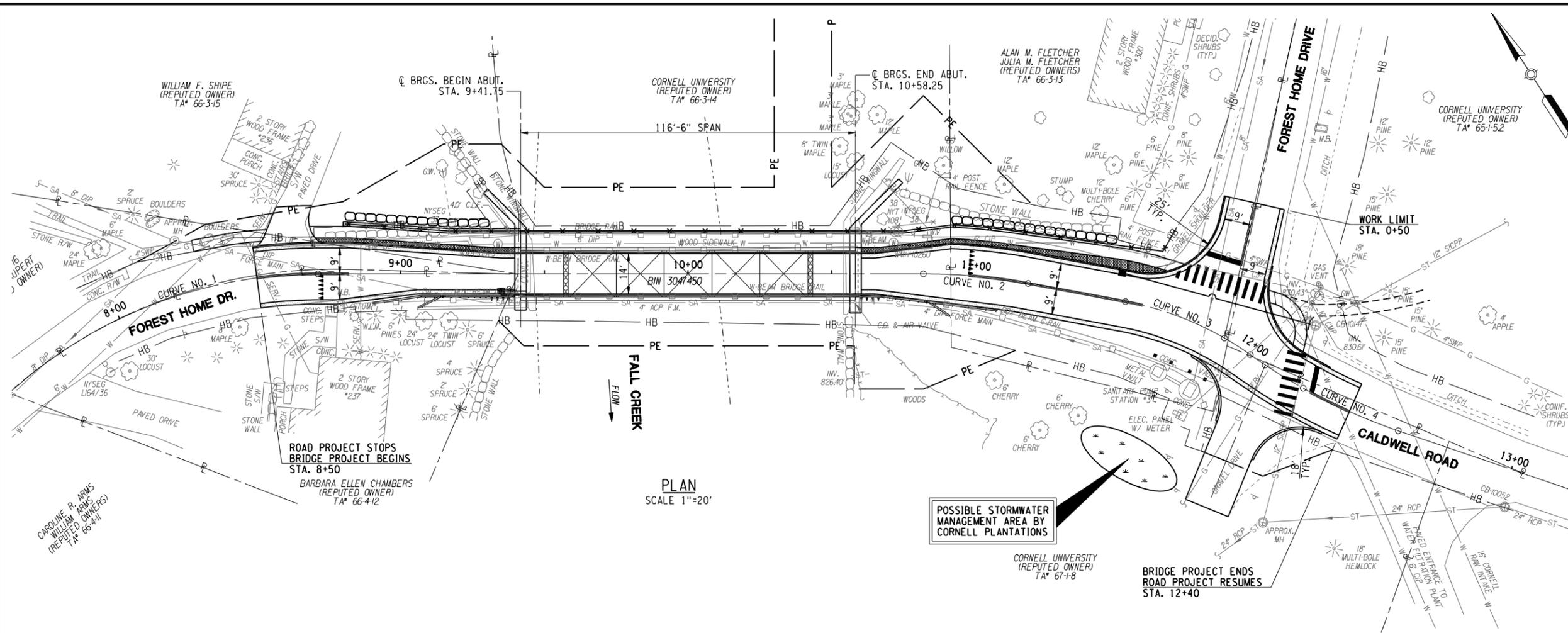
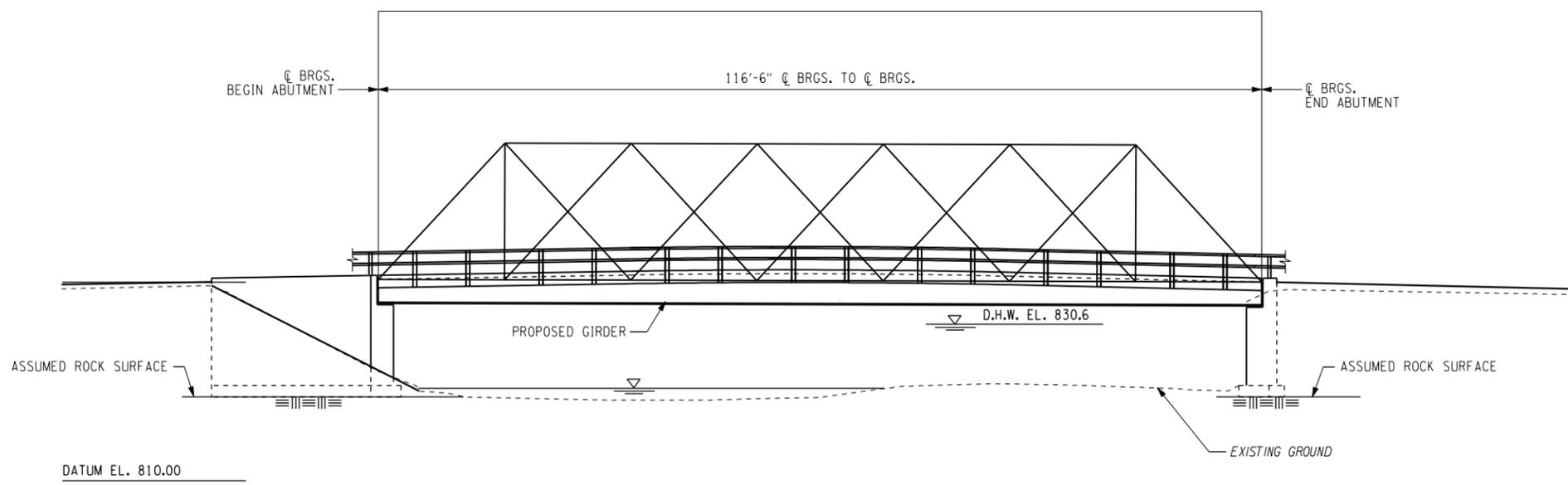

APPENDIX A
PLANS, PROFILES & TYPICAL SECTIONS

PLANS, PROFILES & TYPICAL SECTIONS

DESIGN SUPERVISOR S. ANTHONY
 JOB MANAGER M. LAISTNER
 DESIGNED BY D. ELIAS
 CHECKED BY M. LAISTNER
 ESTIMATED BY M. LAISTNER
 CHECKED BY B. HYDE
 DRAFTED BY D. WELLS
 CHECKED BY L. JANIK



PLAN
SCALE 1"=20'



ELEVATION
SCALE 1"=10'

ERDMAN ANTHONY

2165 Brighton Henrietta Town Line Road
 Rochester, NY 14623
 (T) 585.427.8888
 (F) 585.427.8914
 erdmananthony.com

DATE	DATE
------	------

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

CLIENT

DEPARTMENT OF PUBLIC WORKS

PROJECT NAME

FOREST HOME DRIVE OVER FALL CREEK

B.I.N. 3047450

DRAWING TITLE

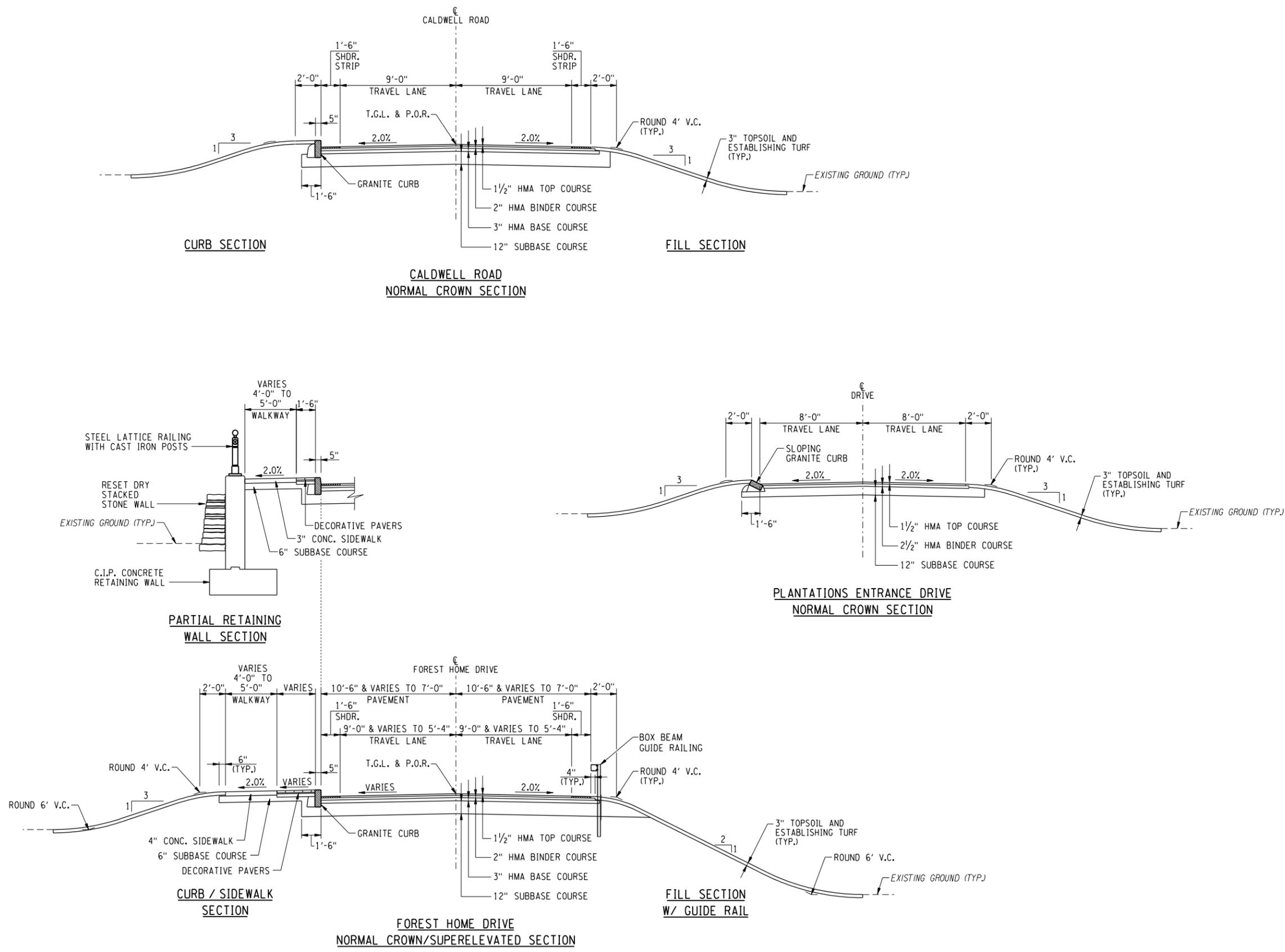
PLAN & ELEVATION

SCALE	DATE
AS NOTED	APRIL 2010
P.I.N.	EAA PROJECT NO.
3950.41	19201.00
SHEET NO.	DRAWING NO.
OF X	PL-1

DESIGN SUPERVISOR S. ANTHONY JOB MANAGER M. LAISTNER DESIGNED BY D. ELIAS CHECKED BY M. LAISTNER ESTIMATED BY B. HYDE DRAFTED BY D. WELLS CHECKED BY L. JANIK

ERDMAN ANTHONY

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DATE _____ DATE _____

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

CLIENT

DEPARTMENT OF PUBLIC WORKS

PROJECT NAME

FOREST HOME DRIVE OVER FALL CREEK

B.I.N. 3047450

DRAWING TITLE

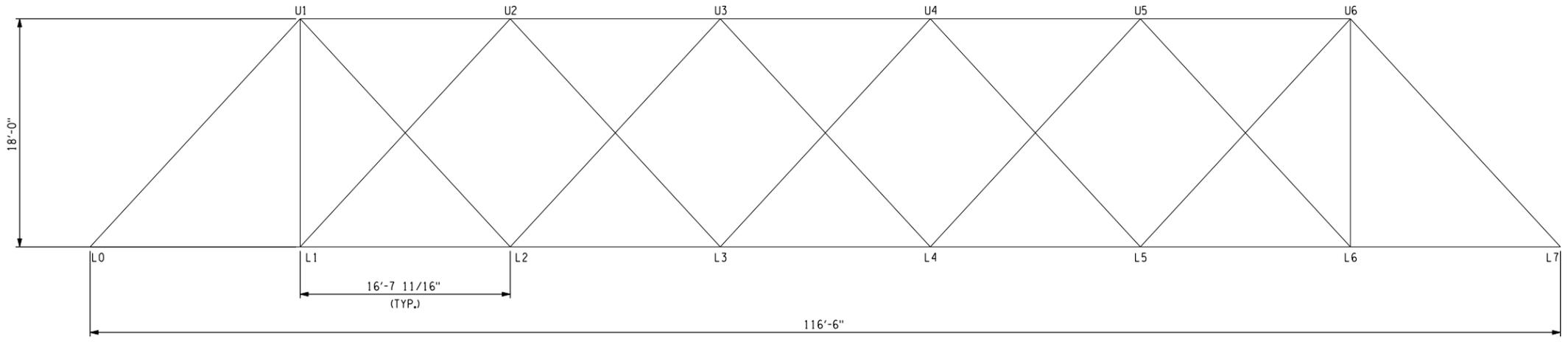
TYPICAL SECTIONS

SCALE 1/4" = 1'	DATE APRIL 2010
P.I.N. 3950.41	EAA PROJECT NO. 19201.00
SHEET NO. OF X	DRAWING NO. TS-1

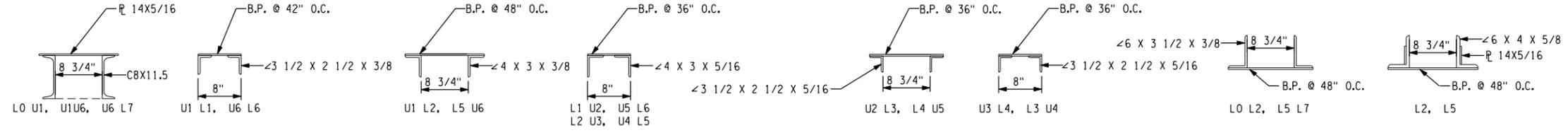
DESIGN SUPERVISOR S. ANTHONY JOB MANAGER M. LAISTNER DESIGNED BY CHECKED BY DRAFTED BY ESTIMATED BY CHECKED BY

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TRUSS ELEVATION
 SCALE: 3/16"=1'-0"



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REVISIONS			
NO.	DESCRIPTION	BY	DATE

CLIENT

DEPARTMENT OF PUBLIC WORKS

PROJECT NAME

**FOREST HOME DRIVE
 OVER
 FALL CREEK**

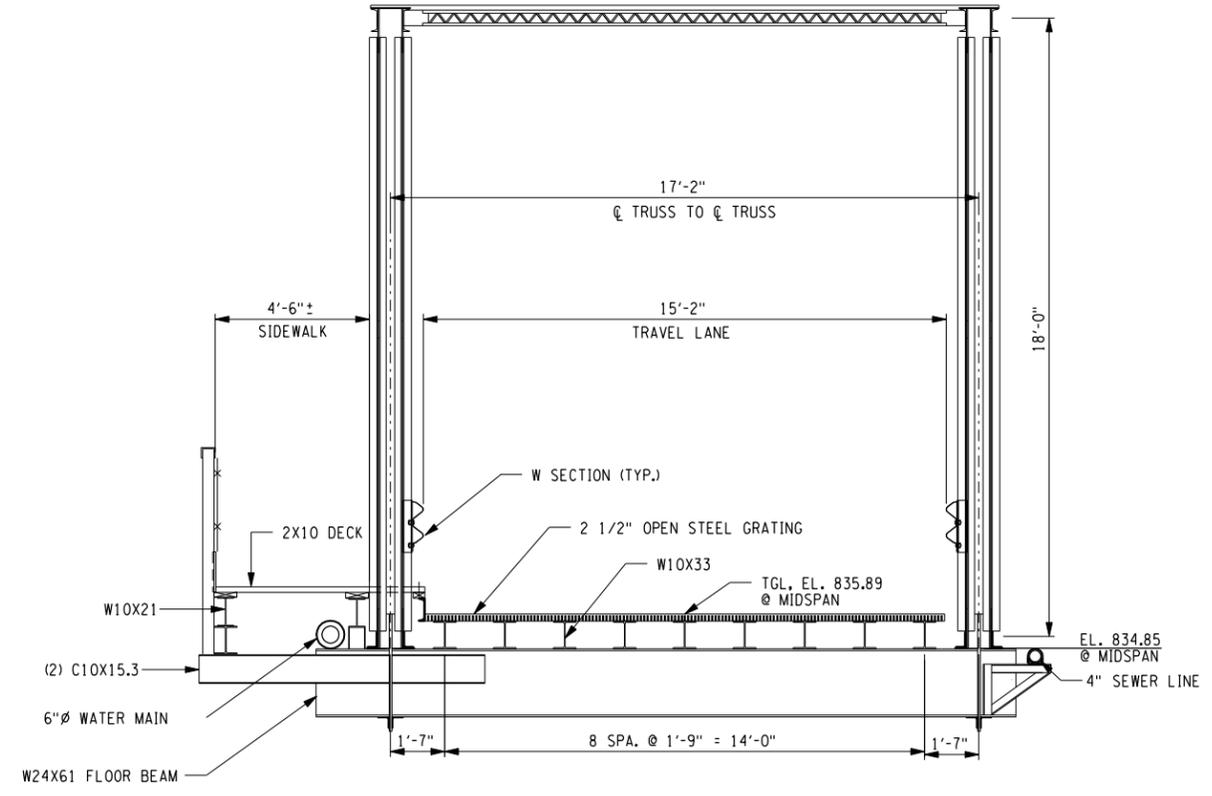
B.I.N. 3047450

DRAWING TITLE

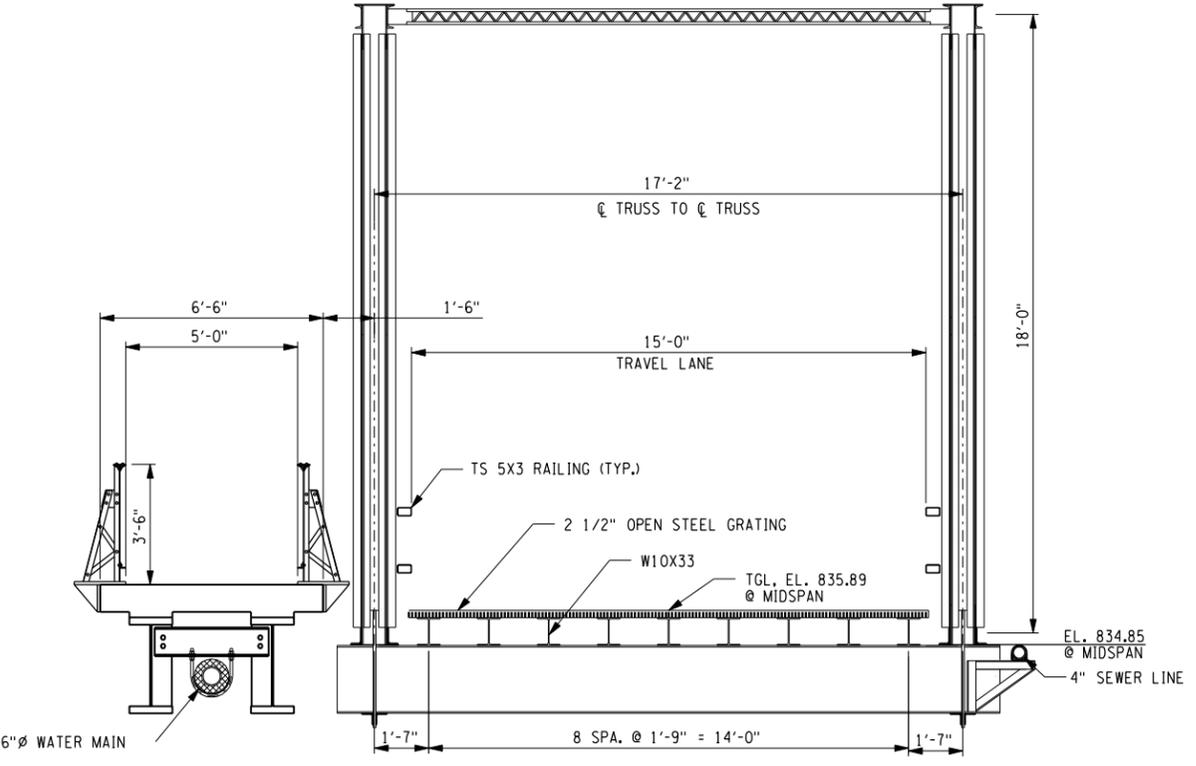
**BRIDGE ELEVATION
 AND SECTIONS**

ALTERNATIVE 2

SCALE AS NOTED	DATE APRIL 2010
P.I.N. 3950.41	EAA PROJECT NO. 19201.00
SHEET NO. OF X	DRAWING NO.

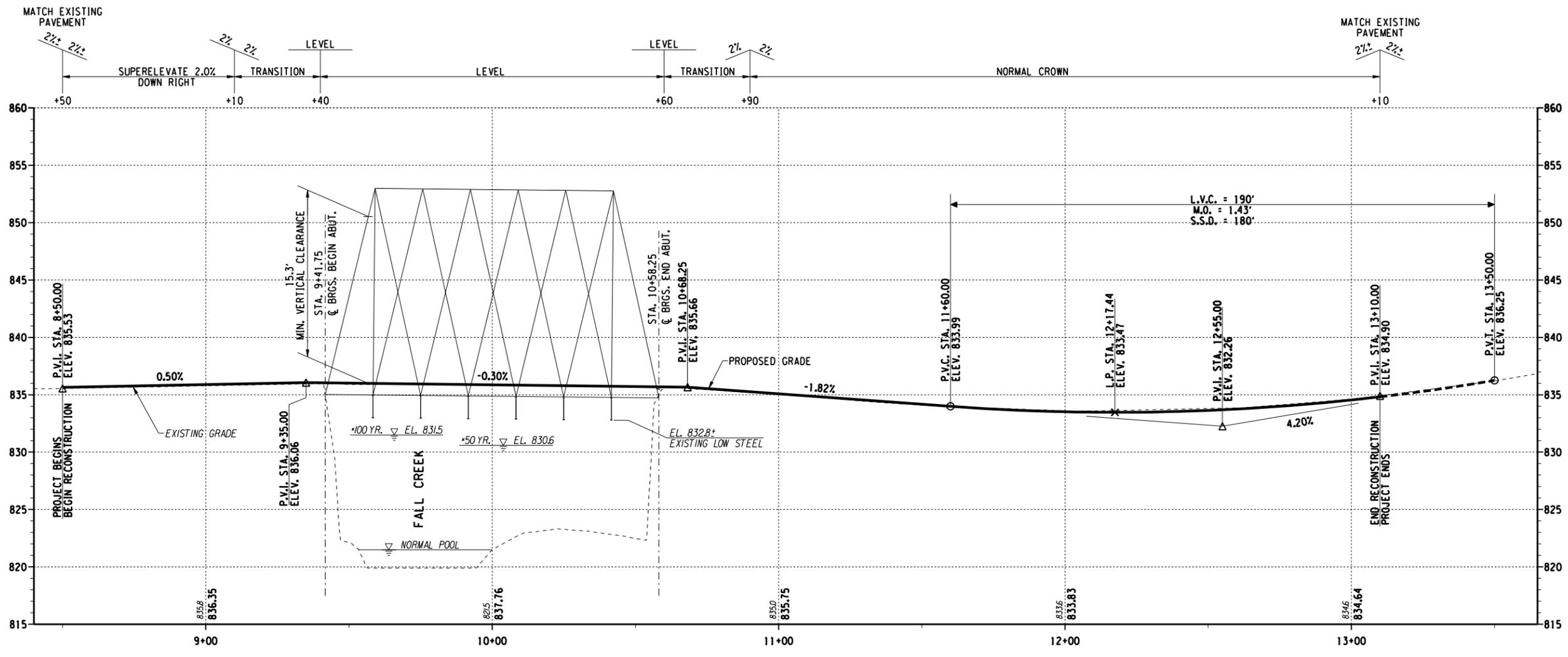


EXISTING TRANSVERSE SECTION
 SCALE: 3/8"= 1'-0"



PROPOSED TRANSVERSE SECTION
 SCALE: 3/8"= 1'-0"

DESIGN SUPERVISOR S. ANTHONY JOB MANAGER M. LAISTNER CHECKED BY D. ELIAS DESIGNED BY D. ELIAS CHECKED BY M. LAISTNER ESTIMATED BY B. HYDE DRAFTED BY D. WELLS CHECKED BY L. JANIK



* WATER SURFACE ELEVATIONS BASED ON WATER DEPTH FROM FEMA PROFILE IN THE FLOOD INSURANCE STUDY.

ALTERNATIVE 2 PROFILE
 SCALE 1" = 20' HORIZ.
 1" = 4' VERT.

DATE _____ DATE _____

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

CLIENT

DEPARTMENT OF PUBLIC WORKS

PROJECT NAME
**FOREST HOME DRIVE
 OVER
 FALL CREEK**
 B.I.N. 3047450

DRAWING TITLE
**PROFILE
 ALTERNATIVE 2**

SCALE AS NOTED	DATE APRIL 2010
P.I.N. 3950.41	EAA PROJECT NO. 19201.00
SHEET NO. OF X	DRAWING NO. PR-1

DATE _____ DATE _____

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

CLIENT

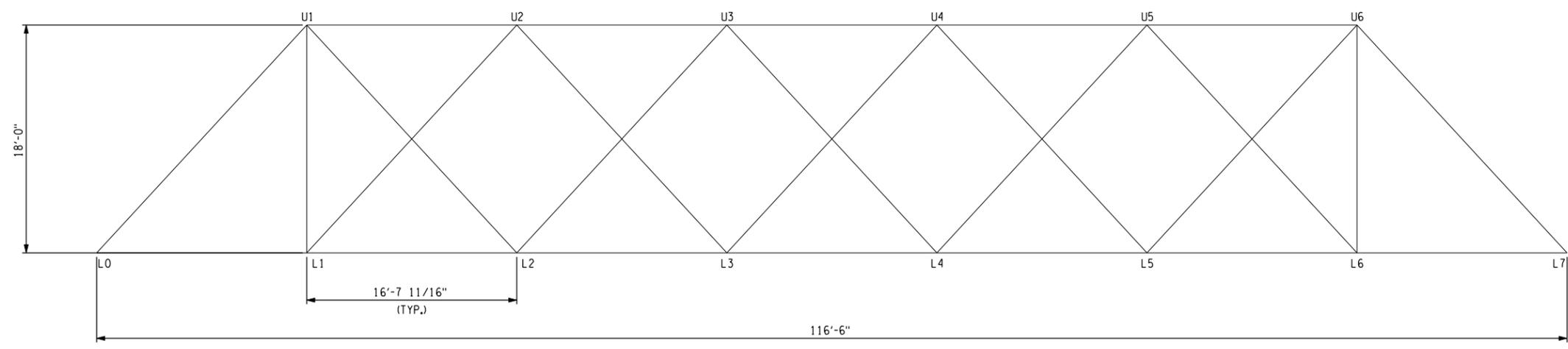


DEPARTMENT OF PUBLIC WORKS

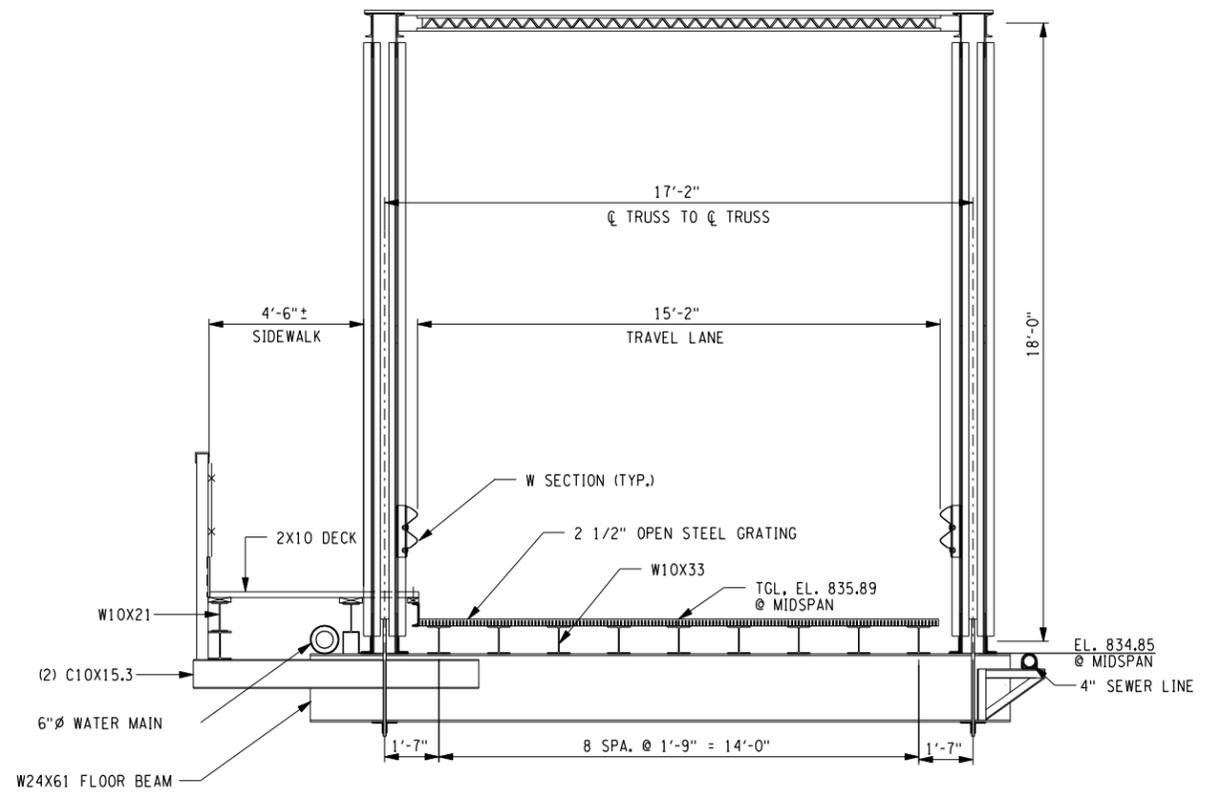
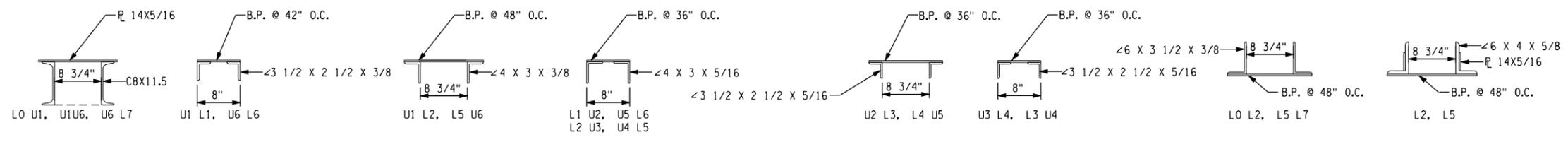
PROJECT NAME
**FOREST HOME DRIVE
 OVER
 FALL CREEK**
 B.I.N. 3047450

DRAWING TITLE
**BRIDGE ELEVATION
 AND SECTIONS**
ALTERNATIVE 3

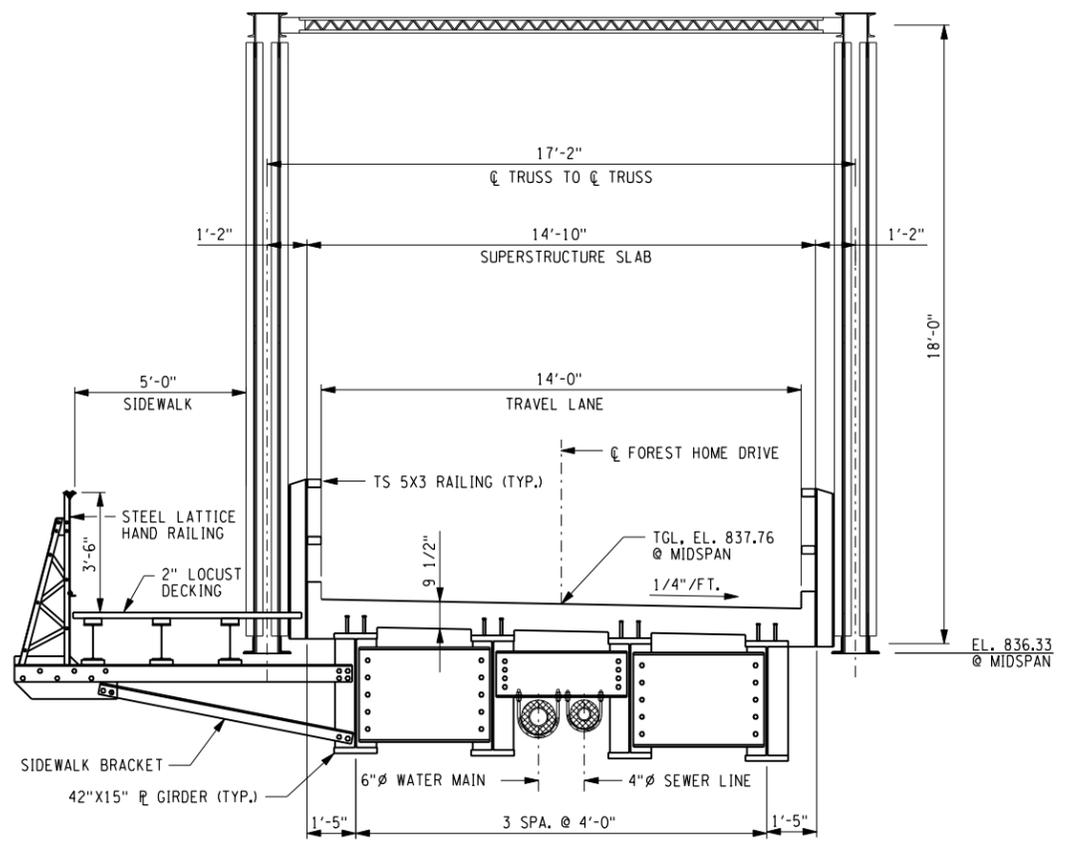
SCALE	DATE
	APRIL 2010
P.I.N. 3950.41	EAA PROJECT NO. 19201.00
SHEET NO.	DRAWING NO.
OF X	



TRUSS ELEVATION
 SCALE: 3/16"=1'-0"



EXISTING TRANSVERSE SECTION
 SCALE: 3/8"= 1'-0"

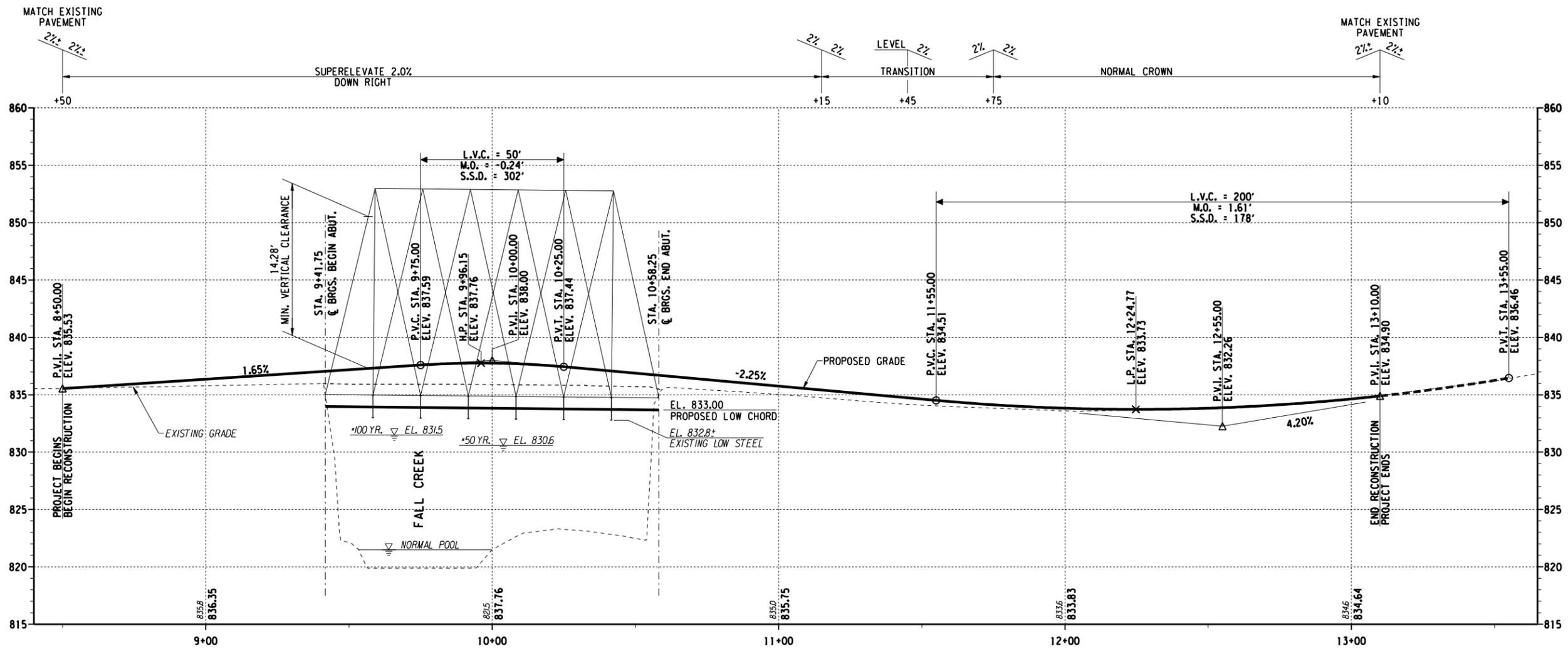


PROPOSED TRANSVERSE SECTION AT MIDSPAN
 SCALE: 3/8"= 1'-0"

DESIGN SUPERVISOR S. ANTHONY JOB MANAGER M. LAISTNER DESIGNED BY CHECKED BY DRAFTED BY ESTIMATED BY CHECKED BY

DESIGN SUPERVISOR S. ANTHONY JOB MANAGER M. LAISTNER CHECKED BY D. ELIAS DESIGNED BY M. LAISTNER CHECKED BY M. LAISTNER ESTIMATED BY B. HYDE DRAFTED BY D. WELLS CHECKED BY L. JANIK

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* WATER SURFACE ELEVATIONS BASED ON WATER DEPTH FROM FEMA PROFILE IN THE FLOOD INSURANCE STUDY.

ALTERNATIVE 3 PROFILE
 SCALE 1" = 20' HORIZ.
 1" = 4' VERT.

DATE _____ DATE _____

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW ARTICLE 145, SECTION 7209.

REVISIONS			
NO.	DESCRIPTION	BY	DATE

CLIENT

DEPARTMENT OF PUBLIC WORKS

PROJECT NAME
**FOREST HOME DRIVE
 OVER
 FALL CREEK**
 B.I.N. 3047450

DRAWING TITLE
**PROFILE
 ALTERNATIVE 3**

SCALE AS NOTED	DATE APRIL 2010
P.I.N. 3950.41	EAA PROJECT NO. 19201.00
SHEET NO. OF X	DRAWING NO. PR-1

APPENDIX B

ENVIRONMENTAL INFORMATION

**SHORT ENVIRONMENTAL ASSESSMENT FORM
SEQR TYPE II CRITERIA DOCUMENTATION
NEPA ASSESSMENT CHECKLIST
ASBESTOS/LEAD ASSESSMENT**

Appendix C
State Environmental Quality Review
SHORT ENVIRONMENTAL ASSESSMENT FORM
For UNLISTED ACTIONS Only

PART I - PROJECT INFORMATION (To be completed by Applicant or Project Sponsor)

1. APPLICANT/SPONSOR Tompkins County	2. PROJECT NAME PIN 3950.41, Rehabilitation of Forest Home Drive over Fall Creek
3. PROJECT LOCATION: Municipality Ithaca County Tompkins	
4. PRECISE LOCATION (Street address and road intersections, prominent landmarks, etc., or provide map) Forest Home Drive Bridge, located along Forest Home Drive, west of Caldwell Road. A map showing the location of the project area is included as Figure 1.	
5. PROPOSED ACTION IS: <input type="checkbox"/> New <input type="checkbox"/> Expansion <input checked="" type="checkbox"/> Modification/alteration	
6. DESCRIBE PROJECT BRIEFLY: The proposed project will involve the rehabilitation of the existing Forest Home Drive bridge over Fall Creek to eliminate existing structural deficiencies. The historic appearance of the bridge will be preserved, pedestrian safety will be improved and the durability of the existing structure will be improved in order to reduce future maintenance needs.	
7. AMOUNT OF LAND AFFECTED: Initially <u>0.5</u> acres Ultimately _____ acres	
8. WILL PROPOSED ACTION COMPLY WITH EXISTING ZONING OR OTHER EXISTING LAND USE RESTRICTIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, describe briefly	
9. WHAT IS PRESENT LAND USE IN VICINITY OF PROJECT? <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Agriculture <input type="checkbox"/> Park/Forest/Open Space <input checked="" type="checkbox"/> Other Describe: Educational - lands associated with Cornell University.	
10. DOES ACTION INVOLVE A PERMIT APPROVAL, OR FUNDING, NOW OR ULTIMATELY FROM ANY OTHER GOVERNMENTAL AGENCY (FEDERAL, STATE OR LOCAL)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, list agency(s) name and permit/approvals: USACE - Nationwide Permit #3 & #33; NYSOPRHP - Letter of "No Adverse Effect"; NYSDEC - Article 15 Protection of Waters Permit, Water Quality Certificate; Town of Ithaca - Floodplain Development Permit.	
11. DOES ANY ASPECT OF THE ACTION HAVE A CURRENTLY VALID PERMIT OR APPROVAL? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, list agency(s) name and permit/approvals:	
12. AS A RESULT OF PROPOSED ACTION WILL EXISTING PERMIT/APPROVAL REQUIRE MODIFICATION? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE	
Applicant/sponsor name: <u>John R. Lampman, P.E.</u> Date: _____ Signature: _____	

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment

PART II - IMPACT ASSESSMENT (To be completed by Lead Agency)

A. DOES ACTION EXCEED ANY TYPE I THRESHOLD IN 6 NYCRR, PART 617.4? If yes, coordinate the review process and use the FULL EAF. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
B. WILL ACTION RECEIVE COORDINATED REVIEW AS PROVIDED FOR UNLISTED ACTIONS IN 6 NYCRR, PART 617.6? If No, a negative declaration may be superseded by another involved agency. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
C. COULD ACTION RESULT IN ANY ADVERSE EFFECTS ASSOCIATED WITH THE FOLLOWING: (Answers may be handwritten, if legible)	
C1. Existing air quality, surface or groundwater quality or quantity, noise levels, existing traffic pattern, solid waste production or disposal, potential for erosion, drainage or flooding problems? Explain briefly: A signed off-site detour will maintain and protect vehicular and pedestrian traffic during bridge rehabilitation activities. Therefore, the traveling public is expected to experience a short-term change in existing travel patterns. Upon completion of construction activities, normal travel patterns will resume.	
C2. Aesthetic, agricultural, archaeological, historic, or other natural or cultural resources; or community or neighborhood character? Explain briefly: The subject bridge is located within the Forest Home Historic District, as listed on the National Register of Historic Places. The NYSOPRHP response letter dated April 2, 2009 indicated that the proposed project will have "No Adverse Effect" upon the Forest Home Historic District or other resources in or eligible for inclusion in the National Register of Historic Places.	
C3. Vegetation or fauna, fish, shellfish or wildlife species, significant habitats, or threatened or endangered species? Explain briefly:	
C4. A community's existing plans or goals as officially adopted, or a change in use or intensity of use of land or other natural resources? Explain briefly:	
C5. Growth, subsequent development, or related activities likely to be induced by the proposed action? Explain briefly:	
C6. Long term, short term, cumulative, or other effects not identified in C1-C5? Explain briefly:	
C7. Other impacts (including changes in use of either quantity or type of energy)? Explain briefly:	
D. WILL THE PROJECT HAVE AN IMPACT ON THE ENVIRONMENTAL CHARACTERISTICS THAT CAUSED THE ESTABLISHMENT OF A CRITICAL ENVIRONMENTAL AREA (CEA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, explain briefly:	
E. IS THERE, OR IS THERE LIKELY TO BE, CONTROVERSY RELATED TO POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, explain briefly:	

PART III - DETERMINATION OF SIGNIFICANCE (To be completed by Agency)

INSTRUCTIONS: For each adverse effect identified above, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting (i.e. urban or rural); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed. If question D of Part II was checked yes, the determination of significance must evaluate the potential impact of the proposed action on the environmental characteristics of the CEA.

<input type="checkbox"/> Check this box if you have identified one or more potentially large or significant adverse impacts which MAY occur. Then proceed directly to the FULL EAF and/or prepare a positive declaration.	
<input type="checkbox"/> Check this box if you have determined, based on the information and analysis above and any supporting documentation, that the proposed action WILL NOT result in any significant adverse environmental impacts AND provide, on attachments as necessary, the reasons supporting this determination.	
Tompkins County	
_____ Name of Lead Agency	_____ Date
John R. Lampman, P.E. _____ Print or Type Name of Responsible Officer in Lead Agency	Associate Civil Engineer _____ Title of Responsible Officer
_____ Signature of Responsible Officer in Lead Agency	_____ Signature of Preparer (If different from responsible officer)

SEQR Type II Criteria Documentation (for minor highway projects per item 37 in 17 NYCRR 15.14(e))

In accordance with 17 NYCRR 15.14(d) and 17 NYCRR 15.14(e)(37), this project is a SEQR Type II project. The project does not include or result in:

- (1) the acquisition of any occupied dwelling units or principal structures of business;
- (2) significant changes in passenger or vehicle traffic volume, vehicle mix, local travel patterns or access (other than changes that would occur without the project);
- (3) more than minor social, economic or environmental effects upon occupied dwelling units, businesses, abutting properties or other established human activities;
- (4) significant inconsistency with current plans or goals that have been adopted by local governmental bodies;
- (5) physical alternation of more than 1.0 ha (2.5 acres) of publicly owned or operated parkland, recreation area or designated open space;
- (6) an effect on any historic district, site, building, structure or object that is listed, or may be eligible for listing, on the National Register of Historic Places, or any historic building, structure, site or prehistoric site that has been proposed by the Committee on the Registers for consideration by the New York State Board of Historic Preservation for a recommendation to the State Historic Preservation Officer for nomination for inclusion in said National Register;
- (7) more than minor alteration of, or adverse effect upon, any property, protected area, or natural or man-made resource of national, State or local significance, including but not limited to:
 - (i) freshwater or tidal wetlands and associated areas;
 - (ii) floodplain areas;
 - (iii) prime or unique agricultural land;
 - (iv) agricultural districts so designated pursuant to article 25, section 203, when more than one acre of such district may be affected;
 - (v) water resources, including lakes, reservoirs, rivers, streams;
 - (vi) water supply sources;
 - (vii) designated wild, scenic and recreational rivers;
 - (viii) unique ecological, natural wooded or scenic areas;
 - (ix) rare, endangered or threatened species formally designated as such pursuant to Federal law; and
 - (x) any area officially designated as a critical environmental area pursuant to 6 NYCRR Part 617; and
- (8) the requirement for an indirect air source quality permit, pursuant to 6 NYCRR Part 203.

NEPA ASSESSMENT CHECKLIST

Answer the following questions by checking YES or NO.

I. THRESHOLD QUESTION YES NO

1. Does the project involve unusual circumstances as described in 23 CFR §771.117(b)? ___ X

- If YES, the project does not qualify as a Categorical Exclusion and an EA or EIS is required. You may STOP COMPLETING THE CHECKLIST.

- If NO, go on.

II. AUTOMATIC CATEGORICAL EXCLUSION YES NO

2. Is the project an action listed as an Automatic Categorical Exclusion in 23 CFR §771.117(c) (C List) and/or is the project an element-specific project classified by FHWA as a Categorical Exclusion on July 22, 1996? ___ X

- If YES to question 2, the project qualifies for a C List Categorical Exclusion. You may STOP COMPLETING THE CHECKLIST. The checklist should be included in the appendix of the Final Design Report (or Scope Summary Memorandum/Final Design Report). The CATEGORICAL EXCLUSION DETERMINATION memo is to be sent to the appropriate Main Office Design liaison unit with a copy of the Final Design Report (or Scope Summary Memorandum/Final Design Report). A copy of the CATEGORICAL EXCLUSION DETERMINATION memo must also be sent to the Office of Budget and Finance, Project and Letting Management, and others (see sample DETERMINATION memo attached).

(Note - Even if YES to question 2, there may be specific environmental issues that still require an action such as an EO 11990 Wetland Finding or a determination of effect on cultural resources. The project is still an Automatic Categorical Exclusion but the necessary action must be taken, such as obtaining FHWA's signature on the wetland finding. Refer to the appropriate section of the Environmental Procedures Manual for guidance.)

