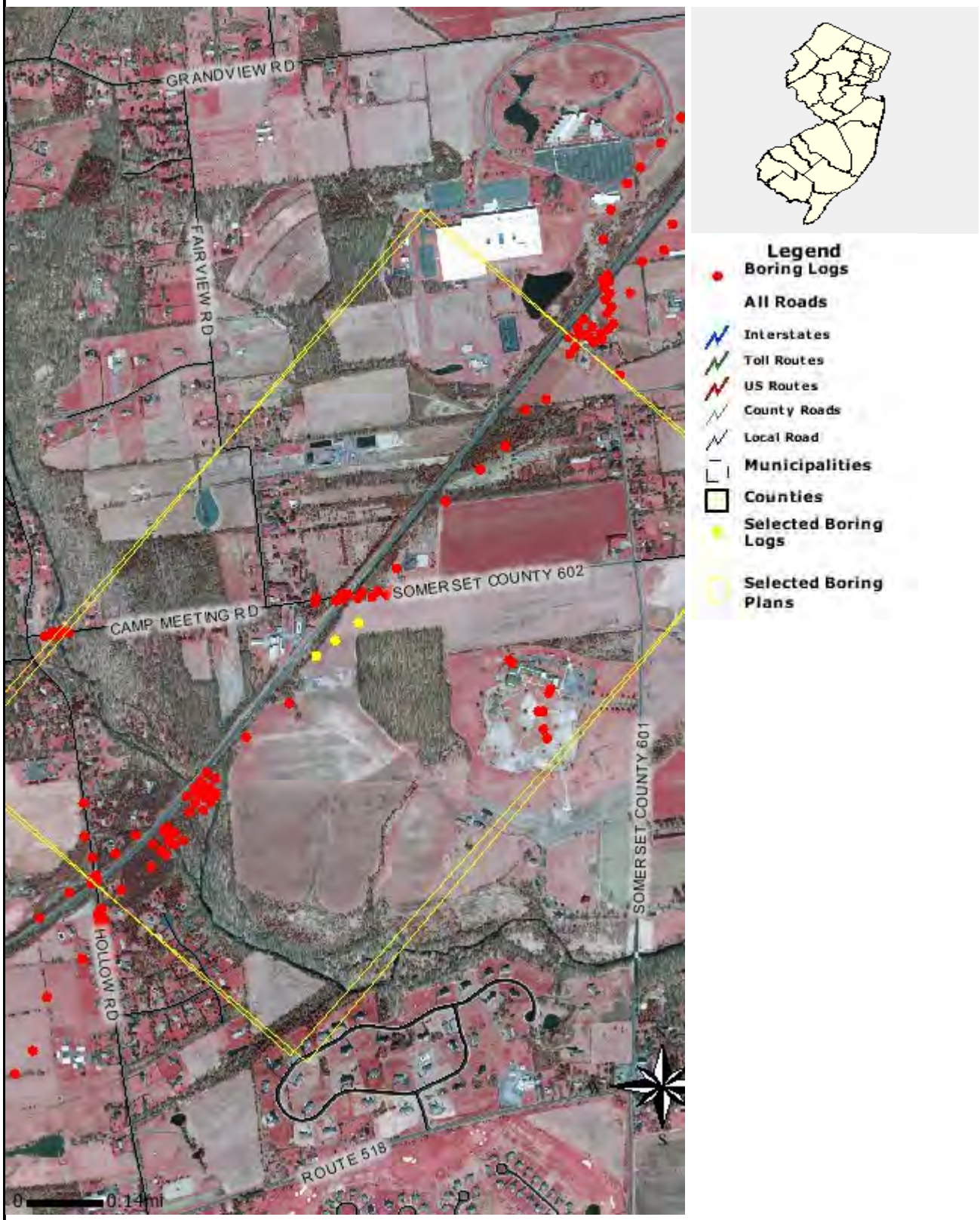
Remarks:

Type of Core Drill AX

Core Diameter 1 3/16"

SHEET 1 OF 1

GDMS Borings Map



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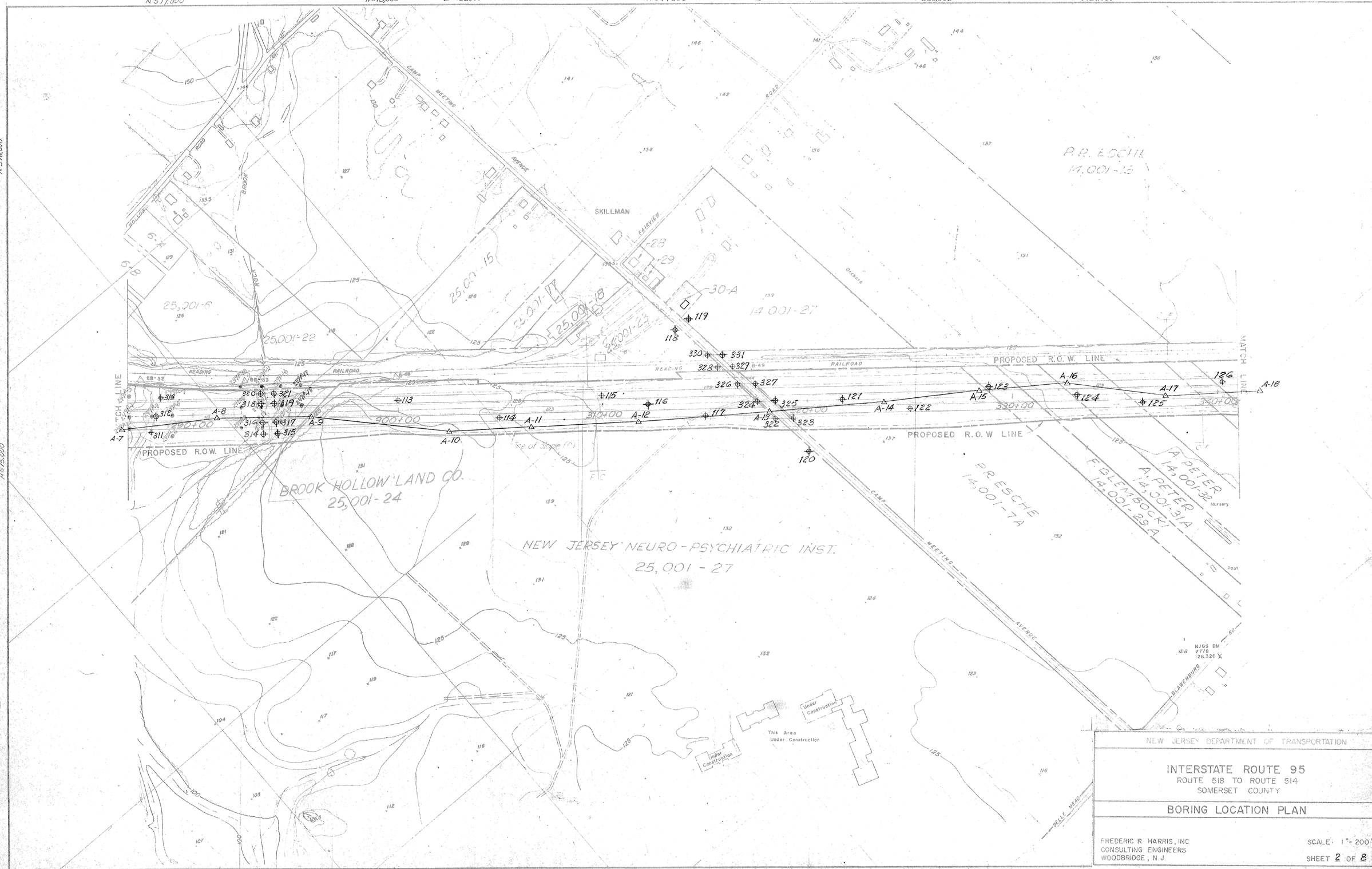


