

# Bridge Load Rating

*Prepared for*

## Maine Department of Transportation

Bridge No. 1432 (SB) & 5950 (NB)

HAMPDEN

INTERSTATE 95

OVER

SOUADABSCOOK STREAM CENTER

Date of Inspection: 10/01/2009 (1432), 7/19/2011 (5950)

Date of Rating: 5/10/2013

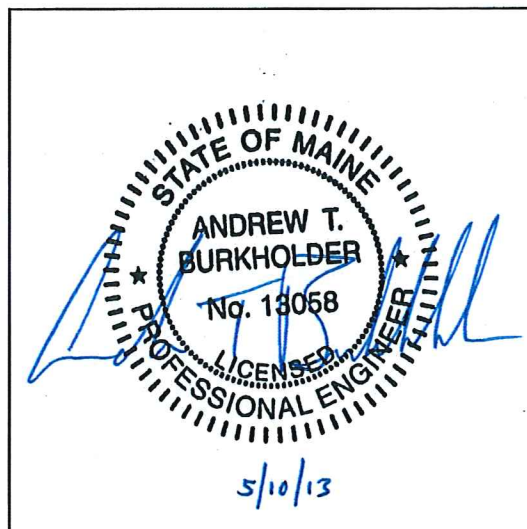
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*T.S.B.*

Vanasse Hangen Brustlin, Inc.



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Bridge No: 1432 (SB) & 5950 (NB)  
 Town/City: Hampden, ME  
 Route Carried: I-95  
 Crosses: Souadabscook Stream Center

Owner: Maine DOT  
 Maintainer: Maine DOT  
 Year Built 1961  
 Year(s) Rebuilt/Rehab: \_\_\_\_\_

## SUMMARY OF BRIDGE RATING

| VEHICLE TYPE    |           | RF          | RT (TONS) | POSTING LOAD (TONS) |
|-----------------|-----------|-------------|-----------|---------------------|
| HL-93           | INVENTORY | <b>0.83</b> |           |                     |
|                 | OPERATING | 1.08        |           |                     |
| HL-93 modified  | INVENTORY |             |           |                     |
|                 | OPERATING |             |           |                     |
| CONFIGURATION 1 |           | 1.35        | 67.50     | OK                  |
| CONFIGURATION 2 |           | 1.42        | 66.60     | OK                  |
| CONFIGURATION 3 |           | 1.28        | 56.32     | OK                  |
| CONFIGURATION 4 |           | 1.30        | 57.20     | OK                  |
| CONFIGURATION 5 |           | 1.29        | 56.76     | OK                  |
| CONFIGURATION 6 |           | 1.00        | 37.95     | OK                  |
| CONFIGURATION 7 |           | 1.21        | 35.70     | OK                  |
| CONFIGURATION 8 |           | 1.76        | 32.91     | OK                  |

### Group 1 Posting Analysis (Configuration 1)

Governing Posting: \_\_\_\_\_  
 Governing Load Model: \_\_\_\_\_

### Group 2 Posting Analysis (Configurations 2 - 5)

Governing Posting: \_\_\_\_\_  
 Governing Load Model: \_\_\_\_\_

### Group 3 Posting Analysis (Configurations 6 - 8)

Governing Posting: \_\_\_\_\_  
 Governing Load Model: \_\_\_\_\_

### LRFR Evaluation Factors:

Live Load Factor: 1.75 (0.75 Fatigue)  
 Live Load Routine Commercial: 1.31  
 Live Load Special Hauling: 1.31  
 Impact Factor: 33% (15% Fatigue)  
 Governing Condition Factor,  $\phi_c$ : 1.00  
 System Factor,  $\phi_s$ : 1.00  
 ADTT (one-way): 1341

*Please check all the boxes that apply:*

- ☐ Bridge load rating is governed by substructure rating
- ☐ Connections control the load rating
- ☒ Exterior girder controls load rating
- ☒ As-built load rating
- ☐ As-inspected load rating
- ☐ One Lane Loaded
- ☐ Advanced Analysis Used
- ☐ Actual Measurements Taken
- ☒ Finite Fatigue Life 0 years

# BREAKDOWN OF BRIDGE RATING

Town/City: Hampden, ME  
 Bridge No: 1432 (SB) & 5950 (NB)

Route Carried: I-95  
 Crosses: Souadabscook Stream Center

## LOAD RATING POINTS OF INTEREST

| <u>Bridge Component</u>                                      | HL-93           |                  | HL-93 Modified  |                  | MaineDOT Truck Configurations |               |               |               |               |               |               |               |
|--------------------------------------------------------------|-----------------|------------------|-----------------|------------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                                              | Inv<br>72.0 kip | Oper<br>72.0 kip | Inv<br>90.0 kip | Oper<br>90.0 kip | 1<br>100.0 kip                | 2<br>94.0 kip | 3<br>88.0 kip | 4<br>88.0 kip | 5<br>88.0 kip | 6<br>75.9 kip | 7<br>59.0 kip | 8<br>37.4 kip |
| Exterior Girder<br>Strength I Negative Moment<br>Pier 1      | <b>0.83</b>     | 1.08             |                 |                  | 1.35                          | 1.48          | 1.28          | 1.30          | 1.29          | 1.00          | 1.21          | 1.76          |
| Exterior Girder<br>Strength I Positive Moment<br>0.5L Span 2 | <b>0.95</b>     | 1.23             |                 |                  | 1.70                          | 1.42          | 1.36          | 1.44          | 1.43          | 1.18          | 1.46          | 2.27          |
| Exterior Girder<br>Strength I Shear<br>Pier 1                | 1.51            | 1.96             |                 |                  |                               |               |               |               |               |               |               |               |
| Interior Girder<br>Strength I Negative Moment<br>Pier 1      | <b>0.87</b>     | 1.13             |                 |                  | 1.41                          | 1.56          | 1.34          | 1.36          | 1.35          | 1.05          | 1.27          | 1.85          |
| Interior Girder<br>Strength I Positive Moment<br>0.5L Span 2 | 1.08            | 1.39             |                 |                  |                               |               |               |               |               |               |               |               |
| Interior Girder<br>Strength I Shear<br>Pier 1                | 1.28            | 1.66             |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| [COMPONENT]<br>[LIMIT STATE]<br>[ANALYZED CONDITION]         |                 |                  |                 |                  |                               |               |               |               |               |               |               |               |
| CONTROLLING RATING<br>FACTORS (STRENGTH I)                   | <b>0.83</b>     | 1.08             |                 |                  | 1.35                          | 1.42          | 1.28          | 1.30          | 1.29          | 1.00          | 1.21          | 1.76          |

## **DESCRIPTION OF BRIDGE**

|                                          |                                                                      |
|------------------------------------------|----------------------------------------------------------------------|
| Bridge Number:                           | 1432 (SB) & 5950 (NB)                                                |
| Owner:                                   | Maine DOT                                                            |
| Maintained By:                           | Maine DOT                                                            |
| Location:                                | Hampden, ME                                                          |
| Route Carried:                           | I95                                                                  |
| Feature Intersected:                     | Souadabscook Stream Center                                           |
| Latest NBI Inspection Date:              | 10/1/2009 (1432), 7/19/2011 (5950)                                   |
| Field Verification Date (if applicable): | N/A                                                                  |
| Date of Construction:                    | 1961                                                                 |
| Bridge Type:                             | Steel rolled beam with cover plates with non-composite concrete deck |
| Material Properties:                     | Fy = 32 ksi (beams), 40 ksi (rebar), f'c = 3 ksi                     |
| Original Design Loading:                 | HS 20                                                                |
| Date(s) of Rebuild/Rehab :               | N/A                                                                  |
| Description of Rebuild/Rehab :           | N/A                                                                  |
| Posting:                                 | N/A, Open                                                            |
| Superstructure:                          | Continuous steel rolled beams with cover plates                      |
| Substructure:                            | Reinforced concrete abutments and piers                              |
| Bearings:                                | Steel Bearings                                                       |
| Bridge Spans:                            | Spans = 40'-0", 50'-0", 40'-0" Total = 130'-0"                       |
| Bridge Skew:                             | 0°00'00"                                                             |
| Bridge Width:                            | 42'-4" out-to-out                                                    |
| Roadway Width:                           | 40'-0" curb-to-curb                                                  |
| Roadway Surface:                         | Bituminous Pavement                                                  |
| Curbs:                                   | Concrete                                                             |
| Sidewalk/Walkway/Median:                 | N/A                                                                  |
| Utilities:                               | N/A                                                                  |
| Bridge Railing:                          | Aluminum Rail on Concrete Parapet                                    |
| Approach Railing:                        | Steel Guardrail                                                      |
| Wearing Surface Condition:               |                                                                      |
| Bridge Railing Condition:                |                                                                      |
| Deck Condition:                          | 6 - Satisfactory (1432), 5 - Fair (5950)                             |
| Beam Condition:                          | 7 - Good                                                             |
| Bearing Condition:                       |                                                                      |
| Abutment Condition:                      | 7 - Good (1432), 6 - Satisfactory (5950)                             |
| Pier Condition:                          | 7 - Good (1432), 6 - Satisfactory (5950)                             |



## Computations

|               |                                 |           |           |
|---------------|---------------------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings           | Project # | 55005.00  |
| Location      | Hampden, ME                     | Sheet     |           |
| Calculated by | KZS                             | Date      | 4/18/2013 |
| Checked by    | DZ                              | Date      | 4/26/2013 |
| Title         | Br. No. 1432 & 5950 Load Rating |           |           |

### Notes and Assumptions

#### References Used:

- *The Manual for Bridge Evaluation (MBE)*, Second Edition, 2011 (MBE) w/ 2013 Interims
- *AASHTO LRFD Bridge Design Specifications*, Fifth Edition, 2010 w/ 2010 Interims (LRFD)
- MaineDOT Load Rating Guide, 2013

#### General Notes:

This load rating was performed in accordance with the Maine Department of Transportation guidelines.