- If NO to question 2, go on.

III. PROGRAMMATIC CATEGORICAL EXCLUSION YES NO

3. Is the project on new location or does it involve a change in the functional classification or added mainline capacity (add through-traffic

- | | | |
|---|-------|---|
| lanes)? | _____ | X |
| 4. Is this a Type I project under 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise and Construction"? | _____ | X |
| 5. If the project is located within the limits of a designated sole source aquifer area or the associated stream flow source area, is the drainage pattern altered? | _____ | X |
| 6. Does the project involve changes in travel patterns? | _____ | X |
| 7. Does the project involve the acquisition of more than minor amounts of temporary or permanent right-of-way (a minor amount of right-of-way is defined as not more than 10 percent of a parcel for parcels under 4 ha (10 acres) in size, 0.4 ha (1 acre) of a parcel 4 ha to 40.5 ha (10 to 100 acres) in size and 1 percent of a parcel for parcels greater than 40.5 ha (100 acres) in size? | _____ | X |
| 8. Does the project require a Section 4(f) evaluation and determination in accordance with the FHWA guidance? | _____ | X |
| 9. Does the project involve commercial or residential displacement? | _____ | X |
| 10. If Section 106 applies, does FHWA's determination indicate an opinion of adverse effect? | _____ | X |
| 11. Does the project involve any work in wetlands requiring a Nationwide Wetland Permit #23? | _____ | X |
| 12. Does the project involve any work in wetlands requiring an individual Executive Order 11990 Wetland Finding? | _____ | X |

- | | | |
|--|-------|---|
| 13. Has it been determined that the project will significantly encroach upon a flood plain based on preliminary hydraulic analysis and consideration of EO 11988 criteria as appropriate? | _____ | X |
| 14. Does the project involve construction in, across or adjacent to a river designated as a component proposed for or included in the National System of Wild and Scenic Rivers? | _____ | X |
| 15. Does the project involve any change in access control? | _____ | X |
| 16. Does the project involve any known hazardous materials sites or previous land uses with potential for hazardous material remains within the right-of-way? | _____ | X |
| 17. Does the project occur in an area where there are Federally listed endangered or threatened species or critical habitat? | _____ | X |
| 18. Is the project, pursuant to EPM Chapter 1A and Table 2 and Table 3 of 40 CFR Parts 51 and 93, non-exempt or does it exceed any ambient air quality standard? | _____ | X |
| 19. Does the project lack consistency with the New York State Coastal Zone Management Plan and policies of the Department of State, Office of Coastal Zone Management? | _____ | X |
| 20. Does the project impact or acquire any Prime or Unique Farmland as defined in 7 CFR Part 657 of the Federal Farmland Protection Policy Act <u>and</u> are there outstanding compliance activities necessary? (<u>Note:</u> Interpret compliance activity to mean completion of Form AD 1006.) | _____ | X |

- If NO for questions, 3-20, go on to answer question 21.

- If YES to any question 3-20, project will not qualify as a Programmatic Categorical Exclusion. Answer questions 21 and 22 for documentation only and go on to question 23.

21. Does the project involve the use of a temporary road, detour or ramp closure? YES NO
X ____

• If NO to questions 3-20 and NO to question 21, the project qualifies as a Programmatic Categorical Exclusion. You may STOP COMPLETING THE CHECKLIST. The checklist should be included in the appendix of the Final Design Report (or Scope Summary Memorandum/Final Design Report). The CATEGORICAL EXCLUSION DETERMINATION memo is to be sent to the appropriate Main Office Design liaison unit with a copy of the Final Design Report (or Scope Summary Memorandum/Final Design Report). A copy of the Categorical Exclusion memo must also be sent to the Office of Budget and Finance, Project and Letting Management, and others (see sample DETERMINATION memo attached).

• If YES to question 21, preparer should complete question 22 (i-v). If questions 3-20 are NO and 21 is YES, the project will still qualify as a Programmatic Categorical Exclusion if questions 22 (i-v) are YES.

22. Since the project involves the use of temporary road, detour or ramp closure, will all of the following conditions be met: YES NO

i. Provisions will be made for pedestrian access, where warranted, and access by local traffic and so posted. X ____

ii. Through-traffic dependent business will not be adversely affected. X ____

iii. The detour or ramp closure, to the extent possible, will not interfere with any local special event or festival. X ____

iv. The temporary road, detour or ramp closure does not substantially change the environmental consequences of the action. X ____

v. There is no substantial controversy associated with the temporary road, detour or ramp closure. X ____

• If questions 3-20 are NO, 21 is YES and 22 (i-v) are YES, the project qualifies for a Programmatic Categorical Exclusion. You may STOP COMPLETING THE CHECKLIST. The checklist should be included in the appendix of the Final Design Report (or Scope Summary Memorandum/Final Design Report). The CATEGORICAL EXCLUSION DETERMINATION memo should be sent to the appropriate Main Office Design liaison unit with a copy of the Final Design Report (or Scope Summary Memorandum/Final Design Report.) A copy of the CATEGORICAL EXCLUSION DETERMINATION memo must also be sent to the Office of Budget and Finance, Project and Letting Management, and others (see sample DETERMINATION memo attached).

• If questions 3-20 are NO, 21 is YES and any part of 22 is NO, go on to question 23.

23. Is the project section listed in 23 CFR §771.117(d) (D List) or is the project an action similar to those listed in 23 CFR §771.117(d)? YES NO

For those questions which precluded a Programmatic Categorical Exclusion, documentation should be provided for any YES response to questions 3-20 or for a NO response to any part of questions 22 (i-v). This documentation, as well as the checklist, should be included in the Design Approval Document, i.e., Final Design Report, etc., to be submitted to the Main Office/FHWA Design liaison unit for submission to the FHWA Division for classification of the project as a D List Categorical Exclusion.



June 9, 2008

Mr. Mark R. Laistner, P.E.
Erdman Anthony & Associates, Inc.
2165 Brighton Henrietta Town Line Road
Rochester, NY 14623

**Re: Asbestos/Lead Assessment
Rehabilitation of Forest Home Drive Bridge Over Fall Creek
Town of Ithaca, Tompkins County, NY
PIN 3950.41; BIN 3047450
SCE No. R07537.00**

Dear Mr. Laistner:

Shumaker Consulting Engineering & Land Surveying, P.C. (SCE) is pleased to present this summary report for the asbestos and lead assessment conducted at the referenced project site.

1.0 BACKGROUND

The project consists of the rehabilitation of the bridge structure located at Forest Home Drive over Fall Creek. The structure is identified as BIN 3047450. The project is located within the Town of Ithaca, Tompkins County, NY.

The primary objective of these screenings is to render an opinion as to whether asbestos containing materials (ACM) or lead based paint (LBP) components are present.

2.0 ASBESTOS ASSESSMENT

SCE conducted an asbestos assessment of the bridge structure. As part of the project, impacted bridge materials that are asbestos-containing are to be handled in accordance with all applicable federal, state and local laws. A material is defined as an ACM under the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101, if it contains greater than one percent (>1%) asbestos by weight. Suspect ACM are identified by reviewing available record plans and by conducting an on-site visual assessment. Suspect ACM on bridges may include but are not limited to abutment sheet packing, tar coatings, caulking, or suspended utility piping/conduit insulations. In accordance with the New York State Department of Transportation (NYSDOT) EI 02-016, dated 6/19/02, all pre-1981 coatings applied to structural steel members should be assumed ACM unless confirmed otherwise by laboratory analyses.

UTICA OFFICE

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Ithaca, NY 14850-2168
315-724-0100 • Fax 724-3215

BINGHAMTON OFFICE

143 Court Street
Binghamton, NY 13901-3528
607-798-8081 • Fax 798-8186

ALBANY OFFICE

1510 Central Avenue, Suite 330
Albany, NY 12205-5046
518-452-5730 • Fax 452-9230

The subject bridge consists of a steel overhead truss structure with two concrete and stone abutments and an open grate deck spanning Fall Creek. A municipal sewer line is located along the north side of the bridge, while a municipal water line is located along the south side of the bridge.

As-built record plans dated 1974 and 1998 were reviewed as part of the preliminary asbestos assessment. No suspect ACMs were noted on the record plans. Original construction plans for the bridge structure were unavailable.

The asbestos assessment and sampling was performed on April 22, 2008. The materials sampled included: a black pipe wrap on the municipal sewer line, green paint on the structural steel components, and a bituminous joint material on the municipal water line. All of these materials were identified as suspect ACM during the preliminary asbestos assessment conducted on January 24, 2008.

All asbestos sampling services were performed by New York State Department of Labor (NYS DOL)-certified/United States Environmental Protection Agency (USEPA)-accredited Asbestos Inspectors. Samples of suspect ACM that were obtained by SCE were sent to Fibers I.D., Inc. of Albany, New York and Eastern Analytical Services, of Elmsford, New York for analysis. The laboratory reports for the samples, a copy of the inspector's license and a copy of the SCE asbestos license are attached to this report.

Results

ACM was identified at the bridge structure located at Forest Home Drive over Fall Creek, (BIN 3047450) in the Town of Ithaca, Tompkins County, New York. A total of nine samples were collected of three homogeneous materials identified for the bridge structure.

Samples were analyzed in accordance with NYS ELAP 198.4 Methodology. GR/PLM/TEM analyses were performed on samples utilizing NYSDOT protocol. Analytical results determined that the bituminous joint material located on the municipal water line is ACM. Analytical results determined that the green paint covering the steel members of the bridge, and the black pipe wrap covering the municipal sewer line are non-ACM.

The bituminous joint material and any additional suspect ACM encountered during construction activities should be handled as an ACM unless laboratory analysis determines the additional material is non-ACM. Removal, transport, and disposal of ACM shall be performed in accordance with federal, state, and local regulations including, but not limited to, those of the USEPA, OSHA, New York State Department of Environmental Conservation (NYSDEC), and NYSDOL. Applicable regulations include National Emission Standards for Hazardous Air Pollutants (NESHAP) promulgated by USEPA and NYSDOL Industrial Code Rule 56 (ICR 56).

3.0 LEAD ASSESSMENT

Painted steel components are present throughout the bridge structure. The OSHA does not set a threshold concentration standard for leaded paint but sets standards of airborne lead

dust exposure for workers during renovation and demolition of painted components. Paint is considered lead-based by the USEPA if analytical results indicate that the concentration of lead exceeds 0.5% by weight (5000 ppm).

Results

LBP was not identified at the bridge structure located at Forest Home Drive over Fall Creek, (BIN 3047450) in the Town of Ithaca, Tompkins County, New York. A total of two samples were collected of the green paint covering the steel members of the bridge structure.

Samples were analyzed in accordance with Standard Methods (SM) Methodology SM 18-20 3120B. Analytical results for both samples indicate that the paint is not lead-based (1 mg/kg = 1 ppm).

Since laboratory analysis did not indicate the presence of LBP, additional handling procedures with respect to the OSHA and USEPA lead dust standards are not anticipated for the impacted steel components. The laboratory reports for the samples are attached.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The asbestos and lead assessments were performed in general conformance with NYSDOT procedures. The materials identified above, as well as any materials encountered during construction activities, should be handled in accordance with all federal, state and local laws.

Thank you for the opportunity to perform this study. Should you have any questions or concerns regarding this report, please do not hesitate to contact me or Lauren Ramos at (607) 798-8081.

Very truly yours,

**SHUMAKER CONSULTING ENGINEERING
& LAND SURVEYING, P.C.**



Nicholas M. Lee
Environmental Scientist

NML/jmp

cc: C. Dousharm, SCE w/enclosures
N. Lee, SCE
L. Ramos, SCE

Enclosures

Chain of Custody for Suspect ACBM

SHUMAKER Consulting Engineering & Land Surveying, P.C.

Client I.D. #: Forest Home Drive over Fall Creek

1510 Central Avenue Albany NY 12205

Project: SCE Proj 07557.00, PIN 3950.41, BFN 3047450

(518) 452-5730 Fax (518) 452-9230

Work Area: TOWN OF ITHACA, TOMPKINS COUNTY, NY

FIBERS I.D., INC.

Technician: NML

1670 Western Ave., Bldg. "B", Albany, New York 12205

Date Collected: 4/21/08

518-456-4501 Fax 518-456-4545

Field ID #	Location	Type	Material Description	Lab ID #
01-01	West abutment, South sewer line, bottom	NBS	Pipe wrap (black)	45444
01-02	South sewer line, Center, north face			45
01-03	South sewer line, east end, top			46
02-04	West abutment, South girder, bottom		Green paint coating	47
02-05	West abutment, north cross brace, north face			48
02-06	Top side, East abutment, north truss, east face			49
03-07	North water line, West end, abutment		Bituminous joint material	50
03-08	North water line,			51
03-09	North water line,			52

Turnaround Time/Requested Date: Standard

Relinquished By: (signature)	Received By: (signature)	Date/Time
Relinquished By: (signature)	Received By: (signature)	Date/Time

Notes:

- Stop first positive per homogenous group (PLM)
- 3 of 3 samples GR/PLM
- 1 of 3 samples to TEM to confirm inconclusive
- 3 of 3 samples to TEM to confirm inconclusive
- Stop first positive per homogenous group (TEM)
-

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PLM-NOB ANALYTICAL REPORT

Page 1 of 1

CLIENT: Shumaker Engineering & Land Surveying, P.C.
ADDRESS: 143 Court Street
 Binghamton NY 13901

DATE COLLECTED: 04/21/08
DATE RECEIVED: 04/22/08
DATE ANALYZED: 04/28/08
DATE REPORTED: 04/28/08

CLIENT PROJECT: Forest Home Drive over Fall Creek

WORK AREA: Town of Ithaca
 Tompkins County, NY

SCE #: 07537.00 **PIN #:** 3950.41 **BIN #:** 3047450

ANALYTICAL METHOD NYS DOH 03/01/97 (Item 198.6)

NOTEBOOK: M. HAY NYS DOH ELAP #11129

LAB #	CLIENT #	DESCRIPTION	GRAVIMETRIC TEST RESULTS			PLM TEST RESULTS		
			ACID-SOL. ORGANIC	INORGANIC	RESIDUE	EST. ASB	CALC. ASB	TOTAL ASB
45444●	01-01	BLK PIPE WRAP	95.92%	01.94%	02.15%	INC	INC	INC
45445●	01-02	BLK PIPE WRAP	95.32%	01.60%	03.08%	INC	INC	INC
45446●	01-03	BLK PIPE WRAP	96.23%	01.61%	02.15%	INC	INC	INC
45447●	02-04	GRN PAINT COATING	45.34%	02.79%	51.87%	INC	INC	INC
45448●	02-05	GRN PAINT COATING	29.22%	02.87%	67.90%	INC	INC	INC
45449●	02-06	GRN PAINT COATING	29.17%	29.60%	41.23%	INC	INC	INC
45450	03-07	BIT JOINT MATERIAL	66.17%	20.96%	12.86%	80.00%-C	80.00%-C	10.28%-C
45451	03-08	BIT JOINT MATERIAL	65.65%	21.37%	12.98%	N/A	1 ST	POSITIVE
45452	03-09	BIT JOINT MATERIAL	44.58%	22.13%	33.29%	N/A	1 ST	POSITIVE

C=CHRYSOTILE A=AMOSITE CR=CROCIDOLITE AN=ANTHOPHYLITE TR=TREMOLITE AC=ACTINOLITE N/A=NOT ANALYZED
 NAD = NO ASBESTOS DETECTED PLM = POLARIZED LIGHT MICROSCOPY NOB = NON-FRIABLE ORGANICALLY BOUND MATERIALS
 INC = INCONCLUSIVE

ANALYTICAL RESULTS REPORTED ON SAMPLES NOT COLLECTED BY FIBERS I.D. INC.. REPORT DATA DEPENDENT ON INFORMATION SUPPLIED BY CLIENT AND CHAIN OF CUSTODY. ● CLIENT REQUESTED TEM.

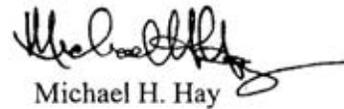
"POLARIZED LIGHT MICROSCOPY IS NOT CONSISTANTLY RELIABLE IN DETECTING ASBESTOS IN FLOOR COVERINGS AND SIMILAR NON-FRIABLE LY BOUND MATERIALS. QUANTITATIVE TRANSMISSION ELECTRON MICROSCOPY IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO DETERMINE IF THIS MATERIAL CAN BE CONSIDERED OR TREATED AS NON-ASBESTOS-CONTAINING." (ELAP 198.6 - 6.3. 2.1)

Analyst:



M.H. Hay

Laboratory Director,



Michael H. Hay

FIBERS I.D. INC.

1670 Western Ave. Bldg. B, Albany, New York 12203
 Laboratory/Office Phone (518) 456-4501 • Fax (518) 456-4545



Eastern Analytical Services, Inc.

Bulk Sample Results

RE: CPN 07537.00 - Forest Home Drive over Fall Creek

Client Fibers I.D., Inc.
1670 Western Avenue - Building "B"
Albany, NY 12203

Date Collected : Not Given
Collected By : Not Given
Date Received : 04/29/2008
Date Analyzed : 04/30/2008
Analyzed By : Ernest Sanchez
Signature : [Signature]
Analytical Method : NYS-DOH 198.4
NVLAP Lab No. 101646-0
NYS Lab No. 10851

Table with 5 columns: Sample ID Number, Layer Number, Lab ID Number, Sample Location, and Sample Description. Values include 45444, 45445, 45446, 45447, 1643639, 1643640, 1643641, 1643642, and Not Given.

Table with 5 columns: Analytical Method, Appearance, Layered, Homogenous, Fibrous, Color. Values include Tem, No, and Reduced by Client.

Table with 5 columns: Asbestos Content, % Amosite, % Chrysotile, % Other, % Total Asbestos, Other Materials Present, % Organic, % Carbonates, % Other Inorganic. Values include 0.0, < 0.1, 0.0, 2.1, 3.1, 48.1, 51.9.

Results Applicable To Those Items Tested. Report Cannot be Reproduced, Except Entirely, Without Written Approval of the Laboratory. Liability Limited To Cost Of Analysis. This Report Must Not be Used by the Client to Claim Product Endorsement by NVLAP or Any Agency of the US Government. AHA Accreditation No. 100263 Rhode Island DOH No. AAL-072T3 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095



Eastern Analytical Services, Inc.

Bulk Sample Results

RE: CPN 07537.00 - Forest Home Drive over Fall Creek

Client Fibers I.D., Inc.
 1670 Western Avenue - Building "B"
 Albany, NY 12203

Date Collected : Not Given
Collected By : Not Given
Date Received : 04/29/2008
Date Analyzed : 04/30/2008
Analyzed By : Ernest Sanchez
Signature : *Ernest Sanchez*
Analytical Method : NYS-DOH 198.4
NVLAP Lab No. 101646-0
NYS Lab No. 10851

Sample ID Number	45448	45449
Layer Number		
Lab ID Number	1643643	1643644
Sample Location	Not Given	Not Given

Sample Description	Not Given	Not Given
--------------------	-----------	-----------

Analytical Method		Tem	Tem
Appearance	Layered	No	No
	Homogenous	No	No
	Fibrous	No	No
	Color	Reduced by Client	Reduced by Client

Asbestos	% Amosite	0.0	0.0
Content	% Chrysotile	0.0	0.0
	% Other	0.0	0.0
	% Total Asbestos	0.0	0.0
Other	% Organic	0.0	0.0
Materials	% Carbonates	32.1	58.8
Present	% Other Inorganic	67.9	41.2

Results Applicable To Those Items Tested. Report Cannot be Reproduced, Except Entirely, Without Written Approval of the Laboratory.
Liability Limited To Cost Of Analysis. This Report Must Not be Used by the Client to Claim Product Endorsement by NVLAP or Any Agency of the US Government.
AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-07273 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095



Nicholas Lee
Shumaker Consulting Engineering
143 Court Street
Binghamton, NY 13901

Phone: (607) 798-8081
FAX: (607) 798-8186
Authorization: PIN #3950.41 BIN #3047

Laboratory Analysis Report

For

Shumaker Consulting Engineering

Client Project ID:

Forest Home Drive Over Fall Creek - SCE #07537.00

LSL Project ID: **0806245**

Receive Date/Time: 04/22/08 15:48

Project Received by: GS

Life Science Laboratories, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose. By the Client's acceptance and/or use of this report, the Client agrees that LSL is hereby released from any and all liabilities, claims, damages or causes of action affecting or which may affect the Client as regards to the results contained in this report. The Client further agrees that the only remedy available to the Client in the event of proven non-conformity with the above warranty shall be for LSL to re-perform the analytical test(s) at no charge to the Client. The data contained in this report are for the exclusive use of the Client to whom it is addressed, and the release of these data to any other party, or the use of the name, trademark or service mark of Life Science Laboratories, Inc. especially for the use of advertising to the general public, is strictly prohibited without express prior written consent of Life Science Laboratories, Inc. This report may only be reproduced in its entirety. No partial duplication is allowed. The Chain of Custody document submitted with these samples is considered by LSL to be an appendix of this report and may contain specific information that pertains to the samples included in this report. The analytical result(s) in this report are only representative of the sample(s) submitted for analysis. LSL makes no claim of a sample's representativeness, or integrity, if sampling was not performed by LSL personnel.

Life Science Laboratories, Inc.

- | | | |
|---|----------------|-------------------------------------|
| (1) LSL Central Lab, East Syracuse, NY | (315) 445-1105 | NYS DOH ELAP #10248 PA DEP #68-2556 |
| (2) LSL North Lab, Waddington, NY | (315) 388-4476 | NYS DOH ELAP #10900 |
| (3) LSL Finger Lakes Lab, Wayland, NY | (585) 728-3320 | NYS DOH ELAP #11667 |
| (4) LSL Southern Tier Lab, Cuba, NY | (585) 968-2640 | NYS DOH ELAP #10760 |
| (5) LSL MidLakes Lab, Canandaigua, NY | (585) 396-0270 | NYS DOH ELAP #11369 |
| (6) LSL Brittonfield Lab, East Syracuse, NY | (315) 437-0200 | NYS DOH ELAP #10155 |

This report was reviewed by:

Delsey Romo, QA
Life Science Laboratories, Inc.

Date:

5/13/08

A copy of this report was sent to:

- - LABORATORY ANALYSIS REPORT - -

Shumaker Consulting Engineering Binghamton, NY

Sample ID: L-1 LSL Sample ID: 0806245-001
Location:
Sampled: 04/21/08 10:15 Sampled By: Client
Sample Matrix: SHW as Recd, Paint

Analytical Method	Prep Date	Analysis Date & Time	Analyst Initials
(1) Lead in Paint by SM 18-20 3120B			
Lead	42 mg/kg	4/25/08 5/1/08	DP

Sample ID: L-2 LSL Sample ID: 0806245-002
Location:
Sampled: 04/21/08 10:30 Sampled By: Client
Sample Matrix: SHW as Recd, Paint

Analytical Method	Prep Date	Analysis Date & Time	Analyst Initials
(1) Lead in Paint by SM 18-20 3120B			
Lead	41 mg/kg	4/25/08 5/1/08	DP

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE



NICHOLAS M LEE
CLASS(EXPIRES)
C ATEC(03/09) D'INSP(03/09)
H PM (03/09)

NYSDOL 64-03503
NYSDOL 200-14704

MUST BE CARRIED ON ASBESTOS PROJECTS



EYES HAZ
HAIR BRO
HGT 6' 03"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 290A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

NEW YORK STATE - DEPARTMENT OF LABOR

DIVISION OF SAFETY AND HEALTH
LICENSE AND CERTIFICATE UNIT
STATE CAMPUS BUILDING 12
ALBANY, NY 12240

ASBESTOS HANDLING LICENSE

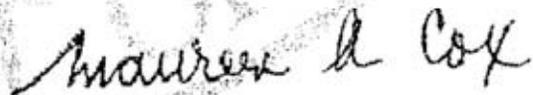
Shumaker Consulting, Eng. & Land Surveying, P.C.
143 Court Street
Binghamton, NY 13901

FILE NUMBER: 00-0828
LICENSE NUMBER: 29368
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 11/08/2007
EXPIRATION DATE: 11/30/2008

Duly Authorized Representative – Linda M. Shumaker PE:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.



Maureen A. Cox, Director
FOR THE COMMISSIONER OF LABOR

APPENDIX C

TRAFFIC & ACCIDENT INFORMATION

**TRAFFIC COUNT LOCATIONS & REPORTS
INTERSECTION TURN MOVEMENT COUNTS
ACCIDENT SUMMARY**

Forest Home Drive Upstream Bridge and Intersection with Caldwell Road

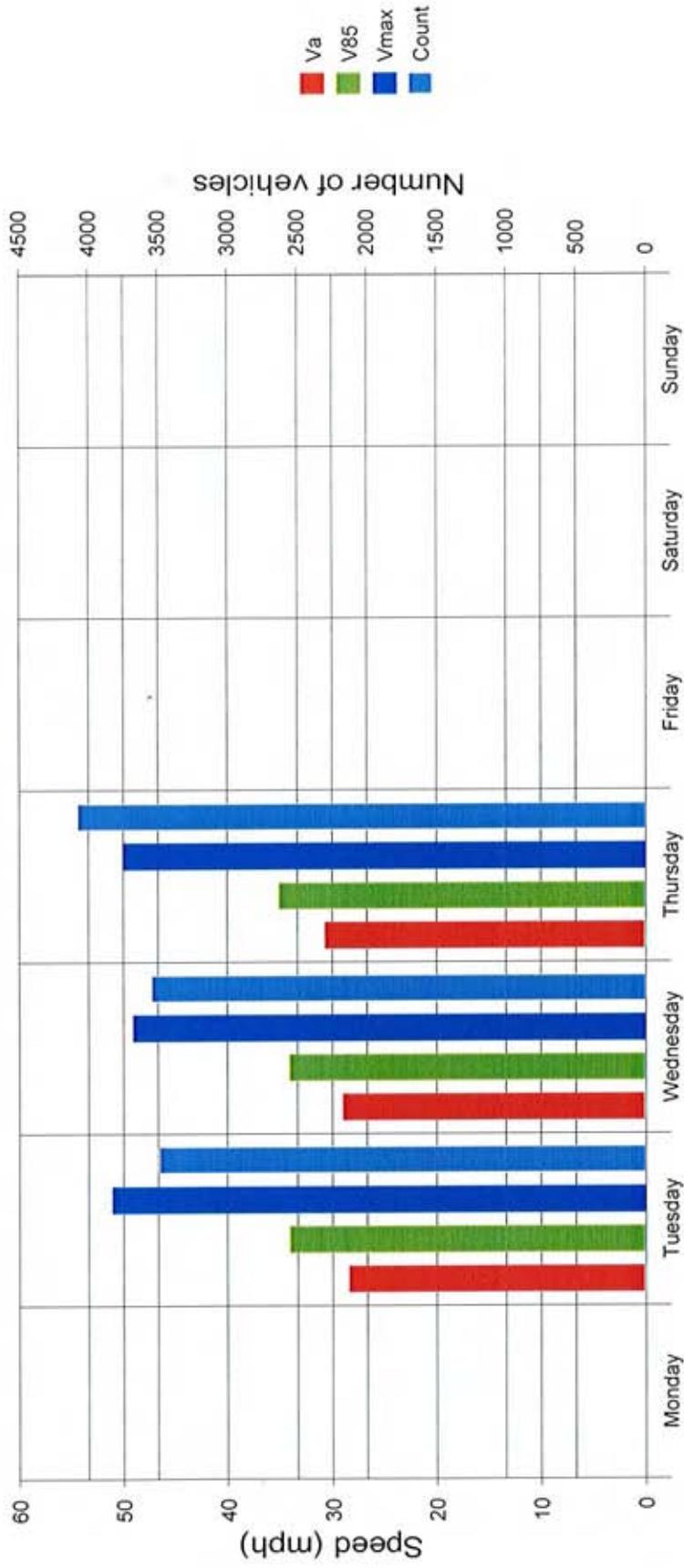
Accident history: 1/1/2005 through 7/31/2008

date	day	time	location	type	cause	citation?	result
1/12/2006	th	1538	FHDr & Caldwell	2 car	fail to yield, defective brakes	stop sign	PD only
6/23/2006	f	1129	Caldwell end of bridge	2 car	stopped too close to bridge & backed into 2nd vehicle while making more room for truck to exit bridge	yes	PD only
6/26/2006	m	1220	Caldwell end of bridge	2 car	reaction to uninvolved vehicle	no	PD only
10/11/2006	w	1315	FHDr & Caldwell	Car/ATV	ATV from Plantations dwy failed to yield	yes	Injury
4/16/2007	m	1320	Bridge	2 car	unsafe backing	yes	PD only

Tompkins County Highway Department
 170 Bostwick Rd.
 Ithaca, NY 14850
 Traffic Data Report
 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD, Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Statistics

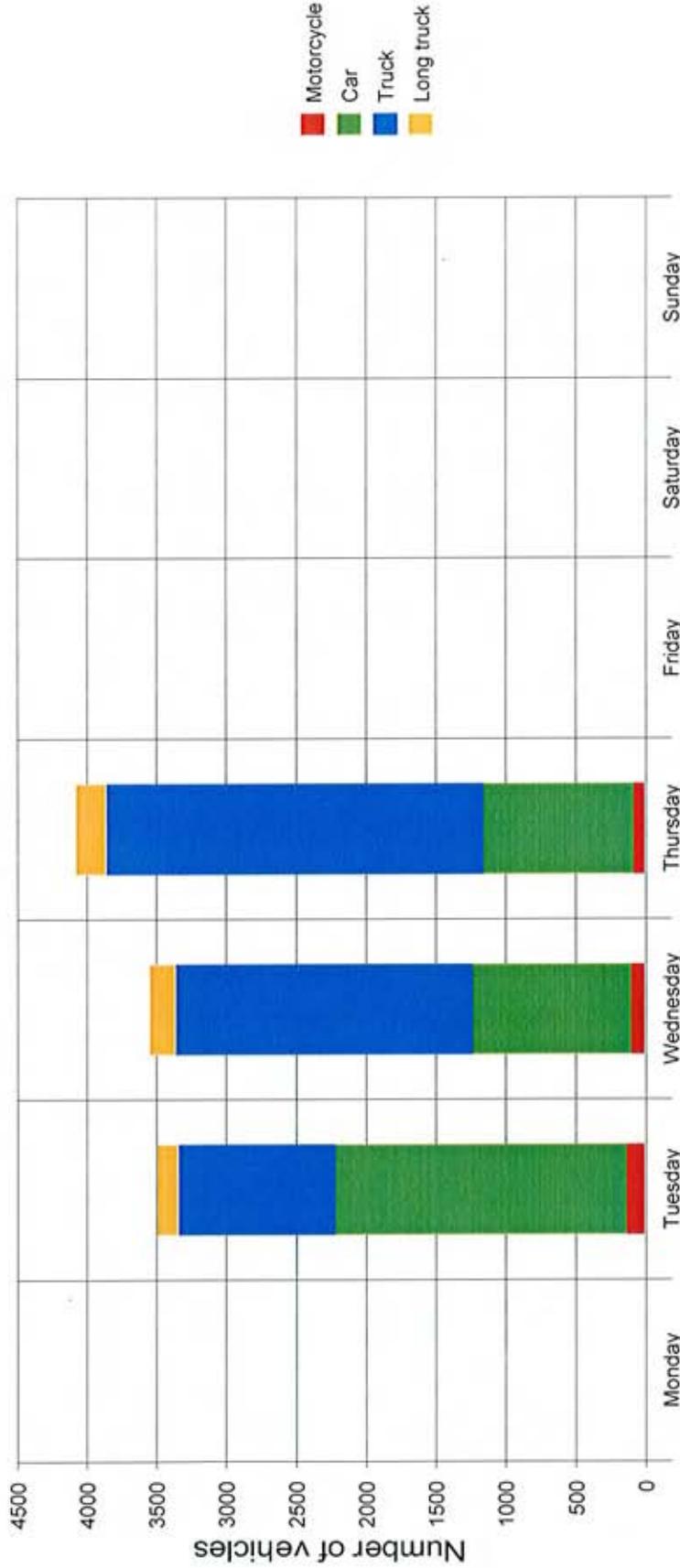
Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
Speed violations:	32	0.6	294	5.2	326	2.9	19	28	34	39	24	30	36	49
Average time interval:	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49
Traffic in column:	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51
ADT:	169	3.1	372	6.6	541	4.9	17	24	29	34	22	28	34	45
Truck Share:	5464	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	45

Tompkins County Highway Department
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 Ithaca, NY 14850
 Traffic Data Report
 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD, Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Statistics

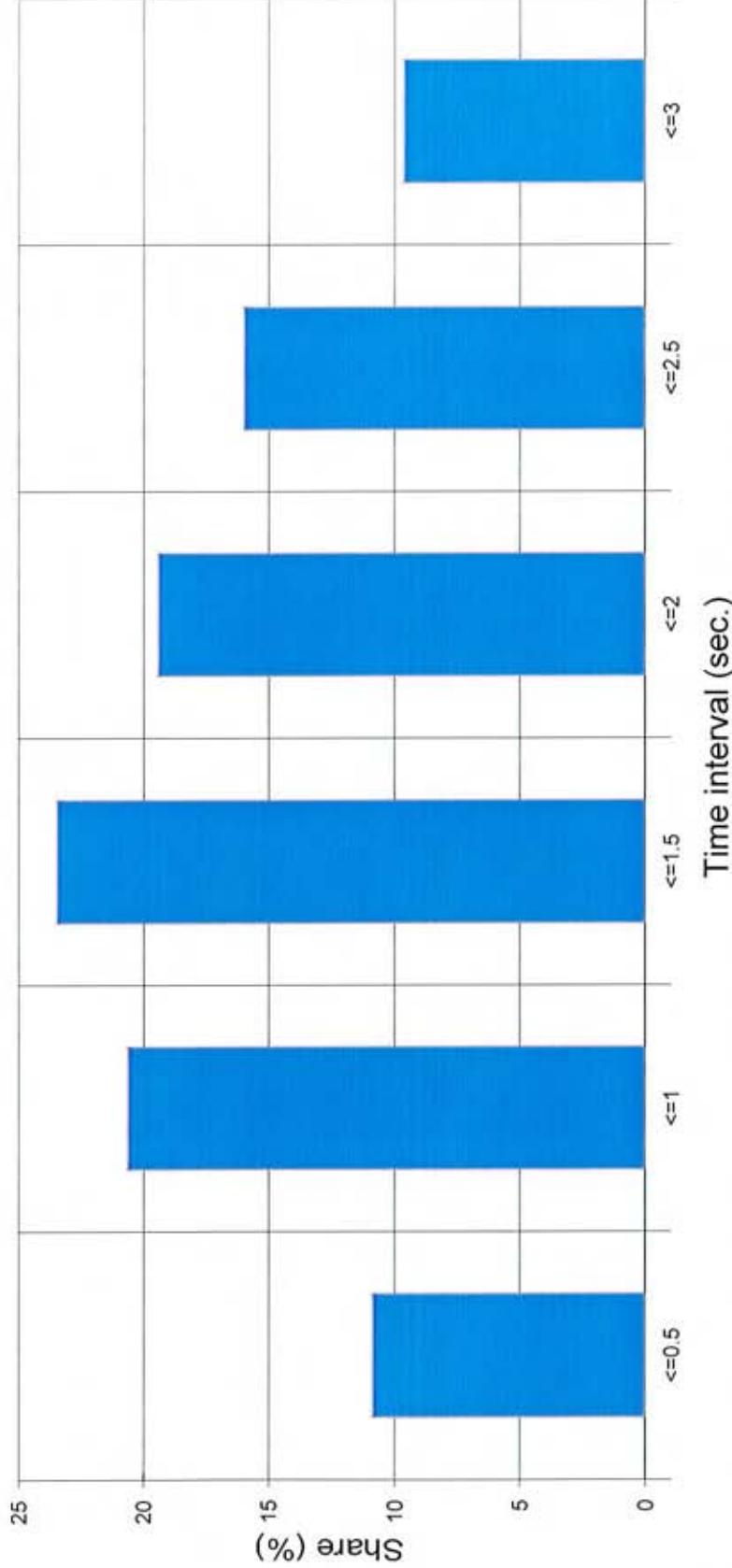
Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

Speed violations:	0 %	Motorcycle	Count +	32	%	0.6	Count -	294	%	5.2	Total	326	%	2.9	V15 +	19	Vmax +	39	Va -	28	V85 -	34	V15 -	24	V85 -	Vmax -	49
Average time interval:	1.5 sec	Car	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49											
Traffic in column:	17 %	Truck	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51											
ADT:	3701	Long truck	169	3.1	372	6.6	541	4.9	17	24	29	34	22	28	34	45											
Truck Share:	58 %	Total	5464	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	51											

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 Ithaca, NY 14850
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 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD, Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Statistics

Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

Speed violations: 0 % Motorcycle

Average time interval: 1.5 sec Car

Traffic in column: 17 % Truck

ADT: 3701

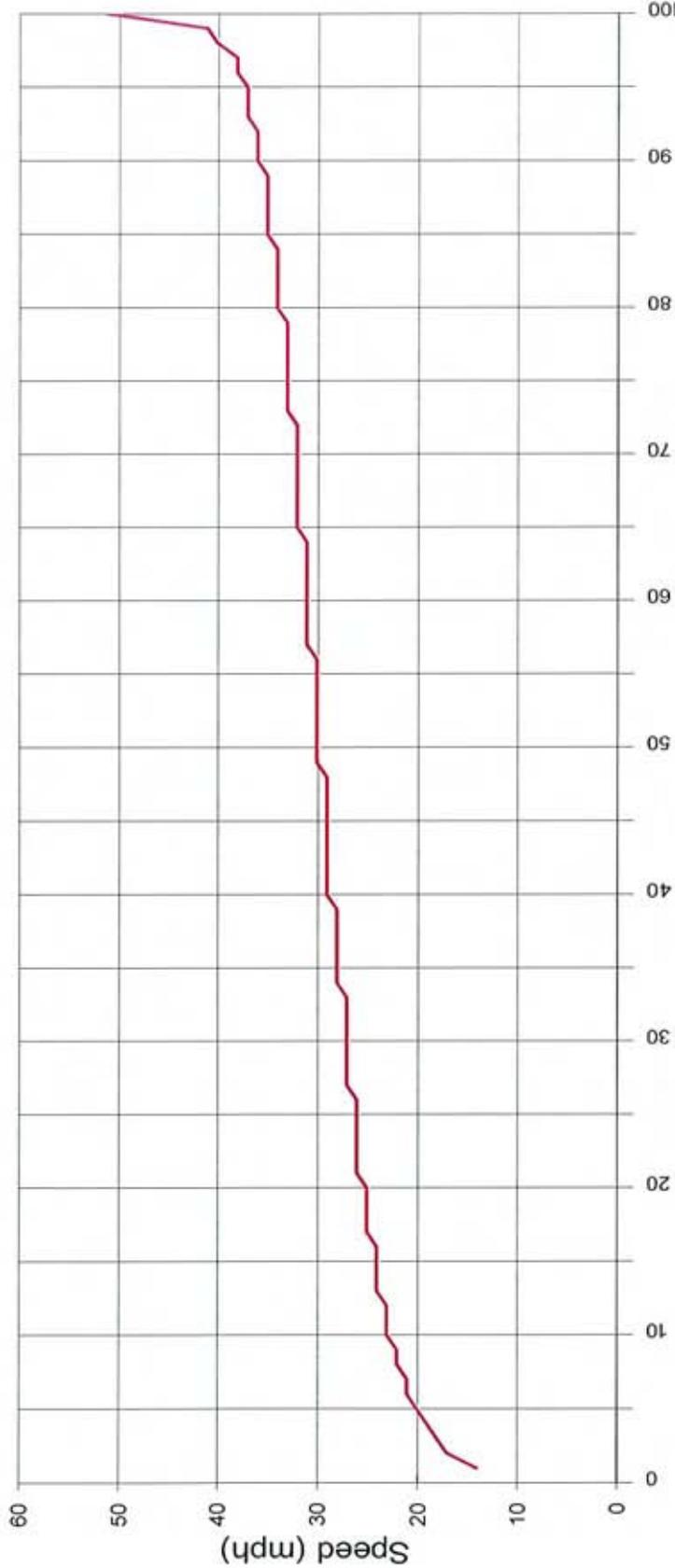
Truck Share: 58 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
Motorcycle	32	0.6	294	5.2	326	2.9	19	28	34	39	24	30	36	49
Car	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49
Truck	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51
Long truck	169	3.1	372	6.6	541	4.9	17	24	29	34	22	28	34	45
Total	5464	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	45

Tompkins County Highway Department
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 Ithaca, NY 14850
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 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD, Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Vx (%) Comment: x % of vehicles are driving at or below y mph

Statistics

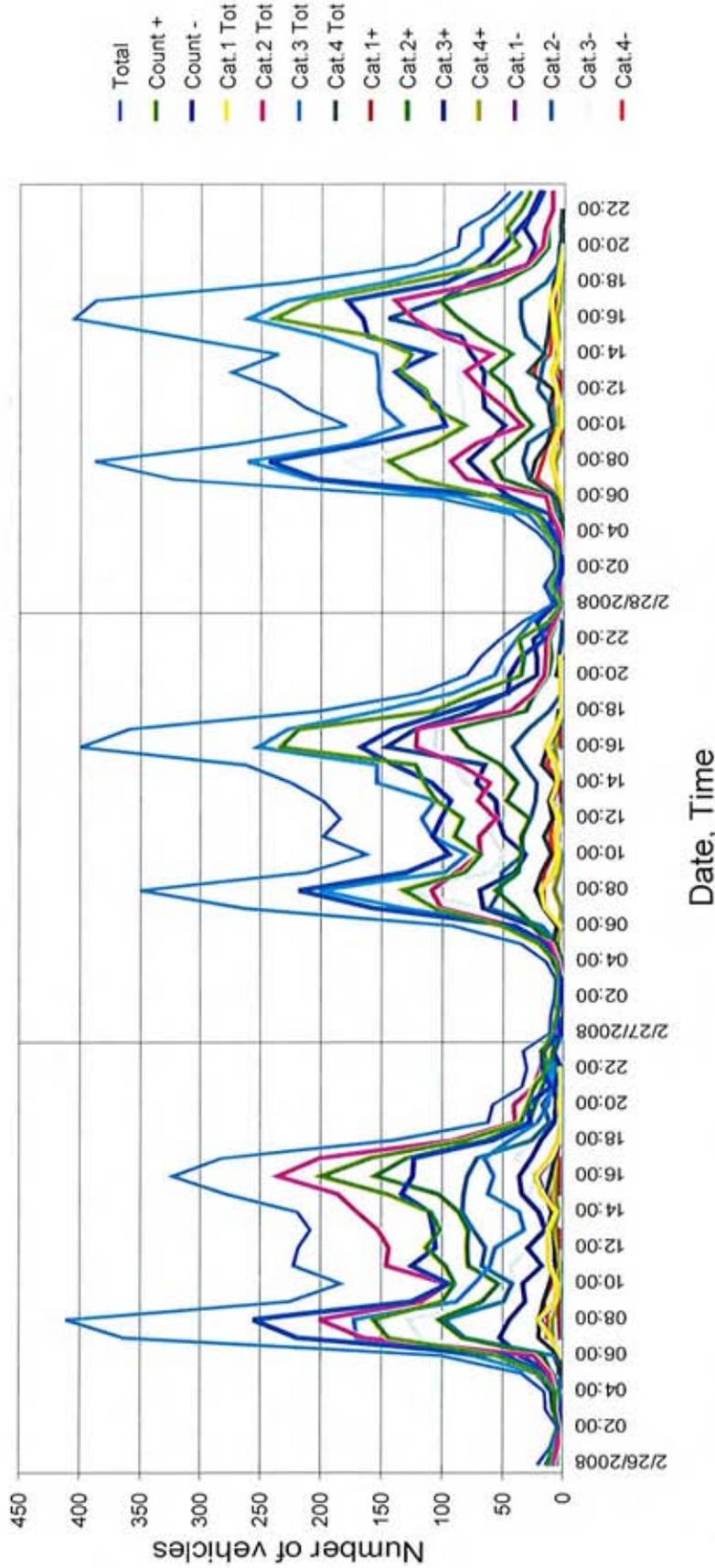
Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	32	0.6	294	5.2	326	2.9	19	28	34	39	24	30	36	49
Average time interval: 1.5 sec	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49
Traffic in column: 17 % Truck	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51
ADT: 3701 Long truck	169	3.1	372	6.6	541	4.9	17	24	29	34	22	28	34	45
Truck Share: 58 % Total	5464	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	45

Tompkins County Highway Department
 170 Bostwick Rd.
 Ithaca, NY 14850
 Traffic Data Report
 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD, Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Statistics

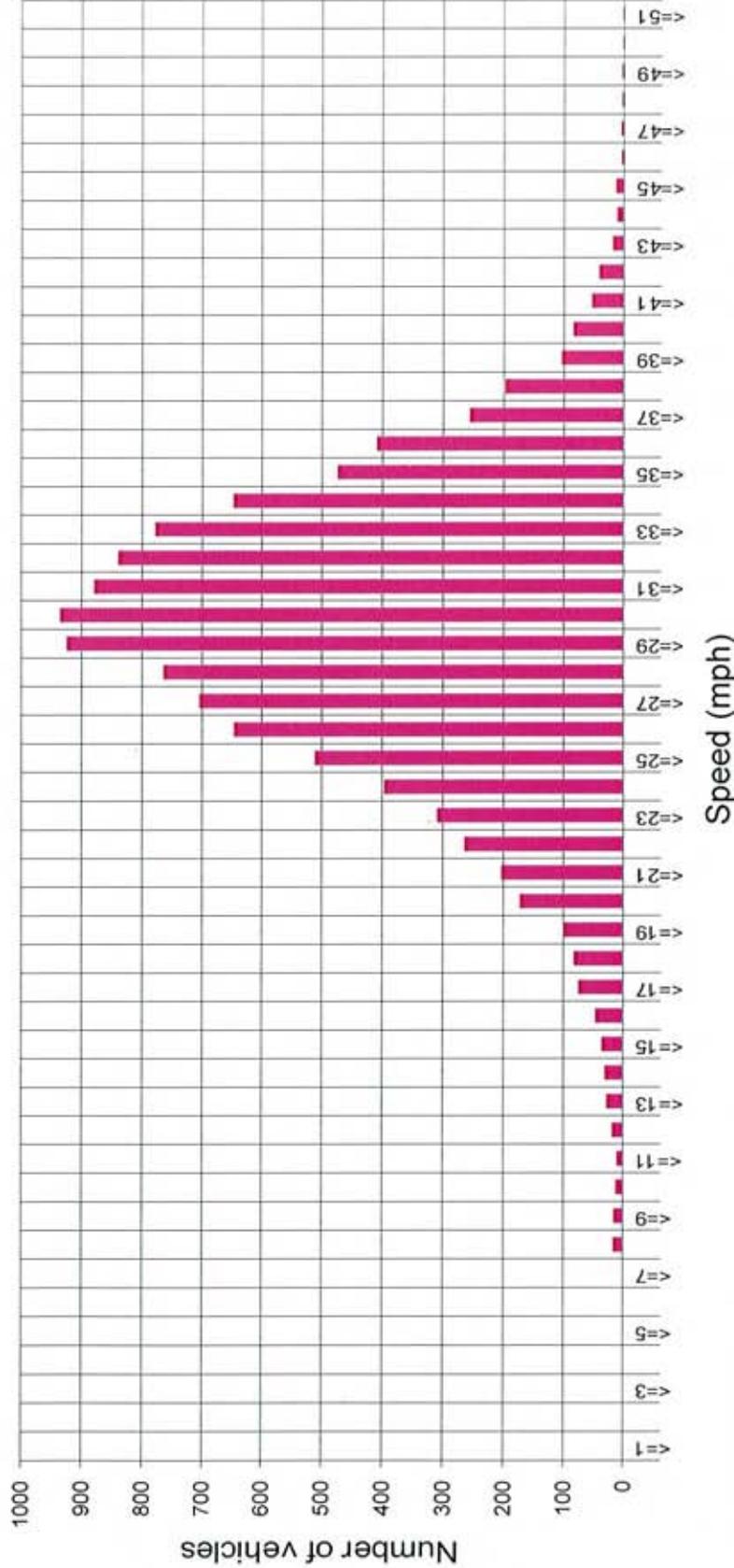
Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	32	0.6	294	5.2	326	2.9	19	28	34	39	24	30	36	49
1.5 sec Car	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49
17 % Truck	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51
ADT:	3701		169	3.1	372	6.6	17	24	29	34	22	28	34	45
Truck Share:	58 %	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	45