NEW JERSEY DEPARTMENT OF TRANSPORTATION

INTERSTATE ROUTE 95
ROUTE 518 TO ROUTE 514
SOMERSET COUNTY

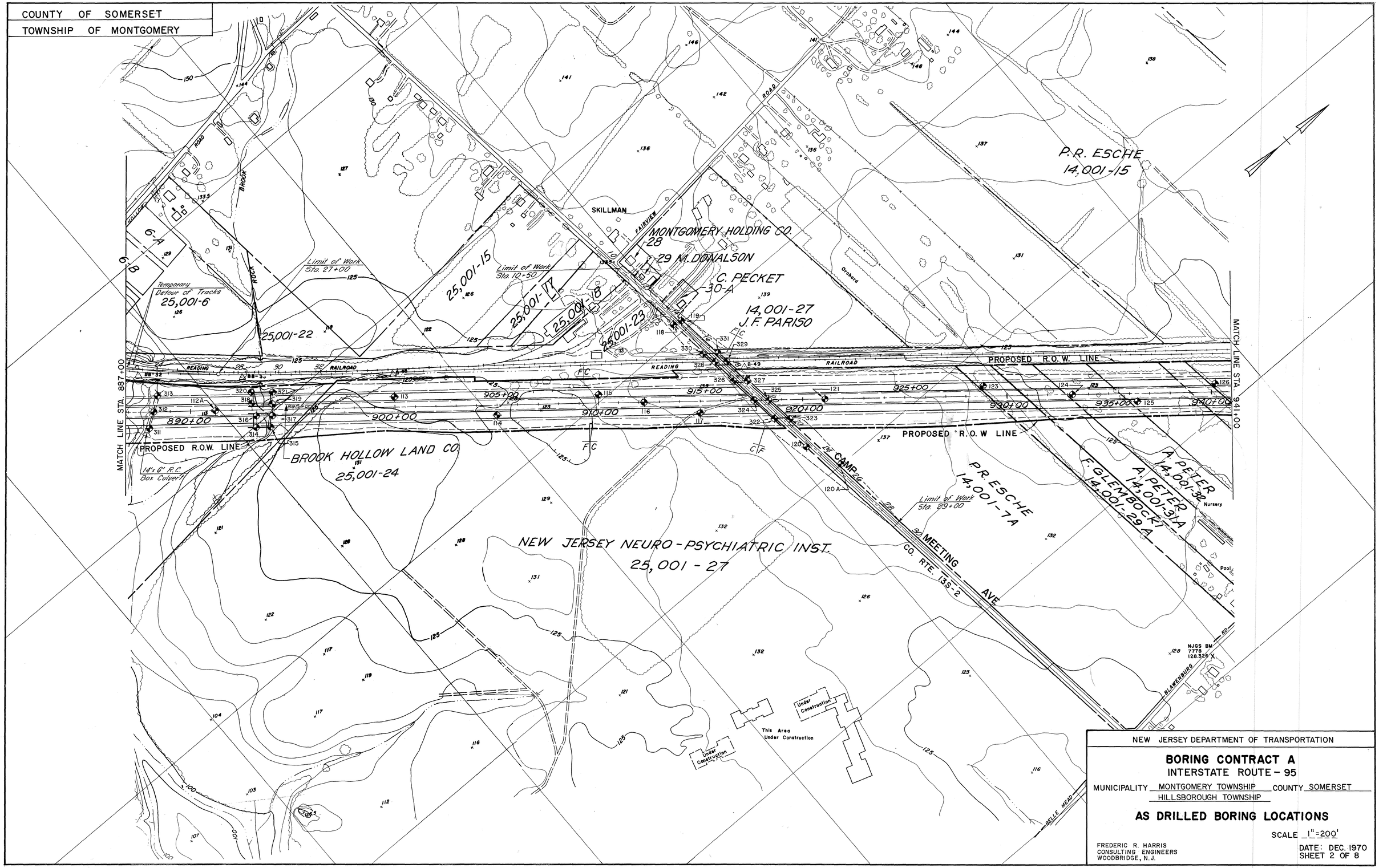
BORING LOCATION PLAN

FREDERIC R HARRIS, INC
CONSULTING ENGINEERS
WOODBRIDGE, N.J.

SCALE: 1" = 200'

SHEET 2 OF 8

COUNTY OF SOMERSET
TOWNSHIP OF MONTGOMERY



NEW JERSEY DEPARTMENT OF TRANSPORTATION

BORING CONTRACT A

INTERSTATE ROUTE - 95

MUNICIPALITY MONTGOMERY TOWNSHIP COUNTY SOMERSET
HILLSBOROUGH TOWNSHIP

AS DRILLED BORING LOCATIONS

SCALE 1" = 200'

FREDERIC R. HARRIS
CONSULTING ENGINEERS
WOODBRIDGE, N.J.

DATE: DEC. 1970
SHEET 2 OF 8

Jakway, Christopher D.

From: Morgan, Michael A.
Sent: Wednesday, April 28, 2010 9:50 PM
To: Krstic, Vladica; Stevens, Glenn B.
Subject: Fw: Fwd: Camp Meeting Road (CR 602) over CSX RR - Management System Request
Attachments: camp mtg Mgmt Systems request.doc; camp mtg mgmt sys.pdf

---

From: Ray Jacek
To: Morgan, Michael A.
Sent: Wed Apr 28 09:32:17 2010
Subject: Fwd: Camp Meeting Road (CR 602) over CSX RR - Management System Request
fyi

>>> Mark Tozzi 4/27/2010 10:13 AM >>>
Ray, a search of our files reveals that Traffic Engineering & Investigations does not have any recent, pending or active work orders in the project area. Call me with any questions, 5-2622 thanks, Mark

>>> Ray Jacek 4/6/2010 11:23 AM >>>
Attached is a request for Management Systems input for the Camp Meeting Road over CSX Railroad bridge project. Please provide your input by April 27.
thanks

Ray Jacek
Project Engineer
Project Development
609-530-5880

APPENDIX X –
Preliminary Engineering Scope Statement

NJDOT Scope Statement

Preliminary Engineering

Camp Meeting Avenue over CSX West Trenton Line Bridge Improvements

Purpose: The Preliminary Engineering Scope Statement lists the proposed project's deliverables and the activities required to create those deliverables. The scope statement also provides a common understanding of the proposed project's scope to stakeholders, subject matter experts, and the designer and lists the proposed project's major objectives. It enables the Project Manager to perform more detailed planning, it helps guide the design team's work during execution, and provides the baseline for evaluating whether change requests or additional work are contained within or outside the proposed project's boundaries.

Notes: The intent of the Preliminary Engineering (PE) Scope Statement is to provide useful project information to designers who are interested in becoming the designer of record for PE and possibly Final Design and Construction for this project. In addition, it will be used to solicit a man-hour estimate and cost proposal. The PE Scope Statement identifies the key elements of PE that are necessary to advance the proposed project to the Final Design (FD) Phase.

The PE Scope Statement is developed by the Division of Project Management (DPM) Project Manager and the Concept Development (CD) Designer near the conclusion of CD, prior to requesting the services of a designer to perform PE. The Scope of Work section is approved by the appropriate Subject Matter Experts (SME).

Section 1 of the document focuses on Proposed Project Identification Information and CD data including the location and description. Section 2 of the document specifies the Scope of Work for PE.

PROPOSED PROJECT IDENTIFICATION INFORMATION

PROPOSED PROJECT SPECIFICS

Proposed Project Name	Limits
Camp Meeting Avenue over CSX West Trenton Line Bridge Improvements	Camp Meeting Avenue (MP 0.00 to 0.56) Skillman Road (MP 0.00 to 0.52)
NJDOT Project Manager	**NJDOT Program Manager**
Samir Shah	_____
Counties	**Municipalities**
Somerset Select County 2 Select County 3	Montgomery _____ _____
UPC Number	994050
DB Number	99405
Legislative District(s)	16 _____ _____
Congressional District (s)	12 _____ _____
Route	Camp Meeting Avenue
Start Milepost	0.00
End Milepost	0.56
Alternate Route	Skillman Road
Alternate Start Milepost	0.00
Alternate End Milepost	0.52
STIP Information	_____
Structure Numbers	1850160
Project Classification:	2 - Reconstruction
MPO	NJTPA

PROPOSED PROJECT ESTIMATE

List the Proposed Project estimates for each category from Concept Development.

Project Item:	CD Phase Estimated Amount
ROW	$465,500
Utility Relocation	$250,000
Construction	$3,830,500
Construction Engineering	$50,000
Contingencies	$246,000
Total	$4,842,000

CONCEPT DEVELOPMENT INFORMATION

Date of Concept Development Report:	_____	**Date of Federal Approval of CD Report:**	_____
Date of CPC decision to advance project to PE:	_____		
CD Designer:	Gannett Fleming		
PE to be Completed by (check one):	☐ In-House ☒ Consultant		

Purpose and Need: The overall purpose of this project is to address deficiencies and meet current functional characteristics/requirements to provide a safe and efficient vehicular and pedestrian crossing of the CSX-West Trenton Line Railroad.

Description of Preliminary Preferred Alternative: Replacement Alternative 2 (increase to a 23'0" vertical clearance) was supported as the Preferred Project Alternative (PPA) by the NJDOT Core Group. The PPA will consist of two 14-foot bicycle compatable lanes with a 6-foot sidewalk on the southern side of the structure. The vertical profile of Camp Meeting Avenue will be improved to provide adequate sight distance. It was determined that further coordination with SHPO will be required during Final Design to select the final structure type (either steel truss, prestressed adjacent box beam, or welded steel multi-girder).