Virtis Version 6.4 software with an AASHTO analysis engine was used to rate this bridge.

The girders will be rated for the HL-93 load case. If the Inventory rating factor is less than 1.0, the controlling girder will be rated using the 8 MaineDOT Legal Load configurations.

Bridge No. 1432 & 5950 are 3-span non-composite continuous bridges with 6 steel girders spaced at 7'-6". The bridge is approximately 40'-0" curb-to-curb. There is a 6.5" concrete slab with a 2" bituminous pavement wearing surface per original plans.

The bridge was evaluated at the strength and service limit states. The service ratings were not allowed to control per the MaineDOT Load Rating Guide (3.6.1).

#### Condition Factors:

A condition factor of 1.0 was used due to the "good" superstructure condition evaluation reported in the latest MaineDOT Inspection Report on July 19, 2011 for bridge 5950 and report on October 1, 2009 for bridge 1432.

#### Assumptions:

- Material Strength: Steel:  $F_y = 32$  ksi (Beams, Stiffeners),  $F_y = 40$  ksi (Reinforcing Steel)
- Material Strength: Concrete:  $f_c = 3$  ksi
- Non-composite action
- Capacity Checked with AASHTO LRFD Specifications, Appendix A6
- Total wearing surface = 2.25 in (Includes waterproofing)
- Superimposed dead loads distributed equally between all girders
- Continuous lateral bracing of top flange assumed per MBE 6A.6.9.3
- Splices not considered in ratings because they are assumed to have equal or greater capacity than the adjoining members
- Diaphragm weights input directly into rating software. An additional 2% self-weight load of the beams used to account for connection plates, splices and miscellaneous hardware



# Computations

|               |                                 |           |           |
|---------------|---------------------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings           | Project # | 55005.00  |
| Location      | Hampden, ME                     | Sheet     |           |
| Calculated by | KZS                             | Date      | 4/18/2013 |
| Checked by    | DZ                              | Date      | 4/26/2013 |
| Title         | Br. No. 1432 & 5950 Load Rating |           |           |

## Legal Load Factors

### References Used:

- *The Manual for Bridge Evaluation (MBE)*, Second Edition, 2011 w/ 2013 Interims
- *AASHTO LRFD Bridge Design Specifications*, Fifth Edition, 2010 w/ 2010 Interims (LRFD)
- MaineDOT Load Rating Guide, 2013

### MaineDOT Legal Loads:

The MaineDOT Load Rating Guide states that Legal Load Configurations 1 thru 5, 7, and 8 are significantly heavier than the AASHTO legal loads and should be rated using load factors specified for Routine Commercial Traffic Table 6A.4.4.2.3a-1 in the MBE. Configuration 6 is considered a specialized hauling vehicle (SHV) and is load rated for the load factors specified in Table 6A.4.4.2.3b-1.

### Bridge Information

|                 |       |                                                    |
|-----------------|-------|----------------------------------------------------|
| ADT =           | 12190 | From SIA Sheet (5950)                              |
| Truck % =       | 11    | From SIA Sheet (5950)                              |
| Directional % = | 100   | Per LRFD C3.6.1.4.2                                |
| ADTT =          | 1341  | One Direction (Input 0 if traffic data is unknown) |

### Legal Live Load Factors

#### For Configurations 1 - 5, 7 and 8

Table 6A.4.4.2.3a-1

| ADTT<br>(one direction) | Load Factor |
|-------------------------|-------------|
| Unknown                 | 1.45        |
| ≥ 5000                  | 1.45        |
| < 1000                  | 1.30        |

#### For Configuration 6

Table 6A.4.4.2.3b-1

| ADTT<br>(one direction) | Load Factor |
|-------------------------|-------------|
| Unknown                 | 1.45        |
| > 5000                  | 1.45        |
| < 1000                  | 1.30        |

|                                                  |             |
|--------------------------------------------------|-------------|
| <b>LL Factor Configurations 1 - 5, 7 and 8 =</b> | <b>1.31</b> |
| <b>LL Factor Configuration 6 =</b>               | <b>1.31</b> |

## Structure Inventory and Appraisal Sheet

|                  |                 |          |           |
|------------------|-----------------|----------|-----------|
| Bridge Key: 1432 | Agency ID: 1432 | SR: 94.2 | SD/FO: ND |
|------------------|-----------------|----------|-----------|

### IDENTIFICATION

State 1: 23 Maine Struc Num 8: 1432  
 Facility Carried 7: I 95 SB Location 9: 2.5 MI E TL/ 95 MI 177.1  
 Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 3 State Hwy  
 Level of Service 5C: 1 Mainline Rte. Number 5D: 00095  
 Directional Suffix 5E: 3 South % Responsibility : 0  
 SHD District 2: 04 Eastern County Code 3: 019 Penobscot  
 Place Code 4: 19280 Hampden Kilometer Post 11: 205.5 km  
 Feature Intersected 6: SOUADABSCOOK STREAM  
 Latitude 16: 44d 45' 47" Longitude 17: 068d 54' 34"  
 Border Bridge Code 98: Not Applicable (P)  
 Border Bridge Number 99: n/a

### INSPECTION

Frequency 91: 24 months Inspection Date 90: 10/1/2009 Next Inspection: 10/01/2011  
 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA  
 UW Frequency 92B: 60 months UW Inspection Date 93B: 10/26/2011 Next UW Inspection: 10/26/2016  
 SI Frequency 92C: NA SI Date 93C: NA Next SI: NA  
 Element Frequency: 24 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/1901

### STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 3  
 Main Span Material/Design 43A/B:  
 4 Steel Continuous 02 Stringer/Girder  
 Deck Type 107: 1 Concrete-Cast-in-Place  
 Wearing Surface 108A: 8 Gravel  
 Membrane 108B: 0 None  
 Deck Protection 108C: None

### CLASSIFICATION

Defense Highway 100: 1 On Interstate STRAHNET Parallel Structure 101: Left of || bridge  
 Direction of Traffic 102: 1 1-way traffic Temporary Structure 103: Not Applicable (P)  
 Highway System 104: 1 On the NHS NBIS Length 112: Long Enough  
 Toll Facility 20: 3 On free road Functional Class 26: 01 Rural Interstate  
 Defense Hwy 110: 1 On Interstate STRAHNET Historical Significance 37: 4 Hist sign not determin  
 Owner 22: 01 State Highway Agency  
 Custodian 21: 01 State Highway Agency

### AGE AND SERVICE

Year Built 27: 1961 Year Reconstructed 106: -4  
 Type of Service on 42A: 1 Highway  
 Type of Service under 42B: 5 Waterway  
 Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 6.6 km  
 ADT 29: 11,520 Truck ADT 109: 11 % Year of ADT 30: 2011

### CONDITION

Deck 58: 6 Satisfactory Super 59: 7 Good Sub 60: 7 Good  
 Culvert 62: N N/A (NBI) Channel/Channel Protection 61: 6 Bank Slumping

### GEOMETRIC DATA

Length Max Span 48: 15.24 m Structure Length 49: 41.15 m  
 Curb/Sdwk Width L 50A: 0.06 m Curb/Sidewalk Width R 50B: 0.06 m  
 Width Curb to Curb 51: 12.19 m Width Out to Out 52: 12.92 m  
 Approach Roadway Width 32:(w/ shoulders) 12.19 m Median 33: 0 No median  
 Deck Area: 531.80 m²  
 Skew 34: 0.00 ° Structure Flared 35: 0 No flare  
 Vertical Clearance 10: 99.99 m Horiz. Clearance 47: 12.19 m  
 Minimum Vertical Clearance Over Bridge 53: 99.90 m  
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR  
 Minimum Vertical Underclearance 54B: 00.00 m  
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR  
 Minimum Lateral Underclearance R 55: 99.90 m  
 Minimum Lateral Underclearance L 56: 99.90 m

### LOAD RATING AND POSTING

Inventory Rating Method 65: 2 AS Allowable Stress Operating Rating Method 63: 2 AS Allowable Stress  
 Inventory Rating 66: MS19.2 Operating Rating 64: MS28.2  
 Design Load 31: 6 MS18(HS20)+mod Posting 70: 5 At/Above Legal Loads  
 Posting status 41: A Open, no restriction

### APPRAISAL

Bridge Rail 36A: 0 Substandard Approach Rail 36C: 1 Meets Standards  
 Transition 36B: 1 Meets Standards Approach Rail Ends 36D: 1 Meets Standards  
 Str. Evaluation 67: 7 Above Min Criteria Deck Geometry 68: 7 Above Min Criteria  
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)  
 Waterway Adequacy 71: 9 Above Desirable Approach Alignment 72: 8 Equal Desirable Crit  
 Scour Critical 113: 5 Stable w/in footing