Tompkins County Highway Department
 170 Bostwick Rd.
 Ithaca, NY 14850
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 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD, Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Statistics

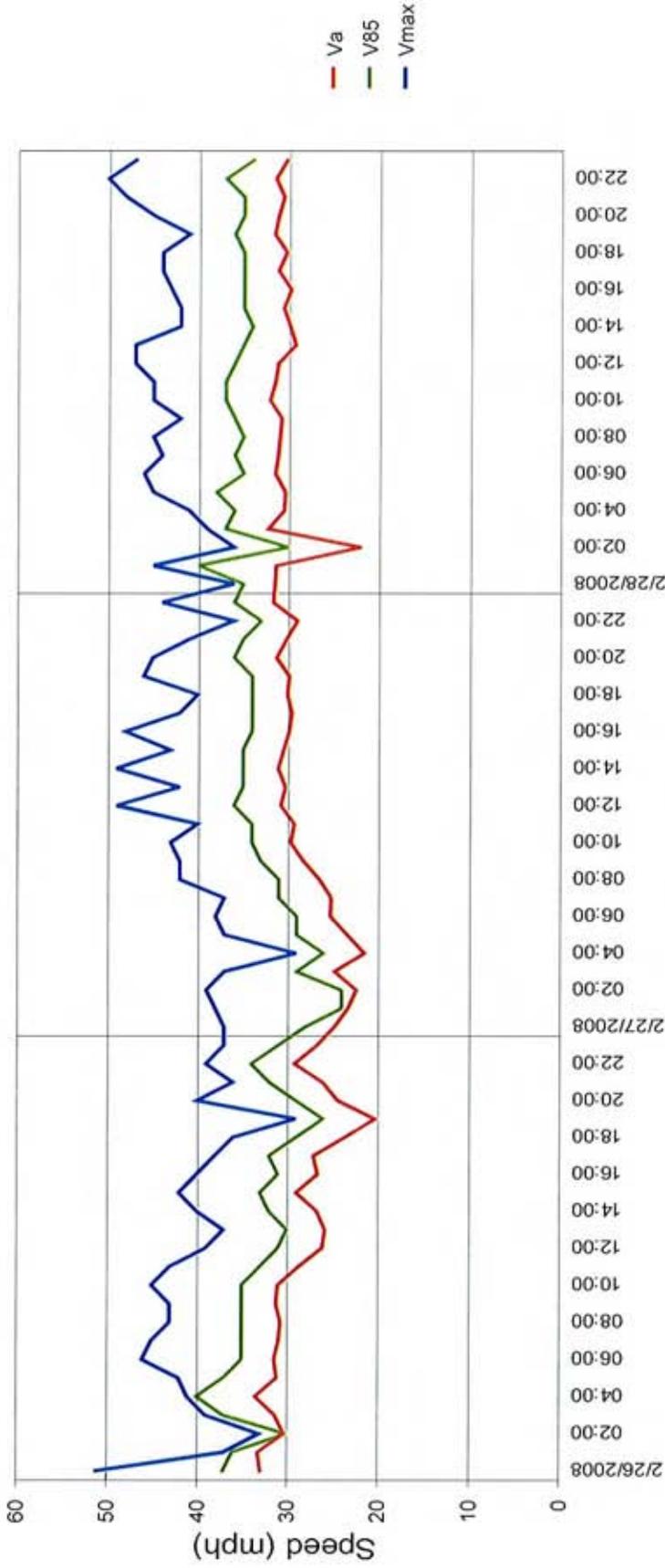
Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
Speed violations:	32	0.6	294	5.2	326	2.9	19	28	34	39	24	30	36	49
Average time interval:	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49
Traffic in column:	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51
ADT:	169	3.1	372	6.6	541	4.9	17	24	29	34	22	28	34	45
Truck Share:	5464	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	45

Tompkins County Highway Department
 170 Bostwick Rd.
 Ithaca, NY 14850
 Traffic Data Report
 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



CALDWELL ROAD , Loc: 170 Ft. South of Forest Home Dr. (+ = North) 30 MPH Zone



Statistics

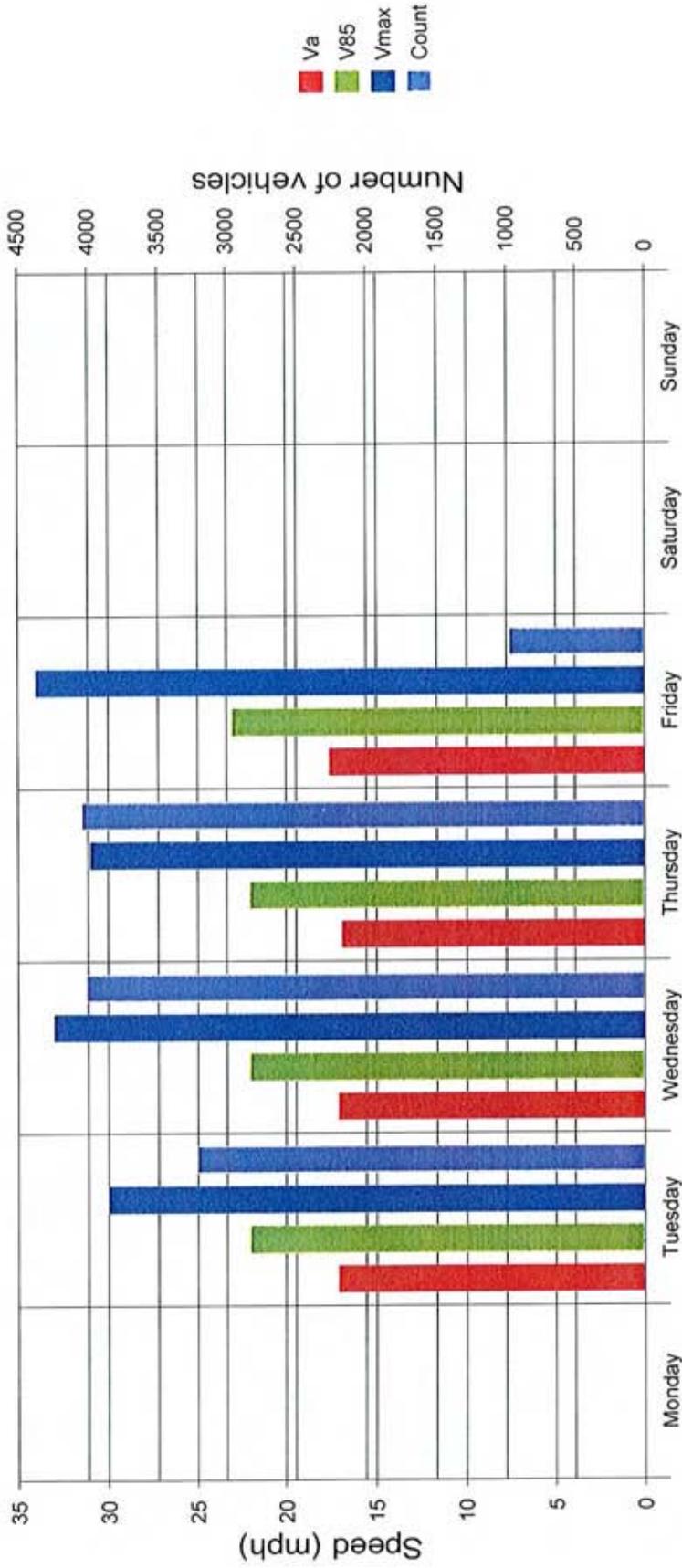
Period: Tuesday, February 26, 2008, 00:00 o'clock to Thursday, February 28, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
Speed violations:	32	0.6	294	5.2	326	2.9	19	28	34	39	24	30	36	49
Average time interval:	2645	48.4	1647	29.2	4292	38.7	23	28	33	47	25	30	35	49
Traffic in column:	2618	47.9	3324	59	5942	53.5	24	29	33	44	26	31	36	51
ADT:	3701	3.1	372	6.6	541	4.9	17	24	29	34	22	28	34	45
Truck Share:	5464	49.2	5637	50.8	11101	100	23	28	33	47	26	31	36	45

Tompkins County Highway Department
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 Ithaca, NY 14850
 Traffic Data Report
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FOREST HOME DRIVE, 100 Ft. South of Warren Rd. 25MPH Zone (+ = South)



Statistics

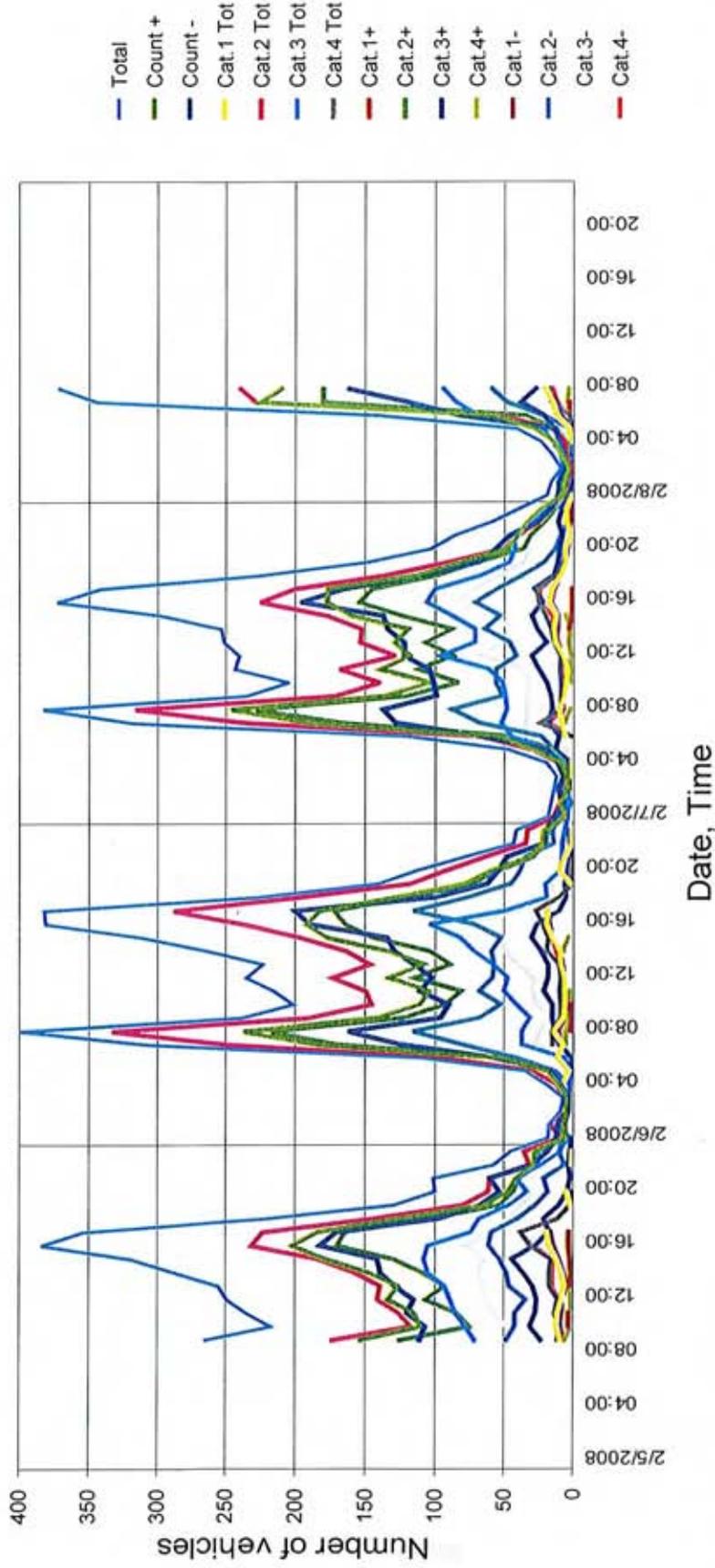
Period: Tuesday, February 05, 2008, 09:00 o'clock to Friday, February 08, 2008, 09:00 o'clock

Speed violations:	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	47	0.7	425	7.4	472	3.9	8	11	12	26	8	11	14	23
2 sec Car	5421	83.1	2586	45.1	8007	65.3	18	20	23	34	10	14	17	28
12 % Truck	982	15.1	2192	38.3	3174	25.9	17	20	23	29	11	14	16	27
ADT:	4084		526	9.2	600	4.9	15	17	20	25	9	11	13	17
Truck Share:	6524	53.2	5729	46.8	12253	100	18	20	23	34	10	13	16	16

Tompkins County Highway Department
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 Ithaca, NY 14850
 Traffic Data Report
 PH. (607) 273 - 0320 FAX. (607) 272 - 8489



FOREST HOME DRIVE, 100 Ft. South of Warren Rd. 25MPH Zone (+ = South)



Statistics

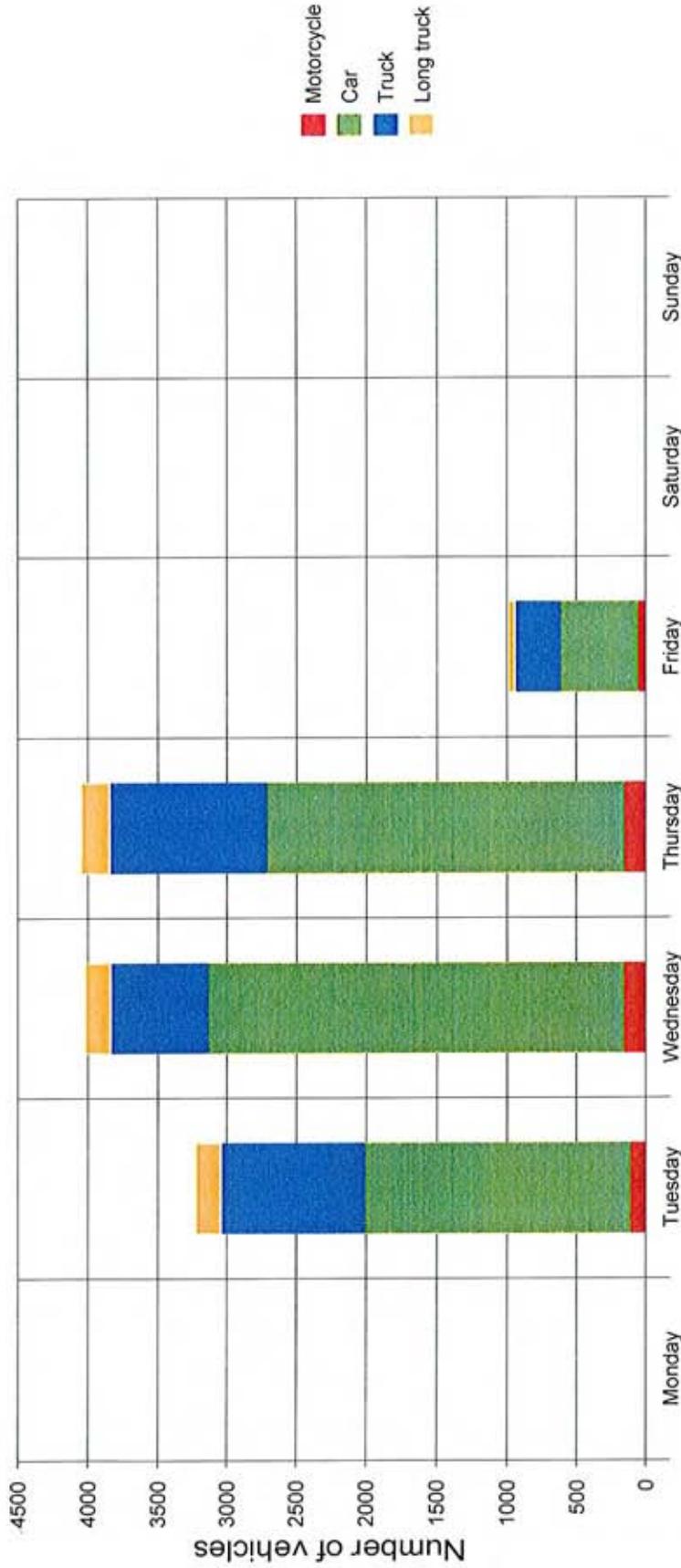
Period: Tuesday, February 05, 2008, 09:00 o'clock to Friday, February 08, 2008, 09:00 o'clock

Speed violations:	0 % Motorcycle	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 + Vmax+	V15 -	Va -	V85 - Vmax -
Average time interval:	2 sec Car	47	0.7	425	7.4	472	3.9	8	11	12	26	8	11
Traffic in column:	12 % Truck	5421	83.1	2586	45.1	8007	65.3	18	20	23	34	10	14
ADT:	4084	982	15.1	2192	38.3	3174	25.9	17	20	23	29	11	14
Truck Share:	31 % Total	74	1.1	526	9.2	600	4.9	15	17	20	25	9	11
		6524	53.2	5729	46.8	12253	100	18	20	23	34	10	13
													16
													17

Tompkins County Highway Department
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 Ithaca, NY 14850
 Traffic Data Report
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FOREST HOME DRIVE , 100 Ft. South of Warren Rd. 25MPH Zone (+ = South)



Statistics

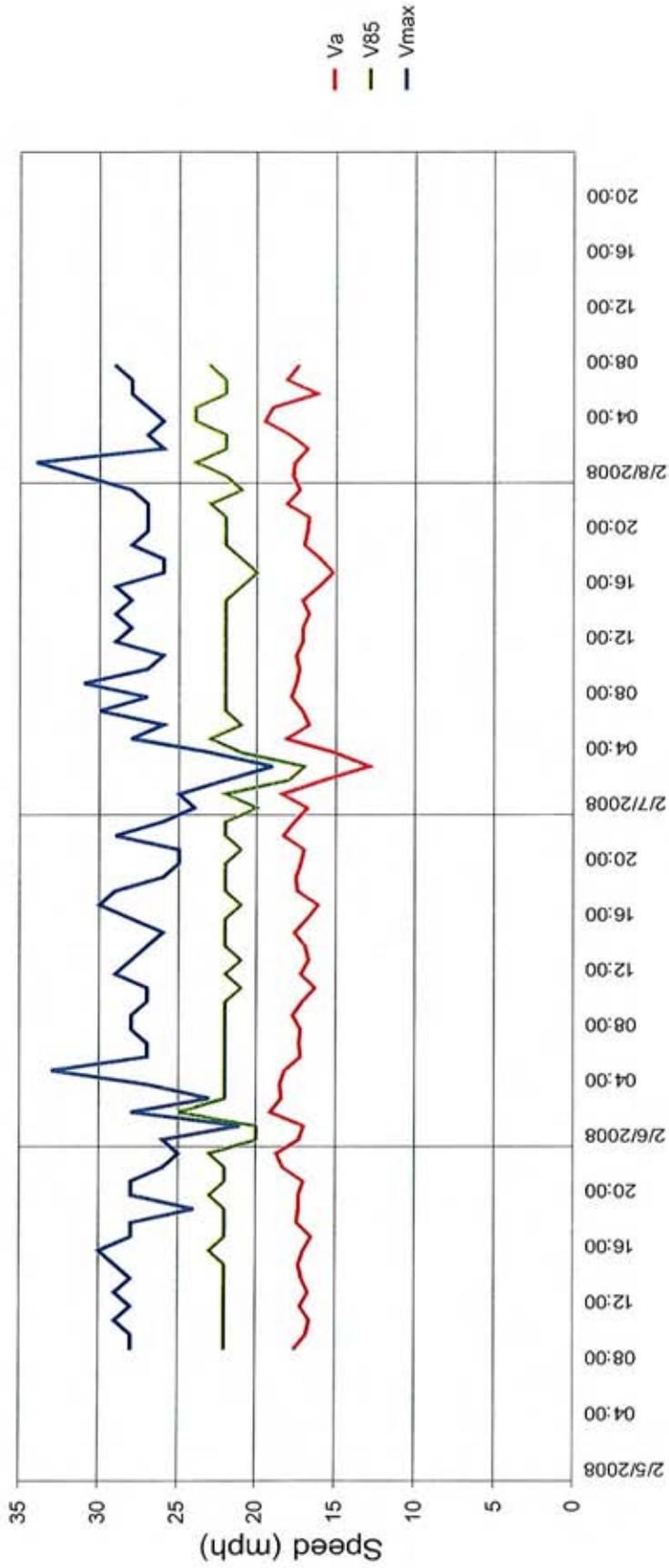
Period: Tuesday, February 05, 2008, 09:00 o'clock to Friday, February 08, 2008, 09:00 o'clock

Speed violations:	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	47	0.7	425	7.4	472	3.9	8	11	12	26	8	11	14	23
2 sec Car	5421	83.1	2586	45.1	8007	65.3	18	20	23	34	10	14	17	28
12 % Truck	982	15.1	2192	38.3	3174	25.9	17	20	23	29	11	14	16	27
ADT:	74	1.1	526	9.2	600	4.9	15	17	20	25	9	11	13	17
Truck Share:	6524	53.2	5729	46.8	12253	100	18	20	23	34	10	13	16	16

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FOREST HOME DRIVE , 100 Ft. South of Warren Rd. 25MPH Zone (+ = South)



Statistics

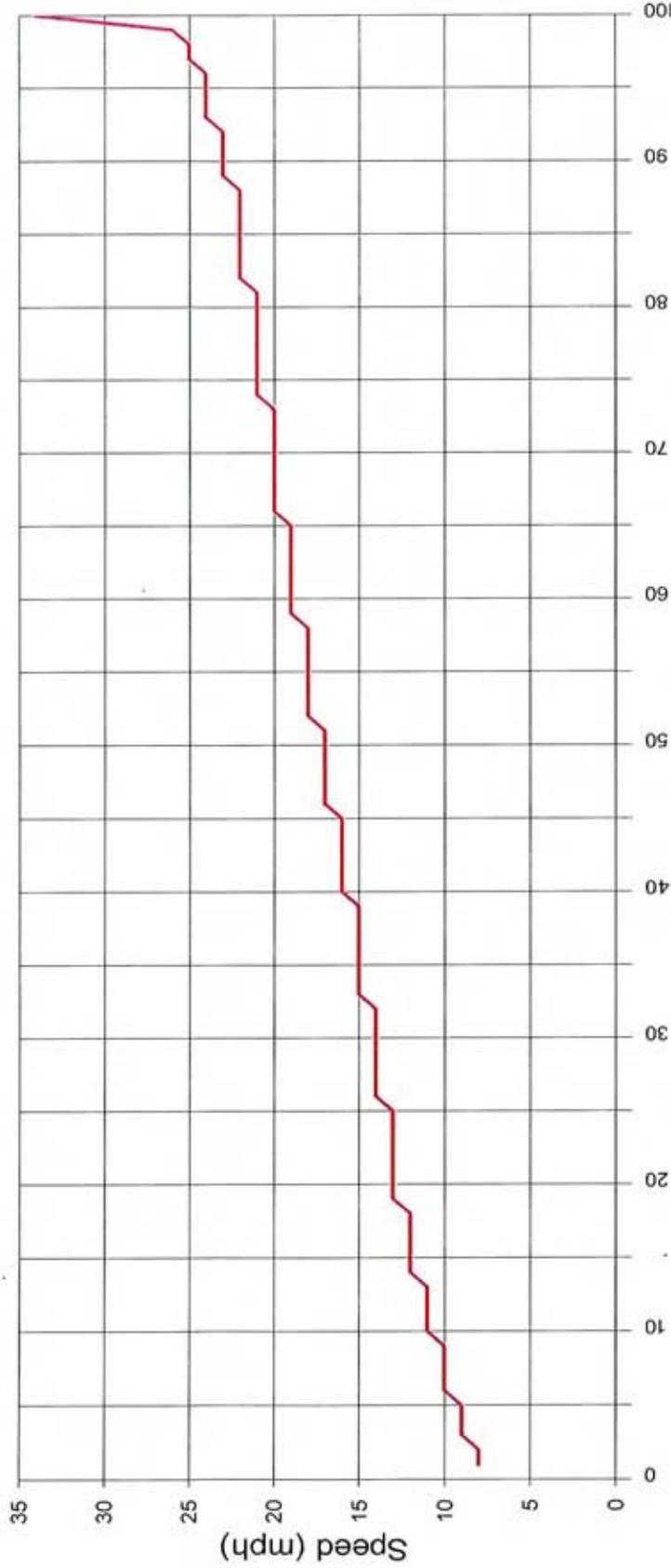
Period: Tuesday, February 05, 2008, 09:00 o'clock to Friday, February 08, 2008, 09:00 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
Speed violations:	47	0.7	425	7.4	472	3.9	8	11	12	26	8	11	14	23
Average time interval:	5421	83.1	2586	45.1	8007	65.3	18	20	23	34	10	14	17	28
Traffic in column:	982	15.1	2192	38.3	3174	25.9	17	20	23	29	11	14	16	27
ADT:	74	1.1	526	9.2	600	4.9	15	17	20	25	9	11	13	17
Truck Share:	6524	53.2	5729	46.8	12253	100	18	20	23	34	10	13	16	16

Tompkins County Highway Department
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FOREST HOME DRIVE, 100 Ft. South of Warren Rd. 25MPH Zone (+ = South)



Vx (%) Comment: x % of vehicles are driving at or below y mph

Statistics

Period:

Tuesday, February 05, 2008, 09:00 o'clock to Friday, February 08, 2008, 09:00 o'clock

Speed violations:

0 % Motorcycle

Average time interval:

2 sec Car

Traffic in column:

12 % Truck

ADT:

4084 Long truck

Truck Share:

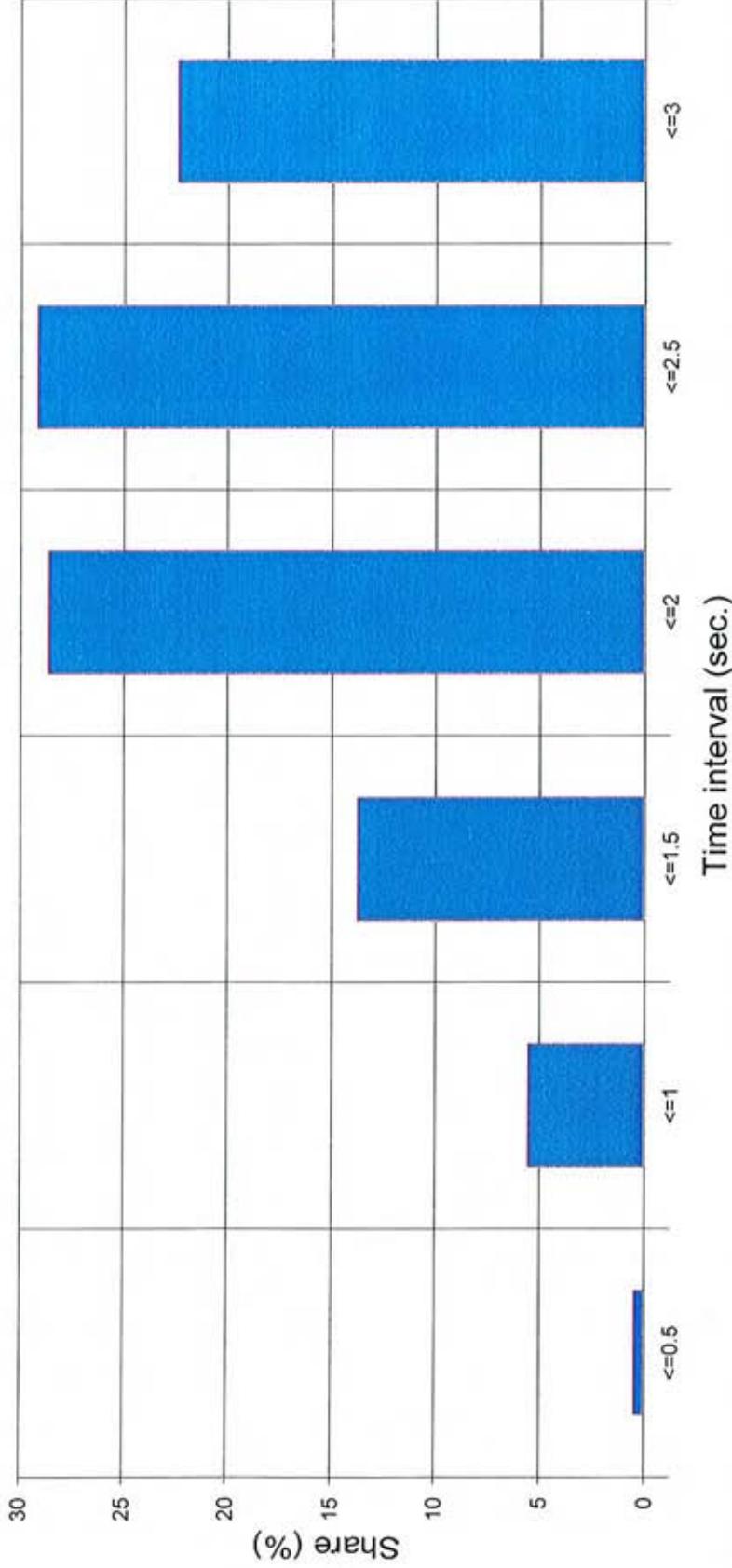
31 % Total

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
Motorcycle	47	0.7	425	7.4	472	3.9	8	11	12	26	8	11	14	23
Car	5421	83.1	2586	45.1	8007	65.3	18	20	23	34	10	14	17	28
Truck	982	15.1	2192	38.3	3174	25.9	17	20	23	29	11	14	16	27
Long truck	74	1.1	526	9.2	600	4.9	15	17	20	25	9	11	13	17
Total	6524	53.2	5729	46.8	12253	100	18	20	23	34	10	13	16	23

Tompkins County Highway Department
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FOREST HOME DRIVE, 100 Ft. South of Warren Rd. 25MPH Zone (+ = South)



Statistics

Period: Tuesday, February 05, 2008, 09:00 o'clock to Friday, February 08, 2008, 09:00 o'clock

Speed violations:

Average time interval:

Traffic in column:

ADT:

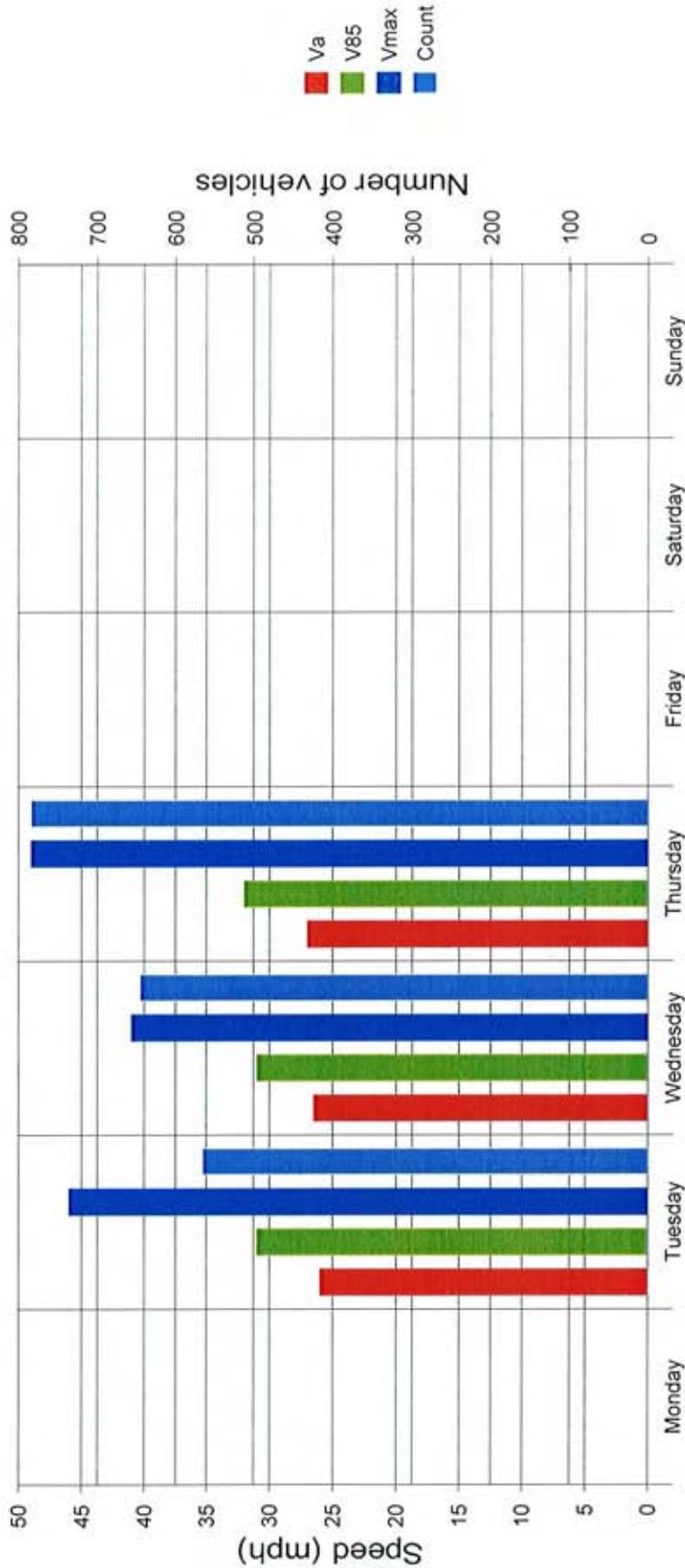
Truck Share:

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	47	0.7	425	7.4	472	3.9	8	11	12	26	8	11	14	23
2 sec Car	5421	83.1	2586	45.1	8007	65.3	18	20	23	34	10	14	17	28
12 % Truck	982	15.1	2192	38.3	3174	25.9	17	20	23	29	11	14	16	27
ADT: Long truck	74	1.1	526	9.2	600	4.9	15	17	20	25	9	11	13	17
31 % Total	6524	53.2	5729	46.8	12253	100	18	20	23	34	10	13	16	23

Tompkins County Highway Department
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 Ithaca, NY 14850
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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Statistics

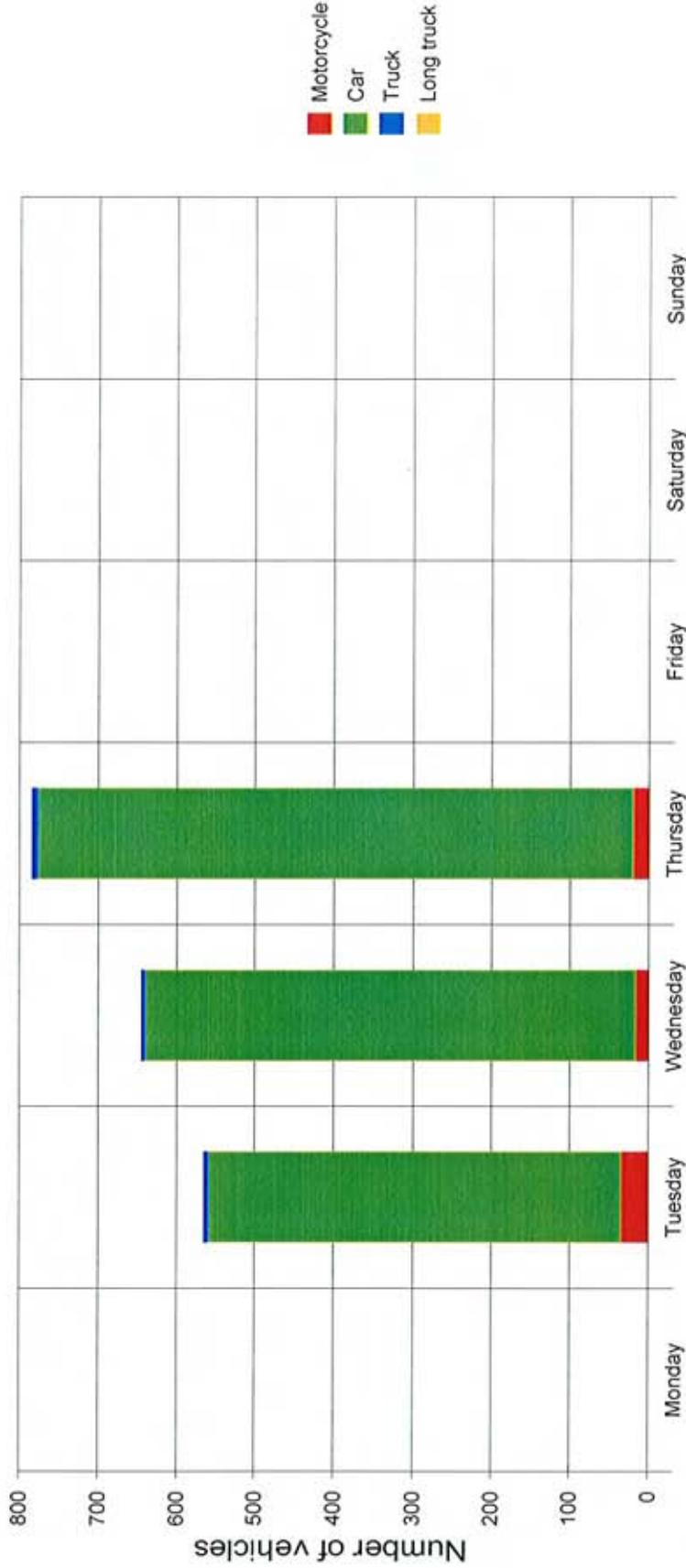
Period: Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

Category	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	24	2.3	48	5.1	72	3.6	8	15	17	36	12	25	32	38
1.6 sec Car	1029	97.4	879	93.7	1908	95.7	22	26	31	45	23	27	32	49
4 % Truck	3	0.3	11	1.2	14	0.7	19	22	26	26	18	21	24	26
ADT:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Truck Share:	1056	53	938	47	1994	100	21	26	31	45	23	27	32	32

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 Ithaca, NY 14850
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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Motorcycle
 Car
 Truck
 Long truck

Statistics

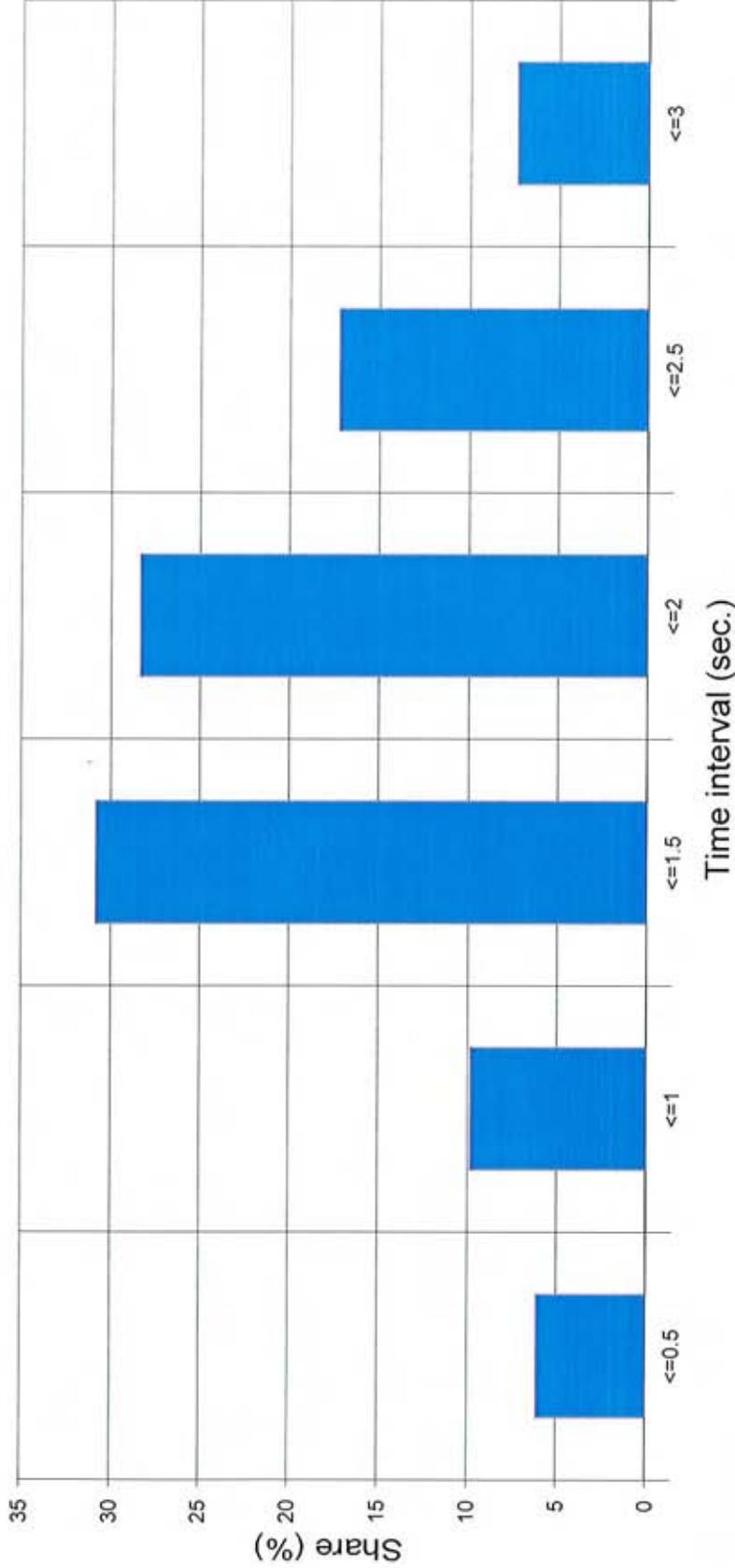
Period: Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

Speed violations:	0 %	Motorcycle	Count +	24	%	2.3	Count -	48	%	5.1	Total	72	%	3.6	V15 +	8	Va +	15	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
Average time interval:	1.6 sec	Car	1029	97.4	879	93.7	1908	95.7	22	26	31	45	23	27	32	49								
Traffic in column:	4 %	Truck	3	0.3	11	1.2	14	0.7	19	22	26	26	18	21	24	26								
ADT:	665	Long truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
Truck Share:	1 %	Total	1056	53	938	47	1994	100	21	26	31	45	23	27	32	32								

Tompkins County Highway Department
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 Ithaca, NY 14850
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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Statistics

Period:

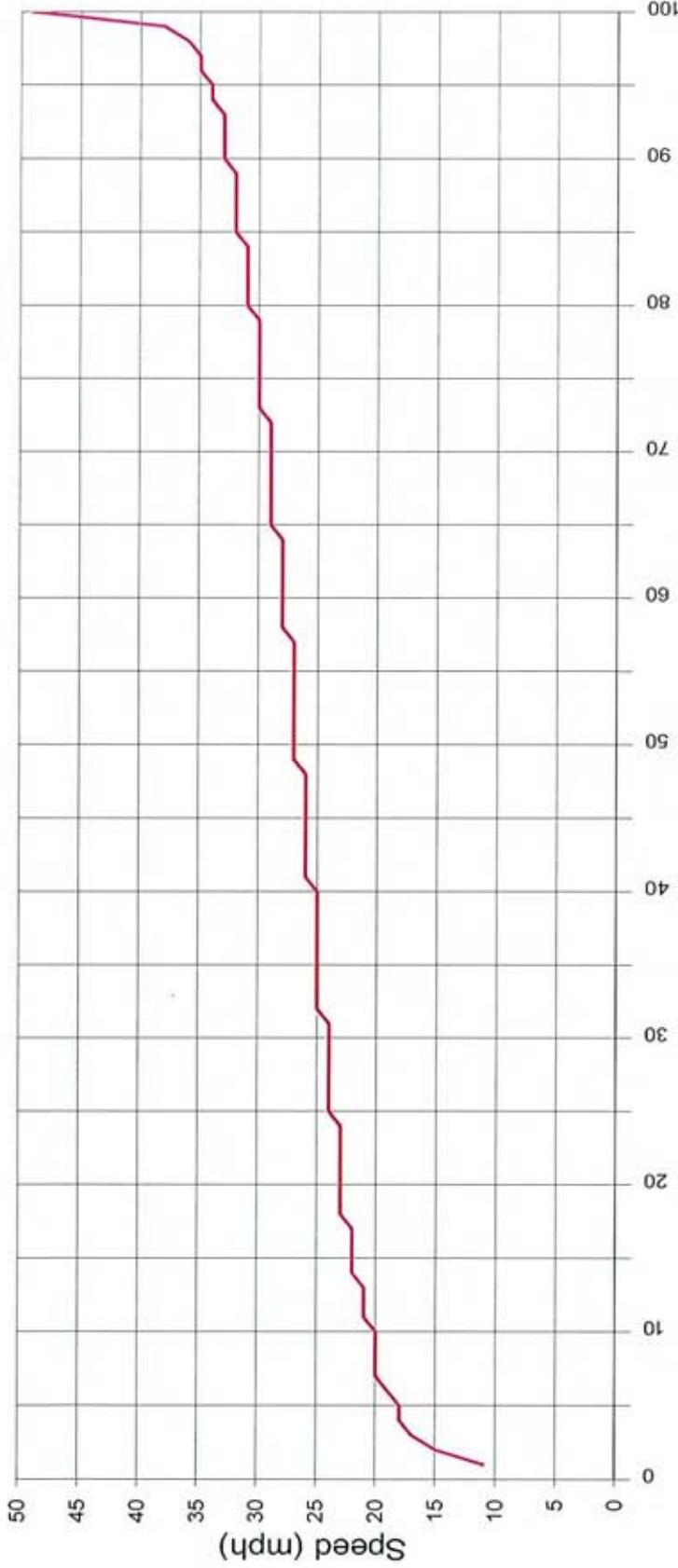
Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
Speed violations:	24	2.3	48	5.1	72	3.6	8	15	17	36	12	25	32	38
Average time interval:	1029	97.4	879	93.7	1908	95.7	22	26	31	45	23	27	32	49
Traffic in column:	3	0.3	11	1.2	14	0.7	19	22	26	26	18	21	24	26
ADT:	0	0	0	0	0	0								
Truck Share:	1056	53	938	47	1994	100	21	26	31	45	23	27	32	32

Tompkins County Highway Department
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 Ithaca, NY 14850
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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Vx (%) Comment: x % of vehicles are driving at or below y mph

Statistics

Period: Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

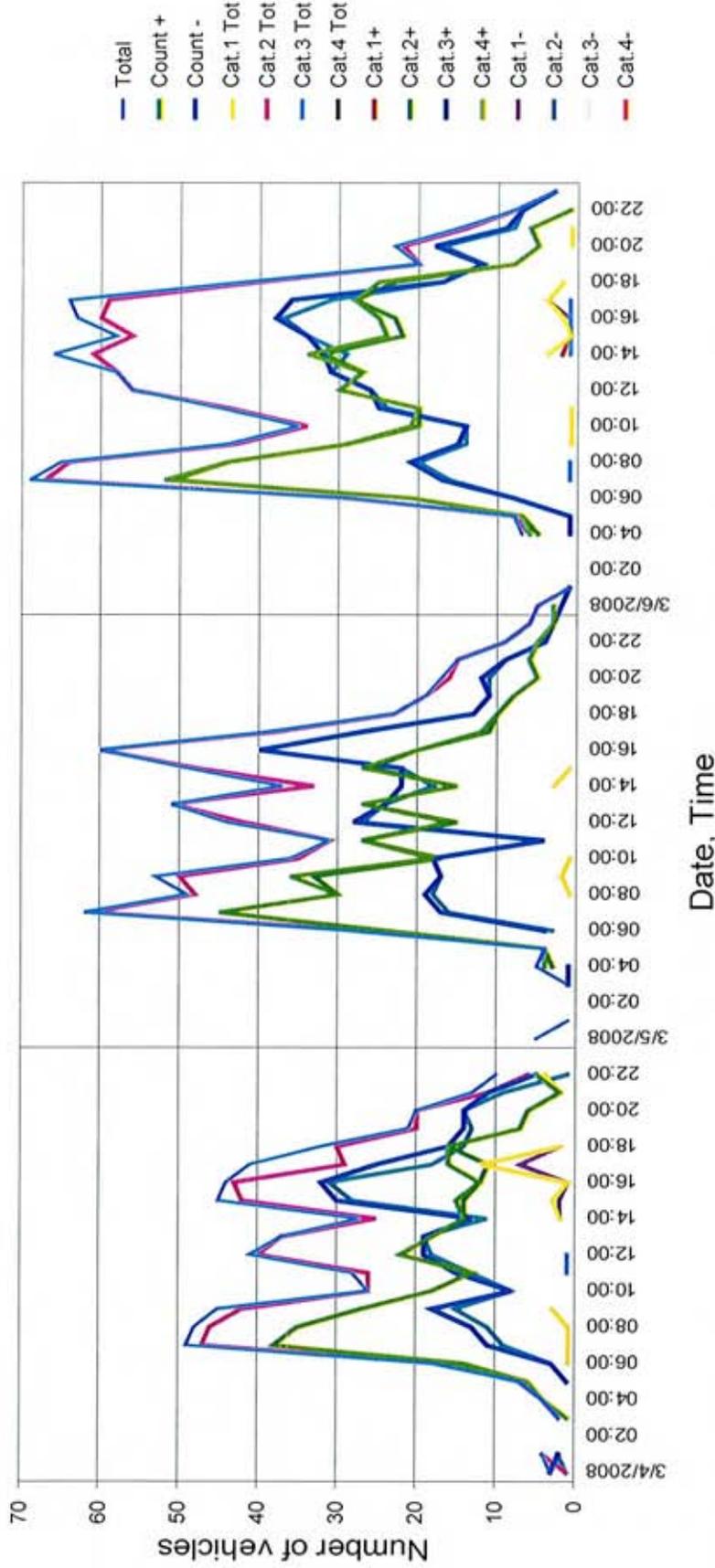
Speed violations: 0 % Motorcycle
 Average time interval: 1.6 sec/Car
 Traffic in column: 4 % Truck
 ADT: 665
 Truck Share: 1 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
Motorcycle	24	2.3	48	5.1	72	3.6	8	15	17	36	12	25	32	38
sec/Car	1029	97.4	879	93.7	1908	95.7	22	26	31	45	23	27	32	49
Truck	3	0.3	11	1.2	14	0.7	19	22	26	26	18	21	24	26
Long truck	0	0	0	0	0	0								
Total	1056	53	938	47	1994	100	21	26	31	45	23	27	32	32