Project Goals and Objectives: 1) Address structural deficiencies 2) Minimize environmental impacts 3) Provide a safe and efficient vehicular and pedestrian crossing

PRELIMINARY ENGINEERING INFORMATION (to be filled in upon selection of a designer)

PE Designer:	_____	
FMIS Contract ID Number (e.g., 89 00766):	_____	**Funding Source:** _____
Agreement Number (e.g., 2001PM03):	_____	

PRELIMINARY ENGINEERING DELIVERABLES

3.1 Preliminary Engineering Initiation	☒ Utility Agreement	☐ Environmental Assessment
☒ Kickoff Meeting Minutes	☐ Subsurface Utility Engineering Test Pit Report	☐ Finding of No Significant Impact (FONSI)
3.2 Roadway Engineering	☒ Updated Base Plans (With Identified Conflicts)	☐ Environmental Commitments/Plan Sheets
☒ Control Survey Report	☐ Railroad Diagnostic Team Meeting Memo of Record	☐ Historic Sites Council Concurrence
☒ Topographic Survey	**3.6 Quality Management**	**3.9 Preliminary Engineering Report**
☒ Base Maps	☒ PE Quality Management Certification	☒ Approved Project Plan
☒ Preliminary Drainage Design Report	**3.7 Communications**	☒ Construction Cost Estimate
☒ Traffic Engineering Facility Location	☒ Design Communications Report	☒ Design Exception Report
☒ Constructability and Maintenance Review Comments	**3.8 Environmental Documents**	☒ Final Design Scope Statement
☐ Preliminary ITS Facility Design Plans	*Technical Environmental Studies*	☒ Updated Project Management Plan
☒ Updated Preliminary Detour and Construction Staging Plans	☐ Air Study	☒ Project Management Plan (Major Projects
☒ Preliminary Roadway Plans	☐ Noise Study	☒ Alternatives Analysis Report
☒ Pavement Design Data	☐ Ecology Study	☒ Core Group Meeting Minutes
☒ Pavement Recommendation	☐ Hazardous Waste Study	☒ Final Design Public Involvement Action Plan
☒ Lighting Warrant Analysis Report	☐ Socio-Economic Study	☒ Complete Streets Checklist
☐ Initial Deforestation/ Reforestation Plan	☐ Cultural Resources Study	**3.10 Contracts**
☒ Preliminary Construction Schedule	*Section 4(f)*	*Final Design Addendum*
3.3 Structural Engineering	☐ Individual Section 4(f) Evaluation	☒ Final Design Designer Fee Proposal
☒ Structural Design Recommendation Summary	☐ Programmatic Section 4(f) Evaluation	
☒ Preliminary Geotechnical Engineering Report	☐ De Minimis Section 4(f) Evaluation	☒ Final Invoice
3.4 Right of Way and Access	☐ Net Benefit Section 4(f) Evaluation	*Final Design Independent Cost Estimate*
☒ Project Access Plan		☒ Summary Independent Cost Estimate Report
☒ Access Impact Summary	☐ Executive Order 215 (E.O. 215) Document	
☒ Right of Way Report		☒ Final Design Schedule
☒ Right of Way Impact Plan	☐ Environmental Impact Statement	☒ Final Design Budget
☒ Initial Right of Way Estimate	☐ Record of Decision (ROD)	☒ Notice of Authorization
3.5 Utility Engineering		**3.11 Preliminary Engineering Approvals**
☒ Utility Base Plans	☐ Categorical Exclusion Document	☒ Capital Program Screening Committee Recommendation
☒ Utility Letter No. 2	☐ Certified Categorical Exclusion Document	☒ Capital Program Committee Approval
☒ Utility Engineering Funding Authorization		☒ FHWA Approval

SUMMARY OF COMMITMENTS

List any commitments made to the public, local officials or other government agencies:

Project Commitment	Unit Requesting the Commitment	Unit Fulfilling Commitment	Special Needs

List any anticipated commitments that may be made:

APPROVAL		
Name	**Title**	**Date Approved**
Samir Shah	Project Manager Division of Project Management	
	Program Manager Division of Project Management	
	Director Division of Project Management	
David Earl - Approval date, 12/17/12	Manager Bureau of Landscape Architecture and Environmental Solutions	

PRELIMINARY ENGINEERING SCOPE OF WORK

Table of Contents

Page

Right of Way 7
Access 9
Drainage Management, Regional Maintenance, Hydrology and Hydraulics 10
Landscape 12
Environmental 14
Quality Management Services 22
Utilities 23
Jurisdiction 25
Geometrics & Roadway 26
Pavement 30
Structures 31
Geotechnical 34
Survey 35
Railroads 37
Construction 38
Traffic Signal and Safety Engineering 39
Electrical 40
Traffic Operations and Intelligent Transportation System (ITS) Engineering 41
Commuter Mobility 42
Technical and Administrative Activities 43
Summary of Approvals 46

NOTE: The PE Designer will perform the tasks associated with PE as so marked, in preparation for Final Design. The Project Manager will review and negotiate the proposal, execute the Agreement and instruct the designer to begin work. The Project Manager will direct the proposed project through PE.

Right of Way

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3110	Prepare ROW Report	☒ Yes ☐ No	☒ Designer	
3115	Initiate ROW Impact Plan	☒ Yes ☐ No	☒ Designer	
3120	Hold ROW Kickoff Meeting	☒ Yes ☐ No	☒ ROW ☒ DPM ☒ Designer	
3125	Prepare Initial ROW Estimate	☒ Yes ☐ No	☒ ROW ☒ DPM	

Total Number of Parcels: 7

1. Fee Parcel /Easements

Number of fee parcels (partial):	3	**Number of fee parcels (entire):**	0	**Number of residential relocations:**	
Number of permanent easements (E parcels):	7	**Number of temporary easements:**	2	**Number of commercial relocations:**	

2. List any known or potential environmental problems or issues that may impact Right of Way processes or decisions (cross reference with the Environmental section of the Scope Statement document: _____

3. List any environmentally sensitive parcels (ESPs), underground storage tanks, freshwater wetlands: _____

4. Identify Riparian Parcels (currently flowed), Easements and/or Green Acres Diversions by contacting NJDEP for any Right of Way to be acquired: _____

5. Identify parcels that can be eliminated by design change modifications and attempts to mitigate damages suffered by the remaining properties. _____

6. Decision to expand parcel for further use or contingency. _____

7. List the number of Non Real Estate Engineering (NRE) parcels. _____

8. List any commitments and conditions made to the public or to private property owners that may impact Right of Way processes or decisions: _____

9. Green Acres mitigation method: ☐ Dollar Reimbursement ☐ Property Replacement

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include number and type of parcels, known environmental problems, riparian parcels, public commitments, etc.

Access

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3105	Prepare Project Access Plan and Access Impact Summary	☒ Yes ☐ No	☒ DPM ☒ Designer ☒ OAD	

Number of Adjustments:	3	Number of Modifications:		Number of Revocations:	

1. Note any pending agreements or access applications within the proposed project limits: _____

2. Are proposed left turn lanes in compliance with the Access Level? ☐ Yes ☐ No

3. Is the proposed Typical Section of the roadway in compliance with the Highway Access Code? ☒ Yes ☐ No

4. Total No. of Driveways impacted: 6

5. Any commercial properties with access modifications and/or Revocations that have potential impacts to site parking slots, circulations and operation of business? ☐ Yes ☒ No
If yes, provide details of impact with Block and Lot Nos. _____

6. Any commercial properties that will require necessary assistance in the establishment of the alternative access (as per NJAC 16:47-4.33)? ☐ Yes ☒ No
If yes, provide details of assistance with Block and Lot Nos. _____

7. Any commercial properties that will require the preparation of an Access Impact Assistance (AIA) report? ☐ Yes ☒ No
If yes, provide Block and Lot Nos. _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include number of driveways impacted, pending agreements or major access permit applications, driveway modifications causing circulation issues, alternative access issues, Access Impact Assistance issues, etc.

Drainage Management
Regional Maintenance
Hydrology and Hydraulics

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3085	Prepare Preliminary Drainage Design	☒ Yes ☐ No	☒ DPM ☒ Designer	

Drainage Management

1. Identify all existing drainage deficiencies as per the Drainage Management System: _____

Regional Maintenance

2. Identify all existing drainage deficiencies (undersized system, excessive spread into travel lanes, insufficient inlets, flooding at low points, etc.): _____

Hydrology and Hydraulics

3. List proposed improvements including outfalls (especially tidal): Stormwater on the bridge will collect against the parapets and wing walls and gutter flow to the bridge approaches where no curbs are provided. Once off the structure, the stormwater will make its way to the railroad ditches below the structure via rip-rap stone slope protection.