### PROPOSED IMPROVEMENTS

Bridge Cost 94: NA Type of Work 75: Unknown (P)  
 Roadway Cost 95: Unknown Length of Improvement 76: 16,128  
 Total Cost 96: Unknown Future ADT 114: 2031  
 Year of Cost Estimate 97: Unknown Year of Future ADT 115: 2031

### NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required  
 Vertical Clearance 39: 0.00 m Horizontal Clearance 40: 0.00 m  
 Pier Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116: 0.00 m

ELEMENT CONDITION STATE DATA



## Structure Inventory and Appraisal Sheet

|                  |                 |        |           |
|------------------|-----------------|--------|-----------|
| Bridge Key: 5950 | Agency ID: 5950 | SR: 88 | SD/FO: ND |
|------------------|-----------------|--------|-----------|

### IDENTIFICATION

State 1: 23 Maine Struc Num 8: 5950  
Facility Carried 7: 95 NB Location 9: 2.5 MI E TL/ 95 MI 177.1

Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 3 State Hwy

Level of Service 5C: 1 Mainline Rte. Number 5D: 00095

Directional Suffix 5E: 1 North % Responsibility : 0

SHD District 2: 04 Eastern County Code 3: 019 Penobscot

Place Code 4: 19280 Hampden Kilometer Post 11: 283.3 km

Feature Intersected 6: SOUADABSCOOK STREAM

Latitude 16: 44d 45' 45" Longitude 17: 068d 54' 34"

Border Bridge Code 98: Not Applicable (P)

Border Bridge Number 99: n/a

### INSPECTION

Frequency 91: 24 months Inspection Date 90: 7/19/2011 Next Inspection: 07/19/2013

FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA

UW Frequency 92B: 60 months UW Inspection Date 93B: 10/26/2011 Next UW Inspection: 10/26/2016

SI Frequency 92C: NA SI Date 93C: NA Next SI: NA

Element Frequency: 24 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/1901

### STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 3

Main Span Material/Design 43A/B:

4 Steel Continuous 02 Stringer/Girder

Deck Type 107: 1 Concrete-Cast-in-Place

Wearing Surface 108A: 1 Monolithic Concrete

Membrane 108B: 0 None

Deck Protection 108C: None

### CLASSIFICATION

Defense Highway 100: 1 On Interstate STRAHNET Parallel Structure 101: Right of || bridge

Direction of Traffic 102: 1 1-way traffic Temporary Structure 103: Not Applicable (P)

Highway System 104: 1 On the NHS NBIS Length 112: Long Enough

Toll Facility 20: 3 On free road Functional Class 26: 01 Rural Interstate

Defense Hwy 110: 1 On Interstate STRAHNET Historical Significance 37: 4 Hist sign not determin

Owner 22: 01 State Highway Agency

Custodian 21: 01 State Highway Agency

### AGE AND SERVICE

Year Built 27: 1961 Year Reconstructed 106: 0

Type of Service on 42A: 1 Highway

Type of Service under 42B: 5 Waterway

Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 6.6 km

ADT 29: 12,190 Truck ADT 109: 11 % Year of ADT 30: 2011

### CONDITION

Deck 58: 5 Fair Super 59: 7 Good Sub 60: 6 Satisfactory

Culvert 62: N N/A (NBI) Channel/Channel Protection 61: 7 Minor Damage

### GEOMETRIC DATA

Length Max Span 48: 15.24 m Structure Length 49: 41.15 m

Curb/Sdwk Width L 50A: 0.06 m Curb/Sidewalk Width R 50B: 0.06 m

Width Curb to Curb 51: 12.19 m Width Out to Out 52: 12.92 m

Approach Roadway Width 32:(w/ shoulders) 13.11 m Median 33: 0 No median

Deck Area: 531.80 m<sup>2</sup>

Skew 34: 0.00 ° Structure Flared 35: 0 No flare

Vertical Clearance 10: 99.99 m Horiz. Clearance 47: 12.19 m

Minimum Vertical Clearance Over Bridge 53: 99.90 m

Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR

Minimum Vertical Underclearance 54B: 00.00 m

Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR

Minimum Lateral Underclearance R 55: 99.90 m

Minimum Lateral Underclearance L 56: 99.90 m

### LOAD RATING AND POSTING

Inventory Rating Method 65: 2 AS Allowable Stress Operating Rating Method 63: 2 AS Allowable Stress

Inventory Rating 66: MS19.2 Operating Rating 64: MS28.2

Design Load 31: 6 MS18(HS20)+mod Posting 70: 5 At/Above Legal Loads

Posting status 41: A Open, no restriction

### APPRAISAL

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Transition 36B: 1 Meets Standards Approach Rail Ends 36D: 1 Meets Standards

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Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)

Waterway Adequacy 71: 9 Above Desirable Approach Alignment 72: 8 Equal Desirable Crit

Scour Critical 113: 8 Stable Above Footing

### PROPOSED IMPROVEMENTS

Bridge Cost 94: NA Type of Work 75: Unknown (P)

Roadway Cost 95: Unknown Length of Improvement 76: 17,066

Total Cost 96: Unknown Future ADT 114: 2031

Year of Cost Estimate 97: Unknown Year of Future ADT 115: 2031

### NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required

Vertical Clearance 39: 0.00 m Horizontal Clearance 40: 0.00 m

Pier Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116: 0.00 m

ELEMENT CONDITION STATE DATA

### SECTION 3: LOAD AND RESISTANCE FACTOR RATING GUIDELINES

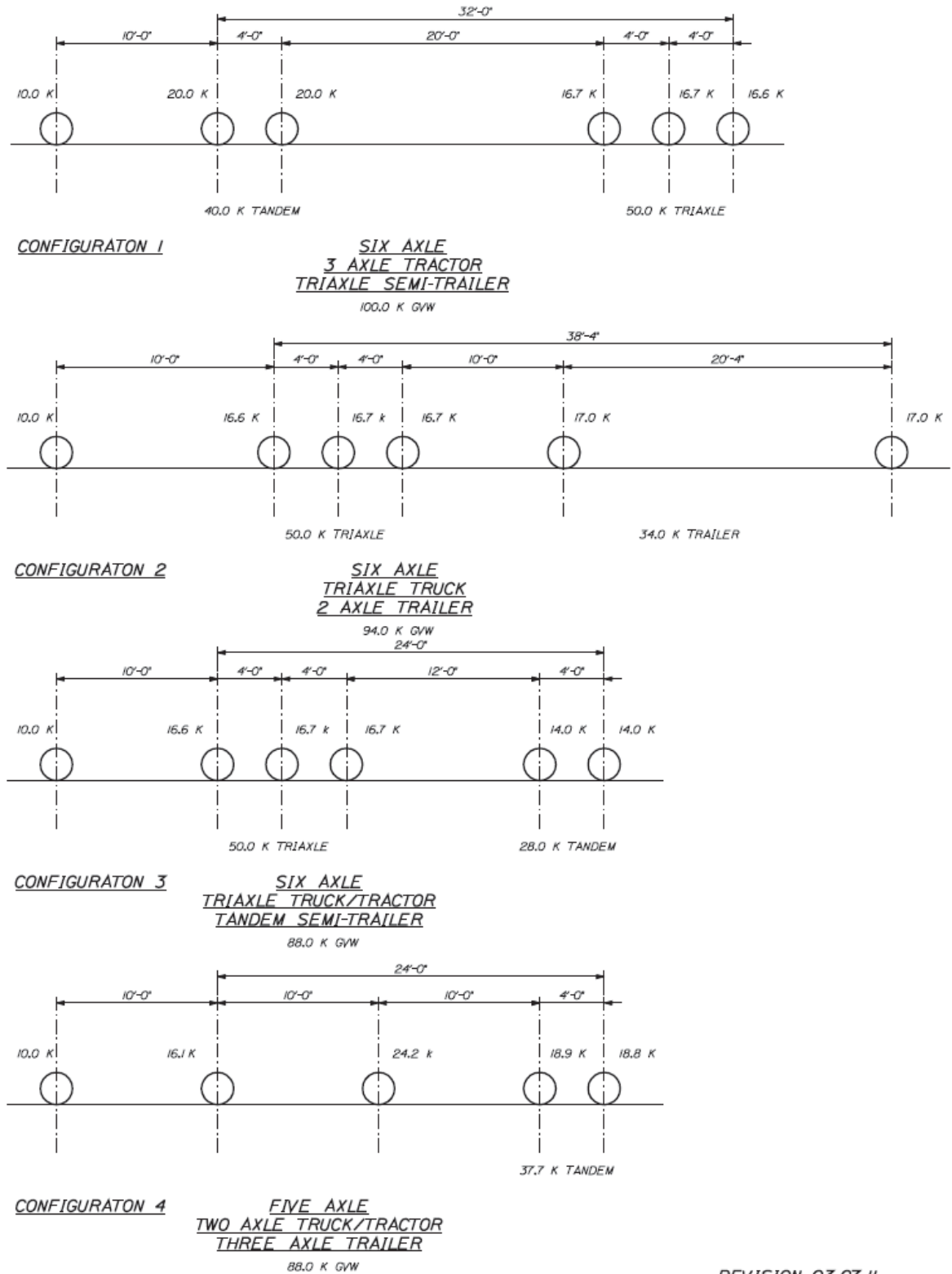
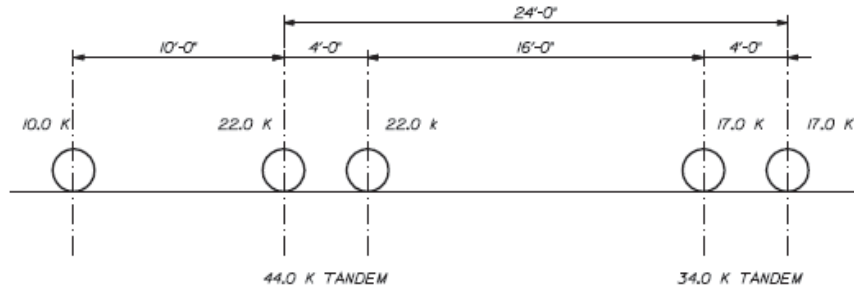
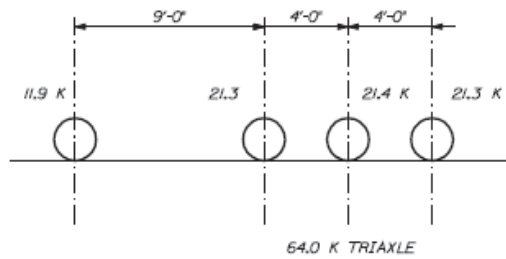