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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Statistics

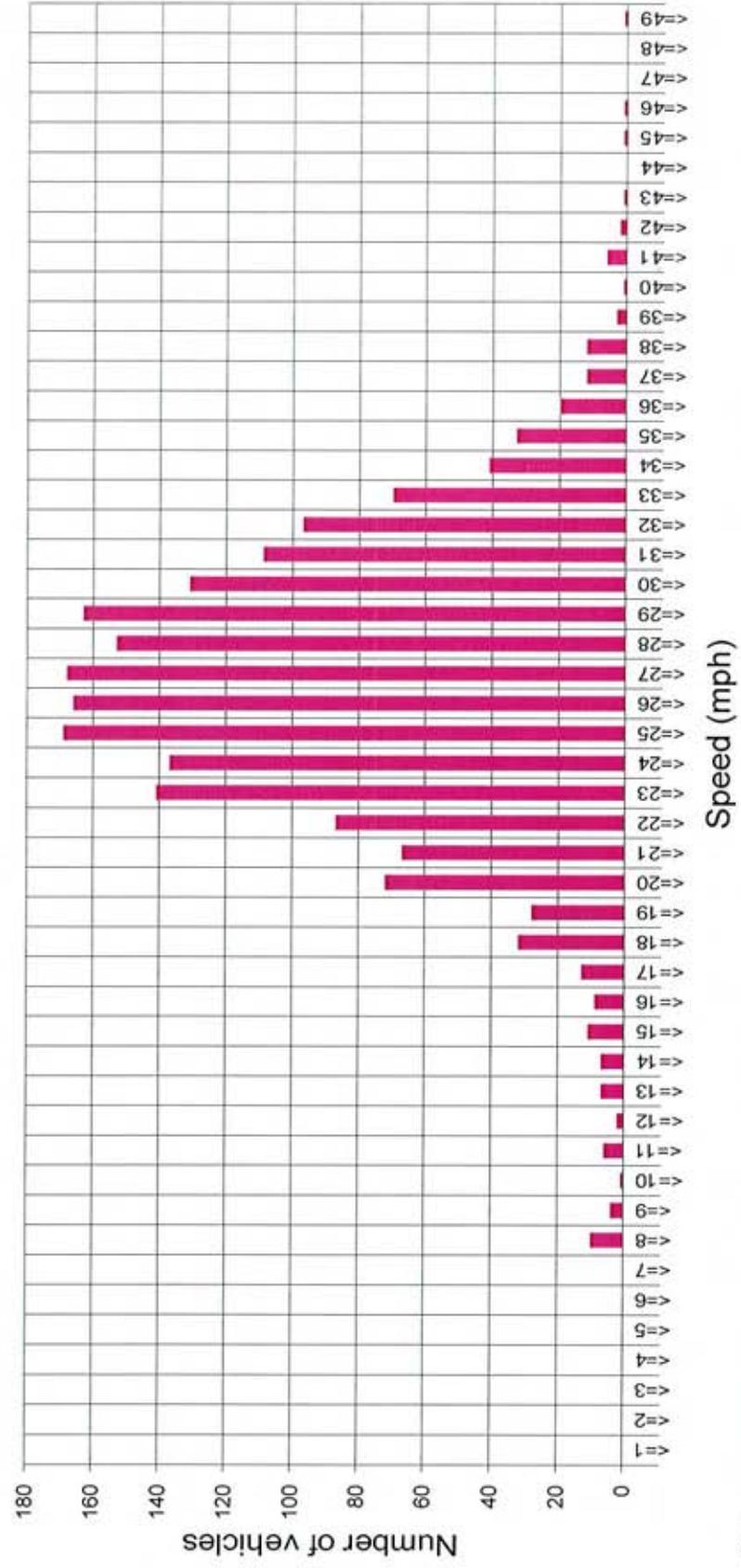
Period: Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	24	2.3	48	5.1	72	3.6	8	15	17	36	12	25	32	38
1.6 sec Car	1029	97.4	879	93.7	1908	95.7	22	26	31	45	23	27	32	49
4 % Truck	3	0.3	11	1.2	14	0.7	19	22	26	26	18	21	24	26
ADT:	0	0	0	0	0	0								
Truck Share:	1056	53	938	47	1994	100	21	26	31	45	23	27	32	32

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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Statistics

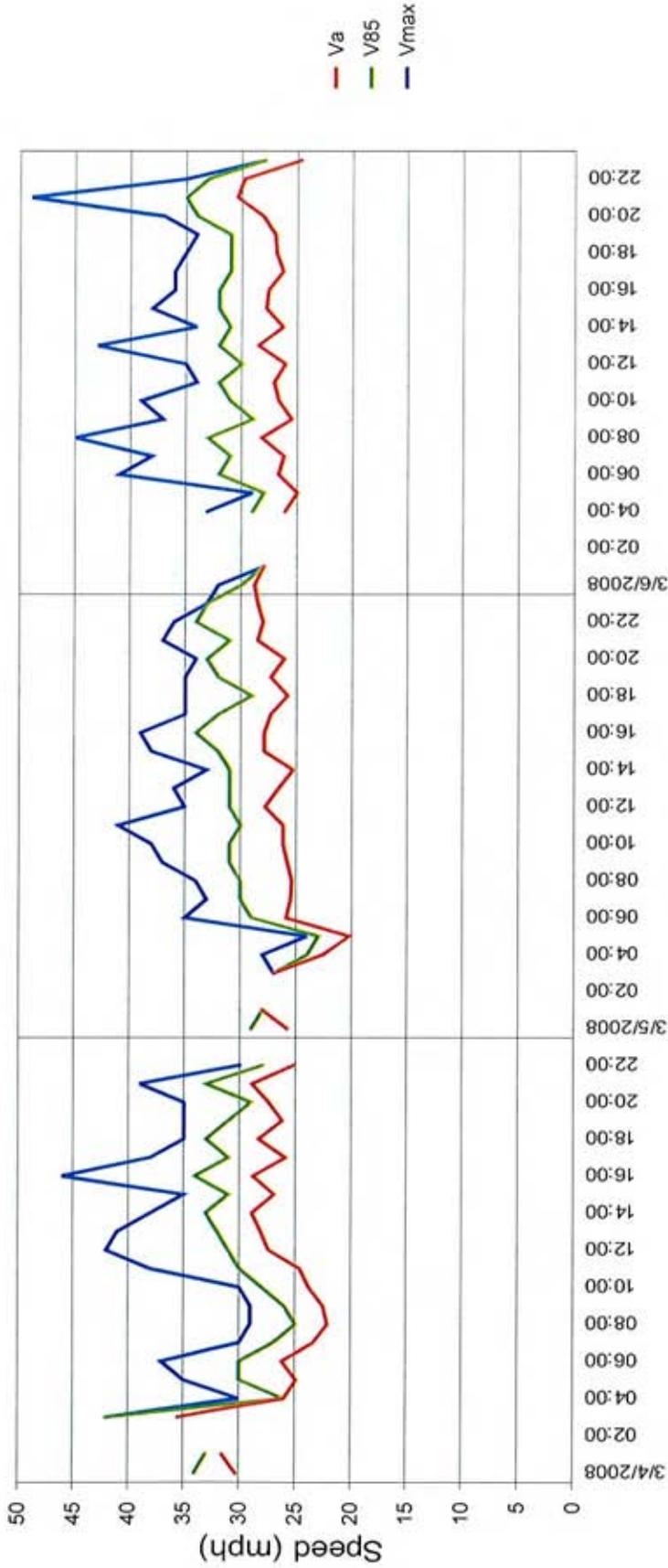
Period: Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax +	V15 -	Va -	V85 -	Vmax -
0 % Motorcycle	24	2.3	48	5.1	72	3.6	8	15	17	36	12	25	32	38
1.6 sec Car	1029	97.4	879	93.7	1908	95.7	22	26	31	45	23	27	32	49
4 % Truck	3	0.3	11	1.2	14	0.7	19	22	26	26	18	21	24	26
ADT:	0	0	0	0	0	0								
1 % Total	1056	53	938	47	1994	100	21	26	31	45	23	27	32	32

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FOREST HOME DRIVE, 1330 FT. EAST OF CALDWELL RD. (+ = WEST) 30 MPH Zone



Statistics

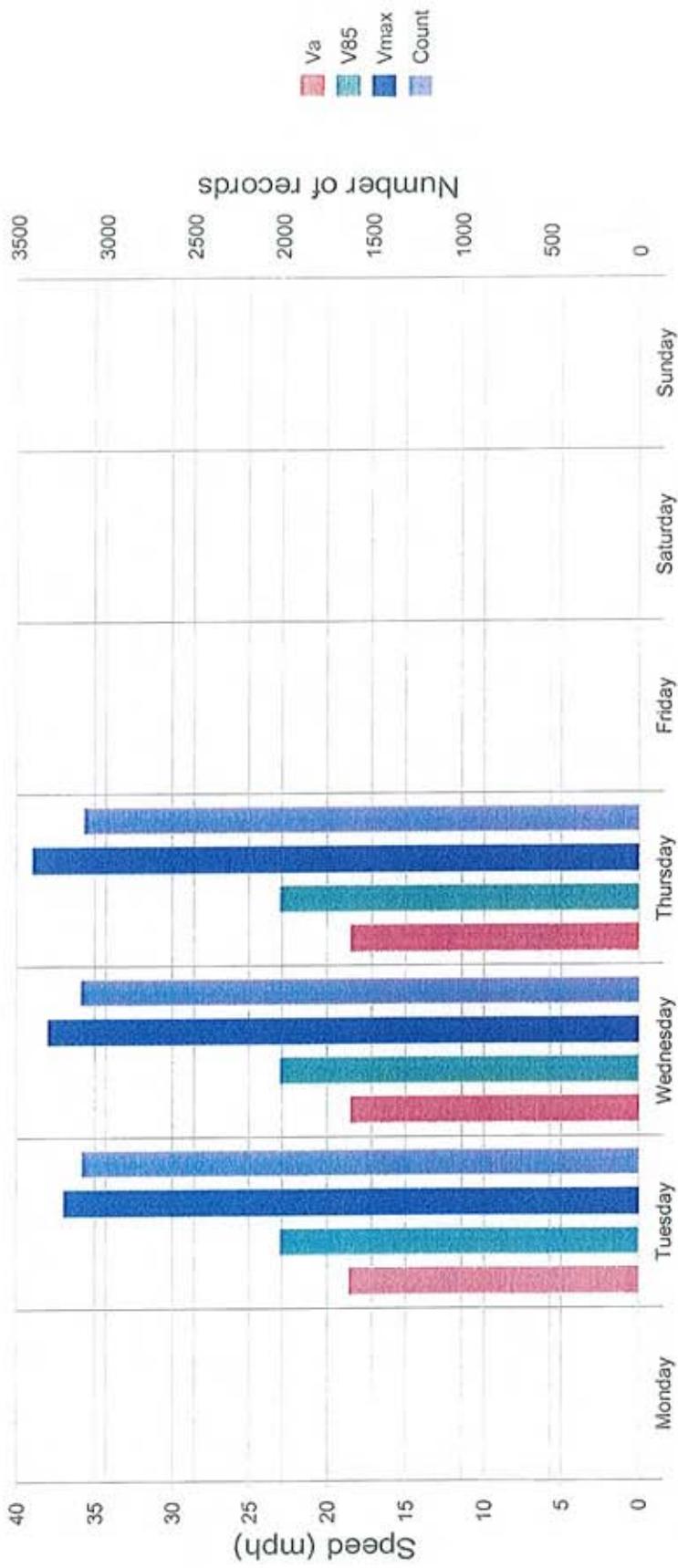
Period: Tuesday, March 04, 2008, 00:00 o'clock to Thursday, March 06, 2008, 23:59 o'clock

Speed violations:	0 %	Motorcycle	Count +	24	2.3	%	Count -	48	5.1	%	Total	72	3.6	%	V15 +	8	V15 -	12	Va +	15	Va -	25	V85 +	17	V85 -	32	Vmax +	36	Vmax -	38
Average time interval:	1.6 sec	Car	1029	97.4	93.7	1908	879	95.7	22	26	31	45	23	27	32	49														
Traffic in column:	4 %	Truck	3	0.3	1.2	14	11	0.7	19	22	26	26	18	21	24	26														
ADT:	665	Long truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
Truck Share:	1 %	Total	1056	53	47	1994	938	47	100	100	1994	21	26	31	45	23	27	32	32	32	32	32	32	32	32	32	32	32	32	32

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Forest Home Drive, On Bridge # 3047450 at Caldwell Rd. (25 MPH ZONE) (+ = S.E.) (Sp-Sgn#1)



Statistics

Period: Tuesday, January 26, 2010, 00:00 o'clock to Thursday, January 28, 2010, 23:59 o'clock

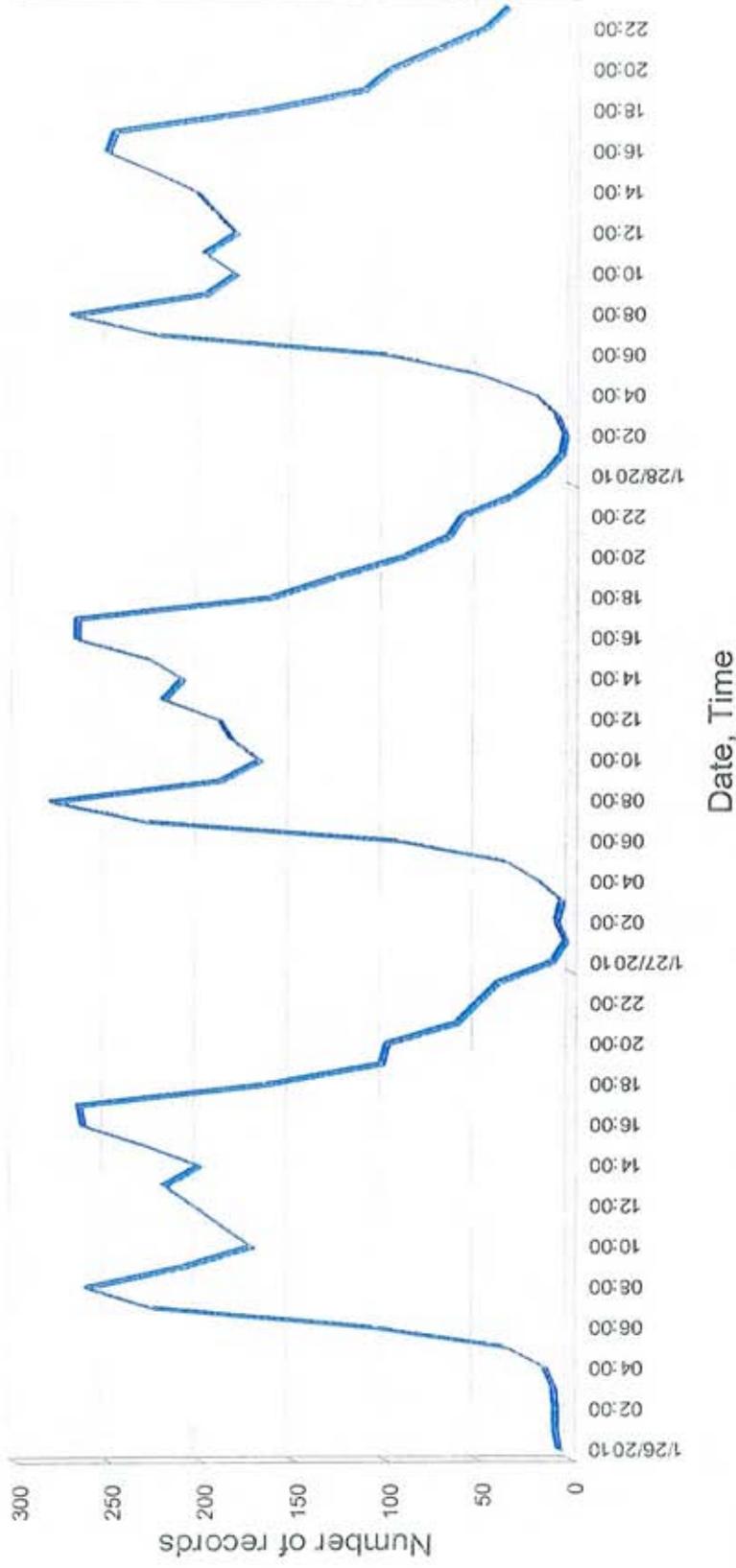
Number of records 9403
 Average speed Va 18.5 mph
 85% of the vehicles are driving slower or up to ... V85 23 mph
 Maximum speed Vmax 39 mph



Tompkins County Highway Department
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Forest Home Drive, On Bridge # 3047450 at Caldwell Rd. (25 MPH ZONE) (+ = S.E.) (Sp-Sgn#1)



Statistics

Period: Tuesday, January 26, 2010, 00:00 o'clock to Thursday, January 28, 2010, 23:59 o'clock

Number of records 9403

Average speed Va 18.5 mph

85% of the vehicles are driving slower or up to ... V85 23 mph

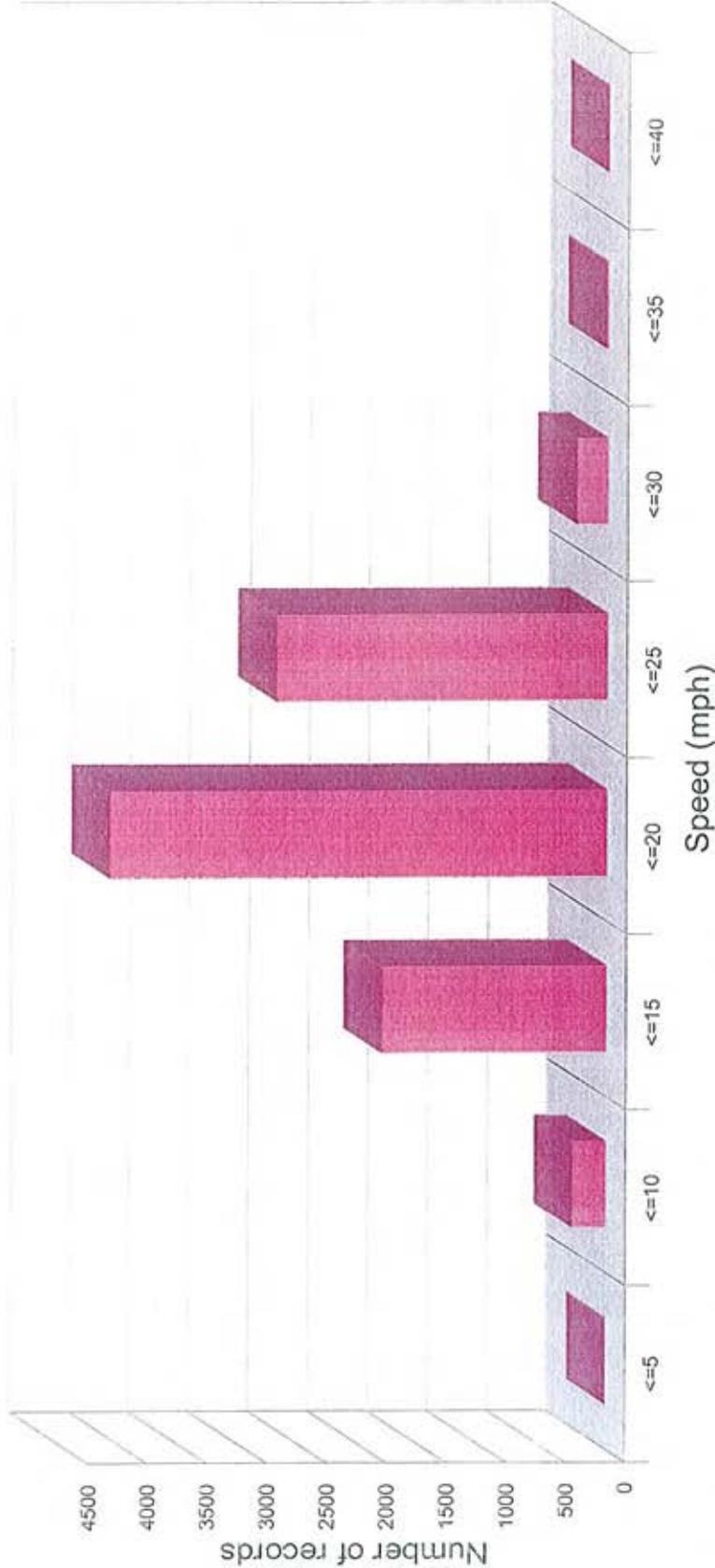
Maximum speed Vmax 39 mph



Tompkins County Highway Department
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Forest Home Drive, On Bridge # 3047450 at Caldwell Rd. (25 MPH ZONE) (+ = S.E.) (Sp-Sgn#1)



Statistics

Period: Tuesday, January 26, 2010, 00:00 o'clock to Thursday, January 28, 2010, 23:59 o'clock

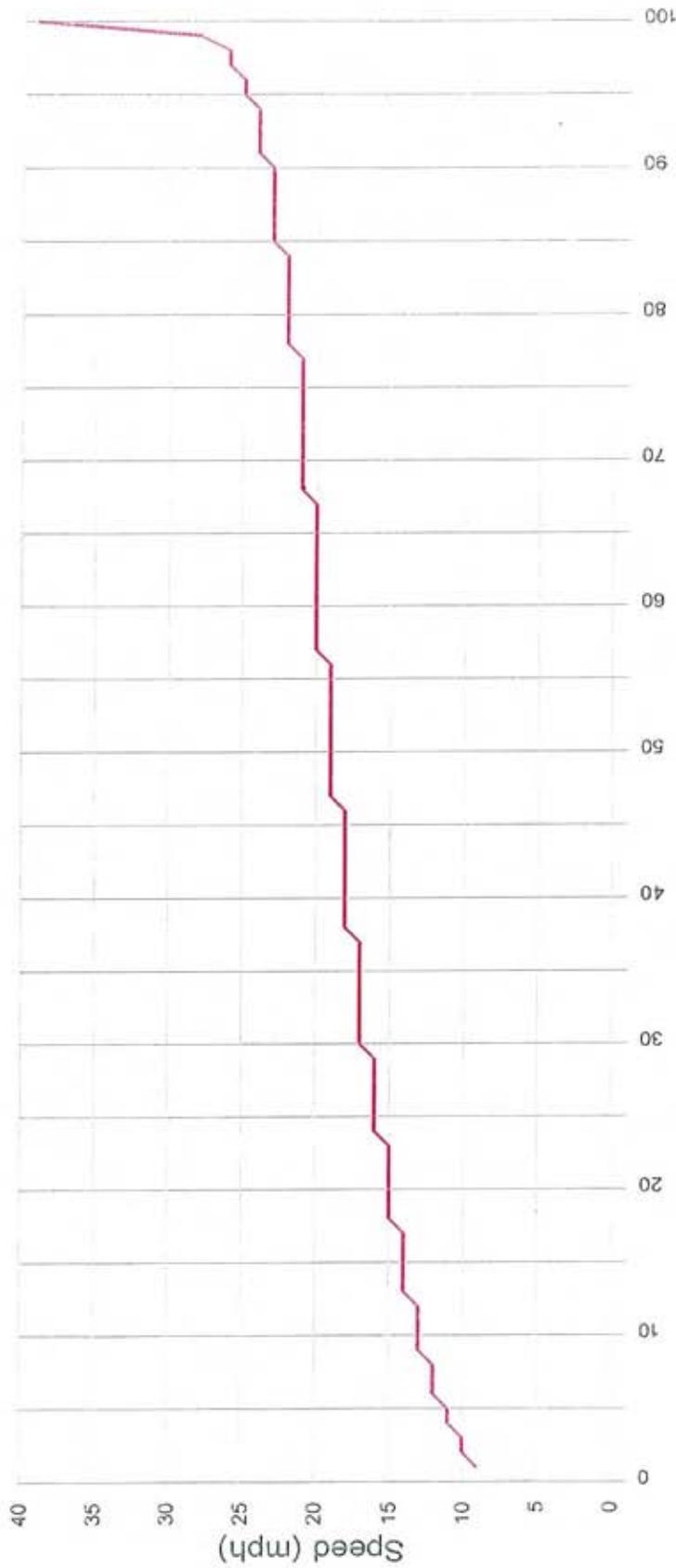
Number of records 9403
 Average speed Va 18.5 mph
 85% of the vehicles are driving slower or up to ... V85 23 mph
 Maximum speed Vmax 39 mph



Tompkins County Highway Department
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Forest Home Drive, On Bridge # 3047450 at Caldwell Rd. (25 MPH ZONE) (+ = S.E.) (Sp-Sgn#1)



Vx (%) Comment: x % of vehicles are driving at or below y mph

Statistics

Period: Tuesday, January 26, 2010, 00:00 o'clock to Thursday, January 28, 2010, 23:59 o'clock

Number of records 9403
 Average speed Va 18.5 mph
 85% of the vehicles are driving slower or up to ... V85 23 mph
 Maximum speed Vmax 39 mph



APPENDIX D
PAVEMENT & GEOTECHNICAL INFORMATION

PAVEMENT DESIGN TECHNICAL MEMORANDUM (NOT COMPLETED)
SOIL BORING LOGS
NRCS CUSTOM SOIL RESOURCE REPORT (NOT COMPLETED)

DISTRICT NO. 2-2
 COUNTY Tompkins
 PROJ. NO. 3192.00

STATE OF NEW YORK
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF SOIL MECHANICS
 SUBSURFACE EXPLORATION LOG
 (STATE FORCES)

HOLE NO. 2-2
 LINE & STA. 34+85
 OFFSET 17' RT.

PROJECT Ithaca - Dryden, Part 2
 QUAD. LOCATION 75-1-I19 DATE, START 14 Sep 70 SURF. ELEV. 836.5'
 SOIL SERIES Chenango DATE, FINISH 16 Sep 70 DEPTH TO WATER None Observed
 (ALSO DESCRIBE UNDER "REMARKS")

CASING O.D. 2.75 I.D. 2.25 WEIGHT OF HAMMER 300 lbs. HAMMER FALL
 SAMPLER O.D. 2.00 I.D. 1.50 INSIDE LENGTH OF SAMPLER 18" CASING 18" SAMPLER 18"

DEPTH BELOW SURFACE	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER				CROSS SECTION	MOISTURE	COLOR	DESCRIPTION OF SOIL AND ROCK	REMARKS
			0-6	6-12	12-18	18-24					
0											
10	J-1	8	15				m	Br.	mottled silt, tr. fine sand, gravel & veg.	0.0' - 1.5'	
30				36	10		m	Br.	silt, sand, & fine gravel, tr. veg.	1.5' - 3.0'	
35	J-2	10	9				m	Br.	Gravel, tr. veg.	3.0' - 4.5'	
28	J-3			10	13		m	Br.	silt, sand & fine gravel, tr. veg.	4.5' - 6.0'	
70		44	10				w	Br.	Silt, so. fine to med gravel, fine sand, tr. clay		
22	J-4			7	6						
20		6									
20											
26									Silt, so. Fine Sand & Fine Gravel		
45											
50	J-5	9	6				w	Br.	tr. clay.	10.0' - 11.5'	
220				4							
15	C-6 Drilled									Drilled with "AX" Diamond bit 12.0' - 17.0' Rec. = 16" 13 pcs + frags.	
20	C-7 Drilled								Gry Limestone	Drilled with "AX" Diamond bit 17.0' - 22.0' Rec. = 34" 16 pcs + frags.	
25	C-8 Drilled								Gry Shaley Limestone	Drilled with "AX" Diamond bit 22.0' - 27.0' Rec. = 34" 23 pcs + frags.	
30									Bottom of hole at 27.0'	Note: Lost wash water at 17.0'.	

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR STATE DESIGN AND ESTIMATE PURPOSES. IT IS MADE AVAILABLE TO BIDDERS ONLY THAT THEY MAY HAVE ACCESS TO IDENTICAL INFORMATION AVAILABLE TO THE STATE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF THE BIDDER.

DRILL RIG OPERATOR A. Teachout
 SOIL DESCRIPTIONS A. Franke
 ROCK DESCRIPTIONS A. Franke
 DISTRICT SOILS ENGR. J. Christopher
 S.E.V.
 SHEET 1 OF 1. HOLE NO. 2-2

DISTRICT NO. 3
 COUNTY Tompkins
 PROJ. NO. 3192.00

STATE OF NEW YORK
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF SOIL MECHANICS
 SUBSURFACE EXPLORATION LOG
 (STATE FORCES)

HOLE NO. 2-4
 LINE & STA. B 33+41
 OFFSET On @

PROJECT Ithaca-Dryden, Part 1
 QUAD. LOCATION 75-1-119 DATE, START 10 Sep 70 SURF. ELEV. 837.5'
 SOIL SERIES Chenango DATE, FINISH 10 Sep 70 DEPTH TO WATER -1.0'
 (ALSO DESCRIBE UNDER "REMARKS")

CASING O.D. 2.75 I.D. 2.25 WEIGHT OF HAMMER 300 lbs. HAMMER FALL
 SAMPLER O.D. 2.00 I.D. 1.50 INSIDE LENGTH OF SAMPLER 18" CASING 18" SAMPLER 18"

DEPTH BELOW SURFACE	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER					CROSS SECTION	MOISTURE	COLOR	DESCRIPTION OF SOIL AND ROCK	REMARKS
			0-6	6-12	12-18	18-24	24					
0	23										Roller bit Used	
1	11										0.0' ~ 3.0'	
24											Drilled with "AX" Diamond bit 3.0' ~ 5.0'	
5	39	J-1	Drilled									Rec. 8" 1 pcs. + frags.
29			4	4						Gry. Sandstone Boulder		
18		J-2			1	6			m Bry.	Shaley Gravel, tr. Sand & Silt.	"E" Spoon 5.0' ~ 7.0'	
39												
36										Shaley Gravel, tr.		
10	12	J-3	6	6					w Bry.	Sand & Silt	9.0' ~ 10.5'	
37						7						
140										Limey Sandstone & Sandy Shale	Drilled with "AX" Diamond bit 11.3' ~ 16.0'	
15		C-4	Drilled									Rec. = 24.0"
16											18 pcs + chips.	
20		C-5	Drilled									Drilled with "AX" Diamond bit 16.0' ~ 21.0'
21											Rec. = 31.5"	
22											14 pcs. + frags.	
23										Gry.		
24										Bottom of hole at 21.0'		

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR STATE DESIGN AND ESTIMATE PURPOSES. IT IS MADE AVAILABLE TO BIDDERS ONLY THAT THEY MAY HAVE ACCESS TO IDENTICAL INFORMATION AVAILABLE TO THE STATE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF THE BIDDER.

DRILL RIG OPERATOR J. McKenna
 SOIL DESCRIPTIONS B. Dawson
 ROCK DESCRIPTIONS B. Dawson
 DISTRICT SOILS ENGR. J. Christopher
 SHEET 1 OF 1. HOLE NO. 2-4

APPENDIX E

CORRESPONDENCE

AGENCY COORDINATION
PROPERTY OWNER COORDINATION

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, Albany, New York 12233-4757
Phone: (518) 402-8935 • FAX: (518) 402-8925
www.dec.state.ny.us



Alexander B. Grannis
Commissioner

RECEIVED

JAN 04 2008

December 31, 2007

SHUMAKER CONSULTING
ENGINEERING

Lauren Ramos
Shumaker Consulting Engineering
143 Court Street
Binghamton, NY 13901-3528

Dear Ms. Ramos:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Bridge Rehabilitation, Forest Home Drive Bridge over Fall Creek, PIN 3950.41, site as indicated on the map you provided, located in the Town of Ithaca, Tompkins County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environment impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Seoane
Tara Seoane, Information Services
New York Natural Heritage Program

Encs.

cc: Reg. 7, Wildlife Mgr.
Reg. 7, Fisheries Mgr.

October 29, 2008

Mr. James Warren
Historic Sites Restoration Coordinator
NYS Office of Parks, Recreation and Historic Preservation
P.O. Box 189
Peebles Island
Waterford, New York 12188-0189

Re: PIN 3750.41, Reconstruction of Forest Home Drive Bridge (upstream) over Fall Creek
Town of Ithaca, Tompkins County, NY
BIN 3047450

Dear Mr. Warren:

Tompkins County Highway Division is administering preliminary design of the referenced project as a federal-aid Transportation Enhancement Project. The upstream Forest Home Drive Bridge is listed on the National Register of Historic Places as a contributing element of the Forest Home Historic District. Please consider the following information related to the subject bridge reconstruction project.

History and Condition of Bridge

The existing through-truss bridge was constructed in 1909 by the Groton Bridge Company. Several details of the original design are unknown, but it is known that the bridge has undergone numerous changes over time. The original (perhaps timber) deck was likely replaced in the 1930s with a concrete 'jack arch' system. This may also have been when a walkway was added outside the upstream truss. Neither feature was likely original, since the trusses are not sized to carry either. In fact, engineering rating of the upstream truss in 1973 determined it had 0 tons capacity. To avoid closure of the bridge, the concrete deck was removed and an open steel grating deck was installed at that time. Other modifications performed in 1974-5 include:

- Old floor system and walkway were replaced,
- Truss bearings and lower chords were modified and strengthened,
- Riveted plate sections from truss end posts were removed and welded back in place, as were lower chord connection plates,
- Bridge railings were replaced with 2 corrugated guide rails per truss, and
- A sanitary sewer main was added to the downstream truss.

In 1995, four diagonal primary members were replaced on each truss. In 1998, the bridge seats were reconstructed and concrete scour protection walls were placed in front of both abutments. This month, additional repairs were made to strengthen the upstream truss bottom chord, which is seriously deteriorated. The bridge is currently load posted for 15 tons. An in-depth discussion of the structure is included in section II.C.1.o of the enclosed excerpts from the draft Design Report.

If improvements are not made the bridge will likely be closed within five to ten years. Three alternative strategies have been suggested:

- Alternative 1 - Continued Maintenance,
- Alternative 2 - Conventional Rehabilitation, and
- Alternative 3 - Superstructure Replacement.

Alternative 1 is not considered feasible because it does not address the project objectives. Typical sections and profiles of Alternatives 2 and 3 are included in the enclosure.

Feasible Alternatives

Both feasible alternatives would remove the existing walkway and create a separate pedestrian bridge outside the upstream truss that carries a replaced water main below its deck. This bridge would have a concrete deck finished to simulate timber, latticed railings, and ornamental end posts resembling those typical of the period. Replacing stone retaining walls on the bridge approaches with segmental block or stone-faced concrete walls would generate additional space for a walkway connecting the pedestrian bridge to other community walkways. Granite curbs and a 3-foot setback would separate the walkway from vehicle traffic.

Both alternatives would replace existing laid-stone abutment stems and portions of the upstream wing walls. New concrete walls would be formed to create a stone-like appearance. Both alternatives preserve and rehabilitate the century-old trusses. Deteriorated truss members, especially the bottom chords and end diagonals, would be replaced in-kind. Bolts with rivet-like heads would replace rivets, as needed, including where previous weld repairs were made. Corrugated railings would be replaced with box beam bridge railings mounted to the trusses. The dimensions of the trusses would be unchanged, but the width of the traveled way would be somewhat reduced, with a slightly greater reduction resulting from Alternative 3.

The alternatives differ in their treatment of the bridge's deck and floor system. Alternative 2 would replace the open-grate deck and floor system in-kind and retain the structural function of the rehabilitated trusses. Alternative 3 would replace the floor system with a steel multi-girder superstructure and composite concrete deck, spanning the creek independently of the trusses. A slight vertical curve would be introduced through the bridge to accommodate the required depth of the girders.

Tompkins County prefers Alternative 3 because of the following advantages.

- The open grating is replaced, thereby decelerating the rate of deterioration of the truss and bridge structure and reducing maintenance efforts to reverse that deterioration. The upgraded deck would also provide safety improvements for bicyclists and yield a surface that is quieter and truer to the bridge's original appearance.

- Structural redundancy afforded by the multi-girder superstructure would mean that failure of a fracture critical truss element would no longer cause a complete collapse of the bridge.
- The bridge would not be posted. (The existing 15-ton posting is retained with Alternative 2.) This would permit use by legal weight emergency and service vehicles. To achieve no posting from Alternative 2, many more elements of the trusses would need replacement with stronger sections, including the entire top chords. This would also add significant cost to the project.
- The bridge would have significant reserve load capacity, so a weight restriction due to future deterioration would be very remote.
- The estimated cost of Alternative 3 is approximately \$200,000 less than Alternative 2.

Tompkins County respectfully requests that your office review this project with respect to the potential for historic or archaeological impacts. Please respond as soon as possible so that any potential concerns may be addresses and project deadlines met.

Thank you for your time and consideration in providing the SHPO's opinions of the project alternatives. Please do hesitate to contact me at 607-274-0307 or jlampman@tomkins-co.org if you have any questions about these materials.

Sincerely,

John R. Lampman, P.E.
Associate Civil Engineer

enclosure

xc(w/o enc.): Jessica Evans, Preservation Director, Historic Ithaca
Mark Laistner, Erdman-Anthony

TOMPKINS COUNTY HIGHWAY DIVISION

170 Bostwick Road, Ithaca, NY 14850
607-274-0300
FAX 607-272-8489

February 20, 2009

Mr. James Warren
Historic Sites Restoration Coordinator
NYS Office of Parks, Recreation and Historic Preservation
P.O. Box 189
Peebles Island
Waterford, New York 12188-0189

Re: PIN 3750.41, Reconstruction of Forest Home Drive Bridge (upstream) over Fall Creek
Town of Ithaca, Tompkins County, NY
BIN 3047450

Dear Mr. Warren:

Tompkins County Highway Division remains convinced that the basic features of Alternative 3, replacing the floor system of the referenced bridge with a steel multi-girder superstructure and composite concrete deck, thereby spanning the creek independently of the trusses, is in the best interests of the community. However, Tompkins County proposes the following changes to the preliminary description sent to you for comment last October to incorporate public input received during design development. These items are also discussed in the enclosed summary of a recent meeting of the project Working Group.

1. Instead of a separate pedestrian bridge, the walkway would be cantilevered off the vehicle bridge, as existing. Walkway support brackets similar to those on the "downstream bridge" would be mounted to the new fascia girder with stringers spanning between brackets. Latticed rail on the outside of the walkway would resemble original railings. No railing would separate truss from walkway. Steel walkway elements would be painted to match the rehabilitated trusses. The water main below the current walk would be moved to between main girders to reduce load on the cantilever.
2. The walkway would have a timber deck instead of concrete.
3. The walkway surface will be flat instead of following the profile of the bridge deck. You will recall that the proposed built-up girders would be taller at center span than at the ends, introducing a slight vertical curve in the deck profile.
4. The girders will be weathering steel to reduce maintenance and initial costs and to differentiate between new and historic elements of the structure.
5. The existing sewer main would be supported under the deck rather than by the trusses.

6. The walkway on the bridge approaches would be concrete instead of asphalt.
7. Rather than mounting vehicle rail to the trusses, the possibility of mounting the rail on independent posts anchored to the deck will be investigated affording the trusses increased protection.

Tompkins County respectfully requests that you review these changes and provide a written determination of historic impacts due to the proposed alternative for inclusion with design documentation.

Thank you for your time and consideration in providing the SHPO's opinions as the design is developed. Please do not hesitate to contact me at 607-274-0307 or jlampman@tomkins-co.org if you have any questions about the project.

Sincerely,



John R. Lampman, P.E.
Associate Civil Engineer

enclosure

xc: Alphonse Pieper, Preservation Director, Historic Ithaca
Mark Laistner, Erdman-Anthony

Working Group Meeting Summary

FOREST HOME DRIVE OVER FALL CREEK - BIN 3047450 UPSTREAM BRIDGE REHABILITATION

February 12, 2009; 2:15 P.M.

Tompkins County Highway Division Conference Room

Present:

Bruce Brittain, Forest Home

Alphonse Pieper, Historic Ithaca

Dan Walker, Town of Ithaca

Fred Noteboom, Town of Ithaca

William Sczesny, Tompkins County Highway

John Lampman, Tompkins County Highway

John distributed a list of project decisions that needed to be made now and in the future, and decisions that were already made. The discussion primarily centered on the decisions needed in the short-term.

1. Maintain pedestrian crossing throughout construction? A consensus was reached that it was not worth \$60-70,000 to maintain pedestrian traffic. However, it was agreed that pedestrian traffic should be maintained as long as possible.
2. Pedestrian bridge deck - timber or concrete? The consensus was to advance the design with a timber deck on the pedestrian bridge.
3. Pedestrian bridge type - separate or cantilever? The cantilevered option was selected because of it is relevant to Forest Home's period of historical significance. Initial construction, design, and maintenance costs will be similar or higher than the separate bridge option. Possible maintenance cost reductions could result if galvanized supports are used. The water and sewer mains will be supported under the vehicle bridge deck.

A means to control horizontal movement of the truss bottom chords that isolates it from deflection on the bridge might be possible to include in the cantilever design.

4. Pedestrian bridge profile - flat or matching profile of vehicle bridge? The pedestrian bridge will be designed with a flat deck instead of following the line of the vehicle bridge.

While on this subject, the need for a 'hump-backed' vehicle bridge was revisited. The beam recommendation is limited by hydraulic and property impacts concerns. John reported that heavy rolled beams would probably not be more readily available than those specified would. Erdman-Anthony looked at many possibilities and the hump-backed option is the optimal solution given the constraints.

Using weathering steel for the main girders will be considered.

5. Pedestrian bridge railing - type; one side or both sides? The pedestrian bridge will be designed so that hand railing is only needed on the outside edge. No hand railing will be provided between the pedestrian and vehicle bridges.

Problems with mounting bridge rail on the trusses were discussed. Dan recommended mounting posts to the deck fascias instead of on top of the deck/curb.



New York State Office of Parks,
Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peables Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

www.nysparks.com

David A. Paterson
Governor

Carol Ash
Commissioner

April 02, 2009

John R. Lampman, P.E.
Associate Civil Engineer
Tompkins County Highway Division
170 Bostwick Road
Ithaca, New York 14850

Re: FHWA/DOT - PIN 3750.41
Rehabilitate BIN 3047450, Forest Home Dr.
over Fall Creek (upstream)
T/Ithaca, Tompkins County
08PR05748

Dear Mr. Lampman, P.E.:

Thank you for your letters of February 20 and March 10, 2009, by which you submitted revised designs for the proposed replacement bridge and approaches for review by the State Historic Preservation Office (SHPO). We have completed our review of the above project in accordance with Section 106 of the National Historic Preservation Act and offer the following finding of project effect.

Based on our review of the *Draft Design Report* (October 2008) and subsequent project design revisions made in consultation with our office, Historic Ithaca Inc. and the local community, it is the SHPO opinion that your project will have No Adverse Effect upon the Forest Home Historic District or other resources in or eligible for inclusion in the National Registers of Historic Places.

If you have any questions regarding this review, please call me at (518) 237-8643, extension 3283 or email me at james.warren@oprhp.state.ny.us.

Sincerely,

James Warren
Historic Sites Restoration Coordinator



United States Department of the Interior

FISH AND WILDLIFE SERVICE



New York Field Office
3817 Luker Road, Cortland, NY 13045
Phone: (607) 753-9334
Fax: (607) 753-9699

Long Island Field Office
3 Old Barto Rd., Brookhaven, NY 11719
Phone: (631) 776-1401
Fax: (631) 776-1405

Endangered Species Act List Request Response Cover Sheet

This cover sheet is provided in response to a search of our website* for information regarding the potential presence of species under jurisdiction of the U.S. Fish and Wildlife Service (Service) within a proposed project area.

Attached is a copy of the New York State County List of Threatened, Endangered, and Candidate Species for the appropriate county(ies). The database that we use to respond to list requests was developed primarily to assist Federal agencies that are consulting with us under Section 7(a)(2) of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Our lists include all Federally-listed, proposed, and candidate species known to occur, as well as those likely to occur, in specific counties.

The attached information is designed to assist project sponsors or applicants through the process of determining whether a Federally-listed, proposed, or candidate species and/or “critical habitat” may occur within their proposed project area and when it is appropriate to contact our offices for additional coordination or consultation. You may be aware that our offices have provided much of this information in the past in project-specific letters. However, due to increasing project review workloads and decreasing staff, we are now providing as much information as possible through our website. We encourage anyone requesting species list information to print out all materials used in any analyses of effects on listed, proposed, or candidate species.

The Service routinely updates this database as species are proposed, listed, and delisted, or as we obtain new biological information or specific presence/absence information for listed species. If project proponents coordinate with the Service to address proposed and candidate species in early stages of planning, this should not be a problem if these species are eventually listed. However, we recommend that both project proponents and reviewing agencies retrieve from our online database an *updated* list every 90 days to append to this document to ensure that listed species presence/absence information for the proposed project is *current*.

Reminder: Section 9 of the ESA prohibits unauthorized taking** of listed species and applies to Federal and non-Federal activities. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to “take**” any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for “take**,” or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the Service, to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species.

For instance, work in certain waters of the United States, including wetlands and streams, may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), the Service may concur, with or without recommending additional permit conditions, or recommend denial of the permit depending upon potential adverse impacts on fish and wildlife resources associated with project construction or implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s).*

For additional information on fish and wildlife resources or State-listed species, we suggest contacting the appropriate New York State Department of Environmental Conservation regional office(s) and the New York Natural Heritage Program Information Services.*

Since wetlands, ponds, streams, or open or sheltered coastal waters may be present in the project area, it may be helpful to utilize the National Wetlands Inventory (NWI) maps as an initial screening tool. However, they may or may not be available for the project area. Please note that while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Online information on the NWI program and digital data can be downloaded from Wetlands Mapper, http://wetlands.fws.gov/mapper_tool.htm.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. After reviewing our website and following the steps outlined, we encourage both project proponents and reviewing agencies to contact our office to determine whether an accurate determination of species impacts has been made. If there are any questions about our county lists or agency or project proponent responsibilities under the ESA, please contact the New York or Long Island Field Office Endangered Species Program at the numbers listed above.