4. Is compliance with Stormwater Management rules triggered (> 1/4 acre new impervious surface, or 1 acre disturbance)? ☐ Yes ☒ No

5. Identify all NJDEP permits required: Freshwater Wetlands Transition Area

6. List proposed structural Best Management Practices (BMP) (e.g., Bioretention System, Constructed Wetlands, extended detention basins, infiltration system, wet ponds, porous pavement): _____

7. List proposed nonstructural BMP (e.g., Vegetation and Landscaping, Minimize Site Disturbance, Impervious Area Management, and Time of Concentration Modifications): _____

8. Identify drainage outflow owner: CSX Will property rights need to be acquired? ☐ Yes ☐ No

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include drainage deficiencies, new/improved outfalls, storm water management rules, permits, Best Management Practices (structural and non-structural), easements/right-of-way, etc.

Landscape

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3010	Determine and Calculate Deforested Areas	☐ Yes ☒ No	☐ BLAES ☐ Designer	NJ No Net Loss Reforestation Act not applicable for non-state owned lands.

1. List any landscape architecture related commitments such as:

a. Wetland or Riparian Mitigation Planting:	TBD
b. Historic Site commitments	TBD
c. Vegetative Screens or Buffers	Yes
d. Noise Barrier Aesthetics:	No
e. Architectural Treatments on Bridge Retaining Walls:	TBD
f. Tree Removal Mitigation:	Yes
g. Urban Design Work (paving, streetscapes, etc.):	No
h. Aesthetic plantings:	Yes
i. Existing tree preservation and protection:	Yes
j. Reforestation Application:	No

2. Anticipated visualization work for in-house and public information meetings:

a. Rendered Plans:	TBD
b. 2D computer generated before & after photographs:	No
c. 3D computer generated mode:	No

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include screens or buffers, aesthetic plantings, mitigation plantings, reforestation, etc.

Any trees removed will be replaced 2:1 if possible. Will provide input on any architectural treatments needed for the bridge.

Environmental

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3300	Initiate Cultural Resources (Section 106) Process	☒ Yes ☐ No	☒ BLAES ☐ Designer	
3305	Conduct CR Survey	☒ Yes ☐ No	☒ BLAES ☐ Designer	
3310	Prepare CR Survey Report	☒ Yes ☐ No	☒ BLAES ☐ Designer	
3315	Review CR Survey Report	☒ Yes ☐ No	☒ BLAES	
3320	Address Comments on CR Survey Report	☒ Yes ☐ No	☐ BLAES ☒ Designer	
3325	Approve CR Survey Report	☒ Yes ☐ No	☒ BLAES	
3330	Obtain SHPO Concurrence (No Resources, No Effect, No Adverse Effect)	☒ Yes ☐ No	☒ BLAES ☐ SHPO	
3335	Prepare Draft MOA (Adverse Effect Only)	☒ Yes ☐ No	☒ BLAES ☒ Designer	
3340	Obtain SHPO Concurrence (No Adverse Effect with Conditions or Adverse Effect)	☒ Yes ☐ No	☒ BLAES ☐ SHPO	
3345	Obtain FHWA Approval of CR Survey Report	☒ Yes ☐ No	☐ FHWA ☒ BLAES	
3350	Prepare Adverse Effect Documentation & Submit to FHWA (Adverse Effect Only)	☒ Yes ☐ No	☒ BLAES	
3355	FHWA Sends Adverse Effect Documentation to ACHP	☒ Yes ☐ No	☒ FHWA	
3360	ACHP Reviews and Accepts or Declines Participation	☒ Yes ☐ No	☒ ACHP	
3365	Resolve Adverse Effects	☒ Yes ☒ No	☒ BLAES ☐ FHWA	
3370	Circulate MOA for Comment	☒ Yes ☐ No	☒ BLAES	

3375	Prepare Final MOA	☒ Yes ☐ No	☒ BLAES	
3380	Execute the MOA	☒ Yes ☐ No	☒ BLAES ☐ DPM ☒ FHWA ☒ ACHP ☒ SHPO	
3390	Submit Historic Sites Council Application	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ SHPO	
3395	Present to Historic Sites Council	☐ Yes ☒ No	☐ BLAES ☐ Historic Sites Council	
3400	Inform Jurisdictional Agency Regarding Programmatic Section 4(f) Impacts	☒ Yes ☐ No	☒ BLAES	
3405	Receive Concurrence Regarding Programmatic Section 4(f) Impacts	☒ Yes ☐ No	☐ Jurisdictional Agencies	
3410	Prepare Programmatic Section 4(f) Evaluation	☒ Yes ☐ No	☒ BLAES ☒ Designer	
3420	Prepare De Minimis Section 4(f) Evaluation	☒ Yes ☐ No	☒ BLAES ☐ Designer	
3425	Prepare Programmatic Net Benefit Section 4(f) Evaluation	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3430	NJDOT Reviews Programmatic Section 4(f) Evaluation	☒ Yes ☐ No	☒ BLAES	
3435	Revise Programmatic Section 4(f) Evaluation (NJDOT Comments)	☒ Yes ☐ No	☒ BLAES ☒ Designer	
3440	FHWA Reviews Programmatic Section 4(f) Evaluation	☒ Yes ☐ No	☒ FHWA	
3445	Revise Programmatic Section 4(f) Evaluation (FHWA Comments)	☒ Yes ☐ No	☒ BLAES ☒ Designer ☒ FHWA	
3450	FHWA Approves Programmatic Section 4(f) Evaluation	☒ Yes ☐ No	☒ FHWA	
3460	Inform Jurisdictional Agency Regarding Draft Individual Section 4(f) Impacts	☒ Yes ☐ No	☒ BLAES	
3465	Receive Concurrence Regarding Draft Individual Section 4(f) Impacts	☐ Yes ☒ No	☐ Jurisdictional Agencies	

3470	Prepare Draft Individual Section 4(f) Evaluation	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3475	NJDOT Reviews Draft Individual Section 4(f) Evaluation	☐ Yes ☒ No	☐ BLAES	
3480	Revise Draft Individual Section 4(f) Evaluation (NJDOT Comments)	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3485	FHWA Reviews and Comments on Draft Individual Section 4(f) Evaluation	☐ Yes ☒ No	☐ FHWA	
3490	Revise Draft Individual Section 4(f) Evaluation (FHWA Comments)	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ FHWA	
3495	Conduct Draft Individual Section 4(f) Legal Sufficiency Review	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ FHWA	
3500	Circulate Draft Individual Section 4(f) Evaluation	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3505	Prepare Final Individual Section 4(f) Evaluation	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3510	FHWA Approves Final Individual Section 4(f) Evaluation	☐ Yes ☒ No	☐ FHWA	
3520	Inform Green Acres Program and Local Officials	☐ Yes ☒ No	☐ BLAES	
3525	Receive Concurrence on Green Acres Impacts	☐ Yes ☒ No	☐ Green Acres Prog. ☐ Local Officials	
3530	Hold Green Acres Pre-Application Meeting	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3535	Negotiate Green Acres Compensation	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ Green Acres Prog. ☐ Local Officials ☐ ROW Tech. Support	
3540	Identify Alternatives (EA Only)	☐ Yes ☒ No	☐ BLAES ☐ DPM ☐ Designer	
3545	Prepare EA or EA/4(f)	☐ Yes ☒ No	☐ Designer	
3550	NJDOT Reviews EA	☐ Yes ☒ No	☐ BLAES	

3555	Revise EA (NJDOT Comments)	☐ Yes ☒ No	☐ Designer	
3560	FHWA Reviews EA	☐ Yes ☒ No	☐ FHWA	
3565	Revise EA (FHWA Comments)	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3570	FHWA Approves EA	☐ Yes ☒ No	☐ FHWA	
3575	Conduct Draft Individual Section 4(f) Legal Sufficiency Review (EA)	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ FHWA	
3580	Circulate EA	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3585	Hold EA Public Hearing and Comment Period	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ CCR	
3590	Address EA Comments	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ FHWA	
3595	Submit FONSI Request Package	☐ Yes ☒ No	☐ BLAES	
3600	FHWA Approves Final Individual Section 4(f) (EA)	☐ Yes ☒ No	☐ FHWA	
3605	FHWA Reviews and Issues FONSI	☐ Yes ☒ No	☐ FHWA	
3610	Publish Notice of FONSI Availability	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ CCR	
3620	Publish Notice of Intent in Federal Register (EIS Only)	☐ Yes ☒ No	☐ BLAES ☐ FHWA	
3625	Invite Cooperating Agencies (EIS Only)	☐ Yes ☒ No	☐ FHWA	
3630	Hold NEPA Scope Meeting (EIS Only)	☐ Yes ☒ No	☐ BLAES ☐ DPM ☐ Designer ☐ FHWA	
3635	Prepare Alternatives Analysis Report	☒ Yes ☒ No	☐ BLAES ☐ DPM ☒ Designer	
3640	Prepare DEIS or DEIS/4(f)	☐ Yes ☒ No	☐ Designer	