Figure 1. Maine DOT Legal Loads

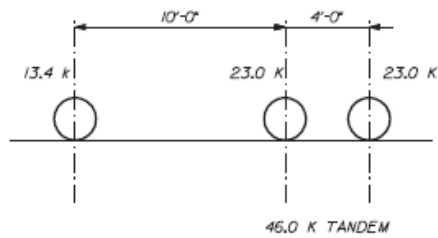
### SECTION 3: LOAD AND RESISTANCE FACTOR RATING GUIDELINES



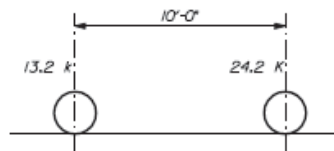
CONFIGURATON 5 FIVE AXLE  
TANDEM AXLE TRUCK  
OR TRACTOR SEMI-TRAILER  
88.0 K GVW



CONFIGURATON 6 FOUR AXLE TRUCK  
75.9 K GVW

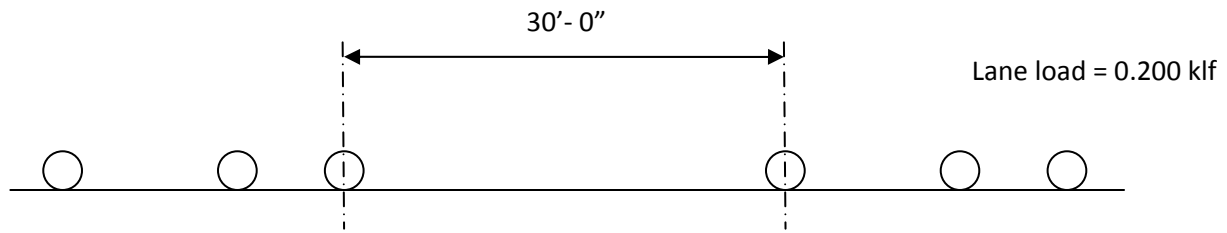


CONFIGURATON 7 THREE AXLE TRUCK  
59.0 K GVW



CONFIGURATON 8 TWO AXLE TRUCK  
37.4 K GVW

Figure 2. Maine DOT Legal Loads



**For negative moments and interior reactions:**

MaineDOT legal vehicles multiplied by 0.75 separated by 30' heading in the same direction.

For one direction ADTT < 500: The lane load component may be excluded and the 0.75 factor changed to 1.0.

Username: virtis

Date: Tuesday, April 23, 2013 15:46:38

**Bridge ID Br. No. 1432+5950 I95 over Souadabscook Stream Center**

NBI Structure ID (8): 1432+5950

Description:

Description

Location: Hampden  
Total Length: 130.00 (ft)  
Facility Carried: I95  
Route Number: 95  
Feature Intersected: Souadabscook  
Mi Post: (mi)  
Units: US Customary  
Year Built: 1961  
Recent ADTT: 1341  
District:  
County:  
Owner:  
National Highway System:  
Functional Class:

Global Reference Point

X Coordinate: 0.000 (ft)  
Y Coordinate: 0.000 (ft)  
Elevation: (ft)  
Longitude: (Degrees)  
Latitude: (Degrees)

**Materials**

**Structural Steel**

Name: **ASTM A373**  
Description: ASTM A 737  
Specified minimum yield strength (Fy): 32.000 (ksi)  
Specified minimum tensile strength (Fu): 58.000 (ksi)  
Coefficient of thermal expansion: 0.0000065000 (1/F)  
Density: 0.4900 (kcf)  
Modulus of elasticity (E): 29000.00 (ksi)

**Concrete**

Name: **Class A (US)**  
Description: Class A cement concrete  
Specified compressive strength at 28 days (f'c): 3.000 (ksi)  
Initial specified compressive strength (f'ci): (ksi)  
Coefficient of thermal expansion: 0.0000060000 (1/F)  
Density (for dead loads): 0.150 (kcf)  
Density (for modulus of elasticity): 0.145 (kcf)  
Modulus of elasticity (Ec): 3155.92 (ksi)  
Poisson's ratio: 0.200

|                                      |             |
|--------------------------------------|-------------|
| Modulus of rupture:                  | 0.416 (ksi) |
| Shear factor:                        | 1.000       |
| Composition of concrete:             | Normal      |
| Initial modulus of elasticity (Eci): | (ksi)       |

### Reinforcing Steel

|                                |                          |
|--------------------------------|--------------------------|
| Name:                          | <b>Grade 40</b>          |
| Description:                   | 40 ksi reinforcing steel |
| Specified yield strength (Fy): | 40.000 (ksi)             |
| Modulus of elasticity (Es):    | 29000.00 (ksi)           |
| Ultimate strength (Fu):        | 70.000 (ksi)             |
| Type:                          | Plain                    |

No prestressing strand materials.

No timber materials.

### Beam Shapes

#### Steel Shapes

No steel angles.

No steel channels.

#### Steel I Shapes

|                        |                             |
|------------------------|-----------------------------|
| Name:                  | <b>W24x110</b>              |
| Description:           |                             |
| Depth (d):             | 24.1250 (in)                |
| Flange width (bf):     | 12.0000 (in)                |
| Flange thickness (tf): | 0.8750 (in)                 |
| Web thickness (tw):    | 0.5000 (in)                 |
| k:                     | (in)                        |
| k1:                    | (in)                        |
| Cross sectional area:  | 32.360 (in <sup>2</sup> )   |
| Nominal load:          | 110.000 (lb/ft)             |
| Ixx:                   | 3315.000 (in <sup>4</sup> ) |
| Iyy:                   | 229.100 (in <sup>4</sup> )  |
| Zx:                    | 308.000 (in <sup>3</sup> )  |
| Zy:                    | 64.400 (in <sup>3</sup> )   |
| Nominal Depth:         | 24.0000 (in)                |
| Type:                  | W Shape                     |
| Name:                  | <b>W24x110 w/ CP span 1</b> |
| Description:           |                             |
| Depth (d):             | 24.0000 (in)                |

|                        |                             |
|------------------------|-----------------------------|
| Flange width (bf):     | 12.0000 (in)                |
| Flange thickness (tf): | 0.8750 (in)                 |
| Web thickness (tw):    | 0.5000 (in)                 |
| k:                     | (in)                        |
| k1:                    | (in)                        |
| Cross sectional area:  | 34.860 (in <sup>2</sup> )   |
| Nominal load:          | 118.507 (lb/ft)             |
| Ixx:                   | 3688.265 (in <sup>4</sup> ) |
| Iyy:                   | 232.433 (in <sup>4</sup> )  |
| Zx:                    | 338.547 (in <sup>3</sup> )  |
| Zy:                    | 66.900 (in <sup>3</sup> )   |
| Nominal Depth:         | 24.7500 (in)                |
| Type:                  | W Shape                     |

Name: **W24x110 w/ CP pier 1**

|                        |                             |
|------------------------|-----------------------------|
| Description:           |                             |
| Depth (d):             | 24.0000 (in)                |
| Flange width (bf):     | 12.0000 (in)                |
| Flange thickness (tf): | 0.8750 (in)                 |
| Web thickness (tw):    | 0.5000 (in)                 |
| k:                     | (in)                        |
| k1:                    | (in)                        |
| Cross sectional area:  | 39.860 (in <sup>2</sup> )   |
| Nominal load:          | 135.521 (lb/ft)             |
| Ixx:                   | 4440.557 (in <sup>4</sup> ) |
| Iyy:                   | 291.600 (in <sup>4</sup> )  |
| Zx:                    | 399.875 (in <sup>3</sup> )  |
| Zy:                    | 83.150 (in <sup>3</sup> )   |
| Nominal Depth:         | 24.8750 (in)                |
| Type:                  | W Shape                     |