Attachment (county list of species)

*Additional information referred to above may be found on our website at:
<http://www.fws.gov/northeast/nyfo/es/section7.htm>

** Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to *take* (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

Tompkins County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Bog turtle (<i>Historic</i>)	<i>Clemmys [=Glyptemys] muhlenbergii</i>	T

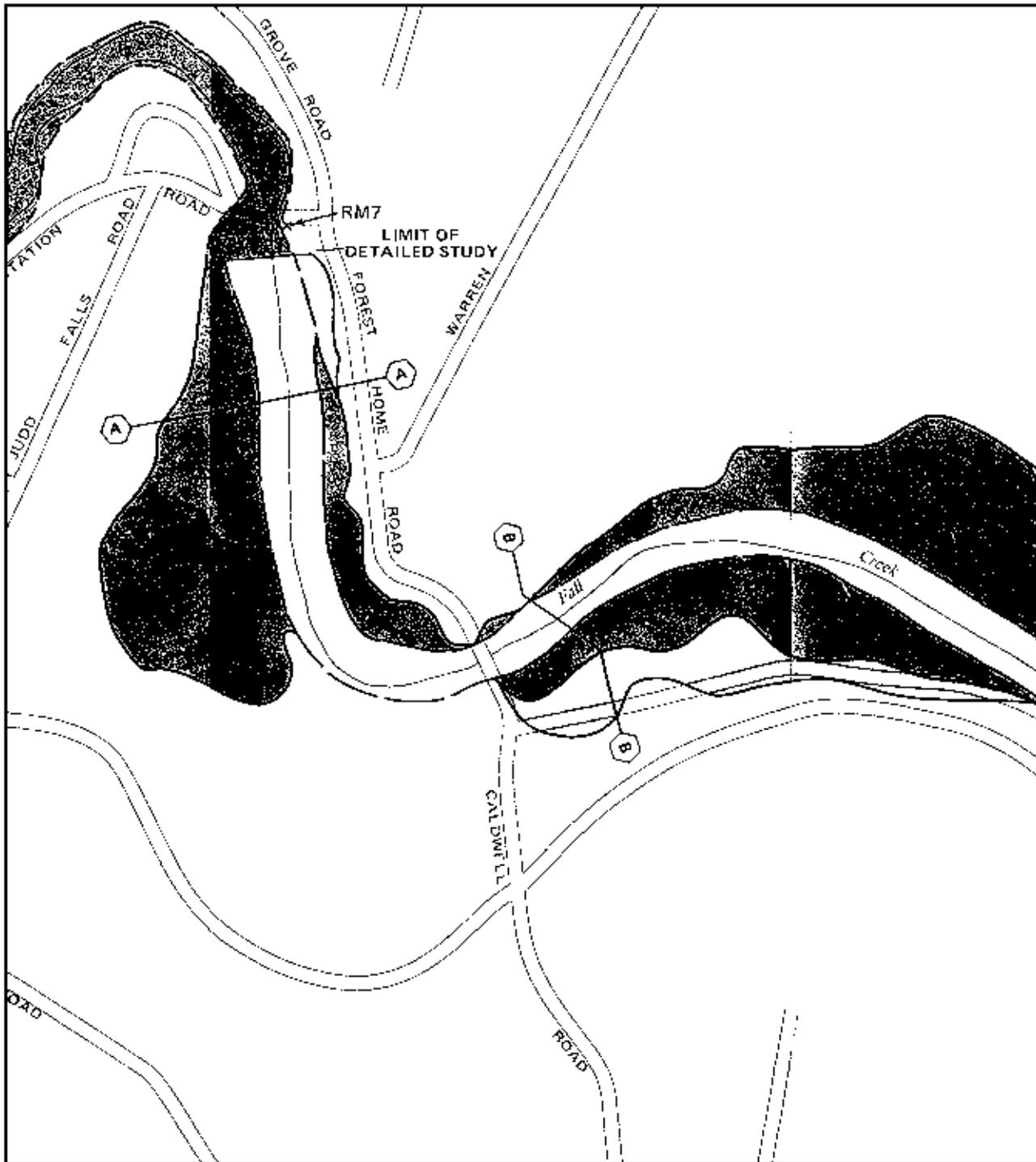
Status Codes: E=Endangered, T=Threatened, P=Proposed, C=Candidate, D=Delisted.

Information current as of: 4/27/2010

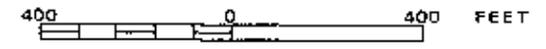
APPENDIX F

HYDRAULICS INFORMATION

**FLOOD BOUNDARY AND FLOODWAY MAP
FLOOD PROFILE**



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

**FLOODWAY
FLOOD BOUNDARY AND
FLOODWAY MAP**

**TOWN OF
ITHACA,
NEW YORK
TOMPKINS COUNTY**

PANEL 22 OF 25
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER

360851 0022

EFFECTIVE DATE:

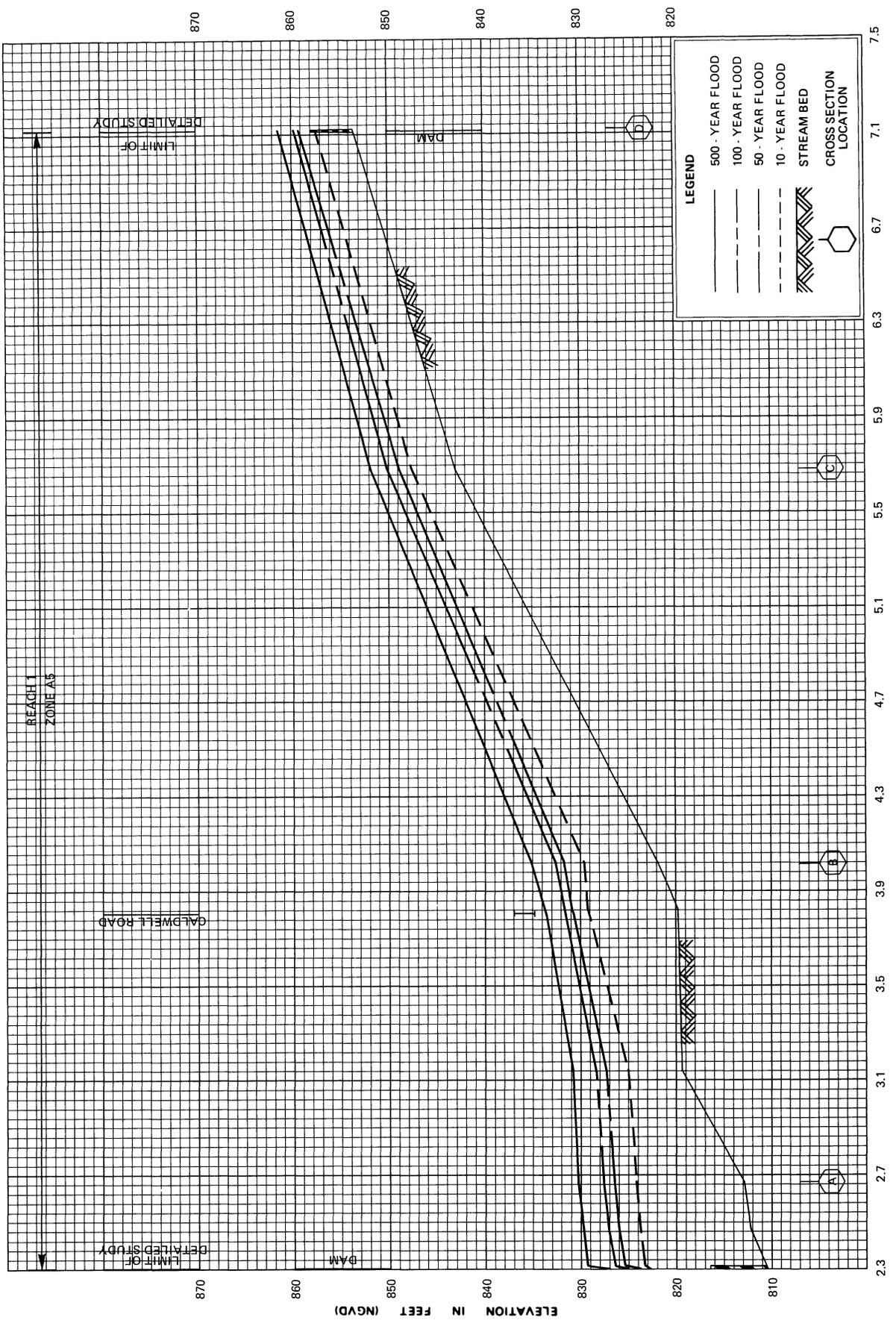
JUNE 10, 1985



Federal Emergency Management Agency

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

FLOOD PROFILES
FALL CREEK



STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CORPORATE LIMITS

APPENDIX G
NON-STANDARD FEATURE JUSTIFICATION

**NON-STANDARD FEATURE JUSTIFICATION
(in accordance with HDM §2.8)**

a. - Description of Non-Standard Feature

Type of Feature:	Horizontal curve radii & stopping sight distance on curve		
Location:	West bridge approach		
Standard Value:	R = 371 ft @ e=4% SSD = 250 ft Min.	Design Speed:	35 mph
Existing Value:	R = 160 ft @ e=4% SSD = 120 ft	Safe Operating Speed:	25 mph
Proposed Value:	R = 160 ft @ e=4% SSD = 120 ft	Safe Operating Speed:	25 mph

b. - Accident Analysis

Current Accident Rate:	0 acc/mvm (west approach)
Statewide Rate:	1.79 acc/mvm (2007-2008 - urban, undivided 2-lane road)
Is the non-standard feature a contributing factor?	There are no reported accidents. This is due to a low operating speed (23 mph) resulting from the one lane bridge and tight curves.
Potential for Future Accidents and Accident Severity:	There is a low potential for low severity accidents.

c. - Cost Estimates

Cost to Fully Meet Standards:	Prohibitive due to necessity of building acquisitions.
Cost(s) For Incremental Improvements:	N/A

d. - Mitigation:

None.

e. - Compatibility with Adjacent Segments & Future Plans:

The existing alignment is compatible with both the adjacent segments and future plans.

f. - Other Factors (e.g., Social, Economic & Environmental):

Improving the curve radius and sight distance would cause severe adverse impacts to adjacent historic residential properties.

g. - Proposed Treatment (i.e., Recommendation):

Retain the existing horizontal alignment and superelevation rate, replace advisory speed and curve signs.

APPENDIX H

COST INFORMATION

APPROVED IPP
CONCEPTUAL COST ESTIMATE

**Transportation Improvement Program (TIP)
Initial Project Proposal (IPP)**

SECTION I. GENERAL PROJECT INFORMATION (Required)

Date Prepared: June 23, 2006

Project Identification Number (PIN) _____ (To be assigned by NYSDOT)

Project Name: Upstream Forest Home Drive Bridge Rehabilitation

Applicant: Tompkins County

Project Location & Limits (attach required Map): BIN 3047450 – bridge and approaches

Implementing Agency (if different from Applicant): same as applicant

Contact Person: John Lampman Title: Associate Civil Engineer

Organization: Tompkins County Highway Department

Address: 170 Bostwick Road
Ithaca, NY 14850

Phone: (607) 274-0307 Fax: (607) 272-8489 E-Mail: jlampman@tomkins-co.org

Municipality/County: Town of Ithaca / Tompkins MPO: ITCTC

Senate District: 53 Assembly District: 125 Congressional District: 22

Is this project in the current TIP? Yes _____ No X If "Yes", what is the PIN? _____

Project Description (Please attach additional pages if necessary):

- Rehabilitate deteriorated National Historic Register bridge.
- Provide a minimum structure life expectancy of 50 years.
- Upgrade railings, drainage, and approaches.
- Provide sidewalks and crosswalks on approaches within approx. 150 feet of the bridge

Project Justification/Problem Identification (Please attach additional pages if necessary):

- Existing bridge NYS Bridge Condition Rating = 4.500; Federal Sufficiency Rating = 38.6
- The lower chord of both trusses and the flooring system show section loss of varying degrees in all locations. L0-L1 - The outer channel bottom flange shows 65% loss at L0. L5-L6 - The outer channel bottom flange shows 100% loss at L6. Other outer channel

bottom flanges on the right truss show lesser losses, varying from 20 to 40 percent. The left truss shows losses in general around 20%, with a few approaching 50%. Sidewalk support channels show flange losses typically at 15%, with a few approaching 40%. Sidewalk connection weld details are prone to cracking with frequent red structural flags. Gusset plates are generally showing losses of 15-20%.

- A tie plate in L0-L1 is disconnected. Other tie plates show heavy section loss, especially at the ends of the bridge. The portal brace at one end has impact damage.
- Begin approach has a settlement dip at the joint about 50mm deep and 1m wide.
- Paint under deck is failing, showing rust over 40% of surface.

Project Objective (Please attach additional pages if necessary):

- Remove bridge from list of deficient structures.
- Maintain existing historic bridge.
- Eliminate or reduce current need for frequent bridge maintenance.
- Improve the safety of the bridge and approaches by addressing poor bridge condition, as well as by providing appropriate bridge/guide rails, uniform pavement surfaces, proper drainage, and continuous pedestrian facilities connecting existing sidewalk to Cornell Plantations parking area.

Goal Category (%)

100 Mobility/Reliability
 _____ Safety
 _____ Environmental Conditions
 _____ Economic Competitiveness
 _____ Security

Transportation Mode (%)

_____ Pavement
100 Bridge
 _____ Bicycle/Pedestrian
 _____ Railroads
 _____ Transit
 _____ Canal/Waterway

Mode Category: Highways & Bridges X
 Goods Movement _____
 Bicycle & Pedestrian _____
 Public Transportation _____
 Other (Water Transport, TDM, etc.) _____

Worksheet(s) Attached: Economic Analysis Worksheet For Bridges

If applicant is proposing multiple projects, what is this project's priority? _____ (e.g. 1 of x projects).

SECTION II. DETAILED PROJECT INFORMATION (Required)

Estimated Project Costs and Schedule:

Project Phase	Total Project Cost (\$)	Federal Funds Requested (\$)	Desired Obligation Date (Month/Year)	Fund Source (To be assigned by NYSDOT)
S, P	\$100,000	\$75,000	October, 2007	
D	\$100,000	\$75,000	October, 2007	
N	\$0	\$0	NA	
R	\$0	\$0	NA	
C,I	\$900,000	\$675,000	October, 2008	
O	\$0	\$0	NA	
TOTAL	\$1,100,000	\$825,000		

S, P – Scoping and Preliminary Engineering D – Detailed Design N – Right of Way Incidentals
 R – Right of Way Acquisition C, I – Construction and Inspection O - Other

a. Estimated Project Costs and Schedule is based on:

Professional Judgment X Scoping Report _____
 Preliminary Engineering Report _____
 Plan, Specifications & Estimate review (PS&E) _____
 Other _____

b. Likely source(s) and amounts of matching funds:

Source	Amount (\$)
<u>25% County and Town Funds</u>	<u>\$275,000</u>
_____	_____
_____	_____

Describe any additional financial or non-financial resources that leverage federal funds.

None

Does the project advance a recommendation(s) of a specific plan or study? Please list (include date):

No

Describe any supportive local policies/regulations in place/pending that support project's success?

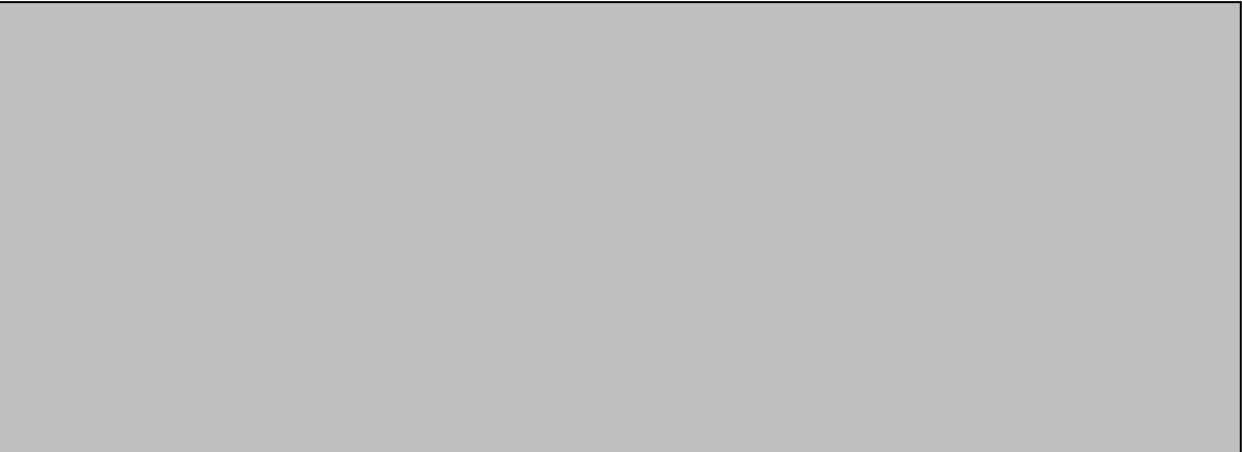
On June 4, 2002, the Tompkins County Board of Representatives adopted "Vital Communities Development and Preservation Principles." This planning policy is now being used to craft a Comprehensive Plan for Tompkins County. Among other things, the following principles are espoused that support this project's success.

- Enhance transportation options, including freight and air service, to support business development, while preserving the integrity of existing communities
- Preserve and enhance the distinct identities and historic character of existing neighborhoods and structures, and encourage the development of new neighborhoods that possess their own special sense of place.
- Create, preserve, and enhance parks, hiking trails, active and passive recreation facilities, and historic resources.

Does the project enhance the region's attractiveness to new and/or existing businesses? Please describe the direct and material fashion in which this occurs.

Tompkins County is home to a number of bridges that are on or have been deemed eligible for listing on the National Historic Register. Projects like preservation of this bridge are attractive for those that would wish to locate or expand businesses because of their contribution to employee's quality of life and the enhancement of the County's reputation as a tourist attraction.

Forest Home Drive is a NYSDEC designated Scenic Road and NYSDOT designated New York State Scenic Byway. Enhancement of the bridge will support both of these State Agency Programs and the tourism industry that grows from them.



Anticipated Project Management Process (To be completed by NYSDOT):

- A
- B
- C

RPPM Approval _____

Date _____

SECTION III. MODE-SPECIFIC INFORMATION

Provide mode-specific information only for the mode category you checked in SECTION I.

HIGHWAY OR BRIDGE PROPOSALS

1. What is the Functional Classification?
 - Principal Arterial
 - Minor Arterial
 - Urban Collector
 - Rural Minor Collector
 - Rural Major Collector
 - Local Road

2. What is the Annual Average Daily Traffic (AADT)* of this facility: 10,185 Year: 2002
3. What is the Length of the Project? 130 meters (425 feet) including approaches
4. What is the number of lanes? One lane (out-out width current bridge: 16')
5. What is the Pavement Condition Score* of this facility: N/A Year: _____
6. What is the Bridge Condition Rating* of this facility: 4.500 Year: 2005
7. Is a Bridge Benefits Economic Analysis Worksheet attached?
Yes X No _____ Not Applicable (Not a Bridge Project) _____
(Worksheets are found in Appendix I)
8. What is the Bridge Identification Number (BIN)*? 3047450
9. Is project on a transit route? Yes X No _____
If yes, which route(s)? TCAT Route 37
10. Is project on a designated emergency services route? Yes _____ No X
11. Is project on a school bus route(s)? Yes X No _____
12. Does project add travel lanes (capacity)? Yes _____ No X
13. Does project include bicycle accommodations? Yes _____ No X
Describe: N/A
14. Does the project include pedestrian accommodations? Yes X No _____
Describe: Existing bridge sidewalk will be maintained and accommodations on approaches will be improved.
15. Does the project include transit accommodations? Yes _____ No X
Describe: N/A
16. Does the project include goods movement accommodations? Yes _____ No X
Describe: N/A.

17. Does the project address a Priority Investigation Location (PIL), High Accident Location (HAL), or other safety concern identified through an accepted safety priority ranking system?
a. Yes _____ No X
b. Identify safety ranking system and specific concern: _____
18. Is a Safety Benefit Evaluation Form (TE 164) attached?
Yes _____ No _____ Not Applicable (Not a Safety Project) X

(Worksheets are found in Appendix I)

**See TIP Guidebook Contact Page for sources of supporting information (e.g. Pavement and Bridge Ratings, Traffic Counts, etc.)*

**Forest Home Drive Bridge
Conceptual Cost Estimate**

8/7/2009

Major Work Item	Unit	Unit Cost	Quantity	Cost	Alternative
Abutments					
Structural Lifting	EA	\$5,000.00	4	\$20,000.00	
Removal of Existing	CY	\$75.00	116	\$8,700.00	
Excavation & Backfill	CY	\$50.00	116	\$5,800.00	
Concrete & Reinforcing	CY	\$750.00	116	\$87,000.00	
Form-liners	SF	\$10.00	748	\$7,480.00	
Cofferdams	EA	\$5,000.00	2	\$10,000.00	
				\$138,980.00	(Alt. 2 & 3)
Conventional Floor System					
Remove existing steel	LS	\$75,000.00	1	\$75,000.00	
Truss repairs	LB	\$10.00	35,000	\$350,000.00	
Steel grating	SF	\$50.00	1,920	\$96,000.00	
Stringers & Floorbeams	LB	\$2.50	42,000	\$105,000.00	
Railings	LF	\$50.00	240	\$12,000.00	
Bearings	EA	\$1,500.00	12	\$18,000.00	
Misc.	SF	\$10.00	780	\$7,800.00	
				\$663,800.00	(Alt. 2)
Multi-Girder Bridge					
Remove existing steel	LS	\$50,000.00	1	\$50,000.00	
Truss repairs	LB	\$10.00	2,000	\$20,000.00	
Deck	SF	\$25.00	1,920	\$48,000.00	
Girders (310 PLF)	LB	\$2.00	148,800	\$297,600.00	
Railings	LF	\$50.00	240	\$12,000.00	
Bearings	EA	\$1,500.00	8	\$12,000.00	
Misc.	SF	\$10.00	780	\$7,800.00	
				\$447,400.00	(Alt. 3)
Separate Walkway Bridge with Conc. Deck					
Deck	SF	\$20.00	780	\$15,600.00	
Girders (210 PLF)	LB	\$2.00	50,400	\$100,800.00	
Railings	LF	\$80.00	240	\$19,200.00	
Bearings	EA	\$1,500.00	4	\$6,000.00	
Misc.	SF	\$10.00	780	\$7,800.00	
				\$149,400.00	(Alt. 2)
Cantilever Walkway with Wood Deck					
Deck	SF	\$10.00	780	\$7,800.00	
Increase in Roadway Girders (75 PLF x 4)	LB	\$2.00	36,000	\$72,000.00	
Brackets (550 LB x 13)	LB	\$4.00	7,150	\$28,600.00	
Stringers (26 PLF x 2)	LB	\$2.00	6,240	\$12,480.00	
Railings	LF	\$80.00	120	\$9,600.00	
Misc.	SF	\$10.00	780	\$7,800.00	
				\$138,280.00	(Alt. 3)
Bridge Painting					
Painting, Containment, Etc.	LS	\$60,000.00	1	\$60,000.00	(Alt. 2 & 3)
Retaining Walls					
Conc wall with stone face	LF	\$500.00	60	\$30,000.00	
5 ft high segmental block	SF	\$50.00	500	\$25,000.00	
				\$55,000.00	(Alt. 2 & 3)
Approach Work					

Pavement, subbase, curb, sw, drainage, rail	LF	\$400.00	300	\$120,000.00	(Alt. 2 & 3)
Water Main Replacement					
Water main in place	LF	\$100.00	350	\$35,000.00	(Alt. 2 & 3)
Sewer Main Replacement					
Temporary bypass	LF	\$30.00	350	\$10,500.00	
Sewer main in place	LF	\$100.00	350	<u>\$35,000.00</u>	
				\$45,500.00	(Alt. 3)
Mobilization - Alt. 2	LS			\$49,000.00	(Alt. 2)
Mobilization - Alt. 3	LS			\$42,000.00	(Alt. 3)
Alternative 2 Total (Conventional Rehabilitation)				<u>\$1,271,180.00</u>	
Alternative 3 Total (Superstructure Replacement)				<u>\$1,082,160.00</u>	

APPENDIX I

BRIDGE INSPECTION REPORTS

**BIENNIAL INSPECTION REPORT
IN-DEPTH INSPECTION REPORT**

Inspection Date: 9/9/2009**RC: 36 BIN: 3047450****Bridge Ratings****Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188**

Inspection Agency: 13 - Consultant Type of Inspection: 1 - BIENNIAL
 GTMS: 310 -- Steel - Truss - Thru
 POSTINGS: See Gen Rec Page 1 for Postings at time of inspection.
 Further Investigation Needed: Scour Critical Rating of 8 appears too high.
 State Highway Number: 000000 Milepoint: 0.65 AADT/Yr: 4635 / 2008
 Orientation: 8 - Northwest Political Unit: 0423 - Town of ITHACA Year Built: 1909
 Total Spans: 1 Ramp Bridge Attached To Span: NA BIN: NA
 General Recommendation: 3 Computed Condition Rating: 4.203

Abutment Ratings:

	Beg Abut	End Abut
Joint with Deck	5	8
Bearings, Bolts, Pads	4	5
Seats and Pedestals	6	6
Backwall	6	6
Stem (Breastwall)	4	5
Erosion or Scour	4	4
Footings	5	6
Piles	8	8
Recommendation	4	5

Wingwall Ratings:

	Beg Abut	End Abut
Walls	5	4
Footings	6	6
Erosion or Scour	4	4
Piles	8	8

Channel Ratings:

	Channel
Stream Alignment	5
Erosion and Scour	5
Waterway Opening	4
Bank Protection	5

Approach Ratings:

	Approaches
Drainage	5
Embankment	4
Settlement	5
Erosion	4
Pavement	4
Guide Railing	4

Number of Flags Issued:

RED: 0	Yellow: 0	Safety: 2
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Vulnerability Reviews Recommended: 1=Yes, 2=No, 3=NA, X=NotActive

Hydraulic: 1	Overload: X	Steel: X
Collision: X	Concrete: X	Seismic: X

Inspector's Signature: CheckValue: 1,734,276,188 Date: 9/9/2009**Robert W. Boone, PE () (Inspector ID: 3100038)**Signed copy of this inspection report is available
in the appropriate NYSDOT Regional Office**Reviewed By: Date: 11/3/2009****A J. Cabal, PE () (QC ID: 3100042)**Signed copy of this inspection report is available
in the appropriate NYSDOT Regional Office

Span Ratings

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Deck Element Ratings: 001

Wearing Surface	4
Curbs	4
Sidewalks, Fascias	5
Railings, Parapets	3
Scuppers	8
Gratings	8
Median	8
Mono Deck Surface	8

Superstructure Ratings: 001

Structural Deck	4
Primary Members	3
Secondary Members	3
Paint	2
Joints	8
Recommendation	3

Pier Ratings: 001

Bearings, Bolts, Pads	8
Pedestals	8
Top of Cap or Beam	8
Stem Solid Pier	8
Cap Beam	8
Pier Columns	8
Footings	8
Erosion or Scour	8
Piles	8
Recommendation	8

Utility Ratings: 001

Lighting	8
Sign Structure	5
Utilities and Support	4

Field Notes:

Field Date	Arrival	Departure	Temp (C)	Temp (F)	Weather Conditions
7/15/2009	7:30:00 AM	2:15:00 PM		50	Sunny
9/9/2009	9:15:00 AM	5:15:00 PM		60	Overcast

Inspection Notes**Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188****Note ID: 3X0930474500014**

General Note for Bridge

Referenced Photos:

2009 - Note: several large trucks & buses of unknown weight were observed crossing the bridge during inspection.

Note ID: 3X0930474500004

Beg Abut -- Abutment: Bearings, Bolts, Pads -- Rated 4, Was 4

Referenced Photos: "1"

2009 - At the bearing for the right sidewalk stringer, the WF-shape bearing stool has heavy laminating rust and section loss underway to web. Loss estimated at about 40%, and web starting to buckle slightly.

Item would otherwise rate '5'.

Note ID: 3X0930474500000

Beg Abut -- Abutment: Stem (Breastwall) -- Rated 4, Was 4

Referenced Photos: "2"

2009 - The shotcrete coating on the left half of the stem has map cracking with efflorescence and is hollow sounding over approximately 10% of its area.

Stone masonry portion at right half would rate '5'.

Note ID: 3X0930474500005

Beg Abut -- Abutment: Erosion or Scour -- Rated 4, Was 4

Beg Abut -- Wingwalls: Erosion or Scour -- Rated 4, Was 4

Referenced Photos: "3"

2009 - At begin stem and right wingwall, there is a concrete footing/ scour protection visible for most of length. Since there are no substructure plans available, this is rated as footing.

Vertical face of footing/scour protection is exposed as follows:

Stem - up to 12 inches high.

Right wingwall - up to 10 inches high.

Left wingwall - no footing exposure; erosion/scour would rate '5'.

Note ID: 3X093047450000F

Stream Channel: Erosion and Scour -- Rated 5, Was 5

Referenced Photos:

2009 - Streambed consists of gravel and erodible broken shale. Channel cross section readings resumed.

Inspection Notes**Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188****Note ID: 3X0930474500006**

Stream Channel: Waterway Opening -- Rated 4, Was 4

Referenced Photos: "6"

2009 - A large, vegetated gravel bar is located along begin bank, starting about 50 feet upstream of bridge and continuing beneath bridge and downstream. Bar helps to direct main flow through end half of channel, with a lesser flow along begin abutment.

Item would otherwise rate '5'.

Note ID: 3X0930474500002

Approaches: Embankment -- Rated 4, Was 4

Approaches: Erosion -- Rated 4, Was 4

Referenced Photos: "7"

2009 - End approach embankment, left and right sides are eroding and slightly sloughing, with right side worse. Several guide rail soil plates are exposed at both sides, causing the rail to lean outward.

Begin approach embankment and erosion would rate '5'.

Note ID: 3X0930474500003

Approaches: Pavement -- Rated 4, Was 4

Referenced Photos: "8"

2009 - Begin approach asphalt pavement has rutting in wheel tracks, and alligator cracking in several locations. There are a few small bumpy patches near bridge.

End approach has small chuckholes in wheel tracks at end of bridge, but would otherwise rate '5'.

Note ID: 3X0930474500010

Approaches: Guide Railing -- Rated 4, Was 5

Referenced Photos: "9"

2009 - At end right guide rail, box section is disconnected from two consecutive posts, about 25 feet from bridge.

At end left and end right runs, several guide rail soil plates are exposed at both sides, causing the rail to lean outward. Left rail is worse. Both runs remain solid overall.

Item would otherwise rate '5'.

Note ID: 3X0930474500011

Span 001 -- Deck Elements: Wearing Surface -- Rated 4, Was 5

Referenced Photos: "10"

2009 - Despite some recent repairs (longitudinal strips welded to top of grating), the open steel grating deck still moves up and down and bangs loudly under traffic, especially in the end right quadrant. There are several cracked welds between the

Inspection Notes**Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188****Note ID: 3X0930474500011 - continued**

repair strips and the grating.

Item would otherwise rate '5'.

Note ID: 3X0930474500012

Span 001 -- Deck Elements: Curbs -- Rated 4, Was 5

Referenced Photos: "11"

2009 - Right side has a vertical steel plate curb, with heavy rust and section loss throughout, especially at connections to steel grating deck. Plate is rusted almost completely through near end.

No curb at left side.

Note ID: 3X0930474500013

Span 001 -- Deck Elements: Sidewalks, Fascias -- Rated 5, Was 5

Referenced Photos:

2009 - Sidewalk at right side only. The timber planking is rated under this item. Steel supports are rated under Primary Member Item (Spans 28). There are no fascias.

Note ID: 3X0930474500007

Span 001 -- Deck Elements: Railings, Parapets -- Rated 3, Was 4

Referenced Photos: "12"

2009 - At right sidewalk railing, the 2nd, 10th, 12th and 14th posts are broken loose from connection to fascia stringer, and moveable by hand. Railing overall is not fully sturdy at end 1/4 of length. Safety Flag #3X090011 for this condition, due to heavy pedestrian traffic.

No sidewalk/ railing at left side.

Both roadway railings would rate '5'.

Note ID: 3X0930474500008

Span 001 -- Superstructure: Structural Deck -- Rated 4, Was 4

Referenced Photos: "13"

2009 - The steel grate deck is rusty, especially along left and right sides, with various scrapes & bends along the outside edges in various locations, and rattles loudly when traffic passes. No sketch - uniform conditions on steel grate deck.

Note ID: 3X0930474500009

Span 001 -- Superstructure: Primary Members -- Rated 3, Was 3

Referenced Photos: "14", "15", "16", "17", "18", "19", "20", "21", "22", "23", "24", "25", "26"

2009 -

Inspection Notes

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Note ID: 3X0930474500009 - continued

Trusses - At both left and right trusses, lower chord is corroding with heavy laminations through out the entire length of the bridge. No significant changes to section losses since previous inspection, with overall losses averaging 15-20% at both trusses. (Photo 16, right truss, L5-L6). Left truss L0-L1 has left channel showing approx 40% loss at L0, with a 1 inch diameter hole through (Photo 14). Right truss L0-L1 and L6-L7 have severe old section losses at begin and end of bridge, but repairs were made using threaded-rods (Photos 15 and 17).

At all four truss end posts (Left truss L0-U1 and U6-L7 and right truss L0-U1 and U6-L7), pack rust between the top plate and the channels at lower 6 feet of length is bending the top plate away from the channels by up to 1-1/2 inches. Worst at right truss L0-U1. Left truss, end post U6-L7 has section loss underway to original top plate, with a 1-1/2 inch diameter hole through due to pack rust at the structure info plate. Rivets have previously been removed at these locations, with a plate welded to the original top plate, but no bolts or welds attach the top plate to the side channels of these members.

Left truss, counter diagonal L3-U4, inside angle has a cracked weld at top side of bracket connecting lower bridge railing to diagonal. Due to poor quality of weld it does not appear that crack will propagate into the diagonal therefore no flag for this condition.

Right truss diagonal U1-L2 has impact damage to inside angle above the railing; bent out of line about 1-1/2 inch.

Floorbeams - All floorbeams are pitted on the bottom flange and the lower portion of the web, with average section losses of approx 15% on the flanges and 10% on the webs. (Photo 21, floorbeam #6).

Floorbeam #5, begin face, right 10 feet, the stitch welds along bottom of channel that were cracked and repaired in the past remain intact. (Photo 22).

At right side, some of the sidewalk cantilevers (floorbeam extensions) that had severe section losses to webs in right 2-3 feet of length during previous inspection have been repaired by welding on web plates. Repaired locations are:

Floorbeam #2 - begin channel (Photo 18).

Floorbeam #3 - begin and end channels (Photo 19).

However, some of the extensions were not repaired and still have holes through webs. Worst locations are as follows:

Floorbeam #4 - holes starting in begin and end channels.

Floorbeam #6 - begin and end channels each have a hole. End is worse, measuring approx 3 inches wide x 7 inches high. (Photo 20). At all of these locations, holes are directly below the right fascia sidewalk stringer (about 8 inches from the right side of the cantilever), reducing the bearing capacity of the cantilever. Safety flag #3X090012 (repeat flag) for this condition due to potential sidewalk failure.

The edge beam along the outside of the sidewalk is laminating along the edges, with an estimated section loss of approx 25 to 30%.

Stringers - are peeling paint along their entire length, resulting in surface corrosion. Estimated stringer section loss is approximately 5 to 10% overall. (Photo 26).

Inspection Notes

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Note ID: 3X0930474500009 - continued...

Gusset Plates - There are no significant changes since the special gusset plate inspection on 12/23/2008. Condition is as follows:

All plates have some section loss, but in general, losses are much more severe at right truss than at left. Most of the gusset plates at right side and some at left side have had various repair plates welded onto original plates. Section losses are as follows (note that all losses are estimated due to difficulty in accessing):

L-1, left truss - No repair plates. Minimal section losses, less than 5% everywhere.

L-1, right truss - No repair plates. Both plates have section losses along the lower portion of their inner faces (right side of left plate and left side of right plate) for entire length X about 7 inches high X 30% loss. (Photo 23).

L-2, left truss - No repair plates. Minimal losses. There is a small area of pack rust/section loss on right face of left plate about 3 inches long x 3 inches high x 25% loss.

L-2, right truss - Both plates have had small repair plates welded to their outer faces (left side of left plate and right side of right plate) above the truss lower chords, for various lengths and heights. Left gusset plate has minimal section loss, but right gusset plate has section loss along the lower portion of its inner face (left side) for entire length X about 7 inches high X 25% loss. (Photo 24).

L-3, left truss - No repair plates. Right gusset plate has minimal section loss, but left gusset plate has section loss along the lower portion of its inner face (right side) for entire length X about 2 inches high X 20% loss.

L-3, right truss - Both gusset plates have had small repair plates welded to their outer faces (left side of left plate and right side of right plate) above the truss lower chords, for various lengths and heights. Both gusset plates have section losses up to an estimated 30%. (Photo 25).

L-4, left truss - Minimal losses. No repair plates.

L-4, right truss - Left gusset plate has had small repair plates welded to its outer face (left side) above the truss lower chord. Right gusset plate has had no such repairs. Both gusset plates have section losses along the lower portion of their inner faces (right side of left plate and left side of right plate) for entire length X about 7 inches high X 25% loss.

L-5, left truss - Minimal losses. Right gusset plate has had small repair plates welded to its outer face (right side) above the truss lower chord. Left gusset plate has had no such repairs.

L-5, right truss - Left gusset plate has had small repair plates welded to its outer face (left side) above the truss lower chord. Right gusset plate has had no such repairs. Both gusset plates have section losses along the lower portion of their inner faces (right side of left plate and left side of right plate) for entire length X about 7 inches high X 20% loss.

L-6, left truss - Minimal losses. Right gusset plate has had a large repair plate welded to its outer face (right side), with cut-outs to accommodate previous rivets/current bolts. Left gusset plate has had no such repairs.

L-6, right truss - No repair plates. Both plates have section losses along the lower portion of their inner faces (right side of left plate and left side of right plate) for entire

Inspection Notes**Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188****Note ID: 3X0930474500009 - continued.....**

length X about 7 inches high X 25% loss.

Note ID: 3X093047450000A

Span 001 -- Superstructure: Secondary Members -- Rated 3, Was 3
Referenced Photos: "27", "28", "29", "30", "31", "32", "33"
2009 - At both trusses, several tie plates for the lower chord are rusted through and/or bending away from lower chord channels due to pack rust. (Photo 27). The begin and end panels (L0-L1 and L6-L7) are worst (Photo 29). Some of the plates on the right truss L6-L7 are missing rivets and completely separated from the lower chord due to pack rust (Photo 28).

All of the upper lateral struts and cross bracing have pack rust and crevice corrosion with section loss underway at all truss connections, and some of these members have lost up to 1/2 the width of an angle leg. Several of the struts have small holes in the horizontal leg of their angles, where they tie into the connection plates. The holes are as follows;

U3 - Left and Right top angles each have a 1 inch hole (Photo 30).

U4 - Right top angle has a 1-1/2 inch hole (Photo 32); left top angle a 3/4-inch hole (Photo 31).

U5 - Right top angle a 3/4-inch hole.

The lacing bars on the lower half of all four end posts are heavily corroded and laminated and it is estimated some have up to 80% section loss.

The begin portal bracing has impact damage to its lower chord and lacing bars (Photo 33)..

Note ID: 3X093047450000B

Span 001 -- Superstructure: Paint -- Rated 2, Was 2
Referenced Photos: "34", "35"
2009 - Paint over the below-deck portion of the superstructure is peeling away from the stringers, and peeling or missing from lower member connection points, resulting in surface rust, pack rust, and section losses in several locations. (Photo 34).

Above deck portion would rate '4', with paint peeling from about 20% of area and rusting on rivet heads and lower part of truss verticals and diagonals. (Photo 35).

Note ID: 3X093047450000C

Span 001 -- Utilities: Utilities and Support -- Rated 4, Was 4
Referenced Photos: "36"
2009 - Left side utility has its pipe insulation torn in several locations. Hangers for all the utilities are rusting with minor section loss.

Inspection Notes**Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188****Note ID: 3X093047450000E**

End Abut -- Abutment: Erosion or Scour -- Rated 4, Was 4

End Abut -- Wingwalls: Erosion or Scour -- Rated 4, Was 4

Referenced Photos: "4"

2009 - At end stem and right wingwall, there is a concrete footing/ scour protection visible for entire length. Since there are no substructure plans available, this is rated as footing.

Vertical face of footing/scour protection is exposed as follows:

Stem - up to 40 inches high, worst at left side.

Right wingwall - up to 36 inches high.

Left wingwall - no footing exposure; erosion/scour would rate '5'.

Note ID: 3X093047450000D

End Abut -- Wingwalls: Walls -- Rated 4, Was 4

Referenced Photos: "5"

2009 - End right stone masonry wingwall is missing mortar over approximately 50% of its area along the end 1/3 of length; the wall remains stable and would otherwise rate '5'.

End left shotcrete-coated wingwall would rate '5'.

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Begin right bearing



Photo Number: 1

Photo Filename: 09IMGP0445.JPG

Begin stem



Photo Number: 2

Photo Filename: 09IMGP0446.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Begin abutment and
right wingwall



Photo Number: 3

Photo Filename: 09IMGP0447.JPG

End abutment and right
wingwall



Photo Number: 4

Photo Filename: 09IMGP0453.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

End right wingwall



Photo Number: 5

Photo Filename: 09IMGP0452.JPG

Right elevation



Photo Number: 6

Photo Filename: 09IMGP0450.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

End right approach



Photo Number: 7

Photo Filename: 09IMGP0455.JPG

Begin approach



Photo Number: 8

Photo Filename: 09IMGP0464.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

End right approach



Photo Number: 9

Photo Filename: 09IMGP0456.JPG

Top of bridge at end right



Photo Number: 10

Photo Filename: 09IMGP0458.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Right curb at end



Photo Number: 11

Photo Filename: 09IMGP0457.JPG

Right railing near end

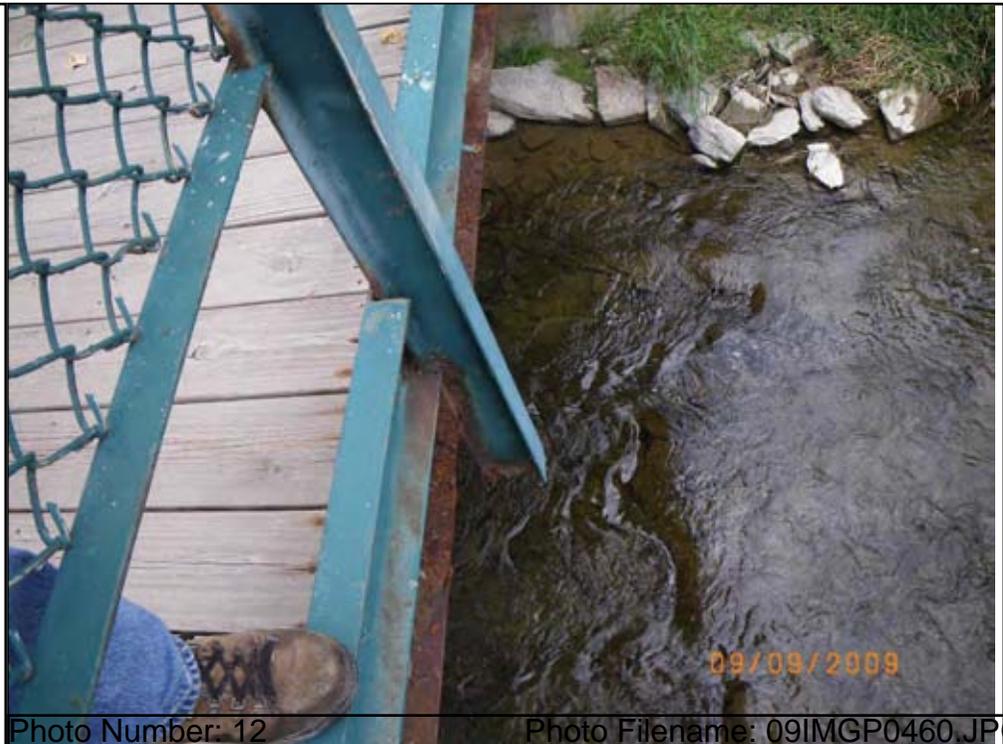


Photo Number: 12

Photo Filename: 09IMGP0460.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Structural deck left side



Photo Number: 13

Photo Filename: 09IMG0459.JPG

Left truss, L0-L1, left channel



Photo Number: 14

Photo Filename: 09100_0655.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Right truss, L0-L1



Photo Number: 15

Photo Filename: 09100_0657.JPG

Right truss, L5-L6 at L6
right angle



Photo Number: 16

Photo Filename: 09100_0668.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Right truss, L6-L7, right channel



Photo Number: 17

Photo Filename: 09100_0670.JPG

Floorbeam #2 right side begin channel



Photo Number: 18

Photo Filename: 09100_0660.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Floorbeam #3, right side,
end channel



Photo Number: 19

Photo Filename: 09100_0663.JPG

Floorbeam #6, right side,
end channel



Photo Number: 20

Photo Filename: 09100_0669.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Floorbeam #6, begin face



Photo Number: 21

Photo Filename: 09100_0667.JPG

Floorbeam #5, begin face, right side



Photo Number: 22

Photo Filename: 09100_0665.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Right truss, gusset plate
at L1



Photo Number: 23

Photo Filename: 09100_0659.JPG

Right truss, gusset
plates at L2



Photo Number: 24

Photo Filename: 09100_0661.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Right truss, gusset
plates at L3



Photo Number: 25

Photo Filename: 09100_0662.JPG

Stringer # S-7, panel #1



Photo Number: 26

Photo Filename: 09100_0658.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Left truss, panel #6,
lower chord



Photo Number: 27

Photo Filename: 09100_0666.JPG

Right truss, L6-L7 near
end



Photo Number: 28

Photo Filename: 09100_0671.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Left truss at L0



Photo Number: 29

Photo Filename: 09100_0656.JPG

Top lateral strut at U-3,
left side



Photo Number: 30

Photo Filename: 09100_0651.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Top lateral strut at U-4,
left side



Photo Number: 31

Photo Filename: 09100_0652.JPG

Top lateral strut at U-4,
right side



Photo Number: 32

Photo Filename: 09100_0653.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Begin portal



Photo Filename: 09100_0654.JPG

Underside of
superstructure



Photo Number: 34

Photo Filename: 09IMG0449.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Photos in Photo Number Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Superstructure above
deck



Photo Number: 35

Photo Filename: 09IMG0466.JPG

Utility at left fascia



Photo Number: 36

Photo Filename: 09IMG0466.JPG

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Sketch ID: 3X0930474500000

Sketch Filename: LdRat.09

General Sketch for Bridge

Referenced Photos:

Load Rating Field Check Form

Region 3 LoadRatingFieldCheckForm

NYS DOT BRIDGE INSPECTION REPORT

LOAD RATING FIELD CHECK FORM

BIN: 3047450

Insp. Date: 09/09/2009

Dead Load - Note Changes since Last load Rating or state "NONE":

None

Section Loss - Note locations and amount of loss on each girder or state "NONE":

2009 - No significant changes since previous inspection.