3645	NJDOT Reviews DEIS	☐ Yes ☒ No	☐ BLAES	
3650	Revise DEIS (NJDOT Comments)	☐ Yes ☒ No	☐ Designer	
3655	FHWA Reviews DEIS	☐ Yes ☒ No	☐ FHWA	
3660	Revise DEIS (FHWA Comments)	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3665	FHWA Approves DEIS to Circulate	☐ Yes ☒ No	☐ FHWA	
3670	Publish Notice of Availability in Federal Register (DEIS)	☐ Yes ☒ No	☐ BLAES ☐ EPA	
3675	Circulate DEIS	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3680	Hold EIS Public Hearing and Comment Period	☐ Yes ☒ No	☐ BLAES ☐ CCR ☐ Designer	
3685	Address Public and Agency Comments	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3690	Select Final Alternative	☐ Yes ☒ No	☐ DPM ☐ FHWA ☐ SME's	
3215	Present to Capital Program Screening Committee	☐ Yes ☒ No	☐ DPM	
3220	Capital Program Committee Approves Final Alternative	☐ Yes ☒ No	☐ DPM ☐ CPC	
3700	Prepare and Submit FEIS	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3705	FHWA Reviews and Comments on FEIS	☐ Yes ☒ No	☐ FHWA	
3710	Address FEIS Comments	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3715	FHWA Reviews FEIS for Legal Sufficiency and Approval	☐ Yes ☒ No	☐ BLAES ☐ Designer ☐ FHWA	
3720	Publish EIS Notice of Availability in Newspaper	☐ Yes ☒ No	☐ BLAES ☐ CCR	
3725	Publish FEIS Notice in Federal Register	☐ Yes ☒ No	☐ BLAES ☐ EPA	

3730	FHWA Publishes ROD in Federal Register	☐ Yes ☒ No	☐ FHWA	
3735	Circulate FEIS	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3740	Conduct Air Quality Study	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3745	Prepare Air Quality TES	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3750	NJDOT Reviews Air Quality TES	☐ Yes ☒ No	☐ BLAES	
3755	Address Air Quality TES Comments	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3760	Approve Air Quality TES	☐ Yes ☒ No	☐ FHWA ☐ BLAES	
3765	Conduct Ecology Study	☒ Yes ☐ No	☒ BLAES ☒ Designer	
3770	Prepare Ecology TES	☒ Yes ☐ No	☒ BLAES ☒ Designer	
3775	NJDOT Reviews Ecology TES	☒ Yes ☐ No	☒ BLAES	
3780	Address Ecology TES Comments	☒ Yes ☐ No	☒ BLAES ☐ Designer	
3785	Approve Ecology TES	☒ Yes ☐ No	☒ BLAES	
3790	Conduct Socio-Economic Study	☐ Yes ☐ No	☐ BLAES ☐ Designer	
3795	Prepare Socio-Economic TES	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3800	NJDOT Reviews Socio-Economic TES	☐ Yes ☒ No	☐ BLAES	
3805	Address Socio-Economic TES Comments	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3810	Approve Socio-Economic TES	☐ Yes ☒ No	☐ BLAES	
3815	Conduct Noise Study	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3820	Prepare Noise TES	☐ Yes ☒ No	☐ BLAES ☐ Designer	

3825	NJDOT Reviews Noise TES	☐ Yes ☒ No	☐ BLAES	
3830	Address Noise TES Comments	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3835	Approve Noise TES	☐ Yes ☒ No	☐ BLAES ☐ FHWA	
3840	Conduct Hazardous Waste Study	☒ Yes ☐ No	☐ BLAES ☒ Designer	
3845	Prepare Hazardous Waste TES	☒ Yes ☐ No	☐ BLAES ☒ Designer	
3850	NJDOT Reviews Hazardous Waste TES	☒ Yes ☐ No	☒ BLAES	
3855	Address Hazardous Waste TES Comments	☒ Yes ☐ No	☐ BLAES ☒ Designer	
3860	Approve Hazardous Waste TES	☒ Yes ☐ No	☒ BLAES	
3865	Hold Public Information Center	☒ Yes ☐ No	☒ BLAES ☐ CCR ☒ Designer ☒ DPM	
3870	Prepare CED	☒ Yes ☐ No	☒ BLAES ☐ Designer	
3875	NJDOT Reviews and Approves CED	☒ Yes ☐ No	☒ BLAES	
3880	Initiate Environmental Technical Studies	☒ Yes ☐ No	☒ BLAES	
3890	Prepare Certified Categorical Exclusion (CCED) Document	☐ Yes ☒ No	☐ BLAES	
3900	Review and Approve Certified Categorical Exclusion Document (CCED)	☐ Yes ☒ No	☐ BLAES	
3910	Prepare Draft EO 215 Document	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3920	NJDOT Reviews Draft EO 215 Document	☐ Yes ☒ No	☐ BLAES	
3925	Revise Draft EO 215 Document (NJDOT Comments)	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3930	NJDEP Reviews EO 215 Document	☐ Yes ☒ No	☐ NJDEP	

3940	Address NJDEP Comments and Prepare Final EO 215 Document	☐ Yes ☒ No	☐ BLAES ☐ Designer	
3945	NJDEP Approves EO 215 Document	☐ Yes ☒ No	☐ NJDEP	

Anticipated Environmental Document: ☐ CCED ☒ CED ☐ EA ☐ EIS ☐ EO 215

Total Number of Permits**:** 3

1. List any environmental impacts and/or issues: Historic Bridge to be reflected in new design. Temporary wetlands impacts.
2. List any environmental commitments (made in approved environmental documents, through Memoranda of Agreement with environmental agencies, other commitments made to the public, local officials or other government agencies such as 4f, Section 106 (historic architecture, archaeology), air, noise, hazardous waste and ecology: _____
3. Check the environmental clearances or permits required on the project:

Federal

☐ U.S. Coast Guard (Bridge)
☐ USACOE Section 404 (Individual/Nationwide) discharge of fill
☐ USACOE Section 10 (Navigable Waters)
☐ USACOE Section 9 (Dam or Dike)
☐ National (or State) Wild & Scenic Rivers
☐ USDOA Forms AS-1006
☒ Section 7 Endangered Species Consultation
☐ NMFS Essential Fish Habitat Study

State

☐ CAFRA
☐ NJDEP Water Lowering
☐ NJDEP Riparian
☐ Hazardous Waste Site Investigation (SI/RI)
☐ HazWaste Remedial Action Work plan
☐ NJDEP Sanitary Facilities
☐ NJDEP Tidal Wetlands
☐ NJDEP Waterfront Development
☒ NJDEP Freshwater Wetlands
☒ NJDEP NJPDES Stormwater Construction GP (RFA)
☐ NJDEP Pollutant Discharge
☐ NJDEP Flood Hazard Area
☐ NJDEP Water Quality Certificate

Other

☐ Delaware River Basin Commission
☐ Delaware & Raritan Canal Commission
☐ Hackensack Meadowlands Commission
☐ Pinelands Commission
☐ Highlands Commission
☐ State Agriculture Development Commission

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include a list of the anticipated NEPA document, type of permits anticipated, anticipated environmental impacts and environmental commitments made in CD if any, etc.

Quality Management Services

Activity No.	Activity Name	Execute	Responsible Unit	Comments
		☐ Yes ☐ No		

Quality Management Services Reviewed? ☐ Yes ☐ No

Value Analysis to be Performed? ☐ Yes (if total cost of project >$20 million) ☒ No

Combined Estimated Cost of Construction, ROW, and Utilities: ☐ <$3 million ☒ $3-5 million ☐ $5-$15 million ☐ >$15 million

Lane Occupancy Charges and Road User Costs to be completed? ☒ Yes ☐ No

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include QMS review, lane occupancy charges/road user cost information, etc.

Utilities

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3035	Prepare Utility Base Plans	☒ Yes ☐ No	☒ Designer	
3040	Establish Utility Engineering Funding	☒ Yes ☐ No	☒ DPM ☒ Designer ☐ Program Coord.	
3045	Send Letter No. 2 and Plans to Utility Company	☒ Yes ☐ No	☐ DPM ☒ Designer ☐ Utility Co.	
3050	Prepare Utility Agreement	☒ Yes ☐ No	☒ DPM ☒ Designer	
3055	Update Base Plans and Identify Conflicts	☒ Yes ☐ No	☐ DPM ☒ Designer ☐ Utility Co.	
3060	Execute Utility Agreement	☒ Yes ☐ No	☒ DPM ☒ Utility Co. ☐ DAG	
3080	Conduct Subsurface Utility Engineering (SUE)	☒ Yes ☐ No	☐ DPM ☒ Designer ☒ SUE Contractor ☐ Utility Co.	