Name: **W24x110 w/CP span 2**

|                        |                             |
|------------------------|-----------------------------|
| Description:           |                             |
| Depth (d):             | 24.0000 (in)                |
| Flange width (bf):     | 12.0000 (in)                |
| Flange thickness (tf): | 0.8750 (in)                 |
| Web thickness (tw):    | 0.5000 (in)                 |
| k:                     | (in)                        |
| k1:                    | (in)                        |
| Cross sectional area:  | 34.860 (in <sup>2</sup> )   |
| Nominal load:          | 118.507 (lb/ft)             |
| Ixx:                   | 3688.265 (in <sup>4</sup> ) |
| Iyy:                   | 232.433 (in <sup>4</sup> )  |
| Zx:                    | 338.547 (in <sup>3</sup> )  |
| Zy:                    | 66.900 (in <sup>3</sup> )   |
| Nominal Depth:         | 24.7500 (in)                |
| Type:                  | W Shape                     |

Name: **W24x110 w/CP pier 1 taper**

|                    |              |
|--------------------|--------------|
| Description:       |              |
| Depth (d):         | 24.1250 (in) |
| Flange width (bf): | 12.0000 (in) |

|                        |                             |
|------------------------|-----------------------------|
| Flange thickness (tf): | 0.8750 (in)                 |
| Web thickness (tw):    | 0.5000 (in)                 |
| k:                     | (in)                        |
| k1:                    | (in)                        |
| Cross sectional area:  | 37.610 (in <sup>2</sup> )   |
| Nominal load:          | 127.865 (lb/ft)             |
| Ixx:                   | 4102.890 (in <sup>4</sup> ) |
| Iyy:                   | 250.538 (in <sup>4</sup> )  |
| Zx:                    | 372.313 (in <sup>3</sup> )  |
| Zy:                    | 73.588 (in <sup>3</sup> )   |
| Nominal Depth:         | 24.8750 (in)                |
| Type:                  | W Shape                     |

No steel structural tee shapes.

### **Prestressed Shapes**

No prestressed shapes.

### **Timber Shapes**

No timber shapes.

### **Appurtenances**

#### **Parapets**

|                                        |                      |
|----------------------------------------|----------------------|
| Name:                                  | <b>Concrete Rail</b> |
| Description:                           | Concrete Rail        |
| X1:                                    | 12.0000 (in)         |
| X2:                                    | 0.0000 (in)          |
| X3:                                    | 2.0000 (in)          |
| Y1:                                    | 0.0000 (in)          |
| Y2:                                    | 18.0000 (in)         |
| Y3:                                    | 0.0000 (in)          |
| Y4:                                    | 11.0000 (in)         |
| Distance to Center of Gravity of Load: | 6.0000 (in)          |
| Additional Load:                       | 0.000 (kip/ft)       |
| Concrete Density:                      | 0.0000 (kcf)         |

No concrete medians.

No concrete generics.

No steel railings.

### **Impact**

*Standard Impact Factor*



Type: Standard - AASHTO  
*LRFD Dynamic Load Allowance*  
 Fatigue and fracture limit states: 15.0 (%)  
 All other limit states: 33.0 (%)

### **Factors**

No LFD Factors specified.

No LRFD Factors specified.

No Bridge Alternatives defined.

### **Superstructure Definition 1432+5950**

#### **Definition**

Units: US Customary  
 Number of spans: 3  
 Number of girders: 6

|      | Length  |
|------|---------|
| Span | (ft)    |
| 1    | 40.0000 |
| 2    | 50.0000 |
| 3    | 40.0000 |

#### **Frame Structure Simplified Definition:**

Support Frame Connection

1  
2  
3  
4

Girder Spacing Display Type: Perpendicular

Average Humidity: (%)

#### **Analysis**

*Default Library Factors*

*Factor Override*

*Analysis Module*

Analysis Method: ASD

Analysis Module:

Analysis Module Component:

Properties:

Analysis Method: LFD

Analysis Module:

Analysis Module Component:

Properties:

Analysis Method: LRFD

Analysis Module:  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFR  
 Analysis Module:  
 Analysis Module Component:  
 Properties:

Analysis Method: Distribution Factors  
 Analysis Module:  
 Analysis Module Component:  
 Properties:

Default rating method: LFD

### **Impact**

Standard Impact Factor

Type: Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

### **Structure Framing Plan Details**

#### **Layout**

Support Skew  
 (Degrees)

|   |        |
|---|--------|
| 1 | 0.0000 |
| 2 | 0.0000 |
| 3 | 0.0000 |
| 4 | 0.0000 |

Girder Spacing Orientation: Perpendicular

| Girder Bay | Girder Spacing Start<br>(ft) | End<br>(ft) |
|------------|------------------------------|-------------|
| 1          | 7.5000                       | 7.5000      |
| 2          | 7.5000                       | 7.5000      |
| 3          | 7.5000                       | 7.5000      |
| 4          | 7.5000                       | 7.5000      |
| 5          | 7.5000                       | 7.5000      |

#### **Diaphragms**

Girder Bay 1

| Distance Left Girder<br>(ft) | Distance Right Girder<br>(ft) | Diaphragm Spacing<br>(ft) | Number of Spaces | Diaphragm Weight<br>(kip) |
|------------------------------|-------------------------------|---------------------------|------------------|---------------------------|
| 0.00                         | 0.00                          | 0.00                      | 1                | 0.2955                    |
| 0.00                         | 0.00                          | 22.00                     | 1                | 0.2955                    |
| 22.00                        | 22.00                         | 18.00                     | 1                | 0.2798                    |
| 40.00                        | 40.00                         | 15.00                     | 1                | 0.2955                    |

|        |        |       |   |        |
|--------|--------|-------|---|--------|
| 55.00  | 55.00  | 20.00 | 1 | 0.2955 |
| 75.00  | 75.00  | 15.00 | 1 | 0.2798 |
| 90.00  | 90.00  | 18.00 | 1 | 0.2955 |
| 108.00 | 108.00 | 22.00 | 1 | 0.2955 |

*Girder Bay 2*

| Distance<br>Left Girder<br>(ft) | Distance<br>Right Girder<br>(ft) | Diaphragm<br>Spacing<br>(ft) | Number of<br>Spaces | Diaphragm<br>Weight<br>(kip) |
|---------------------------------|----------------------------------|------------------------------|---------------------|------------------------------|
| 0.00                            | 0.00                             | 0.00                         | 1                   | 0.2955                       |
| 0.00                            | 0.00                             | 22.00                        | 1                   | 0.2955                       |
| 22.00                           | 22.00                            | 18.00                        | 1                   | 0.2798                       |
| 40.00                           | 40.00                            | 15.00                        | 1                   | 0.2955                       |
| 55.00                           | 55.00                            | 20.00                        | 1                   | 0.2955                       |
| 75.00                           | 75.00                            | 15.00                        | 1                   | 0.2798                       |
| 90.00                           | 90.00                            | 18.00                        | 1                   | 0.2955                       |
| 108.00                          | 108.00                           | 22.00                        | 1                   | 0.2955                       |

*Girder Bay 3*

| Distance<br>Left Girder<br>(ft) | Distance<br>Right Girder<br>(ft) | Diaphragm<br>Spacing<br>(ft) | Number of<br>Spaces | Diaphragm<br>Weight<br>(kip) |
|---------------------------------|----------------------------------|------------------------------|---------------------|------------------------------|
| 0.00                            | 0.00                             | 0.00                         | 1                   | 0.2955                       |
| 0.00                            | 0.00                             | 22.00                        | 1                   | 0.2955                       |
| 22.00                           | 22.00                            | 18.00                        | 1                   | 0.2798                       |
| 40.00                           | 40.00                            | 15.00                        | 1                   | 0.2955                       |
| 55.00                           | 55.00                            | 20.00                        | 1                   | 0.2955                       |
| 75.00                           | 75.00                            | 15.00                        | 1                   | 0.2798                       |
| 90.00                           | 90.00                            | 18.00                        | 1                   | 0.2955                       |
| 108.00                          | 108.00                           | 22.00                        | 1                   | 0.2955                       |

*Girder Bay 4*

| Distance<br>Left Girder<br>(ft) | Distance<br>Right Girder<br>(ft) | Diaphragm<br>Spacing<br>(ft) | Number of<br>Spaces | Diaphragm<br>Weight<br>(kip) |
|---------------------------------|----------------------------------|------------------------------|---------------------|------------------------------|
| 0.00                            | 0.00                             | 22.00                        | 1                   | 0.2955                       |
| 0.00                            | 0.00                             | 0.00                         | 1                   | 0.2955                       |
| 22.00                           | 22.00                            | 18.00                        | 1                   | 0.2798                       |
| 40.00                           | 40.00                            | 15.00                        | 1                   | 0.2955                       |
| 55.00                           | 55.00                            | 20.00                        | 1                   | 0.2955                       |
| 75.00                           | 75.00                            | 15.00                        | 1                   | 0.2798                       |
| 90.00                           | 90.00                            | 18.00                        | 1                   | 0.2955                       |
| 108.00                          | 108.00                           | 22.00                        | 1                   | 0.2955                       |