Additional Notes:

None

Attachments:

None

Team Leader: Robert W. Boone, P.E. 60047

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

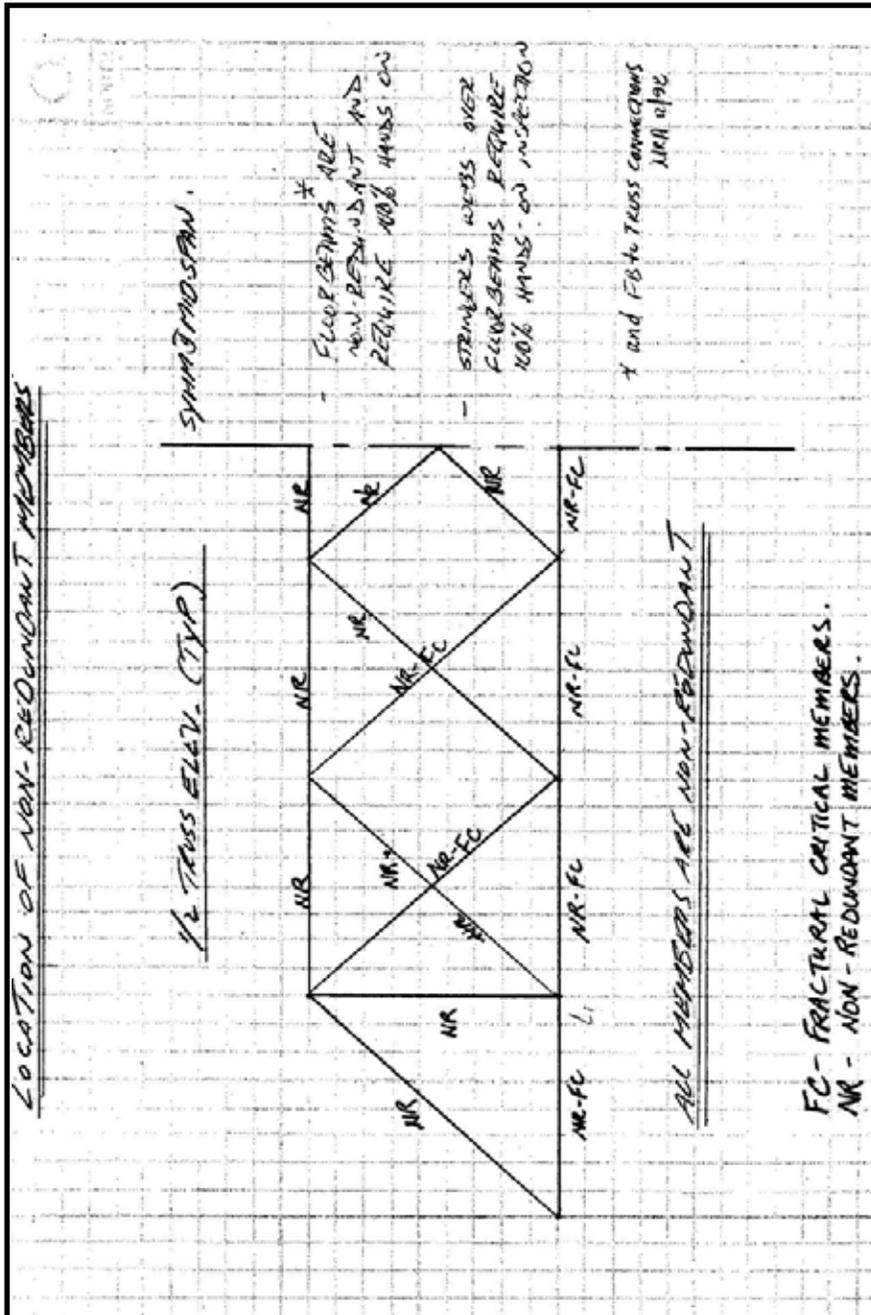
Sketch ID: 3X0930474500001

Sketch Filename: 03_SpecEmp1.tif

General Sketch for Bridge

Referenced Photos:

Special Emphasis Sheet 1



Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

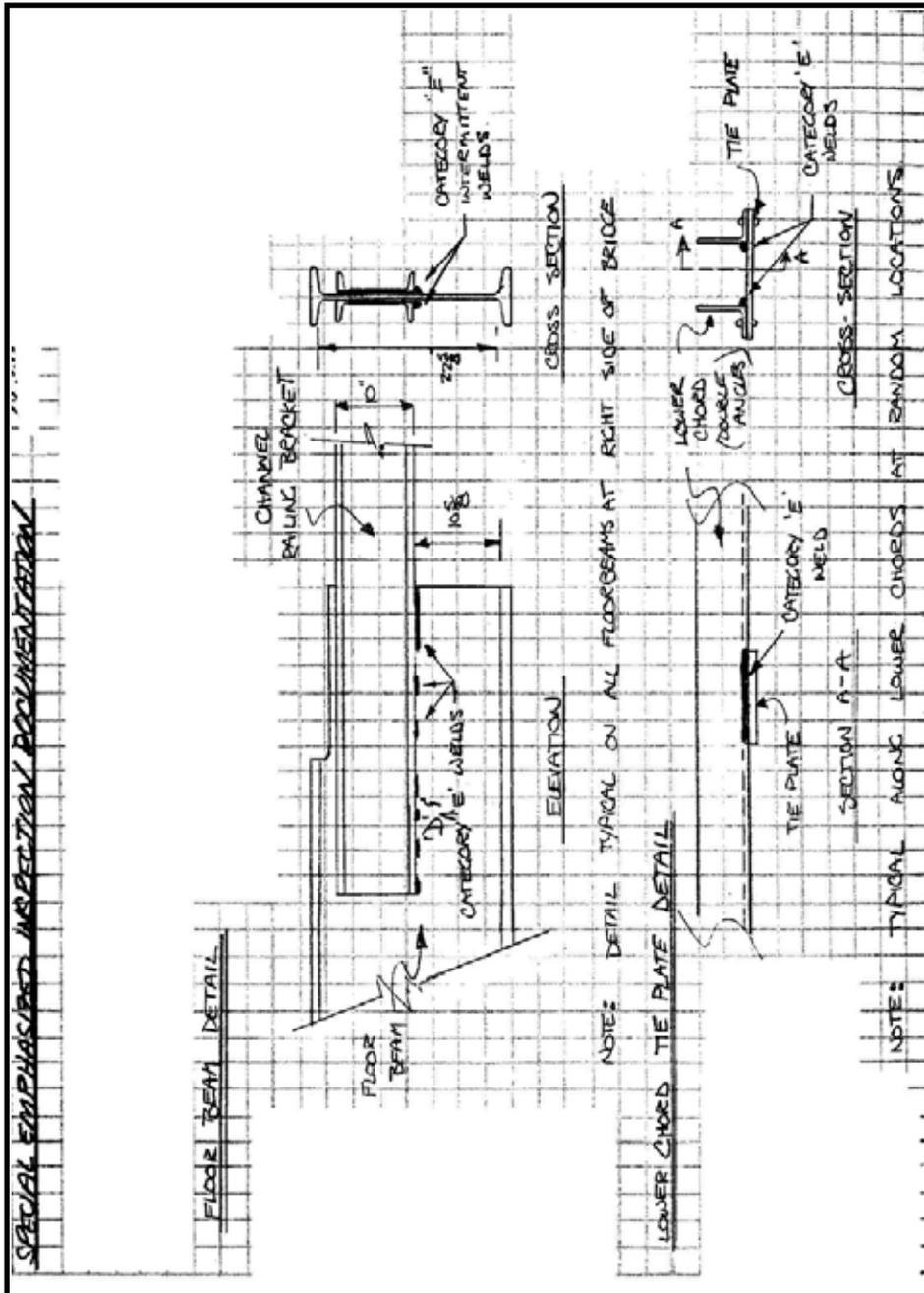
Sketch ID: 3X0930474500002

Sketch Filename: 03_SpecEmp2.tif

General Sketch for Bridge

Referenced Photos:

Special Emphasis Sheet 2



Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

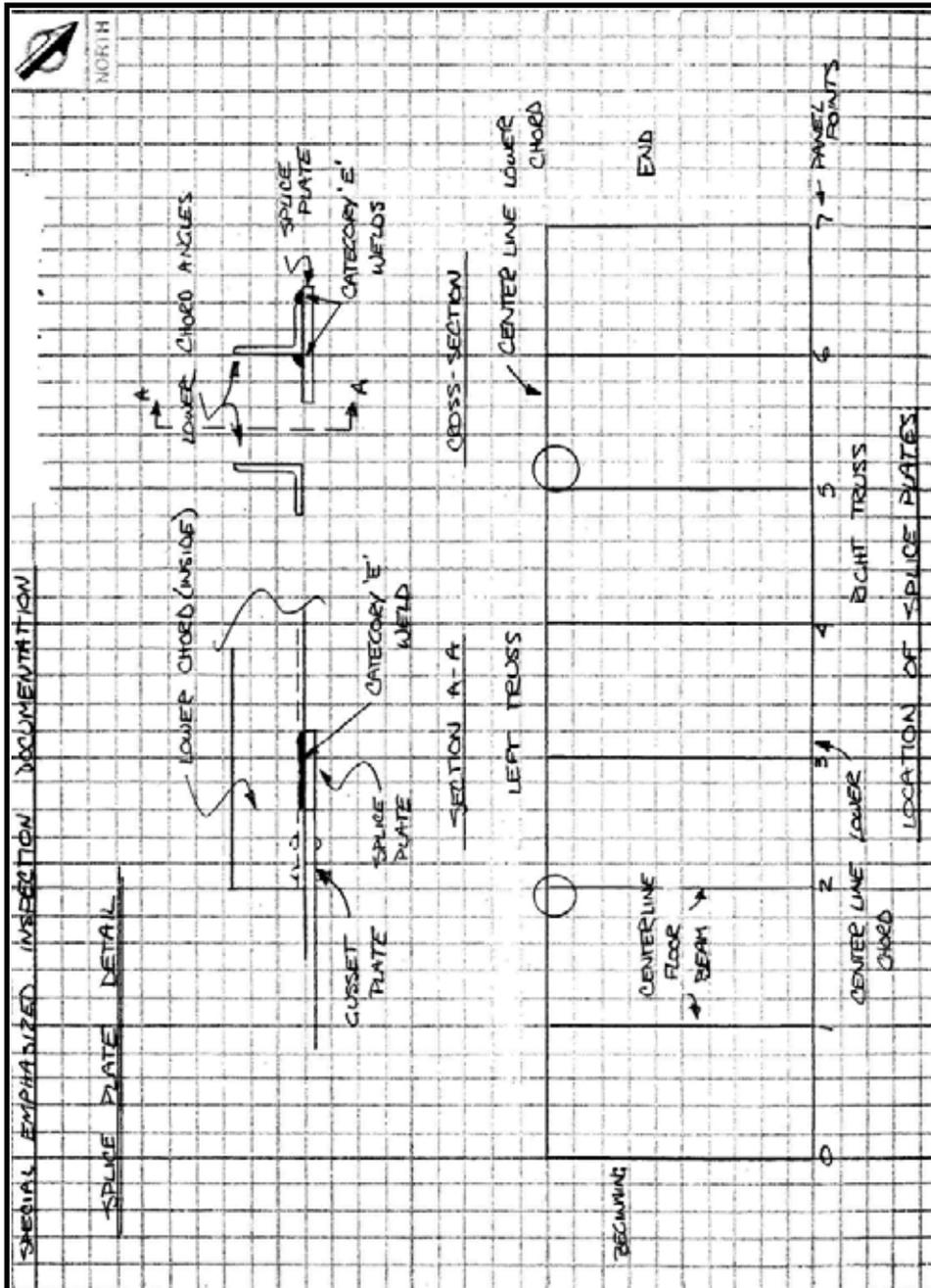
Sketch ID: 3X0930474500003

Sketch Filename: 03_SpecEmp3.tif

General Sketch for Bridge

Referenced Photos:

Special Emphasis Sheet 3



Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

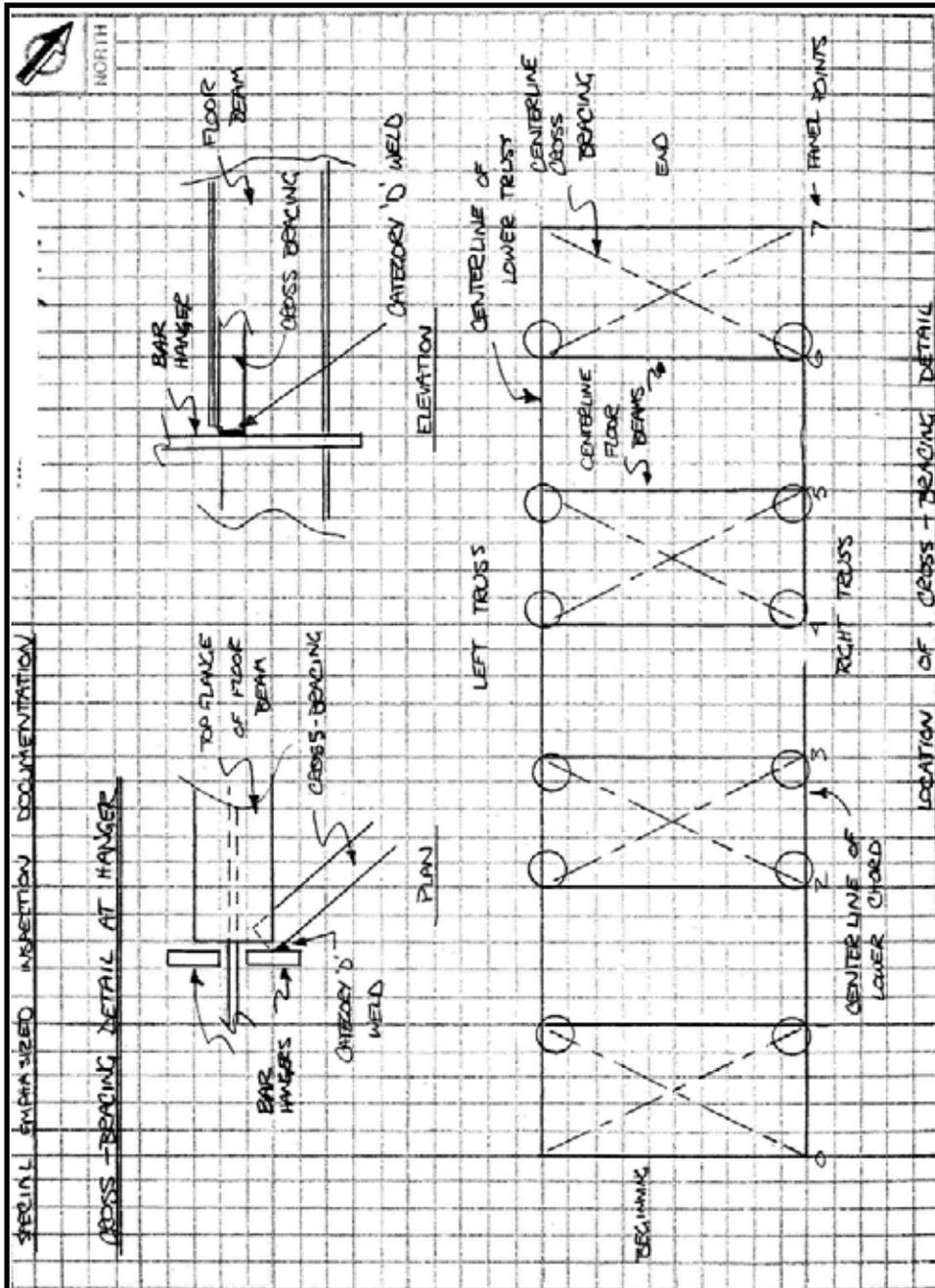
Sketch ID: 3X0930474500004

Sketch Filename: 03_SpecEmp4.tif

General Sketch for Bridge

Referenced Photos:

Special Emphasis Sheet 4



Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

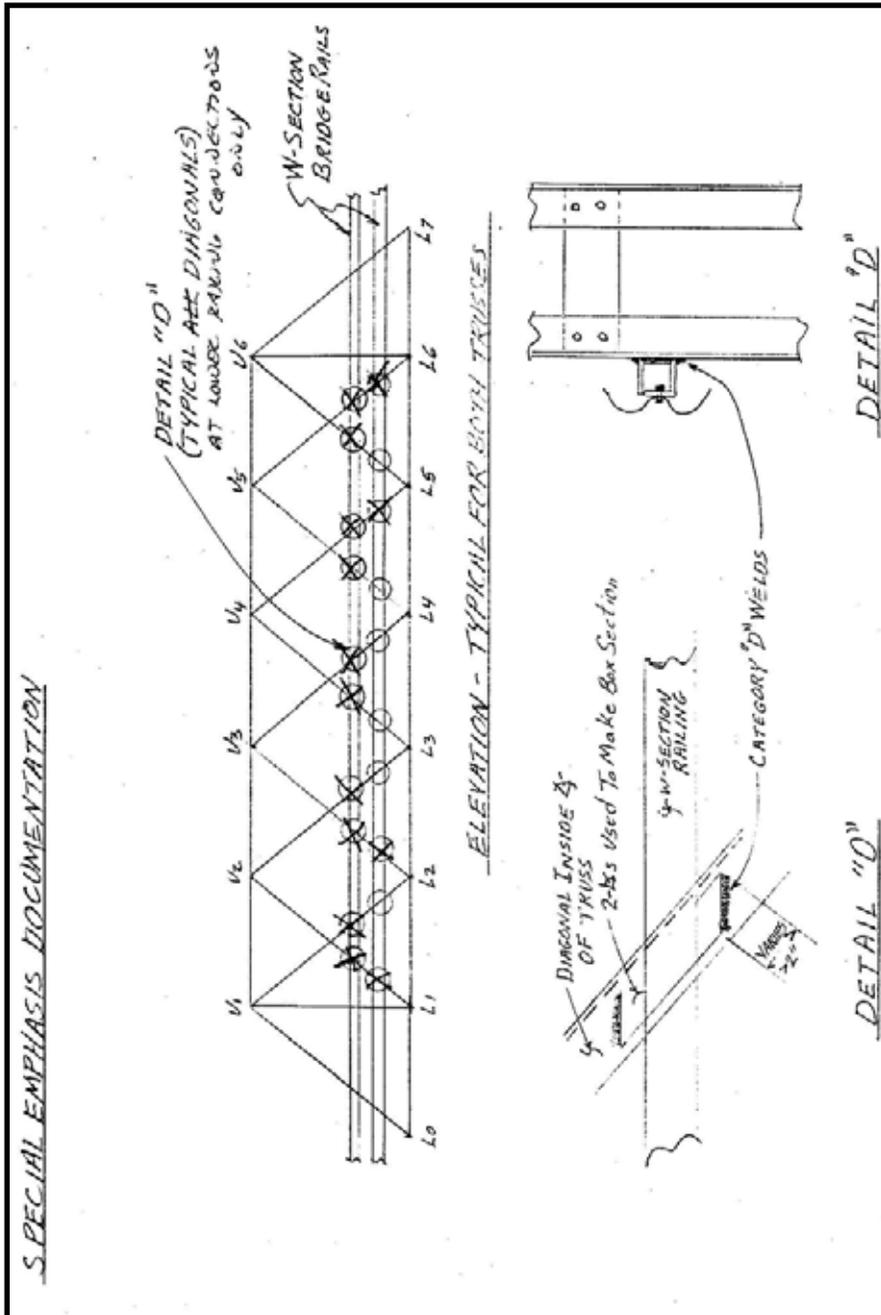
Sketch ID: 3X0930474500005

Sketch Filename: 03_SpecEmp5.tif

General Sketch for Bridge

Referenced Photos:

Special Emphasis Sheet 5



Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Sketch ID: 3X0930474500006

Sketch Filename: 03_SpecEmp6.tif

General Sketch for Bridge

Referenced Photos:

Special Emphasis Sheet 6

<p>LOCATION/DESCRIPTION:</p> <p>Stringer Lower Flanges welded to floor beam Top flange</p> <p>REFERENCE:</p> <p>PART OF 100% NAVALY</p> <p>STRINGER WEBS AT FLANGES</p>
<p>LOCATION/DESCRIPTION:</p> <p>LAST BAY E WELD bracket that supports diaphragms</p> <p>2 Diaphragms - 4 locations</p> <p>REFERENCE: Welds on Stringer lower flange & web @ 14.5' on between Floor beams</p>

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

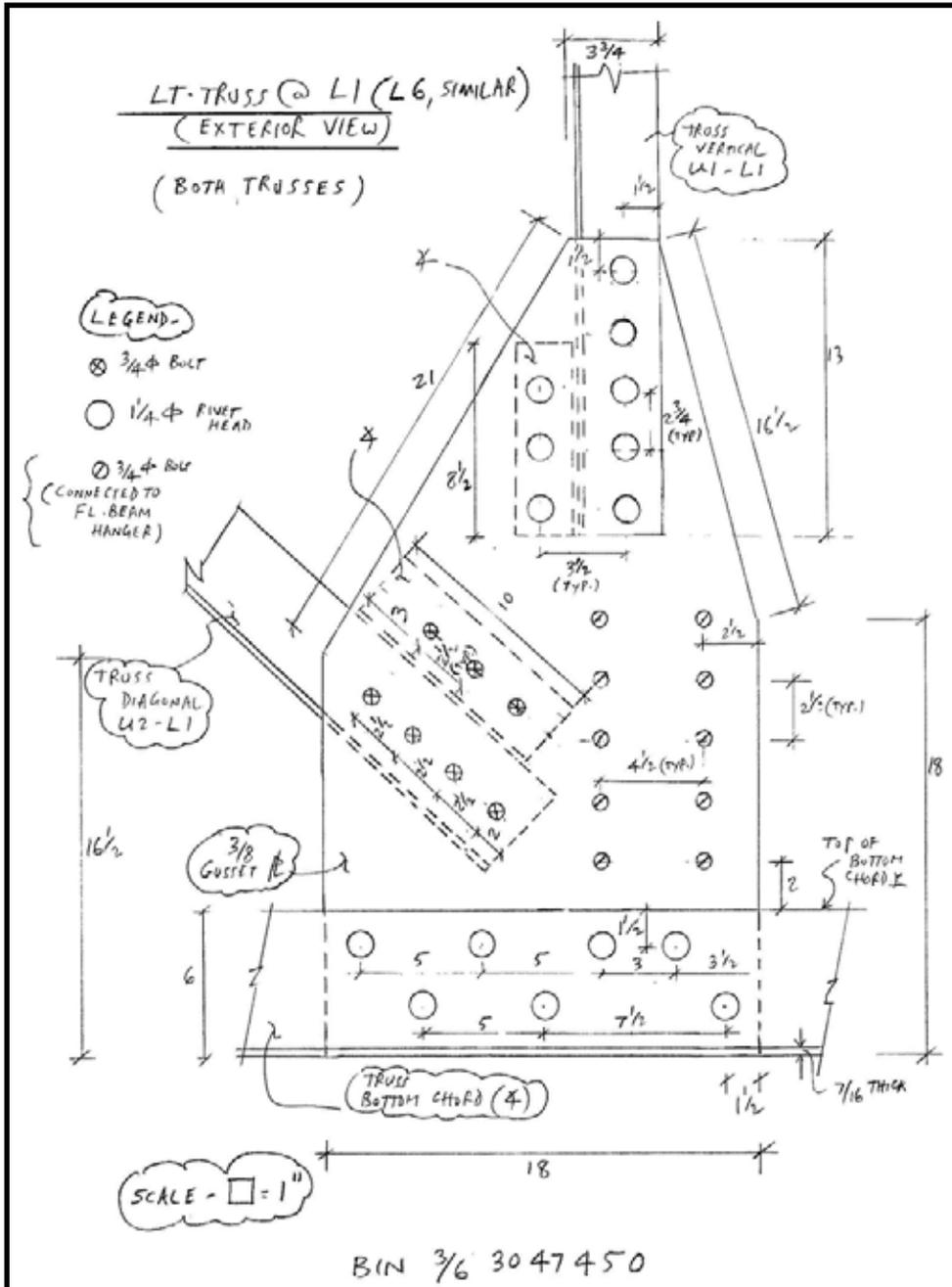
Sketch ID: 3X0930474500007

Sketch Filename: 08Lt Truss - Gusset at L1.tif

General Sketch for Bridge

Referenced Photos:

Gusset Plate Layout Sheet 1



Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

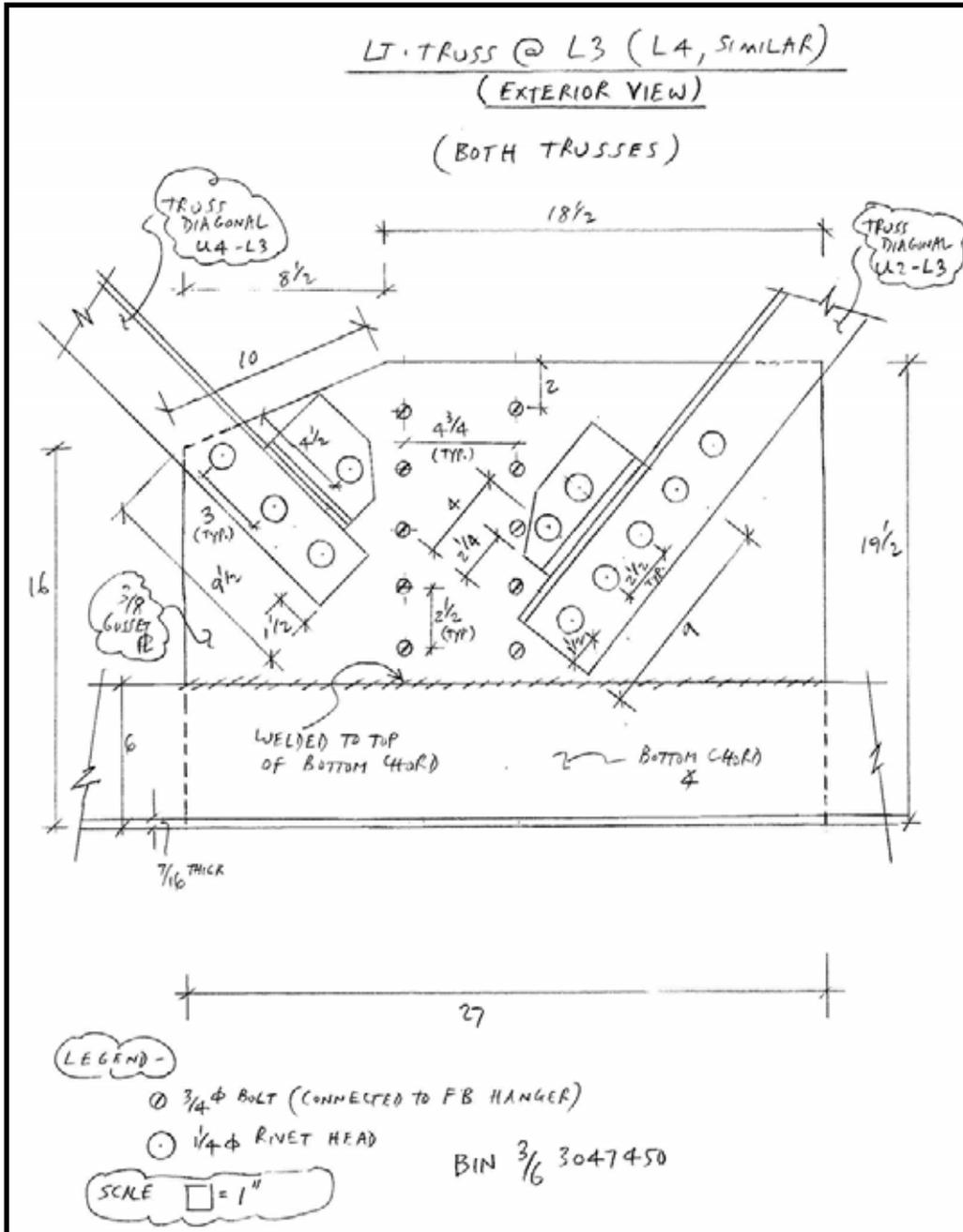
Sketch ID: 3X0930474500009

Sketch Filename: 08Lt Truss - Gusset at L3.tif

General Sketch for Bridge

Referenced Photos:

Gusset Plate Layout Sheet 3



Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Sketch ID: 3X093047450000C

Sketch Filename: BD226.09

Stream Channel: Erosion and Scour -- Rated 5, Was 5

Referenced Photos:

Channel Cross Sections Sheet 2

BD226

CHANNEL CROSS-SECTION READINGS (Feet)

NYSDOT BRIDGE INSPECTION REPORT

Insp. Date: 07/15/2009

BIN: 3047450

STA.	LEFT SIDE READINGS:				STA.	RIGHT SIDE READINGS:			
YEAR>	2009				YEAR>	2009			
T/FTG 0+00	16.3				T/FTG 0+00	16.7			
+05	17.1				+05	17.6			
+10	17.2				+10	17.8			
+20	16.3				+20	17.3			
+30	16.3				+30	17.1			
+40	16.4				+40	17.4			
+50	17.9				+50	18.5			
+60	18.5				+60	18.5			
+70	18.9				+70	19.6			
+80	18.5				+80	19.5			
+90	18.6				+90	19.4			
1+00	18.0				1+00	19.5			
1+10	17.4				1+10	18.3			
T/FTG 1+13	14.1				T/FTG 1+13	15.1			
WE @ 70	17.7				WE @ 70	18.4			

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

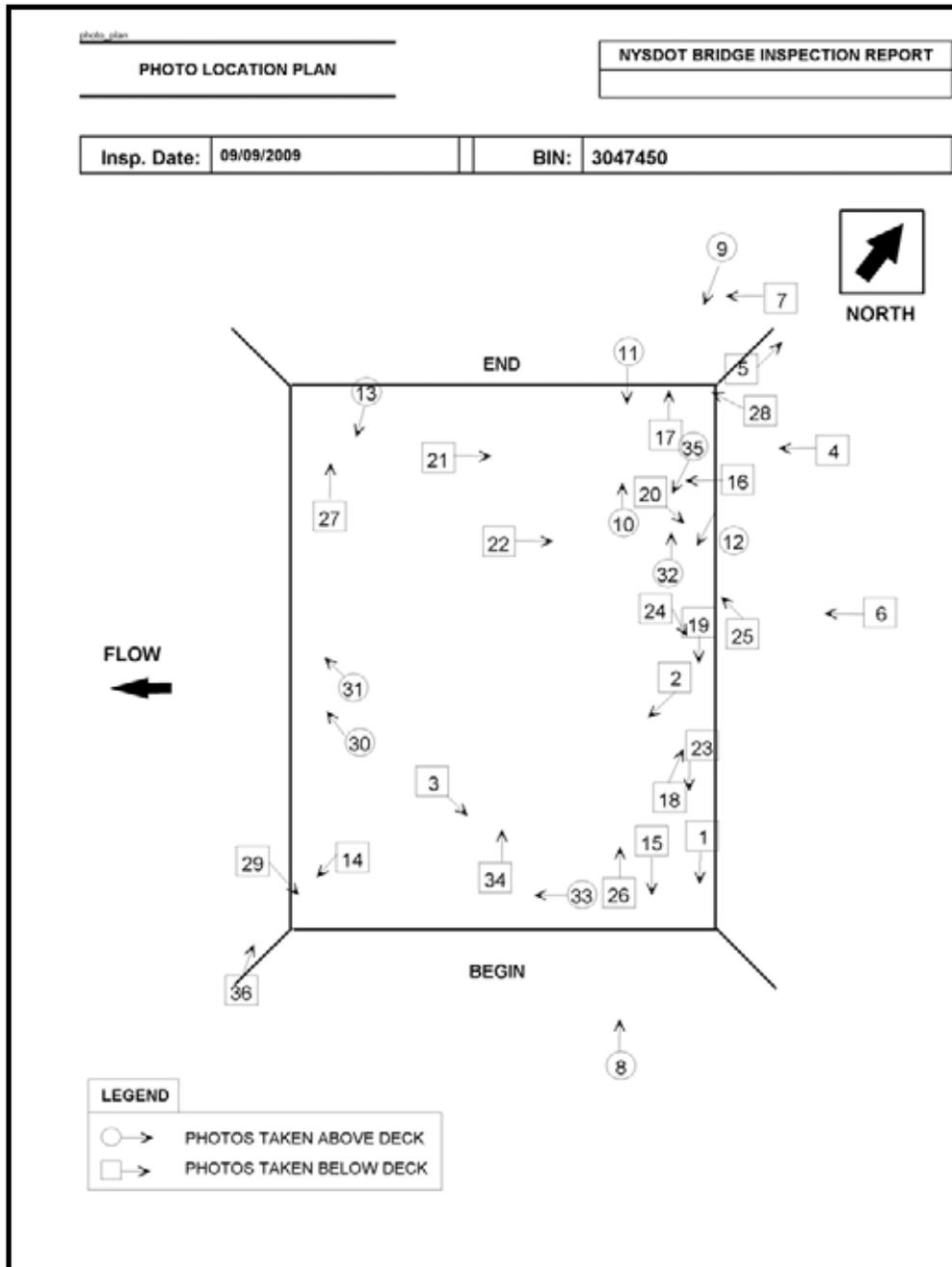
Sketch ID: 3X093047450000D

Sketch Filename: photo_plan.09

General Sketch for Bridge

Referenced Photos:

Photo Location Plan



Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Sketches in Sketch SysID Order

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Sketch ID: 3X093047450000E Sketch Filename: HYDFRM12.09

General Sketch for Bridge

Referenced Photos:

HVA Review form

NYSDOT Bridge Inspection Report Sheet ___ of ___	Hydraulic Vulnerability Assessment (HVA) Review *																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Carried: COUNTY ROAD 121</td> <td style="width: 33%;">BIN: 3047450</td> <td style="width: 33%;"></td> </tr> <tr> <td>Crossed: FALL CREEK</td> <td>Insp. Date: 09/09/2009</td> <td></td> </tr> <tr> <td>ATL: Babula, Nicole M. Assistant Team Leader</td> <td>Inspector: Boone, Robert W.</td> <td></td> </tr> </table>	Carried: COUNTY ROAD 121	BIN: 3047450		Crossed: FALL CREEK	Insp. Date: 09/09/2009		ATL: Babula, Nicole M. Assistant Team Leader	Inspector: Boone, Robert W.																																			
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Owner: <u>Tompkins County</u>	Existing Hydraulic Vulnerability Rating <u>4</u> Existing Rating Date <u>12/4/95</u>																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">A. Hydraulic Review</th> <th style="width: 5%;">Yes**</th> <th style="width: 15%;">No</th> </tr> </thead> <tbody> <tr> <td>1. Since the last assessment, is there any evidence of the channel changing course?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>2. Since the last assessment, is there any evidence of erosion or scour around footings or embankments in the vicinity of the bridge ?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>3. Since the last assessment, is there any evidence of debris or a significant change in the amount of debris around substructures?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>4. Since the last assessment, is there any evidence of rip rap, bank protection, or other such installation having been removed, altered, etc.?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>5. Since the last assessment, is there any evidence of stream work or other work having been done in the vicinity of the bridge, which might change the hydraulic characteristics at the bridge?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6. Record recent flood elevation (if it can be determined) from high water marks on (Elevation): trees, embankments or bridge. (Measured from a fixed and identified point on the structure) Location:</td> <td></td> <td></td> </tr> <tr> <td>7. Since the last assessment, have channel cross sections or profiles changed?</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td colspan="3">B. Foundation Review</td> </tr> <tr> <td>1a. Since the last assessment, have any scour countermeasures been installed?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>1b. If Yes, have their condition or placement changed?</td> <td></td> <td></td> </tr> <tr> <td>2. Since the last assessment, have there been any modifications to the abutment or pier foundations ?</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td> C. Did you observe anything, identified above or otherwise, which you believed might change the existing Hydraulic Vulnerability Assessment or should otherwise be brought to the attention of the Regional Hydraulics Engineer? Explain: Footings are exposed at both abutments. Scour Critical Rating of 8 appears too high. </td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td> D. Was a Foundation, Scour, Stream Channel, Bank Protection, etc. or related Flag Issued? (If Yes, Attach Copy) </td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table>		A. Hydraulic Review	Yes**	No	1. Since the last assessment, is there any evidence of the channel changing course?		X	2. Since the last assessment, is there any evidence of erosion or scour around footings or embankments in the vicinity of the bridge ?		X	3. Since the last assessment, is there any evidence of debris or a significant change in the amount of debris around substructures?		X	4. Since the last assessment, is there any evidence of rip rap, bank protection, or other such installation having been removed, altered, etc.?		X	5. Since the last assessment, is there any evidence of stream work or other work having been done in the vicinity of the bridge, which might change the hydraulic characteristics at the bridge?		X	6. Record recent flood elevation (if it can be determined) from high water marks on (Elevation): trees, embankments or bridge. (Measured from a fixed and identified point on the structure) Location:			7. Since the last assessment, have channel cross sections or profiles changed?	X		B. Foundation Review			1a. Since the last assessment, have any scour countermeasures been installed?		X	1b. If Yes, have their condition or placement changed?			2. Since the last assessment, have there been any modifications to the abutment or pier foundations ?		X	C. Did you observe anything, identified above or otherwise, which you believed might change the existing Hydraulic Vulnerability Assessment or should otherwise be brought to the attention of the Regional Hydraulics Engineer? Explain: Footings are exposed at both abutments. Scour Critical Rating of 8 appears too high.	X		D. Was a Foundation, Scour, Stream Channel, Bank Protection, etc. or related Flag Issued? (If Yes, Attach Copy)		X
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** Reference "Yes" answers to inspection documentation _____																																											
Quality Control Engineer _____ Date _____ <small>(Initial)</small>																																											
RHE Recommends Follow-Up Action? No ___ Yes ___ Describe _____																																											
Reg. Hydr. Engr. HVA Review *** _____ Date _____ <small>(Signature)</small>																																											
* This form is to be completed <u>only</u> when field conditions are different from when the HVA was last assessed. *** RHE HVA review must include review of the BIN Folder and other pertinent information.																																											

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Gen. Rec., Postings, Federal Ratings, etc.

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Overall Condition:

GENERAL RECOMMENDATION: 3

Computed Condition Rating: 4.203

Problems Requiring Action:

FURTHER INVESTIGATION IS NEEDED
Scour Critical Rating of 8 appears too high.

SAFETY Flag(s) Issued

POSTINGS:

Inspector Confirmed existing Posting data as correct.
Posted Vertical Clearance ON the bridge is: No Posting
Posted Vertical Clearance UNDER the bridge is: No Posting
Posted Load on this bridge is: 15 Tons

Overloads Observed:

NO Overload Vehicles were observed on this bridge

FEDERAL RATINGS:

NBI Deck Condition: 5
NBI Superstruct Condition: 4
NBI Substruct Condition: 5
NBI Channel Condition: 7
NBI Culvert Condition: N

Diving Inspection Needs:

Diving Inspection Required? No Date of Last Diving Inspection: No Date

Inventory Problems:

Inventory Problems Exist? No

Miscellaneous:

Time Required to Inspect Bridge: 14.75 Hours

Lane Closure Needs: None Required

No Railroad Flagging Required

No Pedestrian Fence

No Snow Fence

The BIN Plate is in OK condition

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Gen. Rec., Postings, Federal Ratings, etc.

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Special Emphasis Inspection Required:

Non-Redundant/Fracture Critical Members - Yes
 Pin and Hangers - No
 Fatigue-Prone Welds - No
Non-Categorized Fatigue-Prone Details - Yes
 Other (Specified in Text) - No

Special Emphasis Details:

Trusses, floorbeams and floorbeam connections are non-redundant.
Stitch welds for sidewalk brackets, lower chord tie plate welds, lower chord splice plate welds, cross bracing to floorbeam hangers, guiderail brackets to diagonal welds are special emphasis.

2009 - A 100% hands-on inspection was performed on all special emphasis details.

General Notes To the Next Inspector:

2009 - BIN plate located at left side of begin stem.

7-15-09 - Inspection of above deck trusses by extension ladder. Not feasible to use bucket truck or manlift for above deck inspection due to narrow width of roadway across bridge (15'-4" rail-rail) and heavy volume of traffic including small delivery trucks, buses, etc. Bridge was closed at the time by Town of Ithaca forces for deck repairs. Normally would require WZTC.
Below deck inspection performed using scaffolding.

Improvements Observed:

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Review Progress and Personnel Present at Inspection

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Inspection Submission Status:

Submitted to QC Engineer on: 11/3/2009
QC Submission Number: X0390601

QC Review Completed: 11/3/2009
QC Engineer: A J. Cabal

Submitted to Liaison Engineer on: 11/3/2009
Liaison Submission Number: 03926

Liaison Review Completed: 11/5/2009
Liaison Engineer: TODD M. HERMANN

Submitted for BIIS Processing on: 11/5/2009
BIIS Submission Number: .kp1

Current Status: Keypunched, Sent to BIIS
Check Value: 1,734,276,188

Personnel Present During Inspection:

Robert W. Boone	- Team Leader
Nicole M. Babula	- Assistant Team Leader
Sean Appleby	- Rigger (7-15-09 only)
Charlie Mattler	- Rigger (7-15-09 only)

Discovery Date: 9/9/2009

RC: 36 BIN: 3047450

Safety Flag 3X090011

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

Prompt Interim Action Recommended: No

Inspector: Boone, Robert W.
Flag Number: 3X090011

Date Discovered: 9/9/2009
Supersedes Flag Number: _____

Bridge Description:

BIN: 3047450 Carried: COUNTY ROAD 121 Crossed: FALL CREEK

Region: 3 - Syracuse County: 6 - Tompkins
Political Unit: 0423 - Town of ITHACA
Residency Code: - N/A
Primary Owner: 30 - County
Secondary Owner: 40 - Town
Primary Maintenance: 30 - County
Secondary Maintenance: 40 - Town
Year Built: 1909 Posted For Load: 15 Tons

Number of Spans by Type:	Num	Type	Description
	001	- 118	- Steel - Truss, Thru (Overhead Bracing)

Description of Flagged Condition:

At right sidewalk railing, the 2nd, 10th, 12th and 14th posts are broken loose from connection to fascia stringer, and moveable by hand. Railing overall is not fully sturdy at end 1/4 of length. Safety Flag for this condition, due to heavy pedestrian traffic.

1 Photos/Sketches Attached

Verbal Notifications: (For RED Flags and Safety Flags with PIA only)

To: _____ of Regional Office on _____ at _____

Signature: (a signed copy of this report will be placed in the BIN folder)

Flagged Bridge Report Completed By: Boone, Robert W. on 10/19/2009

Flagged Bridge Report Signed By: _____ on _____

Boone, Robert W.

(This PDF Report Created: 11/18/2009 10:28:00 AM)

Discovery Date: 9/9/2009

RC: 36 BIN: 3047450

Safety Flag 3X090011 Attachment

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

09IMGP0460.JPG - Attached to Safety Flag 3X090011

Right railing near end



Safety Flag 3X090012

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

Prompt Interim Action Recommended: No

Inspector: Boone, Robert W.
Flag Number: 3X090012Date Discovered: 9/9/2009
Supersedes Flag Number: 3X080031

Bridge Description:

BIN: 3047450 Carried: COUNTY ROAD 121 Crossed: FALL CREEK

Region: 3 - Syracuse County: 6 - Tompkins
Political Unit: 0423 - Town of ITHACA
Residency Code: - N/A
Primary Owner: 30 - County
Secondary Owner: 40 - Town
Primary Maintenance: 30 - County
Secondary Maintenance: 40 - Town
Year Built: 1909 Posted For Load: 15 Tons

Number of Spans by Type:	Num	Type	Description
	001	- 118	- Steel - Truss, Thru (Overhead Bracing)

Description of Flagged Condition:

At right side, some of the sidewalk cantilevers (floorbeam extensions) that had severe section losses to webs in right 2-3 feet of length during previous inspection have been repaired by welding on web plates. Repaired locations are:

Floorbeam #2 - begin channel (Photo).

Floorbeam #3 - begin and end channels (Photo).

However, some of the extensions were not repaired and still have holes through webs. Worst locations are as follows:

Floorbeam #4 - holes starting in begin and end channels.

Floorbeam #6 - begin and end channels each have a hole. End is worse, measuring approx 3 inches wide x 7 inches high. (Photo). At all of these locations, holes are directly below the right fascia sidewalk stringer (about 8 inches from the right side of the cantilever), reducing the bearing capacity of the cantilever. Safety flag (repeat flag) for this condition due to potential sidewalk failure.

3 Photos/Sketches Attached

Verbal Notifications: (For RED Flags and Safety Flags with PIA only)

To: _____ of Regional Office on _____ at _____

Signature: (a signed copy of this report will be placed in the BIN folder)

Flagged Bridge Report Completed By: Boone, Robert W. on 10/19/2009

Flagged Bridge Report Signed By: _____ on _____

Boone, Robert W.

(This PDF Report Created: 11/18/2009 10:28:01 AM)

Discovery Date: 9/9/2009

RC: 36 BIN: 3047450

Safety Flag 3X090012 Attachment

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

09100_0660.JPG - Attached to Safety Flag 3X090012

Floorbeam #2 cantilever, right side, begin channel



Discovery Date: 9/9/2009

RC: 36 BIN: 3047450

Safety Flag 3X090012 Attachment

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

09100_0663.JPG - Attached to Safety Flag 3X090012

Floorbeam #3 cantilever, right side, end channel



Discovery Date: 9/9/2009

RC: 36 BIN: 3047450

Safety Flag 3X090012 Attachment

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

09100_0669.JPG - Attached to Safety Flag 3X090012

Floorbeam #6 cantilever, right side, end channel



Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Inspection Access Requirements

Carried: COUNTY ROAD 121 Crossed: FALL CREEK CheckValue: 1,734,276,188

Equipment Required for Inspection

No Access Requirement Changes Noted During This Inspection.
This Listing is from the Inventory Database.

ACCESS CATEGORIES FOR ENTIRE BRIDGE

Required: Walking, Extension Ladder, Scaffolding, Lane Closure

ACCESS CATEGORIES FOR SPAN 1

Required: Walking, Extension Ladder, Scaffolding, Lane Closure

Inspection Date: 9/9/2009

RC: 36 BIN: 3047450

Culvert Measurements

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

CheckValue: 1,734,276,188

Culvert Measurements

CULVERT DIMENSIONS FOR SPAN 1

LOCATION: L1

Line AF: 0.00 m

Line FE: 0.00 m

Line CF: 0.00 m

Line AD: 0.00 m

Line BE: 0.00 m

COMMENTS:

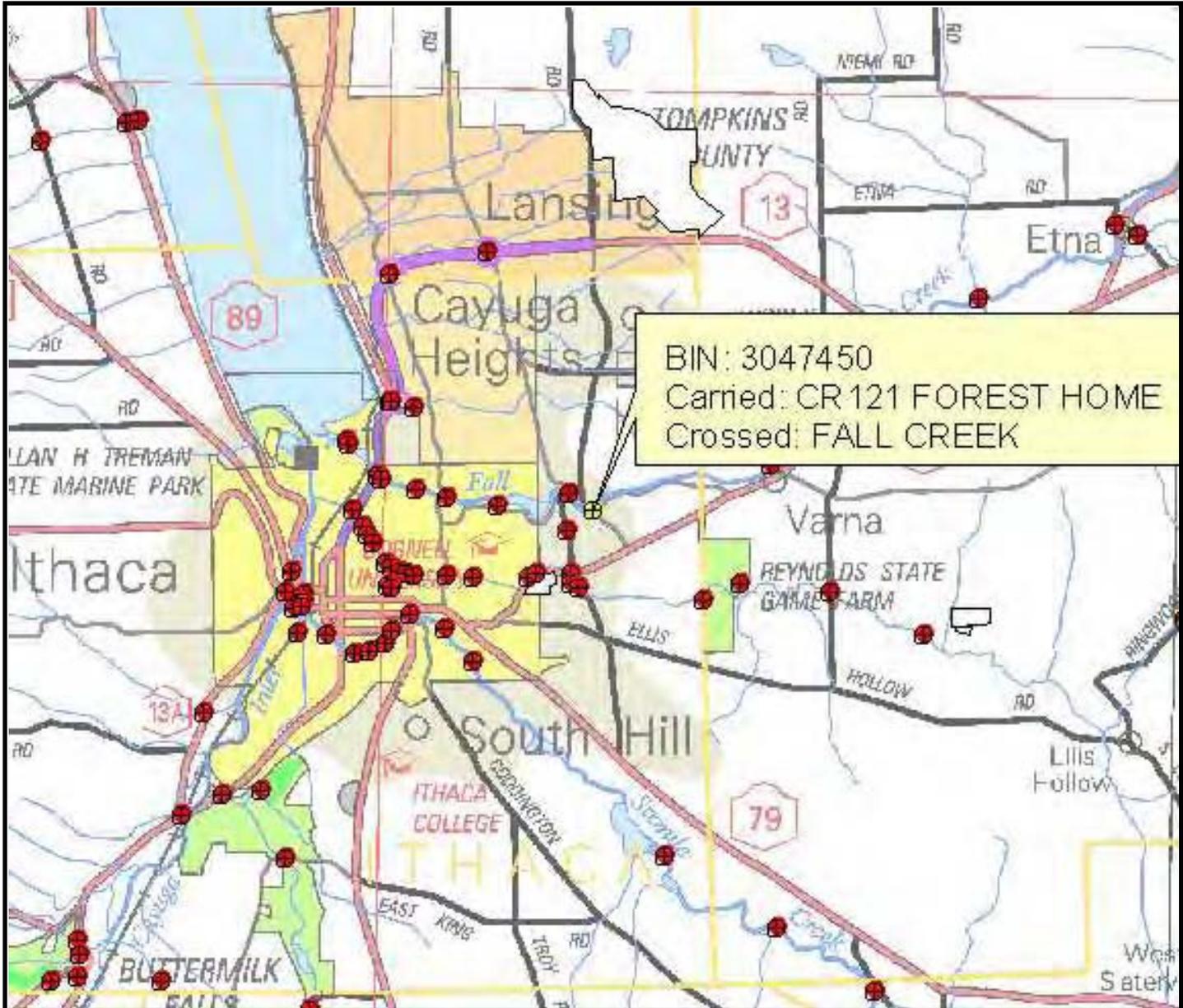
No Comments Provided.