Total Number of Utility Companies: 3

Utility Type	Utility Company	Size (Units of Measure)	Location (aerial/underground)
Gas		Pipe	
Electric	PSE&G	13kV and 26 kV Volts	Aerial
Cable	Verizon, Comcast-Somerset	Pairs/ Strands	Aerial
Telephone	Verizon, Comcast-Somerset	Pairs/ Strands	Aerial (not impacted by the project)
Water		Pipe	
Sewer		Pipe	
Fiber-Optic (non-Department)			
Other:			
Other:			
Other:			
Other:			

1. Identify if the Utility Discover and Verification requires sub-surface utility exploration: No
2. Is a SUE (Subsurface Utility Engineering) Consultant required? ☐ Yes ☒ No

3. Identify Potential Conflicts: _____
4. Identify Temporary Relocations that are needed during construction: Aerial utility lines at bridge.
5. Number of poles? 6
6. Number of guy wires on existing poles? _____
7. Are there cell towers or substations? No
8. Can utility relocations be avoided or performed in advance of the project? _____
9. Can utility design/construction be performed by designer/contractor? _____
10. Can ROW needed for utilities be identified? _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include location of cell towers, location/presence of fiber optic lines, etc.

Jurisdiction

Activity No.	Activity Name	Execute	Responsible Unit	Comments
		☒ Yes ☐ No		

Total Number of Maps: _____ Total Number of Agreements: _____

Are there streetscape or esthetic items intended for this project? ☒ Yes ☐ No

If yes, has a resolution of support been acquired for jurisdictional assignment? ☐ Yes ☒ No ☐ NA

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include the anticipated number of maps and agreements, presence of streetscape or aesthetic treatments, local approval of such, etc.

Geometrics & Roadway

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3030	Prepare Horizontal & Vertical Geometry	☒ Yes ☐ No	☐ DPM ☒ Designer	
3070	Prepare Preliminary Roadway Plans	☒ Yes ☐ No	☐ DPM ☒ Designer ☐ SME's	
3135	Prepare Construction Cost Estimate	☒ Yes ☐ No	☐ DPM ☒ Designer	
3150	Prepare Design Exception Report	☐ Yes ☒ No	☐ DPM ☐ Designer ☐ QMS ☐ State Trans. Engr. ☐ FHWA	
3165	Finalize Project Plan	☒ Yes ☐ No	☒ DPM ☒ Designer	

Construction Plans/Estimated Number of Sheets

Roadway and Bridges

1	Key Map	1	Grades	1	Method of Cross Sections
1	Estimate-Distribution of Quantities	4	Traffic Control and Staging Plans	4	Cross Sections
1	Typical Sections	____	Traffic Control Plans	____	Alternate Retaining Wall System
1	Plan Sheet Index	____	ITS Plans	1	Estimate of Quantities – Bridge
2	Construction Plans	____	Electrical Details	____	Earthwork Summary
2	Environmental Plans	____	Traffic Signal Plans	____	Earthwork Chart Sheet
1	Profiles	____	Highway Lighting Plans	____	Non-standard Roadway Construction Details
1	Ties	____	Landscape Plans	____	Non-standard Bridge Construction Details
		____	Traffic Signing and Striping Plans	1	Drainage Plans

Right of Way Documents

1	Entire Tract Map	1	Tabulation Sheets	3	Individual Property Maps (IPM)
1	General Property Parcel Maps	3	Parcel Descriptions	2	Alignment Sheets

Other Documents

1	Jurisdictional Maps	3	Utility Agreements Plans	1	Railroad Crossing Element Plans
Yes	Project Specific Specifications				

Are there any additional documents? ☒ Yes ☐ No

Please identify any additional documents: Bridge Plans and Details

1. Existing Roadway(s):

	Roadway No. 1	**Roadway No. 2**	**Roadway No. 3**	**Roadway No. 4**
Roadway Name:	Camp Meeting Avenue	Skillman Road		
Posted Speed(s):	**30 and 15**	**30**		
Highway Classification:	Rural	Rural		
Significance (local or regional):	Local	Local		
No. of Interchanges:	0	0		
Traffic Volumes:	1,050 ADT	1,050 ADT		
Design Speeds:	35 and 20	35		
Development Class:	Bridge Replacement	Bridge Replacement		
No. of Traffic Signals:	0	0		
No. of Intersections:	0	0		

2. Typical Section(s):

	Typical Section No. 1	**Typical Section No. 2**	**Typical Section No. 3**	**Typical Section No. 4**
Right of Way width:	46.5	46.5		
Number of Lanes:	2	1		
Lane width & cross slope:	10'. 1.5%	14'. 1.5%		
Shoulder width & cross slope:	N/A	N/A		
Median width:	N/A	N/A		
Sidewalk/border width:	N/A	N/A		
Median description and the overall roadway width:	20'	14'		

3. Intersection/Interchange (describe the existing intersection and/or interchanges including turning and auxiliary lanes.): _____

4. Existing Deficiencies (provide an overview of the existing deficiencies. *Geometric*: Substandard horizontal and vertical sight distance, insufficient sight triangle, substandard vertical clearance, substandard or no shoulders, acceleration/deceleration lanes, etc. *Safety Issues*: check crash data for indicators of specific problems. Substandard/nonexistent guiderail, attenuators, pavement condition, skid resistance, median, etc. Note on substandard guiderail: the project limits should be extended to include upgrading any existing substandard guiderail run that extends beyond the proposed work limits as required by the Design Manual.): The approach guiderail lengths are currently substandard. Required guiderail length of need is 165 feet. The existing guiderail lengths around the structure are ranging from only 55 feet to 145 feet.

The required minimum sight distance is 250 feet. The Camp Meeting Avenue eastbound and westbound directions on the structure have an existing sight distance of approximately 200 feet controlled by the roadway vertical profile.

The required minimum sight distance is 390 feet for left turns onto Camp Meeting Avenue. The driveway located at Block 14001, Lot 15 has existing sight distance of approximately 380 feet controlled by the profile high point that occurs on the bridge.

The Camp Meeting Avenue bridge and roadway approaches have no existing paved right shoulders. The functional classification of the approach roadway is municipal/county rural local roadway. NJDOT design requirements of an 8-foot minimum paved shoulder do not apply to this low volume roadway. AASHTO only requires a minimum of a 2-foot graded/usable shoulder, but recommends 6 feet to 8 feet as preferable.

The existing Camp Meeting Avenue bridge is reduced to one 14' two-way travel lane over the structure. The minimum width for a two lane bridge is 22 feet.

No sidewalks exist on the bridge. The project is located approximately 1000 feet west of the Montgomery Township High School. Although a majority of the surrounding area is rural, several residential land uses to the west are potentially within walking distance of the school. The lack of sidewalks on the bridge is inconsistent with the NJDOT's Complete Streets policy.

5. Proposed Improvements (provide a brief narrative of the proposed improvements and how they address the identified deficiencies. Note changes to be made to profiles, alignment, guiderail, and typical section): The proposed cross section will consist of two bicycle-compatible 14' wide travel lanes with a 6' sidewalk on the southern side of the bridge. An umbrella section with a 7' berm is proposed on the northern side of the roadway and a 10' berm on the southern side of the roadway is proposed to accommodate a future sidewalk. A raised berm was eliminated from further consideration due to changes in the existing drainage pattern. Beam guide rail is proposed on all four quadrants of the structure. The vertical profile of the roadway would be improved to provide proper vertical sight distance. Due to the revisions of the vertical profile, six driveways west of the structure would require regrading to meet the new profile. This alternative would eliminate all controlling substandard design elements.

6. Bicycle/Pedestrian Compatible? ☒ Yes ☐ No

If no, please explain: _____

7. Design Exception(s):

a. Is a Design Exception required? ☐ Yes ☒ No

b. List substandard features that are to remain and require Design Exception: None

c. Has the Design Exception Crash Analysis been received from the Bureau of Safety Programs? ☐ Yes ☐ No

d. Has the Design Exception Crash Data for each controlling substandard design element been requested from the Bureau of Safety Programs? ☐ Yes ☐ No

e. Has FHWA provided preliminary concurrence on the Design Exceptions decisions (a) and (b) above? ☐ Yes ☐ No

f. Has Quality Management Services provided Reasonable Assurance on the Design Exceptions decisions (a) and (b) above ☐ Yes ☐ No

8. List any commitments made to the public, local officials or other government agencies: _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include a discussion of substandard design elements, design exceptions, and perhaps a quick description of the proposed geometry if it is unusual, commitments made to the community, etc.

Pavement

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3960	Obtain Pavement Design Data	☒ Yes ☐ No	☒ DPM ☒ Designer	
3970	Collect Existing Pavement and Subgrade Soil Information	☒ Yes ☐ No	☒ Pvmt. Design Unit ☒ Designer	
3975	Conduct Pavement Testing Program	☒ Yes ☐ No	☒ Pvmt. Design Unit ☒ Designer	
3980	Prepare Pavement Recommendation	☒ Yes ☐ No	☒ Pvmt. Design Unit ☒ Designer	

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include evidence of subsurface drainage issues, settlement problems, stability problems, etc.