*Girder Bay 5*

| Distance<br>Left Girder<br>(ft) | Distance<br>Right Girder<br>(ft) | Diaphragm<br>Spacing<br>(ft) | Number of<br>Spaces | Diaphragm<br>Weight<br>(kip) |
|---------------------------------|----------------------------------|------------------------------|---------------------|------------------------------|
| 0.00                            | 0.00                             | 0.00                         | 1                   | 0.2955                       |
| 0.00                            | 0.00                             | 22.00                        | 1                   | 0.2955                       |
| 22.00                           | 22.00                            | 18.00                        | 1                   | 0.2798                       |
| 40.00                           | 40.00                            | 15.00                        | 1                   | 0.2955                       |
| 55.00                           | 55.00                            | 20.00                        | 1                   | 0.2955                       |
| 75.00                           | 75.00                            | 15.00                        | 1                   | 0.2798                       |
| 90.00                           | 90.00                            | 18.00                        | 1                   | 0.2955                       |

108.00                      108.00                      22.00                      1                      0.2955

### **Structure Typical Section**

#### Deck

Left start width:                      21.17 (ft)  
 Left end width:                      21.17 (ft)  
 Right start width:                      21.17 (ft)  
 Right end width:                      21.17 (ft)  
 Left start overhang:                      2.42 (ft)  
 Left end overhang:                      2.42 (ft)

#### Deck (Cont'd)

Deck concrete:                      Class A (US)  
 Total deck thickness:                      6.5000 (in)  
 Deck crack control parameter:                      (kip/in)  
 Sustained modular ratio factor:                      3.000

#### Parapet

| Name         | Load Case | Measure To | Measured From | Distance At Start | Distance At End | Front Face Orientation |
|--------------|-----------|------------|---------------|-------------------|-----------------|------------------------|
| Concrete ... | DC2       | Front      | Left Ed...    | 1.17              | 1.17            | Right                  |
| Concrete ... | DC2       | Front      | Right E...    | 1.17              | 1.17            | Left                   |

#### Lane Position

Offset Left Start:                      -20.00 (ft)  
 Offset Left End:                      -20.00 (ft)  
 Offset Right Start:                      20.00 (ft)  
 Offset Right End:                      20.00 (ft)

#### Wearing Surface

Wearing surface material:                      bituminous  
 Description:  
 Wearing surface thickness:                      2.2500 (in)  
 Wearing surface density:                      140.000 (pcf)  
 Load case:                      DW

### **Load Case Description**

| Load Case Name | Description              | Stage                 | Type | Time (Days) |
|----------------|--------------------------|-----------------------|------|-------------|
| DC1            | DC acting on non-comp... | Non-composite (Sta... |      | D,DC        |
| DC2            | DC acting on long-ter... | Composite (long te... |      | D,DC        |
| DW             | DW acting on long-ter... | Composite (long te... |      | D,DW        |

### **Superstructure Loads**

#### DL Distribution

Stage 1 Dead Load Distribution: Tributary Area  
 Stage 2 Dead Load Distribution: Uniformly to All Girders

### **Stiffener Definitions**

#### **Transverse Stiffeners**

Name:                      Single Connection PL

Stiffener number: Single  
 Plate Width: 6.0000 (in)  
 Plate Thickness: 0.3750 (in)  
 Material: ASTM A373  
 Top Gap: 2.0000 (in)  
 Bottom Gap: 2.0000 (in)  
 Top Weld:  
 Web Weld:  
 Bottom Weld:

Name: Double Connection PL  
 Stiffener number: Pair  
 Plate Width: 6.0000 (in)  
 Plate Thickness: 0.3750 (in)  
 Material: ASTM A373  
 Top Gap: 2.0000 (in)  
 Bottom Gap: 2.0000 (in)  
 Top Weld:  
 Web Weld:  
 Bottom Weld:

No prestress stress limits.

No prestress properties.

No vertical shear reinforcement definitions.

No horizontal shear reinforcement definitions.

## Member G1

Link with: None

Description:

Existing: G1 -

Current: G1 -

Number of Spans: 3

| Span Number | Span Length (ft) |
|-------------|------------------|
| 1           | 40.000000        |
| 2           | 50.000000        |
| 3           | 40.000000        |

| Support | Frame Connection |
|---------|------------------|
| 1       |                  |
| 2       |                  |
| 3       |                  |
| 4       |                  |

Pedestrian load: (lb/ft)

## **Member Loads**

### Distributed Loads

| Distance<br>(ft) | Length<br>(ft) | Start<br>(kip/ft) | End<br>(kip/ft) | Load Case Name |
|------------------|----------------|-------------------|-----------------|----------------|
| 0.00             | 130.00         | 0.205             | 0.205           | DC2            |

### Member Loads - Settlement

| Support<br>Number | Horizontal<br>(in) | Vertical<br>(in) | Rotational<br>(Radians) | Load Case Name |
|-------------------|--------------------|------------------|-------------------------|----------------|
| 1                 |                    |                  |                         |                |
| 2                 |                    |                  |                         |                |
| 3                 |                    |                  |                         |                |
| 4                 |                    |                  |                         |                |

## **Support Constraints**

### General

| Support<br>Number | Support<br>Type | X Translation | Y Translation | Z Rotation |
|-------------------|-----------------|---------------|---------------|------------|
| 1                 | Pinned          | Fixed         | Fixed         | Free       |
| 2                 | Roller          | Free          | Fixed         | Free       |
| 3                 | Roller          | Free          | Fixed         | Free       |
| 4                 | Roller          | Free          | Fixed         | Free       |

### Elastic

| Support<br>Number | X Translation<br>(kip/ft) | Y Translation<br>(kip/ft) | Z Rotation<br>(kip-in/rad) | Override Computed<br>Z Rotation |
|-------------------|---------------------------|---------------------------|----------------------------|---------------------------------|
| 1                 |                           |                           |                            |                                 |
| 2                 |                           |                           |                            |                                 |
| 3                 |                           |                           |                            |                                 |
| 4                 |                           |                           |                            |                                 |

## **Member Alternative G1**

Description:

Description

Material Type: Steel  
Girder Type: Rolled  
Member units: US Customary  
Girder property input method: Schedule based  
Left end X: (in)  
Right end X: (in)  
Additional Self Load: (kip/ft)  
Additional Self Load %: 2.0 (%)

*Analysis Module*

Analysis Method: ASD  
Analysis Module: AASHTO ASD  
Analysis Module Component:

Properties:

Analysis Method: LFD

Analysis Module: AASHTO LFD  
Analysis Module Component:  
Properties:

Analysis Method: LRFD  
Analysis Module: AASHTO LRFD  
Analysis Module Component:  
Properties:

Analysis Method: LRFR  
Analysis Module: AASHTO LRFR  
Analysis Module Component:  
Properties:

Analysis Method: Distribution Factors  
Analysis Module: Virtis Dist Fact  
Analysis Module Component:  
Properties:

Default rating method: LRFR

#### Factors

*Factor Override*

LRFD:

LFD:

*ASD Factors*

|                   | Inventory | Operating |
|-------------------|-----------|-----------|
| Structural steel  |           |           |
| Concrete          |           |           |
| PS Concrete Comp. |           |           |
| PS Concrete Tens. |           |           |
| PS Moment Cap.    |           |           |
| Reinforcement     |           |           |
| Bearing Stiffener |           |           |
| Stirrup           |           |           |
| Timber            | NA        |           |

#### Default Materials

Structural steel: ASTM A373  
Deck concrete: Class A (US)  
Deck reinforcement: Grade 40  
Welds:  
Bolts:

#### Impact

*Standard Impact Factor*

Type: Standard - AASHTO

*LRFD Dynamic Load Allowance*

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

### **Live Load Distribution**

#### **Standard**

#### **D i s t r i b u t i o n F a c t o r (Wheels)**

| Lanes      | Shear | Shear at<br>Supports | Moment | Deflection |
|------------|-------|----------------------|--------|------------|
| Loaded     |       |                      |        |            |
| 1 Lane     |       |                      |        |            |
| Multi-Lane |       |                      |        |            |

#### **LRFD**

| Distance<br>(ft) | Length<br>(ft) | Type         | 1 Lane | Multi-Lane |
|------------------|----------------|--------------|--------|------------|
| 0.00             | 29.38          | Moment       | 0.600  | 0.676      |
| 29.38            | 21.50          | Moment       | 0.600  | 0.676      |
| 50.87            | 28.25          | Moment       | 0.600  | 0.676      |
| 79.13            | 21.50          | Moment       | 0.600  | 0.676      |
| 100.62           | 29.38          | Moment       | 0.600  | 0.676      |
| 0.00             | 40.00          | Shear        | 0.600  | 0.676      |
| 40.00            | 50.00          | Shear        | 0.600  | 0.676      |
| 90.00            | 40.00          | Shear        | 0.600  | 0.676      |
| 0.00             | 130.00         | Deflectio... | 0.200  | 0.425      |