Standard Photos

RC: 36 BIN: 3047450

Carried: COUNTY ROAD 121 Crossed: FALL CREEK

3047450_LOCATION_MAP.JPG



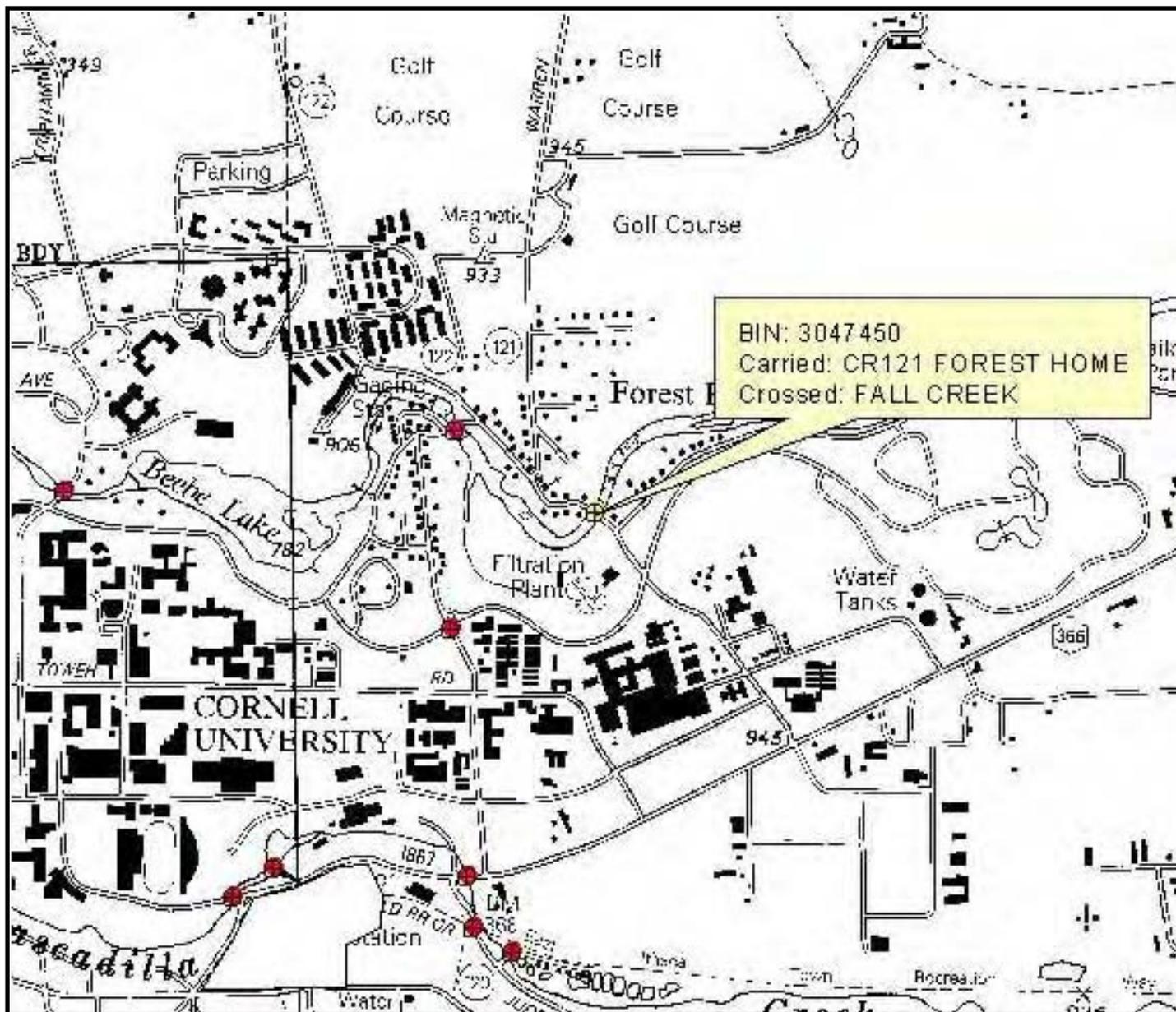
Standard Photos

RC: 36 BIN: 3047450

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

3047450_QUAD_MAP.JPG



AbutmentEnd.JPG



ApproachBegin.JPG



Standard Photos

RC: 36 BIN: 3047450

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

ApproachEnd.JPG



Standard Photos

RC: 36 BIN: 3047450

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

ElevationSpan1.JPG



Standard Photos

RC: 36 BIN: 3047450

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

F2CrossedSpan1Left.JPG



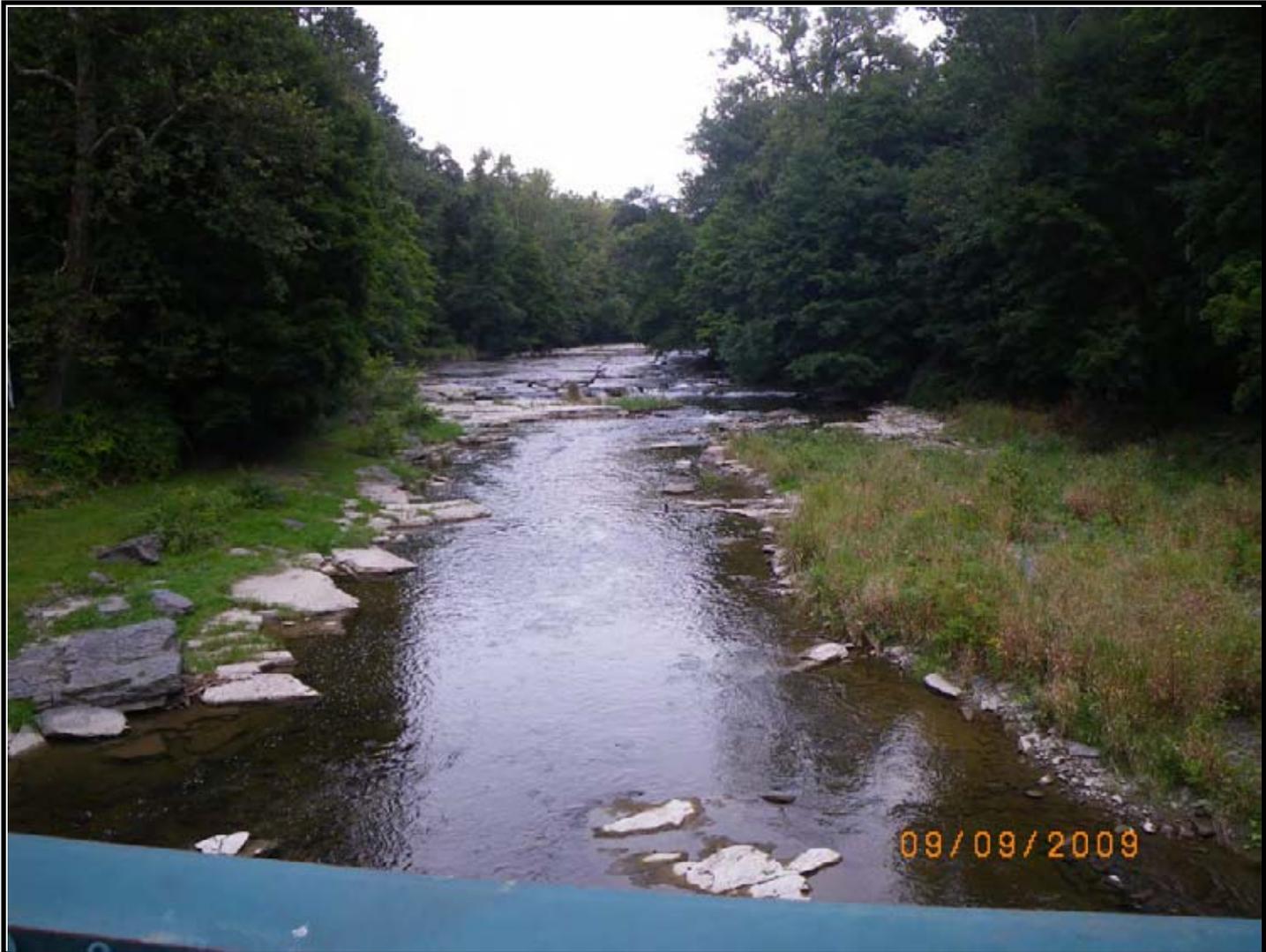
Standard Photos

RC: 36 BIN: 3047450

Carried: COUNTY ROAD 121

Crossed: FALL CREEK

F2CrossedSpan1Right.JPG



FramingSpan1.JPG



In-Depth Inspection Report

BIN 3047450

Forest Home Drive over Fall Creek

Town of Ithaca, NY

Prepared for

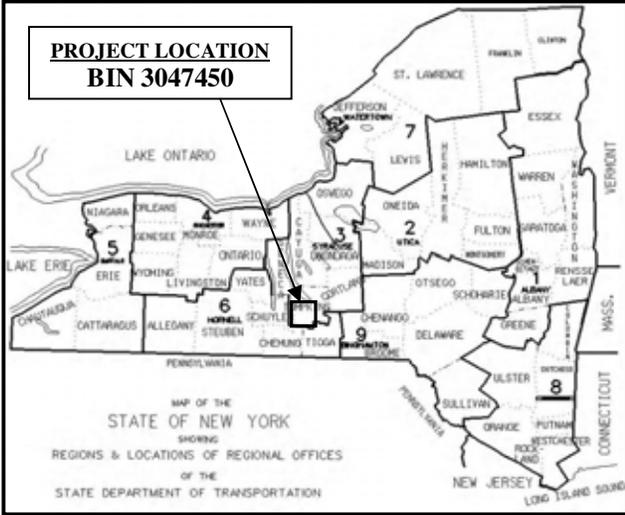
Tompkins County

September 2008

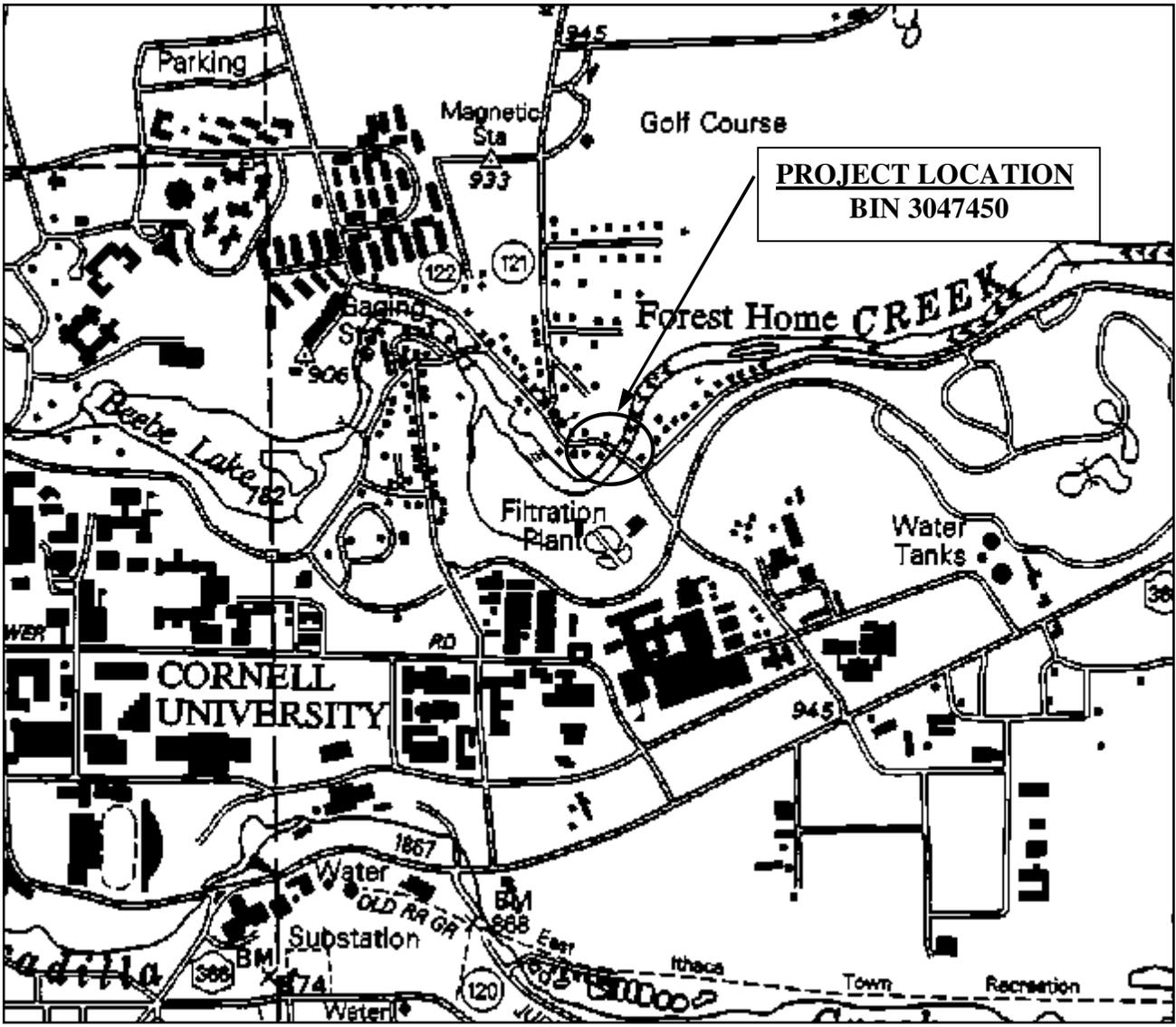


Erdman, Anthony and Associates, Inc.
2165 Brighton Henrietta Town Line Road
Rochester, New York 14623-2755
585 427 8888

LOCATION MAP



**FOREST HOME DRIVE
TOWN OF ITHACA
TOMPKINS COUNTY
BIN 3047450**



INSPECTION SUMMARY

INSPECTION SUMMARY

Scope and Purpose of Inspection

This inspection was performed in order to verify the existing information available for the bridge and to obtain additional information needed for design purposes. The inspection focused on verifying member sizes, obtaining connection details, and verifying the structural condition of the superstructure members.

The inspection was performed April 15 and 16, 2008. The inspection team consisted of Mark Laistner, P.E. (Team Leader), Leszek Janik (Assistant Team Leader), and Tiphaine Williams, P.E. Access was obtained through the use of extension ladders. The bridge remained open during the inspection.

General Description of Bridge

The bridge was constructed in 1909 and is a single span through truss bridge with a Double Warren Truss configuration. The bridge has a span length of 116'-0", a transverse truss spacing of approximately 17'-2" and has no skew. The truss contains built-up and laced angle members. The floor system consists of transverse rolled floorbeams, longitudinal rolled stringers, and an open grate steel deck.

The abutments are constructed of mortared stone masonry on spread footings. The bridge carries water main and force main utilities.

Abutments

The bearings at the Begin and End Abutments are neoprene with steel shims. There is a strip seal joint at the Begin Abutment and no joint at the End Abutment. The neoprene bearing pads have no visible problems.

The abutment bridge seats are reinforced concrete with heavy rust stains from the superstructure. There is steel debris along the bridge seats from the deteriorating superstructure members.

The abutment backwalls appear to be constructed of concrete and have no visible problems.

The stone masonry abutments exhibit many cracks through stones and mortar with areas of missing stones and mortar loss. Some cracks exhibit efflorescence and seepage. A ruler was inserted up to 17" into an area of mortar loss at the End Abutment. Approximately 50% of the Begin Abutment and 20% of the End Abutment is covered with shotcrete. The shotcrete exhibits many cracks with efflorescence and is hollow sounding over 20% of its area. The shotcrete at the End Abutment extends over the downstream wingwall.

The concrete collars along both abutments have no visible problems. There is no scour at either abutment.

Wingwalls

The downstream wingwall at the Begin Abutment merges with a retaining wall along the channel bank that extends far downstream. The upstream stone masonry wingwall at the Begin Abutment has cracks through stones and mortar throughout and a pile of loose stones at the end of the wall.

The downstream U-wing at the End Abutment is covered with shotcrete. The upstream stone masonry wingwall at the End Abutment has cracks through stones and mortar with areas of missing stones and mortar loss.

Stream Channel

The river alignment is relatively straight upstream and through the bridge and bends to the right downstream. There is a gravel sediment island that extends from midspan toward the Begin Abutment. A small amount of flow passes in front of the Begin Abutment while a majority of the flow passes beneath the end half of the span. The sediment island is completely inundated during higher events and flow extends across the full width of the channel.

The water depth at the deepest point in the channel was approximately 3 ft at the time of the inspection. Stream velocities in the channel were high.

A retaining wall runs along the base of the downstream left bank. The upstream left bank is well vegetated, but there is some minor erosion at the water line with exposed tree roots. There is a series of terraced retaining walls along the upstream right channel bank. There is a small retaining wall along the downstream right bank that has failed where it meets the bridge. The channel bank is well vegetated and appears stable farther downstream.

The waterway opening under the bridge appears adequate.

Approaches

Both asphalt approaches exhibit moderate to heavy wear with areas of transverse and longitudinal cracking. The sidewalk approaches are constructed of built-up asphalt in poor condition. The asphalt is cracked, uneven, and breaking off at the edges.

Minimal approach railing is provided at the end approach due to nearby private driveways. No railing is provided along the right side of the begin approach.

Bridge Deck

The bridge has an open grate steel deck. The grating is filled with concrete for 4 ft from each end of the bridge. The grating exhibits light surface rust and areas of paint loss. Many of the welds to the stringers are broken. As a result, the deck impacts the stringers as vehicles pass over the bridge causing loud noises.

The bridge railing consists of two w-rails attached to the trusses.

Superstructure

The deck has areas of light surface rust. Many of the welds to the stringers are broken.

The rolled stringers exhibit heavy paint peeling with heavy surface rust and moderate delamination.

The rolled floorbeams exhibit minor to moderate paint peeling with moderate surface rust. The overhangs beneath the sidewalk are more heavily corroded with delamination and areas of section loss.

The primary members of the steel trusses are in generally good condition above the level of the deck. The built up end diagonals, L₀-U₁ and U₆-L₇, on each truss exhibit heavy pack rust between the top plate and side channels at the lower panel point. In addition, the lacing members close to the joint have up to 100% section loss. Member U₁-L₂ on the right truss has impact damage to the inside angle approximately 2 ft from where it crosses member U₂-L₁.

The primary members below the deck are in poor condition. The bottom chord members of both trusses are heavily corroded with heavy delamination and areas of 100% section loss. The corrosion and section loss is more severe on the right (upstream) truss. The end points of the trusses at the Begin and End Abutments exhibit heavy rust and delamination with section loss to the bottom chord, gusset plate and rivets. Previous welded repairs are also heavily corroded. The end point of the right truss at the End Abutment is the most severely deteriorated. The bottom flanges of the angles of the built-up bottom chord exhibit 100% section loss along most of their length. The bottom plate between the angles and the gusset plates and rivets at the end point connection are also severely deteriorated.

The secondary members of the truss are in generally good condition above the deck. The portal bracing at the End Abutment has impact damage. A few of the braces between the upper panel points of the trusses have a few spots of rust with minor section loss. The diagonal braces below the deck in Bays 1, 3, 5, and 7 exhibit heavy corrosion with areas of delamination.

Load Rating

A Level I Load Rating Analysis was performed for the bridge in its present condition. Based on the AASHTO Manual for the Condition Evaluation of Bridges (1996), a conservative yield strength value of 30,000 psi was used to establish the allowable inventory and operating stresses. The working stress method was used to compute the ratings. The truss analysis was performed using influence lines created from a finite element model of the truss. The results of the rating analysis are presented below:

ELEMENTS WITH INVENTORY RATINGS BELOW H20

ELEMENT	INVENTORY RATING	OPERATING RATING	CONTROLLING CONDITION
U1L1	H 13.8	H 24.8	TENSION
U3U4	H 15.0	H 24.8	COMPRESSION
L0U1	H 16.4	H 25.8	COMPRESSION
U2U3	H 19.4	H 30.0	COMPRESSION
Deck Grating	H 18.4	H 24.8	BENDING

The controlling members are the vertical, diagonal, and top chord members, which exhibit the least amount of section loss. The bottom chord members of the truss exhibit the most severe deterioration but do not control the rating since they are in tension and were strengthened during a previous rehabilitation. The rating analysis indicates that replacement of the bottom chord members will not increase the load capacity of the structure. The entire truss would have to be replaced with stronger members in order to achieve increased load capacity. The current load posting of 15 Tons should be maintained.

PHOTOGRAPHS

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 1

Location:
Forest Home Drive
looking west.

Description:
Begin Approach

Reference:



PHOTO NO. 2

Location:
Forest Home Drive
looking East

Description:
End Approach

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 3

Location:
North of bridge
looking south.

Description:
Upstream elevation
of bridge (looking
downstream).

Reference:



PHOTO NO. 4

Location:
South of bridge
looking north.

Description:
Downstream
elevation of bridge
(looking upstream).

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 5

Location:
Beneath bridge
looking upstream.

Description:
Upstream channel of
Fall Creek at bridge.

Reference:



PHOTO NO. 6

Location:
Beneath bridge
looking downstream.

Description:
Downstream
channel of Fall
Creek at bridge.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 7

Location:
In Fall Creek looking toward Begin Abutment.

Description:
Downstream wingwall/retaining wall at Begin Abutment.

Reference:



PHOTO NO. 8

Location:
In Fall Creek looking toward Begin Abutment.

Description:
Begin Abutment Stem – 50% of stone masonry abutment is covered with shotcrete.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 9

Location:
In Fall Creek looking toward Begin Abutment.

Description:
Upstream wingwall at Begin Abutment.

Reference:



PHOTO NO. 10

Location:
In Fall Creek looking toward End Abutment.

Description:
Upstream wingwall at End Abutment.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 11

Location:
In Fall Creek looking at End Abutment.

Description:
End Abutment Stem – 20% of stone masonry abutment stem is covered with shotcrete.

Reference:



PHOTO NO. 12

Location:
Along downstream right bank of Fall Creek.

Description:
Downstream wingwall at End Abutment – completely covered with shotcrete.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 13

Location:
Begin Abutment

Description:
Stone masonry has broken stones with missing mortar and heavy efflorescence.

Reference:



PHOTO NO. 14

Location:
End Abutment

Description:
Stone masonry with areas of cracked stones and missing mortar with areas of seepage.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 15

Location:
Upstream wingwall at End Abutment.

Description:
Example of crack through height of stone in stone masonry substructures.

Reference:



PHOTO NO. 16

Location:
In Fall Creek looking toward Begin Abutment.

Description:
Shotcrete portion of Begin Abutment exhibits heavy cracking with efflorescence and rust stains.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 17

Location:
Upstream wingwall
at Begin Abutment.

Description:
There are loose and
broken stones at the
end of the wingwall.

Reference:



PHOTO NO. 18

Location:
End Abutment
approach.

Description:
Approach to
sidewalk at End
Abutment (typical
both ends of
sidewalk).

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 19

Location:
Sidewalk looking toward Begin Abutment.

Description:
Typical sidewalk condition.

Reference:



PHOTO NO. 20

Location:
Right truss member L0-L1 near L0.

Description:
1" separation between top plate and channel due to pack rust.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 21

Location:
Right truss member
L0-L1 near L0.

Description:
Lacing exhibits
areas of 100%
section loss.

Reference:



PHOTO NO. 22

Location:
Right truss member
U1-L2

Description:
Impact damage to
angle on roadway
side 2 ft from center
of 'X'.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 23

Location:
Right truss viewed from Begin Abutment.

Description:
Typical condition of truss members above the bridge deck.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 24

Location:
Right truss member
U3-L2 at L2.

Description:
Typical condition of
diagonal truss
members at lower
panel points –
moderate to heavy
surface rust.

Reference:



PHOTO NO. 25

Location:
Left truss – Upper
panel point U2.

Description:
Typical condition of
upper panel points
on both trusses.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 26

Location:
Top chord members and bracing.

Description:
Typical condition of upper truss members.

Reference:



PHOTO NO. 27

Location:
Begin bridge seat from right side.

Description:
Right truss bearing and stringer bearings at Begin Abutment.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 28

Location:
Right truss bearing
at Begin Abutment.

Description:
Heavy deterioration
with areas of 100%
section loss.

Reference:



PHOTO NO. 29

Location:
Right truss bearing
at Begin Abutment.

Description:
Heavy deterioration
inside of bottom
chord member at L0.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 30

Location:
Right truss bearing at Begin Abutment.

Description:
Gusset plate exhibits heavy deterioration with areas of 100% section loss.

Reference:



PHOTO NO. 31

Location:
Left truss bearing at Begin Abutment.

Description:
Heavy deterioration at L0.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 32

Location:
Left truss bearing at Begin Abutment.

Description:
Heavy deterioration inside of bottom chord member at L0. Bottom plate exhibits 100% section loss. Rivets and bolts are heavily deteriorated with section loss.

Reference:



PHOTO NO. 33

Location:
Left truss bearing adjacent to utility.

Description:
Heavy surface rust on left truss bearing adjacent to utility.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 34

Location:
Left truss bearing at Begin Abutment.

Description:
Heavy deterioration and section loss to outside channel of member L0-L1.

Reference:



PHOTO NO. 35

Location:
Bay 1 looking toward Begin Abutment.

Description:
General condition of stringers and bracing – heavy surface rust with moderate to heavy delamination. Typical in Bays 1, 3, 5, and 7.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 36

Location:
Bay 2 looking toward
Begin Abutment.

Description:
Typical stringer
condition in Bays 2,
4, and 6.

Reference:



PHOTO NO. 37

Location:
Right side of
Floorbeam 1.

Description:
Typical condition of
floorbeam hanger.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 38

Location:
Left truss bearing at End Abutment.

Description:
Heavy surface rust with delamination on bottom flange of low chord member.

Reference:



PHOTO NO. 39

Location:
Left truss bearing at End Abutment.

Description:
Heavy deterioration to rivets and bottom plate with areas of 100% section loss.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 40

Location:
Left truss bearing at
End Abutment.

Description:
Heavy surface rust
with delamination
and section loss.

Reference:



PHOTO NO. 41

Location:
Stringer bearings at
End Abutment.

Description:
General condition of
bearing seat
beneath stringers.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 42

Location:
Stringers at End Abutment.

Description:
General condition of stringers - heavy surface rust and delamination.

Reference:



PHOTO NO. 43

Location:
Inside bottom chord member of right truss bearing at End Abutment.

Description:
Heavy deterioration with areas of 100% section loss to bottom plate and rivets.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 44

Location:
Right truss bearing
at End Abutment.

Description:
Severe deterioration.

Reference:



PHOTO NO. 45

Location:
Looking along
bottom chord toward
right truss bearing at
End Abutment.

Description:
Severe deterioration
to bottom flange of
bottom chord
channel with areas
of 100% section
loss.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

BRIDGE INSPECTION REPORT

BIN: 3047450

PHOTO NO. 46

Location:
Right truss bottom chord member looking from L1 to L2.

Description:
Typical condition of bottom chord between angles.

Reference:



PHOTO NO. 47

Location:
Bottom chord of right truss at joint L1.

Description:
Bottom chord exhibits heavy deterioration with delamination and areas of 100% section loss.

Reference:



ASSISTANT TEAM LEADER: Leszek Janik, Tiphaine Williams, P.E.

FEATURE CROSSED: Fall Creek

TEAM LEADER: Mark R. Laistner, P.E.

FEATURE CARRIED: Forest Home Drive

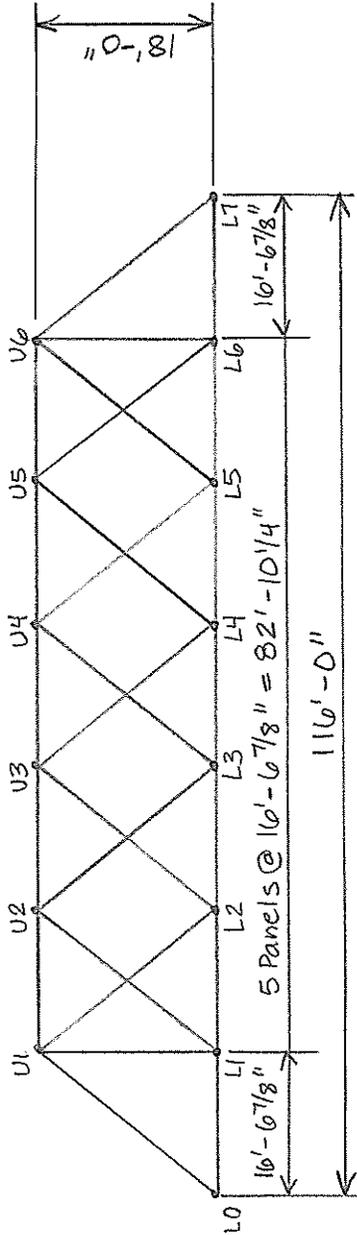
LOAD RATING

SHEET 1 OF _____ SUBSHEET NO. _____
 BY TAW DATE 9/25/08 CKD _____ DATE _____
 PROJECT NAME & NO. Forest Home 19201.00
 CLIENT Tompkins County
 SUBJECT Load Rating BIN 3047450



H2O Rating Summary

Element	Inventory (Tons)	Operating (Tons)
Grating	18.4	24.8
Stringers	26.6	35.6
Floorbeams	32.0	44.6
Truss	13.8	24.8



TRUSS ELEVATION
N.T.S.

<p>①</p> <p>\overline{P} 14 x 5/16 ← C8 x 11.5</p> <p>L0U1, U1 → U6, U6L7</p>	<p>②</p> <p>\overline{P} 3 1/2 x 2 1/2 x 5/16 ← B.P. @ 36" o.c.</p> <p>U1L1, U6L6</p>	<p>③</p> <p>\overline{P} 4 x 3 3/8 ← B.P. @ 48" o.c.</p> <p>U1L2, L5U6</p>	<p>④</p> <p>\overline{P} 4 x 3 5/16 ← B.P. @ 36" o.c.</p> <p>L1U2, U5L6</p>
<p>⑤</p> <p>\overline{P} 3 1/2 x 2 1/2 x 5/16 ← B.P. @ 36" o.c.</p> <p>U3L4, L4U5</p>	<p>⑥a</p> <p>\overline{P} 3 x 2 1/2 x 5/16 ← B.P. @ 36" o.c.</p> <p>U3L4, L3U4</p>	<p>⑦</p> <p>\overline{P} 3 1/2 x 3/8 \overline{P} 3 3/4 x 1/4 ← B.P. @ 48" o.c.</p> <p>L0L2, L5L7</p>	<p>⑧</p> <p>\overline{P} 6 x 4 x 5/8 \overline{P} 4 x 1/4 ← B.P. @ 48"</p> <p>L2 → L5</p>

SHEET 3 OF

SUBSHEET NO.

BY TAW

DATE 9/24/08

CKD

DATE

PROJECT NAME & NO. Forest Home Dr 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

ERDMAN

ANTHONY



MEMBER PROPERTIES

TYPE ①

From 1994 Load Rating $\Rightarrow A = 11.13 \text{ in}^2$, $A_{\text{net}} = 9.54 \text{ in}^2$, $I_{xx} = 111.20 \text{ in}^4$

2008 Inspection - Section Loss = 10% for LOU1

$$A = 0.9(11.13 \text{ in}^2) = 10.02 \text{ in}^2$$

$$A_{\text{net}} = 0.9(9.54 \text{ in}^2) = 8.59 \text{ in}^2$$

TYPE ②

From 1994 Load Rating:

$$A = 3.17 \text{ in}^2 \text{ corroded}, \quad A = 4.22 \text{ in}^2 \text{ uncorroded}$$

$$A_{\text{net}} = 2.75 \text{ in}^2$$

$$I_{xx} = 5.12 \text{ in}^4$$

TYPE ③

From 1994 Load Rating:

$$A = 3.72 \text{ in}^2$$

$$I_{xx} = 7.92 \text{ in}^4$$

$$A_{\text{net}} = 3.30 \text{ in}^2$$

SHEET 4 OF _____ SUBSHEET NO. _____
BY TAW _____ DATE 9/24/08 CKD _____ DATE _____
PROJECT NAME & NO. Forest Home 1920 1.00
CLIENT Tompkins County
SUBJECT Load Rating

ERDMAN 
ANTHONY

TYPE ④

From 1994 Load Rating $\Rightarrow A = 4.18 \text{ in}^2$, $A_{net} = 3.71 \text{ in}^2$, $I_{xx} = 6.76 \text{ in}^4$

Members replaced in 1995. Assume 10% Section Loss

$$A = (4.18 \text{ in}^2)(0.9) = 3.76 \text{ in}^2$$

$$A_{net} = (3.71 \text{ in}^2)(0.9) = 3.34 \text{ in}^2$$

TYPE ⑤

From 1994 Load Rating:

$$A = 2.67 \text{ in}^2 \text{ corroded} \quad A = 3.56 \text{ in}^2 \text{ uncorroded}$$

$$A_{net} = 2.32 \text{ in}^2$$

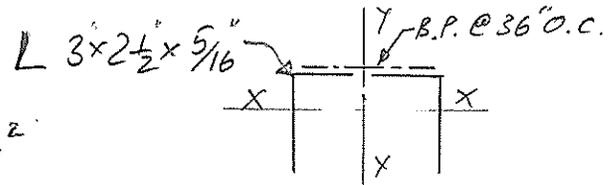
$$I_{xx} = 4.38 \text{ in}^4$$

Member Properties

TYPE 6a

Fy = 36

U3L4, L3U4



$$A = 1.62 \text{ in}^2 \times 2 = 3.24 \text{ in}^2$$

$$A_{net} = 3.24 \text{ in}^2 - (2)(3/4)(5/16) = 2.77 \text{ in}^2 \quad \sim 10\% \text{ sect. loss.}$$

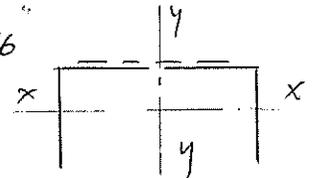
$$I_{xx} = 2(142 \text{ in}^4) = \boxed{2.84 \text{ in}^4}$$

$$A = 0.90 \times 3.24 \text{ in}^2 = \boxed{2.92 \text{ in}^2}$$

$$A_{net} = 0.90 \times 2.77 \text{ in}^2 = \boxed{2.49 \text{ in}^2}$$

TYPE 6b L2U3, U4L5

L 4" x 3" x 5/16"



$$A = 2.09 \text{ in}^2 \times 2 = 4.18 \text{ in}^2 \text{ uncorroded}$$

$$A_{net} = 4.18 \text{ in}^2 - 2(3/4)(5/16) = 3.71 \text{ in}^2 \quad Fy = 36$$

$$I_{xx} = 2(3.38 \text{ in}^4) = \boxed{6.76 \text{ in}^4}$$

~ 5% loss sect.

$$A = 0.95(4.18 \text{ in}^2) = \boxed{3.97 \text{ in}^2} \text{ corroded}$$

$$A_{net} = 0.95(3.71 \text{ in}^2) = \boxed{3.52 \text{ in}^2}$$

TYPE 7 L0L2, L5L7

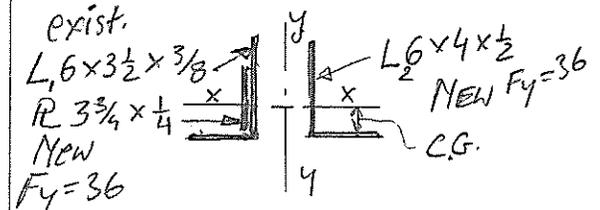
$$A_{L1} = 3.42 \text{ in}^2$$

$$A_{PL} = 3.75 \text{ in}^2 \times 0.25 \text{ in}^2 = 0.94 \text{ in}^2$$

$$A_{L2} = 4.75 \text{ in}^2, \quad \text{Total } A = 3.42 \text{ in}^2 + 0.94 \text{ in}^2 + 4.75 \text{ in}^2 = 9.11 \text{ in}^2$$

$$A_{net} = 9.11 \text{ in}^2 - (3/4)(3/8 + 1/2) = 8.45 \text{ in}^2$$

$$C.G. = \frac{(3.42 \text{ in}^2)(2.04") + 0.94 \text{ in}^2 \left(\frac{2.75"}{2} + (3 \frac{3}{4}) \frac{1}{2} \right) + (4.75 \text{ in}^2)(1.99")}{9.11 \text{ in}^2} = 2.08 \text{ in}$$



SHEET 6 OF

SUBSHEET NO. 6b

BY LJ DATE 4/29/08 CKDTAW DATE 8/1/08

PROJECT NAME & NO. Forest Home Dr. # 19201.00

CLIENT Tompkins Co

BJECT Rotings

ERDMAN
ANTHONY Type (7) Cont.

$$I_{xx} = 12.9 \text{ in}^4 + \frac{(3.42 \text{ in}^2)(2.04 - 2.08)^2}{0.005} + \frac{(0.25 \text{ in} \times 3.75 \text{ in}^3)}{1.10} + \frac{0.94 \text{ in}^2(2.75 - 2.08)^2}{0.42} + 17.4 \text{ in}^4 + \frac{(4.75 \text{ in}^2)(1.99 - 2.08)^2}{0.04} = 31.9 \text{ in}^4$$

⊙ Bay 1, 2, 6 & 7 loss ~ 35% Section

$$A = 0.65 (9.11 \text{ in}^2) = 5.92 \text{ in}^2$$

$$A_{net} = 0.65 (8.45 \text{ in}^2) = 5.49 \text{ in}^2$$

SHEET 7 OF

SUBSHEET NO.

BY TAW

DATE 9/24/08 CKD

DATE

PROJECT NAME & NO. Forest Home 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

ERDMAN
ANTHONY 

TYPE ⑧

From 1994 Load Rating $A = 13.72 \text{ in}^2$, $A_{net} = 12.78 \text{ in}^2$, $I_{xx} = 43.58 \text{ in}^4$

Section Loss = 35% 2008 Inspection

$$A = 0.65(13.72 \text{ in}^2) = 8.92 \text{ in}^2$$

$$A_{net} = 0.65(12.78 \text{ in}^2) = 8.31 \text{ in}^2$$

SHEET 8 OF _____ SUBSHEET NO. _____
BY TAW _____ DATE _____ CKD _____ DATE _____
PROJECT NAME & NO. Forest Home 19201.00
CLIENT Tompkins County
SUBJECT Load Rating

ERDMAN 
ANTHONY

TRUSS DEAD LOADS

From 1994 Load Rating:

TYP. PANEL WEIGHT = 2918 LB
(including truss members,
rivets, gusset plates, and
batten plates)

GRATING, SIDEWALK,
RAILINGS, & UTILITIES = 8964 LB

STRINGERS = 2191 LB

FLOORBEAMS = 910 LB

TOTAL = 14,983 LB

15 K / PANEL POINT

SHEET 9 OF

SUBSHEET NO.

BY TAW

DATE 9/24/08

CKD

DATE

PROJECT NAME & NO. Forest Home 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

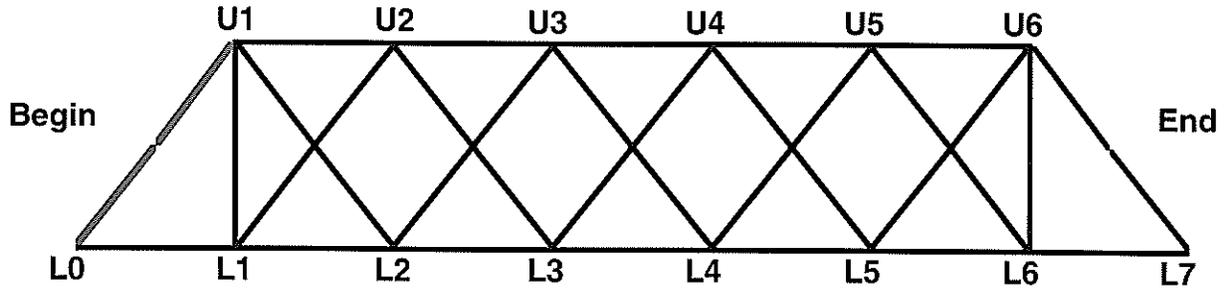
ERDMAN
ANTHONY 

TRUSS LIVE LOAD (H2O LANE LOAD)

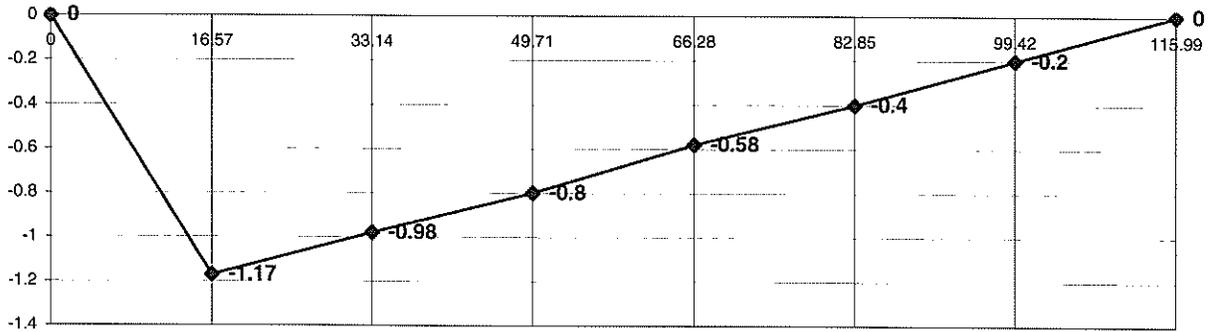
From 1994 Load Rating:

- Distribution Factor = 0.65
- Impact Factor = 1.21
- Uniform Load/Panel Point = 8.34 k
(including Impact & Dist. Factor)
- Concentrated Load/Panel Point = 14.16 k (CHORDS)
20.45 k (DIAGONALS)
(including Impact & Dist. Factor)

Forest Home Bridge Inspection BIN 3047450



(elevation view from roadway)



Influence Line - Member LOU1

From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(1.17+0.98+0.80+0.58+0.40+0.20) = \boxed{61.95k} (c)$$

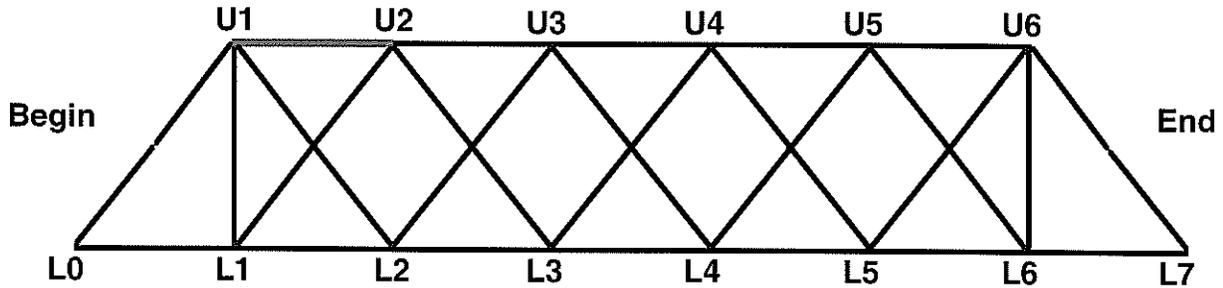
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(61.95k) = 34.44k$$

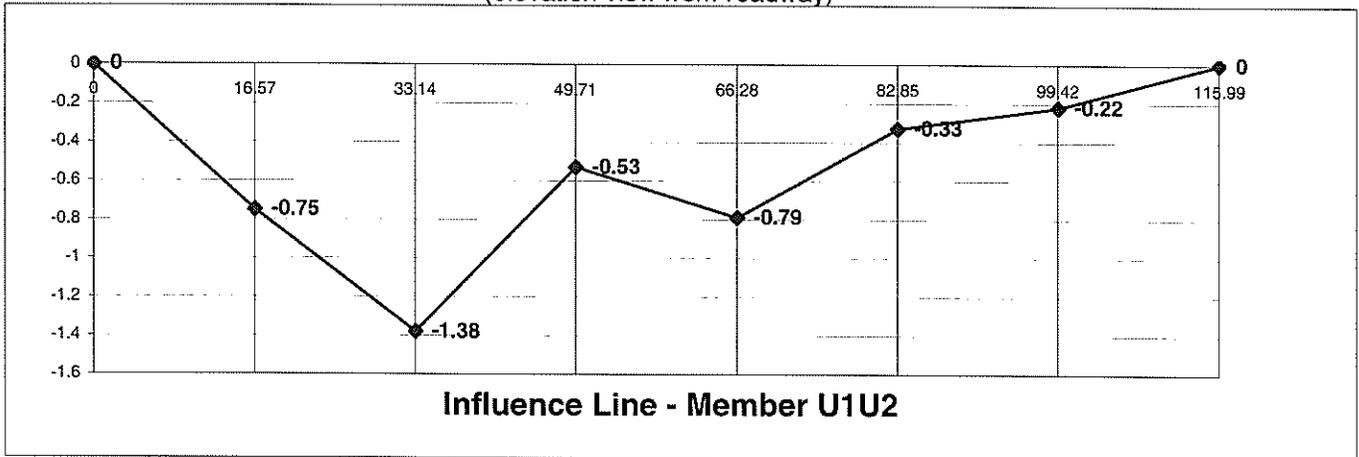
$$\text{Conc. Load: } (20.5k)(1.17) = 23.93k$$

$$\text{Total Live Load} = \boxed{58.37k} (c)$$

Forest Home Bridge Inspection BIN 3047450



(elevation view from roadway)



From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.75+1.38+0.53+0.79+0.33+0.22) = \boxed{60.00k} (c)$$

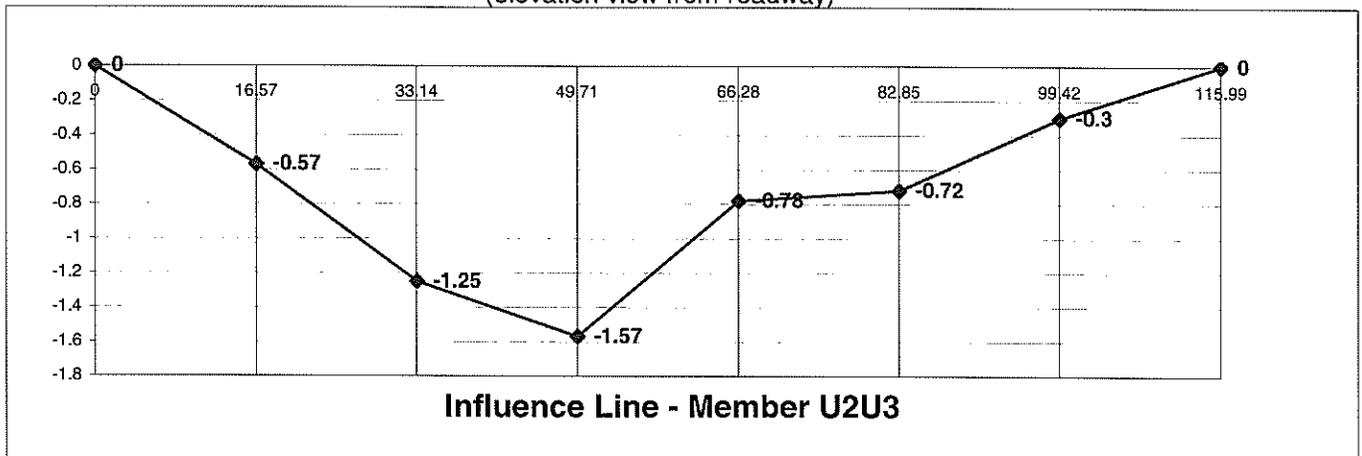
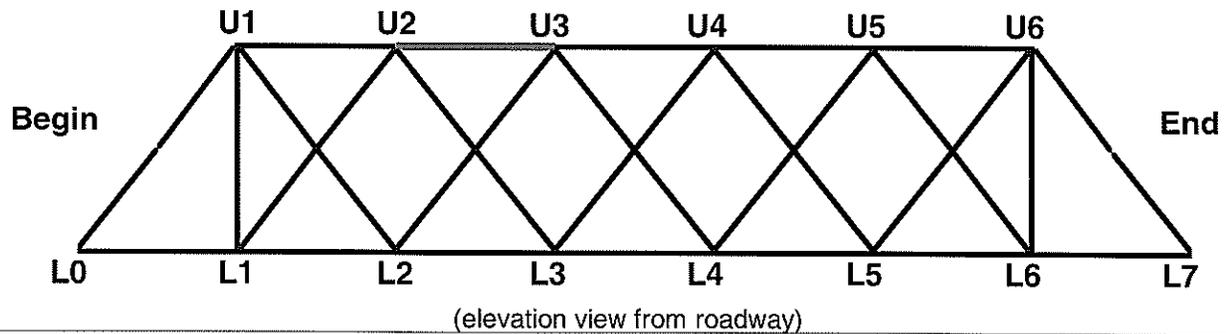
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(60.00k) = 33.36k$$

$$\text{Conc. Load: } (14.2k)(1.38) = 19.54k$$

$$\text{Total Live Load} = \boxed{52.90k} (c)$$

Forest Home Bridge Inspection BIN 3047450

**From 1994 Load Rating:****Live Load**

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.57+1.25+1.57+0.78+0.72+0.3) = \boxed{77.85k} (c)$$