Structures

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3100	Prepare Structural Design Recommendation Summary	☒ Yes ☐ No	☒ Designer ☒ SME's	

Total Number of New Bridges:		**Total Number of New Spans:**	
Total Number of Rehab Bridges:		**Total Number of Rehab Spans:**	
Total Number of Replacement Bridges:	1	**Total Number of Replacement Spans:**	

1. Condition of existing bridge(s):

	Bridge No. 1	**Bridge No. 2**	**Bridge No. 3**	**Bridge No. 4**
a. NJDOT Structure Number:	1850-160			
b. Year Built:	1889			
c. Date/type of any major modifications:	1922,1950,2008,2010			
d. Type & material of superstructure:	Steel - Howe pony truss			
e. Type and material of substructure:	Ashlar abutments			
f. Feature that is spanned:	CSX Rail Line			
g. Type of roadway it carries:	Local Rural Roadway			
h. Vertical Clearance of structure if it spans a roadway or railroad:	21'2"			
i. Number of Spans:	Three			
j. Length of Structure:	104'			
k. Width of Structure:	15.9' out to out			
l. Horizontal Clearance of the pier/abutment with respect to the riding lane:	6'2"			
m. Typical Section (number of lanes, width and cross slope and width of each sidewalk):	One 14' lane, no shoulders			

	Bridge No. 1	Bridge No. 2	Bridge No. 3	Bridge No. 4
n. Parapet railing Type:	Box Beam guide rail			
o. Identify the structural deficiencies:	Poor overall conditions and low load ratings			
p. Bridges over waterways (Identify scouring evaluation, bridge opening capacity, and frequency of storm):				

2. Proposed Bridge(s)/Bridge Improvements:

	Bridge No. 1	Bridge No. 2	Bridge No. 3	Bridge No. 4
a. Number of spans:	Single Span			
b. Identify the type of maintenance of traffic that will be used (staging or detour):	Detour			
c. Identify the changes to the typical section of the existing structure:	2-14' Lanes and 6' Sidewalk			
d. Vertical Clearance of structure if it spans a roadway or railroad:	23'			
e. Length of Structure:	76'8"			
f. Width of Structure:	43'6"			
g. Horizontal Clearance of the pier/abutment with respect to the riding lane:	18'			
h. Typical Section (number of lanes, width and cross slope and width of each sidewalk):	2-14' Lanes at 2% cross slope and 6' Sidewalk			
i. Parapet railing Type:	Barrier parapet and fencing			
j. Identify the structural deficiencies:				
k. Coast Guard Permit Required:				

3. Are the minimum vertical clearance requirements over waterways, roadways, railroads met? ☒ Yes ☐ No

a. If no, please explain? _____

4. List other substandard features of proposed bridge: _____

5. Other Existing Structure(s):

a. Identify existing minor structures (Noise barriers, Retaining Walls (cast in place or alternate system), Gabions, High Tower Lighting foundations, Pre-cast Culverts, Culvert extensions, Type and number of Overhead Sign Structures): None

b. Specify type and number of each substandard feature: _____

6. Proposed Other Structure(s):

	Structure No. 1	**Structure No. 2**	**Structure No. 3**	**Structure No. 4**
a. Identify changes in the existing minor structure that are being improved:				
b. List substandard features to be included in the design exception:				
c. Length:				
d. Width:				
e. Number of spans/units:				

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include scour, unusual existing or proposed structural elements, clearances, substandard elements, design exceptions, etc.

Geotechnical

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3095	Prepare Preliminary Geotechnical Engineering Report	☒ Yes ☐ No	☒ Geotechnical Engineering Unit ☒ DPM ☒ Designer	

1. **Is there evidence of subsurface drainage problems?** No
2. **Is there evidence of settlement problems?** No
3. **Is there evidence of stability problems?** No
4. **Is there evidence of scour problems?** N/A
5. **Are there existing soil-borings within the project limits?** No
6. **Are there rock slopes/cuts located within the project limits?** No
   a. **Are the rock cuts listed in the Rockfall Hazard Rating System?** _____
   b. **Do catchment areas need to be cleaned or modified?** _____
   c. **Are there apparent safety problems with protruding rock, sight lines, rock-fall and substandard existing mitigation measures?** _____
7. **Alternate site exploration (test pits)?** _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include rock slope issues, soil borings, scour, unusual existing or proposed structural elements, clearances, etc.

Survey

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3015	Prepare Control Survey Report	☒ Yes ☐ No	☒ DPM ☐ Designer ☒ Geodetic Survey	
3020	Conduct Topographic Survey	☒ Yes ☐ No	☒ Designer ☐ Geodetic Survey	
3025	Prepare Base Maps	☒ Yes ☐ No	☐ DPM ☒ Designer ☐ Geodetic Survey ☐ CADD Support	

1. **Identify available mapping information (aerial/conventional methods):** Aerial
2. **How were the existing and proposed baselines established?** Best fit
3. **How were the existing and proposed ROW lines established?** Taxmaps and Existing ROW Maps
4. **How was the horizontal and vertical control established; and which existing monumentation was used?** _____
5. **Is project in Tidal area?** ☐ **Yes** ☒ **No**

   If yes, then current mean high water elevation must be established in tidal water areas under Tidelands Bureau jurisdiction. _____
6. **Has NJDOT Regional Survey office been contacted regarding existing Control, and as-built plans within the project?** Yes
7. **Compliance with MAP filing law required?** ☒ **Yes** ☐ **No**
8. **Has NJDOT Geodetic Survey been contacted regarding existing control within the project?** ☐ Yes ☐ No
9. **Does Primary Control exist within the project limits or immediately adjacent to the project?** ☐ Yes ☐ No

   If yes, what year was control established in? _____

   If no, will primary control be required? _____
10. **Will plans be developed from aerial photogrammetry or as-built plans and conventional survey?** Survey
11. **Geodetic Survey Services will be provided by:** ☐ In-House ☒ Consultant

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include base mapping obtained in CD, tidal issues, compliance with MAP filing laws, geodetic control issues, etc.

Railroads

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3075	Hold Diagnostic Team Meeting	☒ Yes ☐ No	☒ Railroad Eng. & Safety Unit ☒ DPM ☒ Designer	

Railroads Affected CSX Select RR Line 2 Select RR Line 3 _____ _____ _____

1. **Grade Crossings Affected?** ☐ Yes ☒ No
   a. **How many?** _____
2. **Is there sufficient overhead structure clearance?** ☐ Yes ☐ No
3. **Diagnostic Team Meeting Required:** ☐ Yes ☐ No
4. **Diagnostic Team Meeting Held:** _____ (DATE)

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include presence of at-grade crossings, overhead structure clearances, diagnostic team meetings, etc.

Construction

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3130	Update Preliminary Detour and Construction Staging Plans	☒ Yes ☐ No	☒ Designer ☐ TSSE ☐ SME's	
3145	Conduct Constructability and Maintenance Review	☒ Yes ☐ No	☒ DPM ☐ Designer ☒ Const. Mgmt.	

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include commitments made to local officials or other agencies, staging details, detour discussion, schedule constraints, utility conflicts, etc.

Traffic Signal and Safety Engineering

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3090	Determine Traffic Engineering Facility Locations	☒ Yes ☐ No	☐ TSSE ☒ Designer	

Number of New Traffic Signals:	0	**Number of Revised Traffic Signals:**	0
New overhead signs and sign structures	☐ Yes ☒ No	**Revised overhead signs and sign structures**	☐ Yes ☒ No
New Guide Signs	☐ Yes ☒ No	**Revised Guide Signs**	☐ Yes ☒ No
Number of Roundabouts:	0	**Emergency signal pre-emption**	☐ Yes ☒ No
Revised Highway Lighting	☐ Yes ☒ No	**Temporary Lighting "for staging and diversion roadways"**	☐ Yes ☒ No
Raised Pavement Markers	☒ Yes ☐ No		

1. Maintenance of Traffic: (What type of maintenance of traffic will be used during construction, i.e. staging, detour, permanent lane closures, or diversion road): Detour.

2. Identify the number and location of temporary traffic signal(s) required during Staging or Detours: 0

3. Is there an adequate corner ROW cutout for signal equipment installation? ☐ Yes ☐ No

4. Identify if a new or revised traffic signal agreement is required: _____

5. Identify overhead utility conflicts for traffic signals to be identified and resolved: _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include discussion of need for temporary signals, right-of-way constraints (related to traffic signal equipment), utility conflicts, etc.

Designer to confirm detour route and traffic signal retimings during construction that were approved in Concept Development phase.