### **Girder Profile**

#### **Shape**

|           |                           |
|-----------|---------------------------|
| Shape:    | W24x110                   |
| Distance: | 0.00 (ft)                 |
| Length:   | 14.00 (ft)                |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/ CP span 1      |
| Distance: | 14.00 (ft)                |
| Length:   | 12.00 (ft)                |
| Material: | ASTM A373                 |
| Shape:    | W24x110                   |
| Distance: | 26.00 (ft)                |
| Length:   | 9.50 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/CP pier 1 taper |
| Distance: | 35.50 (ft)                |
| Length:   | 2.00 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/ CP pier 1      |
| Distance: | 37.50 (ft)                |
| Length:   | 5.00 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/CP pier 1 taper |
| Distance: | 42.50 (ft)                |
| Length:   | 2.00 (ft)                 |
| Material: | ASTM A373                 |



Shape: W24x110  
 Distance: 44.50 (ft)  
 Length: 14.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP span 2  
 Distance: 59.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 71.00 (ft)  
 Length: 14.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 85.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP pier 1  
 Distance: 87.50 (ft)  
 Length: 5.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 92.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 94.50 (ft)  
 Length: 9.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP span 1  
 Distance: 104.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 116.00 (ft)  
 Length: 14.00 (ft)  
 Material: ASTM A373

### **Deck Profile**

#### **Deck Concrete**

| Material<br>(LRFD) | Distance<br>n<br>(ft) | Length<br>(ft) | Total<br>Thickness<br>(in) | Structural<br>Thickness<br>(in) | Effective<br>Width (Std)<br>(in) | Effective<br>Width<br>(in) |
|--------------------|-----------------------|----------------|----------------------------|---------------------------------|----------------------------------|----------------------------|
| Class A (US)       | 0.00<br>9.20...       | 130.00         |                            | 6.5000                          | 67.9980                          | 73.9980                    |

### **Haunch Profile**

|                  |        |              |    |    |    |    |    |
|------------------|--------|--------------|----|----|----|----|----|
| Haunch Type:     |        | Flange edges |    |    |    |    |    |
| Embedded flange: |        | TRUE         |    |    |    |    |    |
| Distance         | Length | Z1           | Z2 | Z3 | Z4 | Y1 | Y2 |

|      |        |        |        |        |        |        |        |
|------|--------|--------|--------|--------|--------|--------|--------|
| (ft) | (ft)   | (in)   | (in)   | (in)   | (in)   | (in)   | (in)   |
| 0.00 | 130.00 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |

### **Bracing Ranges**

Lateral Support

|          |        |
|----------|--------|
| Distance | Length |
| (ft)     | (ft)   |
| 0.00     | 130.00 |

### **Stiffener Ranges**

Transverse Stiffener Ranges (Location)

| Name                  | Distance<br>(ft) | Number | Spacing<br>(in) |
|-----------------------|------------------|--------|-----------------|
| Single Connection ... | 22.00            | 1      | 0.0000          |
| Single Connection ... | 55.00            | 1      | 0.0000          |
| Single Connection ... | 75.00            | 1      | 0.0000          |
| Single Connection ... | 108.00           | 1      | 0.0000          |

### **Bearing Stiffener Locations**

## **Member G2**

Link with: None

Description:

Existing: G2 -

Current: G2 -

Number of Spans: 3

| Span<br>Number | Span Length<br>(ft) |
|----------------|---------------------|
| 1              | 40.000000           |
| 2              | 50.000000           |
| 3              | 40.000000           |

| Support | Frame Connection |
|---------|------------------|
| 1       |                  |
| 2       |                  |
| 3       |                  |
| 4       |                  |

Pedestrian load: (lb/ft)

### **Member Loads**

Distributed Loads

| Distance<br>(ft) | Length<br>(ft) | Start<br>(kip/ft) | End<br>(kip/ft) | Load Case Name |
|------------------|----------------|-------------------|-----------------|----------------|
| 0.00             | 130.00         | 0.205             | 0.205           | DC2            |

Member Loads - Settlement

| Support<br>Number | Horizontal<br>(in) | Vertical<br>(in) | Rotational<br>(Radians) | Load Case Name |
|-------------------|--------------------|------------------|-------------------------|----------------|
| 1                 |                    |                  |                         |                |
| 2                 |                    |                  |                         |                |
| 3                 |                    |                  |                         |                |
| 4                 |                    |                  |                         |                |

### **Support Constraints**

#### General

| Support<br>Number | Support<br>Type | X Translation | Y Translation | Z Rotation |
|-------------------|-----------------|---------------|---------------|------------|
| 1                 | Pinned          | Fixed         | Fixed         | Free       |
| 2                 | Roller          | Free          | Fixed         | Free       |
| 3                 | Roller          | Free          | Fixed         | Free       |
| 4                 | Roller          | Free          | Fixed         | Free       |

#### Elastic

| Support<br>Number | X Translation<br>(kip/ft) | Y Translation<br>(kip/ft) | Z Rotation<br>(kip-in/rad) | Override Computed<br>Z Rotation |
|-------------------|---------------------------|---------------------------|----------------------------|---------------------------------|
| 1                 |                           |                           |                            |                                 |
| 2                 |                           |                           |                            |                                 |
| 3                 |                           |                           |                            |                                 |
| 4                 |                           |                           |                            |                                 |

### **Member Alternative G2**

#### Description:

#### Description

Material Type: Steel  
 Girder Type: Rolled  
 Member units: US Customary  
 Girder property input method: Schedule based  
 Left end X: (in)  
 Right end X: (in)  
 Additional Self Load: (kip/ft)  
 Additional Self Load %: 2.0 (%)

#### *Analysis Module*

Analysis Method: ASD  
 Analysis Module: AASHTO ASD  
 Analysis Module Component:  
 Properties:

Analysis Method: LFD  
 Analysis Module: AASHTO LFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFD  
 Analysis Module: AASHTO LRFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFR  
 Analysis Module: AASHTO LRFR  
 Analysis Module Component:  
 Properties:

Analysis Method: Distribution Factors  
 Analysis Module: Virtis Dist Fact  
 Analysis Module Component:  
 Properties:

Default rating method: LRFR

#### Factors

*Factor Override*

LRFD:

LFD:

*ASD Factors*

|                   |           |           |
|-------------------|-----------|-----------|
|                   | Inventory | Operating |
| Structural steel  |           |           |
| Concrete          |           |           |
| PS Concrete Comp. |           |           |
| PS Concrete Tens. |           |           |
| PS Moment Cap.    |           |           |
| Reinforcement     |           |           |
| Bearing Stiffener |           |           |
| Stirrup           |           |           |
| Timber            | NA        |           |

#### Default Materials

Structural steel: ASTM A373  
 Deck concrete: Class A (US)  
 Deck reinforcement: Grade 40  
 Welds:  
 Bolts:

#### Impact

*Standard Impact Factor*

Type: Standard - AASHTO

*LRFD Dynamic Load Allowance*

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

#### Live Load Distribution

Standard

|        |                                                |          |        |            |
|--------|------------------------------------------------|----------|--------|------------|
|        | D i s t r i b u t i o n   F a c t o r (Wheels) |          |        |            |
| Lanes  |                                                | Shear at |        |            |
| Loaded | Shear                                          | Supports | Moment | Deflection |
| 1 Lane |                                                |          |        |            |

## Multi-Lane

### LRFD

| Distance<br>(ft) | Length<br>(ft) | Type         | 1 Lane | Multi-Lane |
|------------------|----------------|--------------|--------|------------|
| 0.00             | 29.38          | Moment       | 0.472  | 0.617      |
| 29.38            | 21.50          | Moment       | 0.460  | 0.608      |
| 50.87            | 28.25          | Moment       | 0.436  | 0.582      |
| 79.13            | 21.50          | Moment       | 0.460  | 0.608      |
| 100.62           | 29.38          | Moment       | 0.472  | 0.617      |
| 0.00             | 40.00          | Shear        | 0.660  | 0.779      |
| 40.00            | 50.00          | Shear        | 0.660  | 0.779      |
| 90.00            | 40.00          | Shear        | 0.660  | 0.779      |
| 0.00             | 130.00         | Deflectio... | 0.200  | 0.425      |

### Girder Profile

#### Shape

Shape: W24x110  
Distance: 0.00 (ft)  
Length: 14.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/ CP span 1  
Distance: 14.00 (ft)  
Length: 12.00 (ft)  
Material: ASTM A373  
Shape: W24x110  
Distance: 26.00 (ft)  
Length: 9.50 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP pier 1 taper  
Distance: 35.50 (ft)  
Length: 2.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/ CP pier 1  
Distance: 37.50 (ft)  
Length: 5.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP pier 1 taper  
Distance: 42.50 (ft)  
Length: 2.00 (ft)  
Material: ASTM A373  
Shape: W24x110  
Distance: 44.50 (ft)  
Length: 14.50 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP span 2  
Distance: 59.00 (ft)  
Length: 12.00 (ft)  
Material: ASTM A373

Shape: W24x110  
 Distance: 71.00 (ft)  
 Length: 14.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 85.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP pier 1  
 Distance: 87.50 (ft)  
 Length: 5.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 92.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 94.50 (ft)  
 Length: 9.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP span 1  
 Distance: 104.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 116.00 (ft)  
 Length: 14.00 (ft)  
 Material: ASTM A373