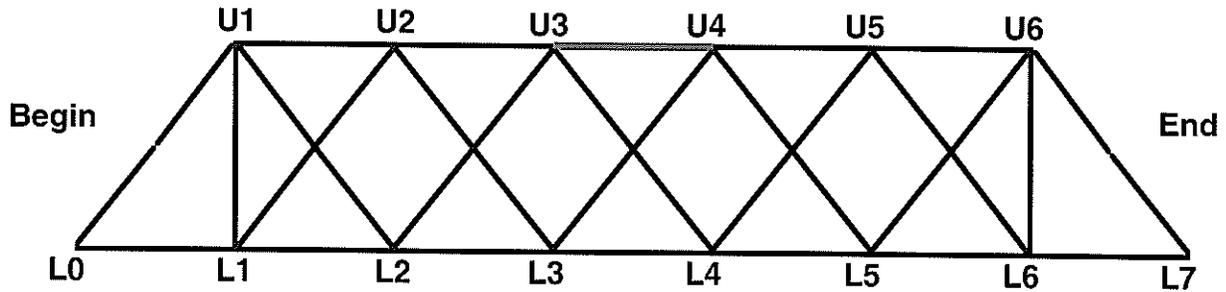
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(77.85k) = 43.28k$$

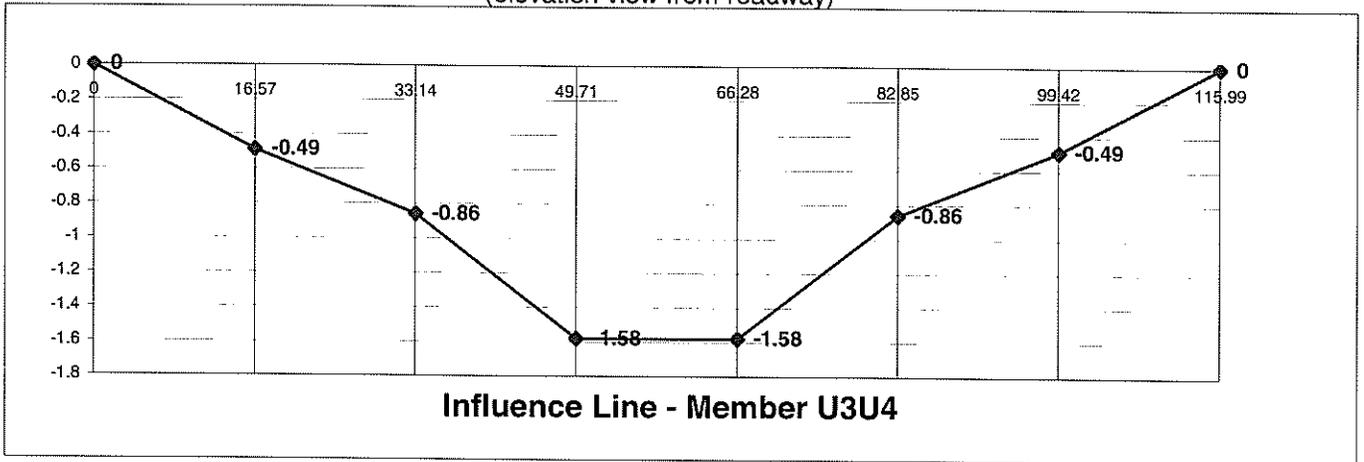
$$\text{Conc. Load: } (14.2k)(1.57) = 22.23k$$

$$\text{Total Live Load} = \boxed{65.52k} (c)$$

Forest Home Bridge Inspection BIN 3047450



(elevation view from roadway)



Influence Line - Member U3U4

From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.49+0.86+1.58+1.58+0.86+0.49) = \boxed{87.90k} \text{ (c)}$$

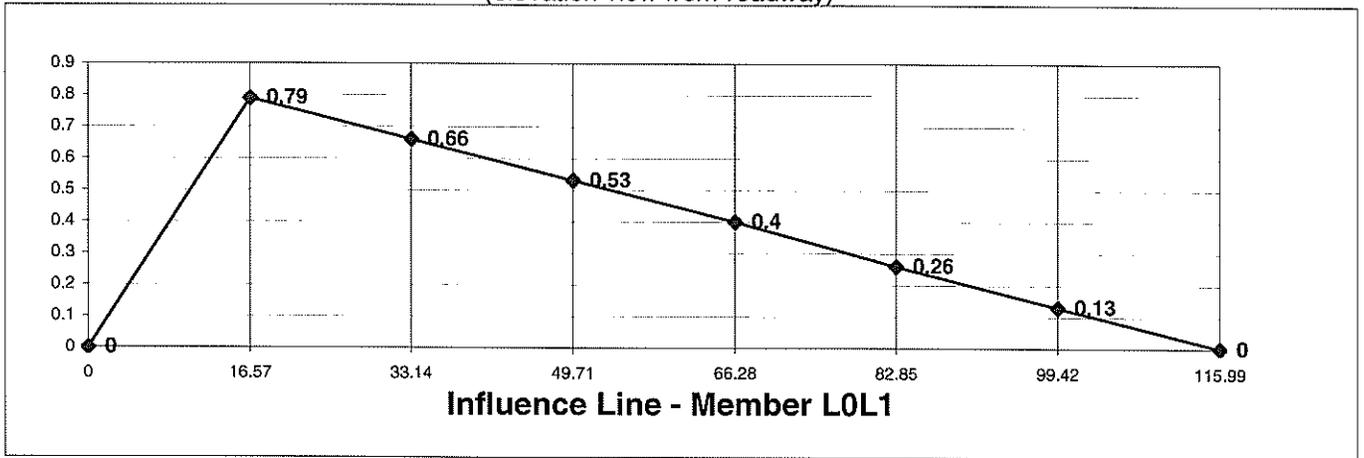
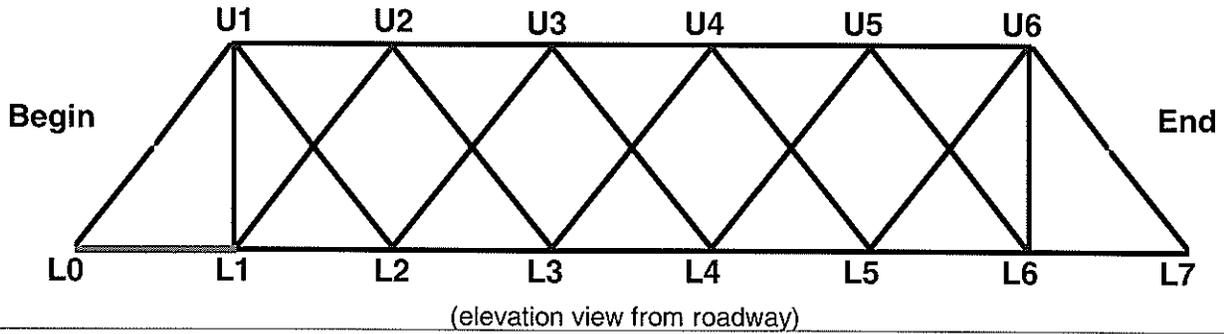
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(87.90k) = 48.87k$$

$$\text{Conc. Load: } (14.2k)(1.58) = 22.37k$$

$$\text{Total Live Load} = \boxed{71.25k} \text{ (c)}$$

Forest Home Bridge Inspection BIN 3047450



From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.79+0.66+0.53+0.40+0.26+0.13) = \boxed{41.55k} (T)$$

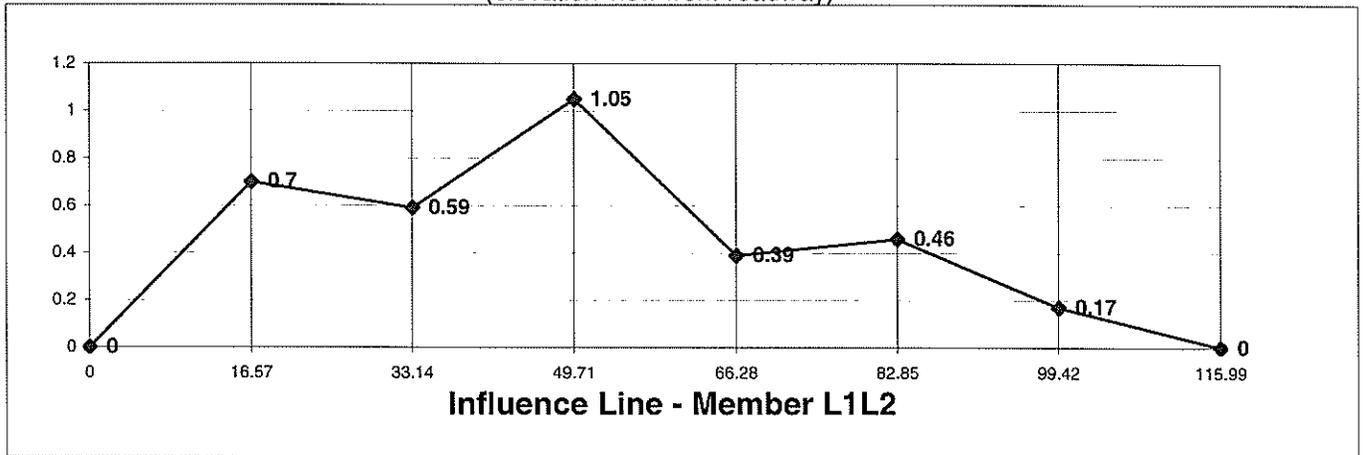
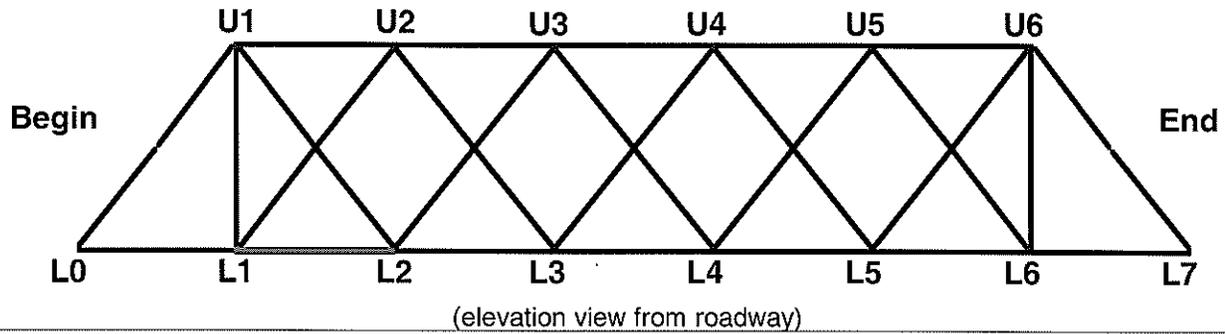
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(41.55k) = 23.10k$$

$$\text{Conc. Load: } (14.2k)(0.79) = 11.19k$$

$$\text{Total Live Load} = \boxed{34.29k} (T)$$

Forest Home Bridge Inspection BIN 3047450



From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.70+0.59+1.05+0.39+0.46+0.17) = \boxed{50.40k} (T)$$

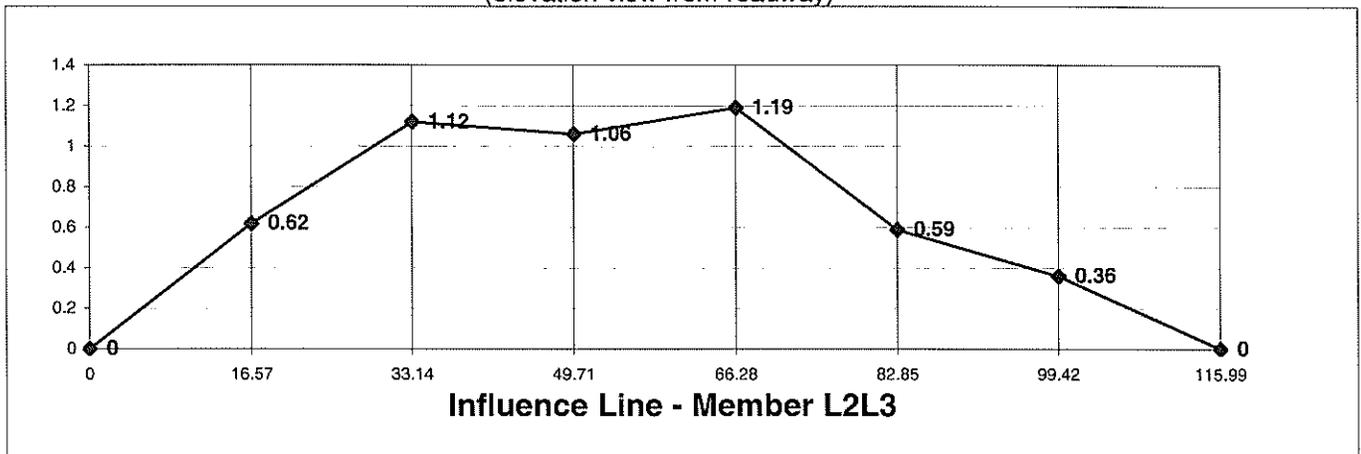
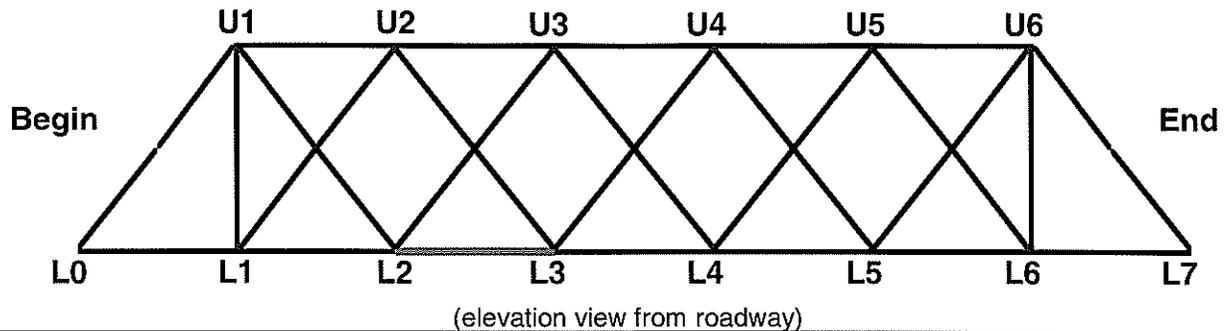
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(50.40k) = 28.02k$$

$$\text{Conc. Load: } (14.2k)(1.05) = 14.87k$$

$$\text{Total Live Load} = \boxed{42.89k} (T)$$

Forest Home Bridge Inspection BIN 3047450

**From 1994 Load Rating:****Live Load**

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.62+1.12+1.06+1.19+0.59+0.36) = \boxed{74.10k} (T)$$

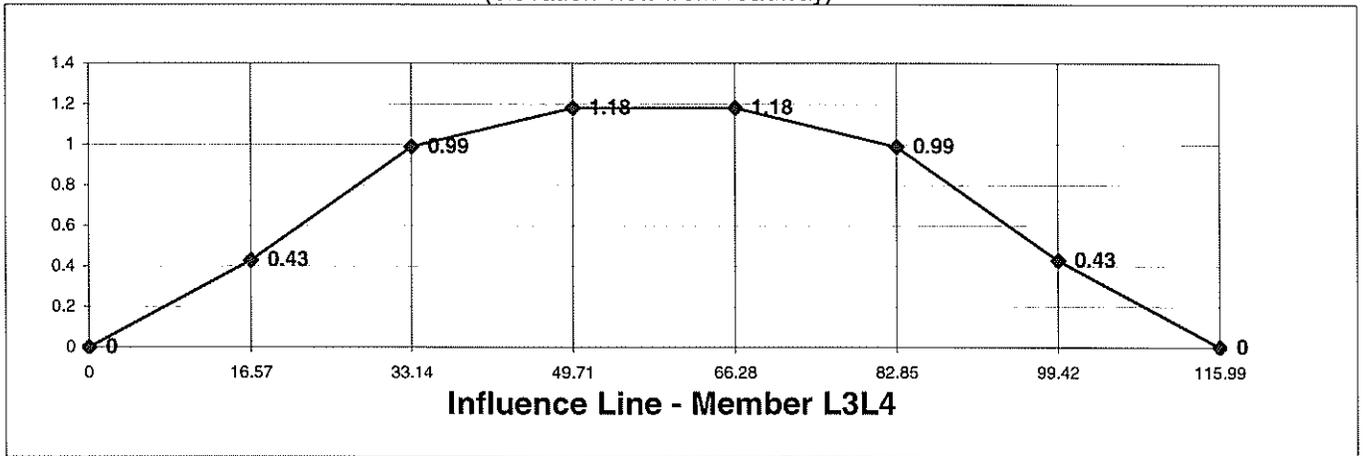
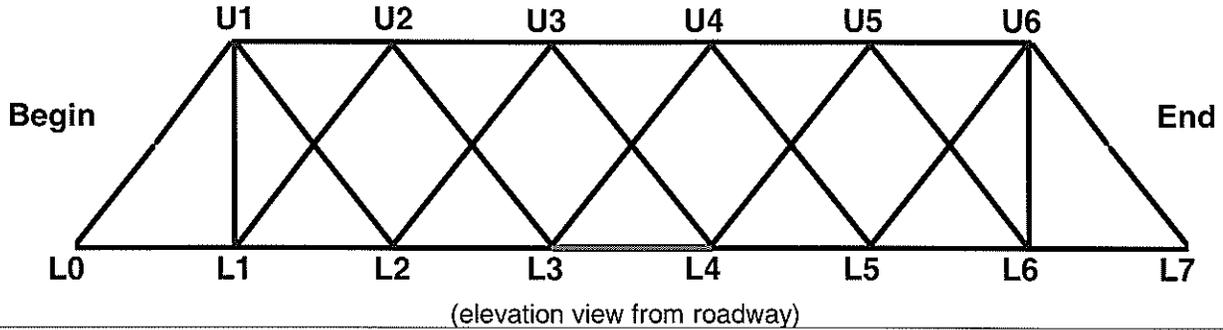
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(74.10k) = 41.20k$$

$$\text{Conc. Load: } (14.2k)(1.19) = 16.85k$$

$$\text{Total Live Load} = \boxed{58.05k} (T)$$

Forest Home Bridge Inspection BIN 3047450



From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.43+0.99+1.18+1.18+0.99+0.43) = \boxed{78.00k} (T)$$

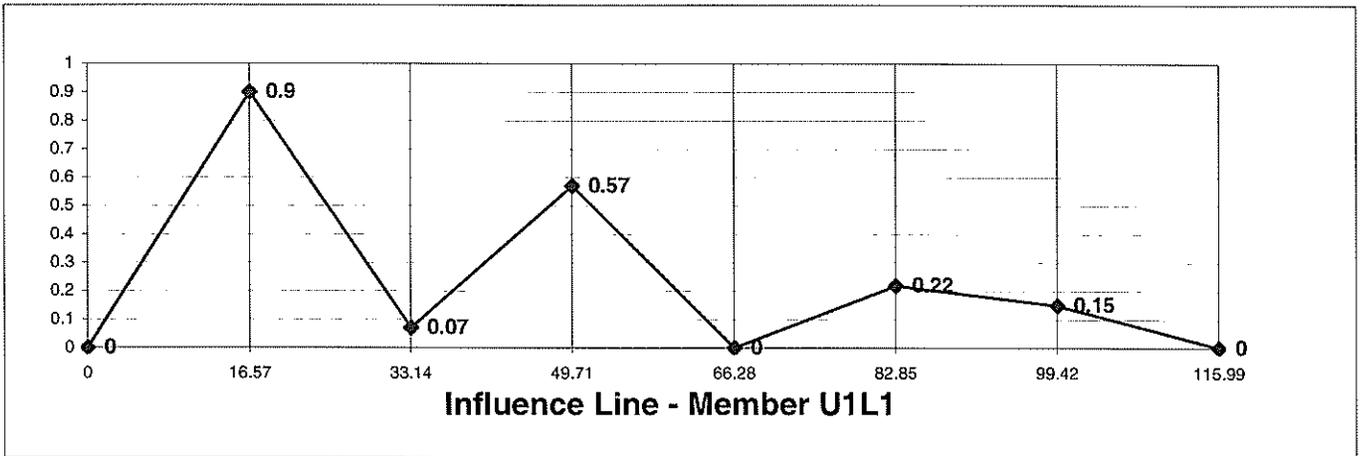
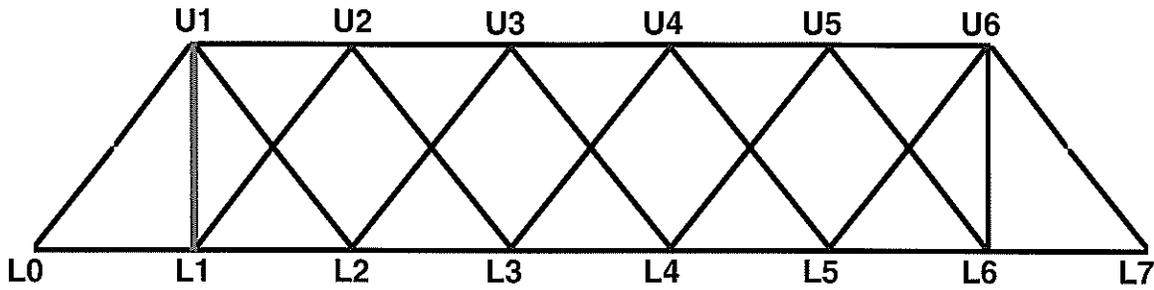
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(78.00k) = 43.37k$$

$$\text{Conc. Load: } (14.2k)(1.18) = 16.71k$$

$$\text{Total Live Load} = \boxed{60.08k} (T)$$

Forest Home Bridge Inspection BIN 3047450



From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.9+0.07+0.57+0+0.22+0.15) = \boxed{28.65k} (T)$$

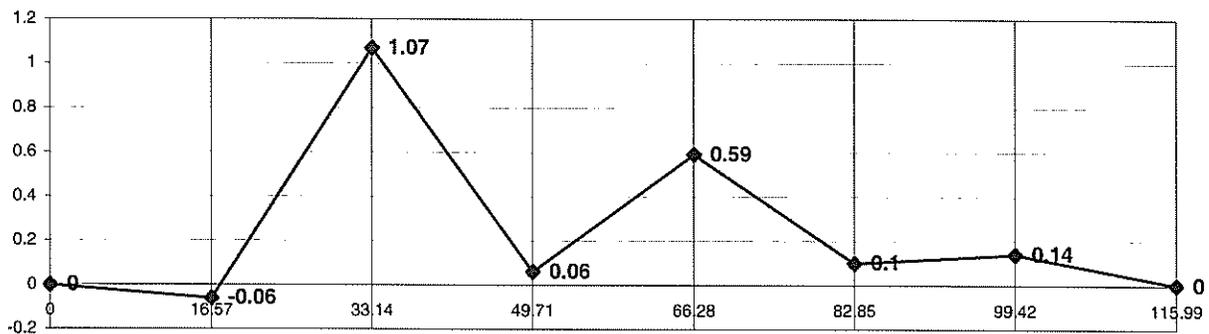
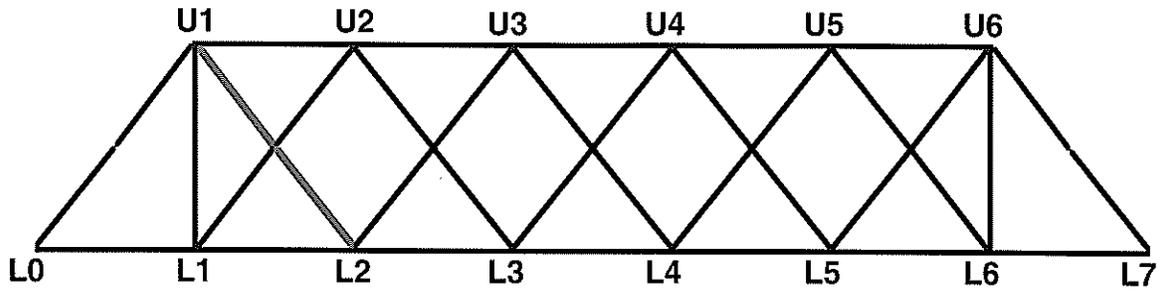
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(28.65k) = 15.93k$$

$$\text{Conc. Load: } (20.5k)(0.9) = 18.41k$$

$$\text{Total Live Load} = \boxed{34.33k} (T)$$

Forest Home Bridge BIN 3047450



Influence Line - Member U1L2

From 1994 Load Rating:**Live Load**

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(-0.06+1.07+0.06+0.59+0.1+0.14) = \boxed{28.50k} (T)$$

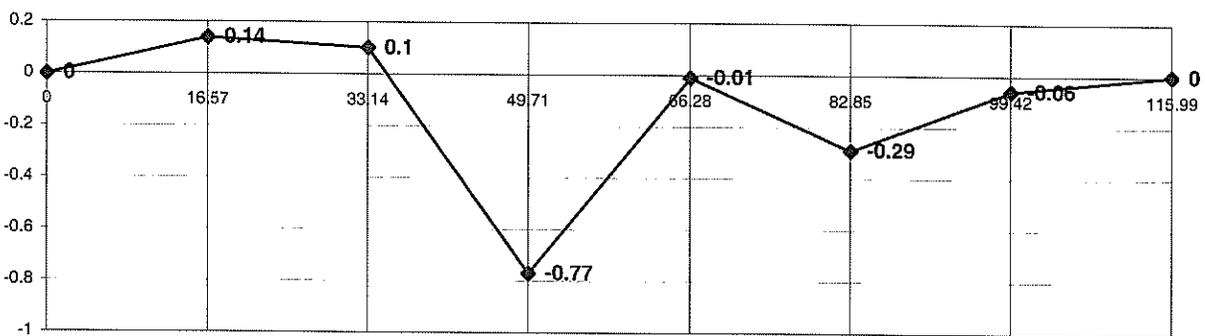
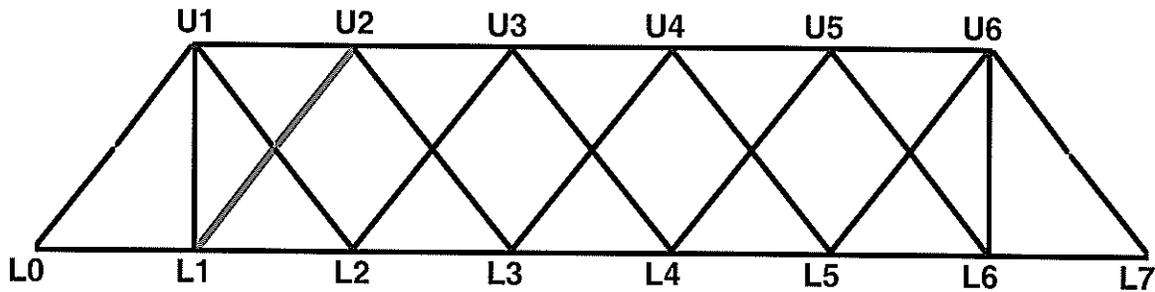
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(28.50k) = 15.85k$$

$$\text{Conc. Load: } (20.5k)(1.07) = 21.88k$$

$$\text{Total Live Load} = \boxed{37.73k} (T)$$

Forest Home Bridge BIN 3047450



Influence Line - Member L1U2

From 1994 Load Rating:**Live Load**

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.14+0.10-0.77-0.01-0.29-0.06) = \boxed{13.35k} \text{ (c)}$$

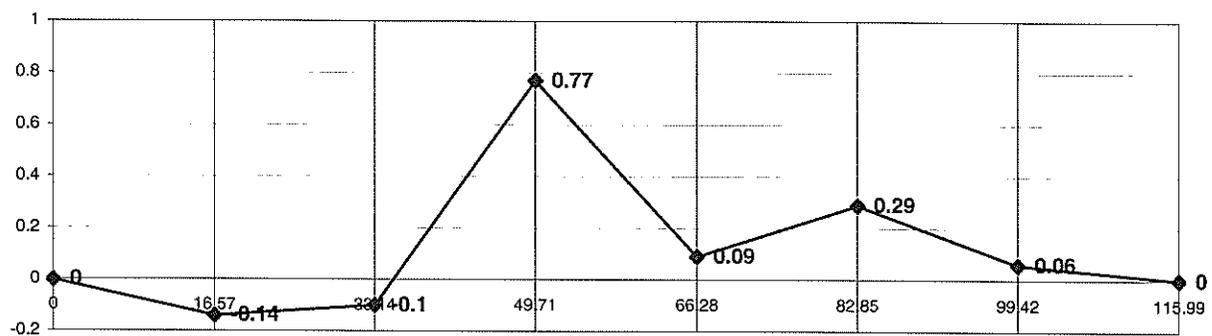
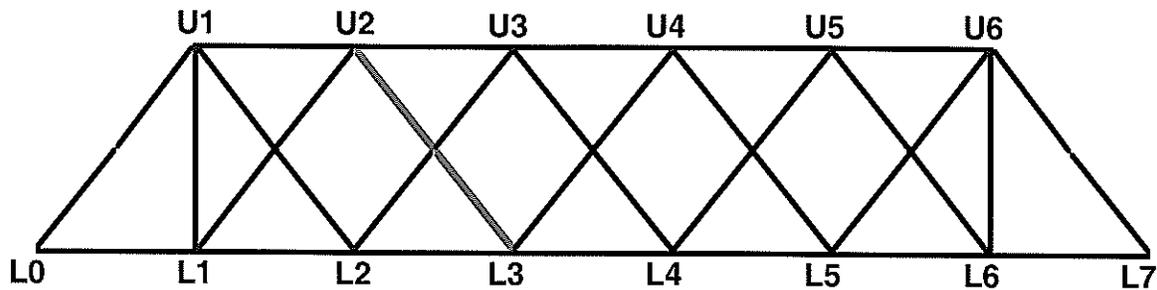
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(13.35k) = 07.42k$$

$$\text{Conc. Load: } (20.5k)(0.77) = 15.75k$$

$$\text{Total Live Load} = \boxed{23.17k} \text{ (c)}$$

Forest Home Bridge BIN 3047450



Influence Line - Member U2L3

From 1994 Load Rating:**Live Load**

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(-0.14 - 0.1 + 0.77 + 0.09 + 0.29 + 0.06) = \boxed{14.55k} \text{ (T)}$$

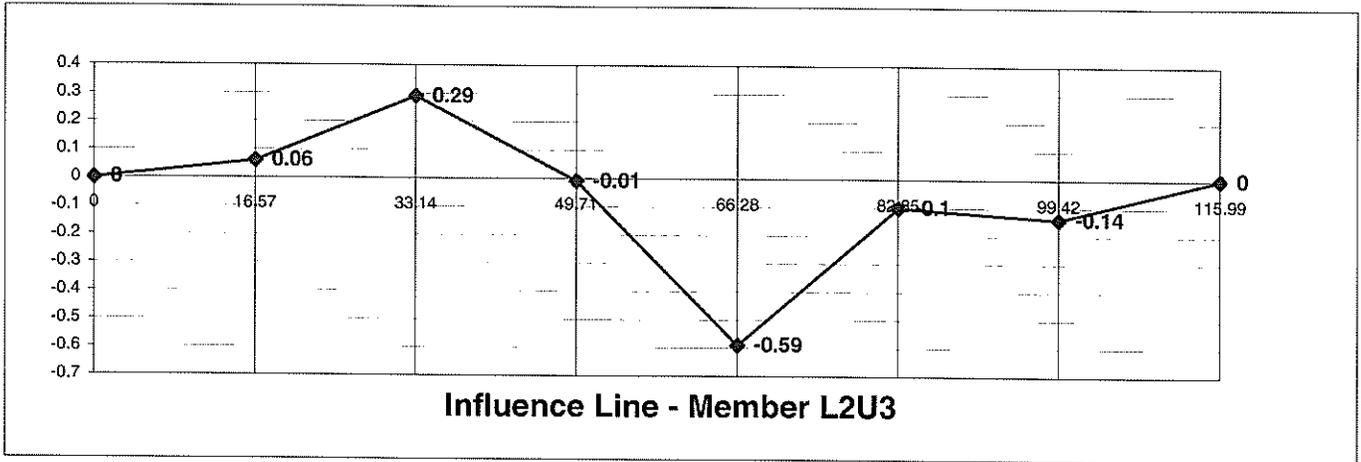
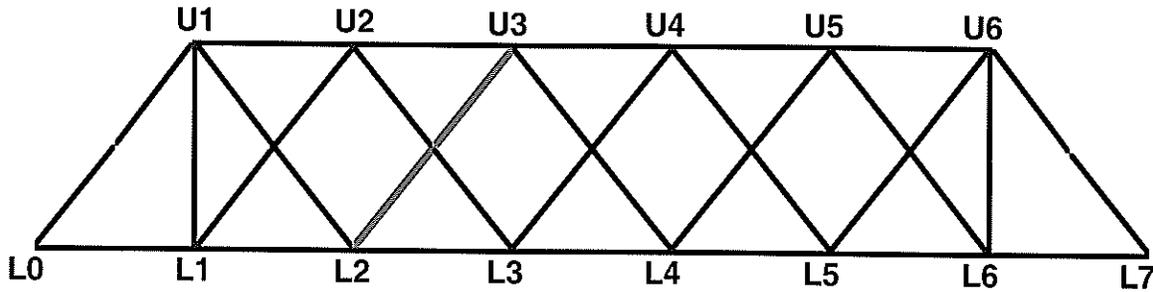
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(14.55k) = 08.09k$$

$$\text{Conc. Load: } (20.5k)(0.77) = 15.75k$$

$$\text{Total Live Load} = \boxed{23.84k} \text{ (T)}$$

Forest Home Bridge BIN 3047450



From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(0.06+0.29-0.01-0.59-0.10-0.14) = \boxed{07.35k} (c)$$

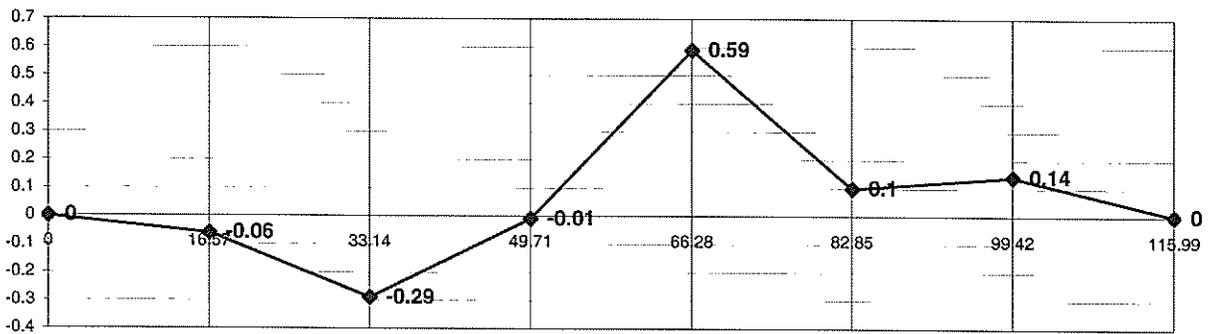
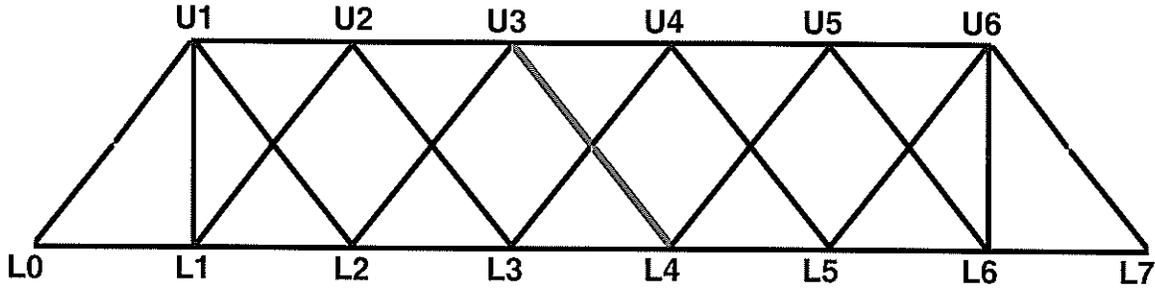
Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(7.35k) = 04.09k$$

$$\text{Conc. Load: } (20.5k)(0.59) = 12.07k$$

$$\text{Total Live Load} = \boxed{16.15k} (c)$$

Forest Home Bridge BIN 3047450



Influence Line - Member U3L4

From 1994 Load Rating:

Live Load

Uniform Load = 8.34 k
 Concentrated Load = 14.2 k (chords)
 = 20.5 k (diagonals)

Dead Load

15 k @ Lower Panel Points

Dead Load

$$(15k)(-0.06-0.29-0.01+0.59+0.10+0.14) = \boxed{07.05k} (T)$$

Live Load (H20 Lane Load)

$$\text{Uniform Load: } (8.34k/15k)(7.05k) = 03.92k$$

$$\text{Conc. Load: } (20.5k)(0.59) = 12.07k$$

$$\text{Total Live Load} = \boxed{15.99k} (T)$$

SHEET 24 OF

SUBSHEET NO.

BY TAW

DATE 9/25/08 CKD

DATE

PROJECT NAME & NO. Forest Home 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

**ALLOWABLE COMPRESSION STRESSES**

MEMBER	TYPE	AREA (sq in)		I (In ⁴)	R (in)	L (In)	KL/R	COMP. STRESS (ksi)		COMP. FORCE (k)		Rust
		CORR.	UNCORR.					INV.	OPER.	INV.	OPER.	Area(%)
L0U1	1	10.02	11.13	111.20	3.16	293.61	92.89	10.96	13.68	109.79	137.08	10%
U1U2	1	11.13	11.13	111.20	3.16	198.88	62.92	12.69	15.83	141.19	176.18	0%
U2U3	1	11.13	11.13	111.20	3.16	198.88	62.92	12.69	15.83	141.19	176.18	0%
U3U4	1	11.13	11.13	111.20	3.16	198.88	62.92	12.69	15.83	141.19	176.18	0%
U1L1	2	3.17	4.22	5.12	1.10	216.00	196.10	0.00	0.00	0.00	0.00	25%
L1U2	4	3.76	4.18	6.76	1.27	146.81	115.44	9.92	12.25	37.29	46.06	10%
U2L3	5	2.67	3.56	4.38	1.11	146.81	132.36	7.67	9.59	20.47	25.61	25%
L2U3	6	3.97	4.18	6.72	1.27	146.81	115.79	9.87	12.20	39.20	48.42	5%
U3L4	6	2.92	3.24	2.84	0.94	146.81	156.81	5.05	6.34	14.75	18.51	10%

SHEET 25 OF

SUBSHEET NO.

BY TAW

DATE 9/25/08

CKD

DATE

PROJECT NAME & NO. Forest Home 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

ERDMAN

ANTHONY



ALLOWABLE TENSILE STRESSES

MEMBER	TYPE	CORR. AREA (sq in)		STRESSES (ksi)		FORCE (k)		Rust
		GROSS	NET	INV.	OPER.	INV.	OPER.	Area(%)
LOL1	7	5.92	5.49	16.50	22.50	97.68	133.20	35%
L1L2	7	5.92	5.49	16.50	22.50	97.68	133.20	35%
L2L3	8	8.92	8.31	16.50	22.50	147.18	200.70	35%
L3L4	8	8.92	8.31	16.50	22.50	147.18	200.70	35%
U1L1	2	3.17	2.75	16.50	22.50	52.31	71.33	25%
U1L2	3	3.72	3.3	16.50	22.50	61.38	83.70	25%
L1U2	4	3.76	3.34	19.80	27.00	74.45	101.52	10%
U2L3	5	2.67	2.32	16.50	22.50	44.06	60.08	25%
L2U3	6	3.97	3.52	19.80	27.00	78.61	107.19	5%
U3L4	6	2.92	2.49	16.50	22.50	48.18	65.70	10%

SHEET 26 OF

SUBSHEET NO.

BY TAW

DATE 9/25/08 CKD

DATE

PROJECT NAME & NO. Forest Home 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

ERDMAN
ANTHONY

TRUSS RATING

MEMBER	DL (k)	LL+I (k)	ALLOWABLE LOAD (k)		RATING FACTOR	
			INV.	OPER.	INV.	OPER.
LOU1	-61.95	-58.37	-109.79	-137.08	0.82	1.29
U1U2	-60.00	-52.90	-141.19	-176.18	1.53	2.20
U2U3	-77.85	-65.52	-141.19	-176.18	0.97	1.50
U3U4	-87.90	-71.25	-141.19	-176.18	0.75	1.24
L0L1	41.55	34.29	97.68	133.20	1.64	2.67
L1L2	50.40	42.89	97.68	133.20	1.10	1.93
L2L3	74.10	58.05	147.18	200.70	1.26	2.18
L3L4	78.00	60.08	147.18	200.70	1.15	2.04
U1L1	28.65	34.33	52.31	71.33	0.69	1.24
U1L2	28.50	37.73	74.45	101.52	1.22	1.94
L1U2	-13.35	-23.17	-37.29	-46.06	1.03	1.41
U2L3	14.55	23.84	44.06	60.08	1.24	1.91
L2U3	-7.35	-16.15	-39.20	-48.42	1.97	2.54
U3L4	7.05	15.99	48.18	65.70	2.57	3.67
TENSION = "+"			COMPRESSION = "-"			

SHEET 28 OF

SUBSHEET NO.

BY TAW

DATE 9/24/08

CKD

DATE

PROJECT NAME & NO. Forest Home 19201.00

CLIENT Tompkins County

SUBJECT Load Rating

ERDMAN

ANTHONY



BEARING BAR CAPACITY:

$$A = 0.31 \text{ in}^2$$

$$S = 0.13 \text{ in}^3$$

$$M_{INV} = \underline{2.60 \text{ IN-K}}$$

$$M_{OP} = \underline{3.51 \text{ IN-K}}$$

$$V_{INV} = \underline{3.72 \text{ K}}$$

$$V_{OP} = \underline{4.96 \text{ K}}$$

RATING:

$$\text{SHEAR: } R.F. = \frac{3.72 \text{ K}}{0.86 \text{ K}} = 4.33 \rightarrow \boxed{86.6 \text{ T (INV)}}$$

$$R.F. = \frac{4.96 \text{ K}}{0.86 \text{ K}} = 5.77 \rightarrow \boxed{115.4 \text{ (OP)}}$$

$$\text{BENDING: } R.F. = \frac{2.60 \text{ IN-K}}{2.83 \text{ IN-K}} = 0.92 \rightarrow \boxed{18.4 \text{ T (INV)}}$$

$$R.F. = \frac{3.51 \text{ IN-K}}{2.83 \text{ IN-K}} = 1.24 \rightarrow \boxed{24.8 \text{ T (OP)}}$$



- STRINGER RATING

Stringers replaced during 1998 Rehab

- W10 x 33 Section Properties from AISC Manual

$$A = 9.71 \text{ in}^2$$

$$d = 9.73 \text{ in}$$

$$S = 35 \text{ in}^3$$

$$I = 170 \text{ in}^4$$

$$\text{Area of Web} = [9.73 - 2(0.435)]0.290 = 2.57 \text{ in}^2$$

Live Load (from 1994 Load Rating Analysis)

$$D.F. = 0.41 \text{ for wheel load} \quad \text{Impact} = 30\% \quad \text{Span} = 16.57'$$

$$M_{LL+I} = \underline{28.33 \text{ k-ft}}$$

$$V_{LL+I} = \underline{21.60 \text{ k}}$$

Dead Load

$$W = \overset{\text{Grating}}{(17 \text{ PSF})(1.83')} + \overset{\text{stringers}}{33 \text{ PLF}} = \underline{64 \text{ PLF}}$$

$$M_{DL} = \frac{(64 \text{ PLF})(16.57')^2}{8} \overset{\text{Continuous}}{(0.80)} = \underline{1.76 \text{ k-ft}}$$

$$V_{DL} = \frac{(64 \text{ PLF})(16.57')}{2} = \underline{0.53 \text{ k}}$$

SHEET 30 OF

SUBSHEET NO.

BY TAW

DATE 8/5/08

CKD

DATE

PROJECT NAME & NO. FOREST HOME DR. 19201.00

CLIENT TOMPKINS COUNTY

SUBJECT LOAD RATING

ERDMAN

ANTHONY



Stringer Capacity

Section Loss ~ 59% (8/7/2007 Inspection Report)

$$A_{web} = 2.57 \text{ in}^2 (0.95) = 2.44 \text{ in}^2$$

$$S = 35.0 \text{ in}^3$$

$$M_{INV} = \frac{(35.0 \text{ in}^3)(20 \text{ ksi})}{12} = \underline{58.3 \text{ k-ft}}$$

$$M_{OP} = \frac{(35.0 \text{ in}^3)(27 \text{ ksi})}{12} = \underline{78.7 \text{ k-ft}}$$

$$V_{INV} = (2.44 \text{ in}^2)(12 \text{ ksi}) = \underline{29.3 \text{ k}}$$

$$V_{OP} = (2.44 \text{ in}^2)(16 \text{ ksi}) = \underline{39.0 \text{ k}}$$

Rating

$$\text{Shear: } R.F. = \frac{29.3 \text{ k} - 0.53 \text{ k}}{21.6 \text{ k}} = 1.33 \rightarrow \underline{26.6 \text{ T (INV)}}$$

$$R.F. = \frac{39.0 \text{ k} - 0.53 \text{ k}}{21.6 \text{ k}} = 1.78 \rightarrow \underline{35.6 \text{ T (OP)}}$$

$$\text{Bending: } R.F. = \frac{58.3 \text{ k-ft} - 1.76 \text{ k-ft}}{28.3 \text{ k-ft}} = 2.0 \rightarrow \underline{40.0 \text{ T (INV)}}$$

$$R.F. = \frac{78.7 \text{ k-ft} - 1.76 \text{ k-ft}}{28.3 \text{ k-ft}} = 2.72 \rightarrow \underline{54.4 \text{ T (OP)}}$$

- FLOORBEAM RATING (W24x61)

$$\text{Dead Load} \quad \begin{array}{l} \swarrow \text{stringer} \\ \swarrow \text{reaction} \end{array} \quad \begin{array}{l} \swarrow \text{FB DL} \end{array}$$

$$W = \frac{(2)(0.53 \text{ K})}{1.83'} + 0.061 \text{ KLF} = \underline{0.64 \text{ KLF}}$$

$$M_{DL} = \frac{(0.64 \text{ KLF})(17.17')^2}{8} = \underline{23.6 \text{ K-FT}}$$

$$V_{DL} = \frac{(0.64 \text{ KLF})(17.17')}{2} = \underline{5.5 \text{ K}}$$

Live Load (from 1994 Load Rating)

$$M_{LL+I} = \underline{120.6 \text{ K-FT}}$$

$$V_{LL+I} = \underline{28.1 \text{ K}}$$

Capacity

Section loss \approx 13-1990 (8/07/2007 Inspection Report)
 W24x61 section Properties from AISC Manual 7th Edition

$$A_{web} = (10.4375") (23.75" - 2(\frac{9}{16}")) = 9.90 \text{ in}^2 (0.81) = \underline{8.02 \text{ in}^2}$$

Account for
Section Loss

$$S = 130 \text{ in}^3 \quad (\text{AISC, p. 2-34})$$

$$M_{INV} = (130 \text{ in}^3)(20 \text{ ksi})(\frac{1}{12}) = \underline{216.7 \text{ K-FT}}$$

$$M_{OP} = (130 \text{ in}^3)(27 \text{ ksi})(\frac{1}{12}) = \underline{292.5 \text{ K-FT}}$$

$$V_{INV} = (8.02 \text{ in}^2)(12 \text{ ksi}) = \underline{96.2 \text{ K}}$$

$$V_{OP} = (8.02 \text{ in}^2)(16 \text{ ksi}) = \underline{128.3 \text{ K}}$$

Rating (Floorbeams)

R.F. =

$$\text{Shear: } \frac{96.2\text{K} - 5.5\text{K}}{28.1\text{K}} = 3.23 \rightarrow \underline{\underline{64.6\text{ T (INV)}}}$$

$$\text{R.F.} = \frac{128.3\text{K} - 5.5\text{K}}{28.1\text{K}} = 4.37 \rightarrow \underline{\underline{87.4\text{ T (OP)}}}$$

$$\text{Bending: } \text{R.F.} = \frac{216.7\text{K}\cdot\text{ft} - 23.6\text{K}\cdot\text{ft}}{120.6\text{K}\cdot\text{ft}} = 1.60 \rightarrow \underline{\underline{32.0\text{ T (INV)}}}$$

$$\text{R.F.} = \frac{292.5\text{K}\cdot\text{ft} - 23.6\text{K}\cdot\text{ft}}{120.6\text{K}\cdot\text{ft}} = 2.23 \rightarrow \underline{\underline{44.6\text{ T (OP)}}}$$

FLOORBEAM HANGER RATING

see 1994 Load Rating Analysis (Results are still valid).

Weak Point is 2 angles @ bottom

Shear Capacity = 30.6 K (INV) w/ 1570 Section Loss

$$\text{R.F.} = 1.99 = \underline{\underline{39.8\text{ T (INV)}}}$$

$$\text{R.F.} = 2.72 = \underline{\underline{54.4\text{ T (OP)}}}$$