Electrical

Activity No.	Activity Name	Execute	Responsible Unit	Comments
		☐ Yes ☒ No		

1. **Do any elements of this project scope require additional planned maintenance activities that would necessitate an increase in personnel or equipment resources?** ☐ Yes ☐ No

   If yes, provide details: _____

2. **Do any elements of this project scope include new roadway/electrical appurtenances that would require specialized training, equipment or materials to properly maintain the item (e.g., Vortech drainage chamber, ornamental lighting, and brick pavers)?** ☐ Yes ☐ No

   If yes, provide details: _____

3. **Does this project scope include or overlap sections of roadway that are simultaneously being planned or scheduled for Operations maintenance/construction activities?** ☐ Yes ☐ No

   If yes, provide details: _____

4. **Should consideration be given to canceling or postponing the Operations activity?** ☐ Yes ☐ No

   If yes, provide details: _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include elements of the design that will necessitate an increase in maintenance personnel or equipment, conflicting or overlapping projects with Operations, etc.

Traffic Operations and Intelligent Transportation System (ITS) Engineering

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3065	Prepare Preliminary ITS Facility Design	☐ Yes ☒ No	☐ Designer ☐ ITS ☐ Traffic Ops	

1. Project scope complies with the requirements of the latest ITS Investment Strategy and ITS Architecture? ☐ Yes ☐ No

2. Traffic Operations (North/ South) has been consulted for needs and impacts? ☐ Yes ☐ No

Identify needs and impacts. _____

3. Transportation Data Development has been consulted for needs and impacts? ☐ Yes ☐ No

Identify needs and impacts. _____

4. Project limits have been visually inspected for the existing ITS facilities? ☐ Yes ☐ No

5. Check if the project includes the construction or relocation of any of the following Intelligent Transportation System (ITS) facilities:

☐ Controlled Traffic Signal Systems (CTSS)
☐ Weigh-in-Motion (WIM)
☐ Closed Circuit TV Cameras (CCTV)
☐ Traffic Volume Stations
☐ Dynamic Message Signs (DMS)
☐ Roadway Weather Information Systems (RWIS)
☐ Highway Advisory Radio (HAR)
☐ In-Road Sensors
☐ Traffic Detection systems
☐ Fiber Optic Conduit and/or Cable
☐ Bridge Sensors
☐ Electrical or Communication Installations for the above systems
☐ Other ITS Devices: _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include compliance with latest ITS Investment Strategy and Architecture, consultation with Traffic Ops during CD, etc.

Commuter Mobility

Activity No.	Activity Name	Execute	Responsible Unit	Comments
		☐ Yes ☒ No		

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include bicycle and pedestrian compatibility, Complete Streets compliance, presence of bus stops, interruption of pedestrian accommodations during construction, ADA issues, etc.

Technical and Administrative Activities

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3005	Initiate Preliminary Engineering	☒ Yes ☐ No	☐ DPM ☒ Designer	
3160	Prepare Draft Preliminary Engineering Report	☒ Yes ☐ No	☒ DPM ☒ Designer	
3170	Prepare Final Design Scope Statement	☒ Yes ☐ No	☒ SME's ☒ DPM ☐ Designer	
3175	Complete Preliminary Engineering Quality Certification	☒ Yes ☐ No	☒ Designer	
3180	Update Project Management Plan	☒ Yes ☐ No	☒ DPM	
3185	Prepare FD Public Involvement Action Plan	☒ Yes ☐ No	☒ DPM ☒ Designer ☒ CCR	
3195	Prepare Project Management Plan (**Major Projects**)	☐ Yes ☒ No	☐ DPM ☐ Designer	
3200	FHWA Approves Draft Project Management Plan (**Major Projects**)	☐ Yes ☒ No	☐ DPM ☐ Designer ☐ FHWA	
3205	NJDOT Reviews Draft Preliminary Engineering Report	☒ Yes ☐ No	☒ DPM ☒ SME's ☒ Designer	
3210	FHWA Reviews and Approves Preliminary Engineering Report	☒ Yes ☐ No	☐ DPM ☐ Designer ☒ FHWA	
3225	Assess Designer	☒ Yes ☐ No	☒ DPM	
3230	Develop FD Designer Fee Proposal	☒ Yes ☐ No	☒ Designer	
3235	Develop FD Independent Cost Estimate	☒ Yes ☐ No	☒ DPM ☐ OSBM	
3240	Create FD Schedule	☒ Yes ☐ No	☒ DPM ☐ OSBM	
3245	Negotiate FD Addendum	☒ Yes ☐ No	☒ DPM ☐ Designer ☐ OSBM	

3250	Approve FD Schedule	☒ Yes ☐ No	☒ DPM ☐ OSBM	
3255	Develop FD Budget	☒ Yes ☐ No	☒ DPM ☐ OSBM	
3260	Finalize FD Budget	☒ Yes ☐ No	☒ DPM	
3265	Approve FD Budget	☒ Yes ☐ No	☒ DPM ☐ OSBM	
3270	Authorize Final Design	☒ Yes ☐ No	☒ DPM ☐ CIPD	
3275	Execute FD Addendum	☒ Yes ☐ No	☒ DPM ☐ Designer	
3285	Complete PE Closeout	☒ Yes ☐ No	☒ DPM	

1. Have the objectives of the Public Involvement Action Plan (PIAP) been satisfied? ☒ Yes ☐ No

2. Number of Local Workshop Meetings conducted in CD: _____

3. Public Information Centers conducted in CD (number of meetings, location & dates): 1 PIC, Montgomery Township Council Chambers, 2261 Van Horne Road - Route 206, Belle Mead, NJ, on Tuesday, November 20, 2012 from 3:45 - 6:45 PM.

4. Number of Officials Briefings conducted in Concept Development: 3

5. List Issues, Commitments or Concerns: Montgomery Township indicated that pedestrians (Montgomery High School's cross country track team was specifically mentioned) and bicyclists traverse the structure and recommended that sidewalks be included in any bridge improvement scheme. Montgomery also said that due to the historic nature of the bridge, coordination with the Landmarks Commission and the Harlingen Historical Society should be completed.

6. Is the mailing list up to date? ☒ Yes ☐ No

7. Are the Displays adequate to reuse in PE: ☐ Yes ☐ No

8. Resolution of Support Number: #R12-512, Somerset County

Resolution of Support Date: 8/29/2012

9. Other Coordination:

a. List additional organizations (Historic Society, Chamber of Commerce, Board of Education, Fire Company's etc.) or authorities (NJ Transit, NJ Turnpike, NJ Highway Authority, Port Authority, etc.) that have interest in the project: SHPO, Montgomery Township School District

b. Proposed Formal Public Involvement Program (estimate number of Official Briefings and Public Info Centers/Meetings/Hearings): _____

c. If additional displays are required, provide the specifics (number, scale, special graphics 3D, simulations, models, etc): _____

d. If a mailing list is required, provide the approximate number of property owners: _____

Who is responsible for putting the mailing list together and providing mail labels? ☐ Consultant? ☐ In-house Design ☐ Other (Specify) _____

e. If handouts are required (provide the specifics, number, size, color or black and white, mapping, etc): _____

f. List special needs (i.e. Community Involvement Sub-Consultant, Facility Needs, Interpreter, Website, etc.): _____

g. Traffic Staging: How many lanes of traffic need to be maintained? 0 (detour all traffic)

What will be the available working hours? _____

Can the project duration be significantly reduced by reducing the number of stages? _____

Can detours be used? Yes

h. Schedule - Identify scheduling constraints (environmental, seasonal construction limitations, community). _____

What is the optimum period to start construction? _____

i. Is the scope focused on replacement or rehabilitation of road/bridge? Replacement

Is condition likely to change/deteriorate between scoping and construction? No

ADDITIONAL INPUT

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Summary of Approvals

SME Unit	Manager	Approval	SME Involved	Remarks
Right of Way	Polina Knaster			
Access	Paul Ignari			
Drainage Management	David Earl			
Regional Maintenance	Mike Moran			
Hydrology and Hydraulics	Susan Gresavage	12/18/2012	Ryan Reali	
Landscape	David Earl	12/18/2012	David Earl	
Environmental	Bruce Hawkinson	12/14/2012	Bruce Hawkinson	
Quality Management Services	Ron Maruca			
Utilities	Samir Shah			
Jurisdiction	Pat Webber			
Geometrics & Roadway	Richard Jaffe	1/9/2013	Robert Abitz, Jr.	
Pavement	Susan Gresavage			
Structures	Kraehenbuehl, Eric			
Geotechnical	Nat Kasbekar			
Survey	John Knapp			
Railroads	Todd Hirt			
Construction	Ronald Maruca	1/10/2013	Thomas Loftus	

Traffic Signal Design	Chris Barretts	1/16/2013	Nayan Brahmbhatt	
Electrical	Chris Barretts	1/16/2013	Nayan Brahmbhatt	
Traffic Operations & ITS	Michael Pilsbury	1/14/2013	Michael Pilsbury	
Commuter Mobility	Wasif Mirza			