### **Deck Profile**

#### **Deck Concrete**

| Material<br>(LRFD) | Distance<br>n<br>(ft) | Length<br>(ft) | Total<br>Thickness<br>(in) | Structural<br>Thickness<br>(in) | Effective<br>Width (Std)<br>(in) | Effective<br>Width<br>(in) |
|--------------------|-----------------------|----------------|----------------------------|---------------------------------|----------------------------------|----------------------------|
| Class A (US)       | 0.00<br>9.20...       | 130.00         |                            | 6.5000                          | 78.0000                          | 90.0000                    |

### **Haunch Profile**

|                  |                |            |            |            |
|------------------|----------------|------------|------------|------------|
| Haunch Type:     | Flange edges   |            |            |            |
| Embedded flange: | TRUE           |            |            |            |
| Distance<br>(ft) | Length<br>(ft) | Z1<br>(in) | Z2<br>(in) | Y1<br>(in) |
| 0.00             | 130.00         | 4.0000     | 4.0000     | 1.0000     |

### **Bracing Ranges**

#### **Lateral Support**

| Distance<br>(ft) | Length<br>(ft) |
|------------------|----------------|
| 0.00             | 130.00         |

### **Stiffener Ranges**

#### Transverse Stiffener Ranges (Location)

| Name                  | Distance<br>(ft) | Number | Spacing<br>(in) |
|-----------------------|------------------|--------|-----------------|
| Double Connection ... | 22.00            | 1      | 0.0000          |
| Double Connection ... | 55.00            | 1      | 0.0000          |
| Double Connection ... | 75.00            | 1      | 0.0000          |
| Double Connection ... | 108.00           | 1      | 0.0000          |

### **Bearing Stiffener Locations**

#### **Member G3**

Link with: None

Description:

Existing: G3 -

Current: G3 -

Number of Spans: 3

| Span<br>Number | Span Length<br>(ft) |
|----------------|---------------------|
| 1              | 40.000000           |
| 2              | 50.000000           |
| 3              | 40.000000           |

| Support | Frame Connection |
|---------|------------------|
| 1       |                  |
| 2       |                  |
| 3       |                  |
| 4       |                  |

Pedestrian load: (lb/ft)

### **Member Loads**

#### Member Loads - Settlement

| Support<br>Number | Horizontal<br>(in) | Vertical<br>(in) | Rotational<br>(Radians) | Load Case Name |
|-------------------|--------------------|------------------|-------------------------|----------------|
| 1                 |                    |                  |                         |                |
| 2                 |                    |                  |                         |                |
| 3                 |                    |                  |                         |                |
| 4                 |                    |                  |                         |                |

### **Support Constraints**

#### General

| Support<br>Number | Support<br>Type | X Translation | Y Translation | Z Rotation |
|-------------------|-----------------|---------------|---------------|------------|
| 1                 | Pinned          | Fixed         | Fixed         | Free       |
| 2                 | Roller          | Free          | Fixed         | Free       |
| 3                 | Roller          | Free          | Fixed         | Free       |

|                |               |               |              |                   |
|----------------|---------------|---------------|--------------|-------------------|
| 4              | Roller        | Free          | Fixed        | Free              |
| <u>Elastic</u> |               |               |              |                   |
| Support        | X Translation | Y Translation | Z Rotation   | Override Computed |
| Number         | (kip/ft)      | (kip/ft)      | (kip-in/rad) | Z Rotation        |
| 1              |               |               |              |                   |
| 2              |               |               |              |                   |
| 3              |               |               |              |                   |
| 4              |               |               |              |                   |

### Member Alternative G3

Description:

Description

Material Type: Steel  
 Girder Type: Rolled  
 Member units: US Customary  
 Girder property input method: Schedule based  
 Left end X: (in)  
 Right end X: (in)  
 Additional Self Load: (kip/ft)  
 Additional Self Load %: 2.0 (%)

*Analysis Module*

Analysis Method: ASD  
 Analysis Module: AASHTO ASD  
 Analysis Module Component:  
 Properties:

Analysis Method: LFD  
 Analysis Module: AASHTO LFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFD  
 Analysis Module: AASHTO LRFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFR  
 Analysis Module: AASHTO LRFR  
 Analysis Module Component:  
 Properties:

Analysis Method: Distribution Factors  
 Analysis Module: Virtis Dist Fact  
 Analysis Module Component:  
 Properties:

Default rating method: LRFR

Factors



### Factor Override

LRFD:

LFD:

ASD Factors

|                   | Inventory | Operating |
|-------------------|-----------|-----------|
| Structural steel  |           |           |
| Concrete          |           |           |
| PS Concrete Comp. |           |           |
| PS Concrete Tens. |           |           |
| PS Moment Cap.    |           |           |
| Reinforcement     |           |           |
| Bearing Stiffener |           |           |
| Stirrup           |           |           |
| Timber            | NA        |           |

### Default Materials

|                     |              |
|---------------------|--------------|
| Structural steel:   | ASTM A373    |
| Deck concrete:      | Class A (US) |
| Deck reinforcement: | Grade 40     |
| Welds:              |              |
| Bolts:              |              |

### Impact

Standard Impact Factor

Type: Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

### Live Load Distribution

Standard

| D i s t r i b u t i o n   F a c t o r (Wheels) |       |                   |        |            |
|------------------------------------------------|-------|-------------------|--------|------------|
| Lanes                                          | Shear | Shear at Supports | Moment | Deflection |
| Loaded                                         |       |                   |        |            |
| 1 Lane                                         |       |                   |        |            |
| Multi-Lane                                     |       |                   |        |            |

### LRFD

| Distance<br>(ft) | Length<br>(ft) | Type         | 1 Lane | Multi-Lane |
|------------------|----------------|--------------|--------|------------|
| 0.00             | 29.38          | Moment       | 0.472  | 0.617      |
| 29.38            | 21.50          | Moment       | 0.460  | 0.608      |
| 50.87            | 28.25          | Moment       | 0.436  | 0.582      |
| 79.13            | 21.50          | Moment       | 0.460  | 0.608      |
| 100.62           | 29.38          | Moment       | 0.472  | 0.617      |
| 0.00             | 40.00          | Shear        | 0.660  | 0.779      |
| 40.00            | 50.00          | Shear        | 0.660  | 0.779      |
| 90.00            | 40.00          | Shear        | 0.660  | 0.779      |
| 0.00             | 130.00         | Deflectio... | 0.200  | 0.425      |

## **Girder Profile**

### **Shape**

Shape: W24x110  
Distance: 0.00 (ft)  
Length: 14.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/ CP span 1  
Distance: 14.00 (ft)  
Length: 12.00 (ft)  
Material: ASTM A373  
Shape: W24x110  
Distance: 26.00 (ft)  
Length: 9.50 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP pier 1 taper  
Distance: 35.50 (ft)  
Length: 2.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/ CP pier 1  
Distance: 37.50 (ft)  
Length: 5.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP pier 1 taper  
Distance: 42.50 (ft)  
Length: 2.00 (ft)  
Material: ASTM A373  
Shape: W24x110  
Distance: 44.50 (ft)  
Length: 14.50 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP span 2  
Distance: 59.00 (ft)  
Length: 12.00 (ft)  
Material: ASTM A373  
Shape: W24x110  
Distance: 71.00 (ft)  
Length: 14.50 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP pier 1 taper  
Distance: 85.50 (ft)  
Length: 2.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/ CP pier 1  
Distance: 87.50 (ft)  
Length: 5.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/CP pier 1 taper  
Distance: 92.50 (ft)

Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 94.50 (ft)  
 Length: 9.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP span 1  
 Distance: 104.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 116.00 (ft)  
 Length: 14.00 (ft)  
 Material: ASTM A373

### **Deck Profile**

#### **Deck Concrete**

| Material<br>(LRFD) | Distance<br>n<br>(ft) | Length<br>(ft) | Total<br>Thickness<br>(in) | Structural<br>Thickness<br>(in) | Effective<br>Width (Std)<br>(in) | Effective<br>Width<br>(in) |
|--------------------|-----------------------|----------------|----------------------------|---------------------------------|----------------------------------|----------------------------|
| Class A (US)       | 0.00                  | 130.00         |                            | 6.5000                          | 78.0000                          | 90.0000                    |
|                    | 9.20...               |                |                            |                                 |                                  |                            |

### **Haunch Profile**

|                  |              |        |        |        |
|------------------|--------------|--------|--------|--------|
| Haunch Type:     | Flange edges |        |        |        |
| Embedded flange: | TRUE         |        |        |        |
| Distance         | Length       | Z1     | Z2     | Y1     |
| (ft)             | (ft)         | (in)   | (in)   | (in)   |
| 0.00             | 130.00       | 4.0000 | 4.0000 | 1.0000 |

### **Bracing Ranges**

#### **Lateral Support**

| Distance | Length |
|----------|--------|
| (ft)     | (ft)   |
| 0.00     | 130.00 |

### **Stiffener Ranges**

#### **Transverse Stiffener Ranges (Location)**

| Name                  | Distance<br>(ft) | Number | Spacing<br>(in) |
|-----------------------|------------------|--------|-----------------|
| Double Connection ... | 22.00            | 1      | 0.0000          |
| Double Connection ... | 55.00            | 1      | 0.0000          |
| Double Connection ... | 75.00            | 1      | 0.0000          |
| Double Connection ... | 108.00           | 1      | 0.0000          |

### **Bearing Stiffener Locations**

### **Member G4**

Link with: None

Description:

Existing: G4 -

Current: G4 -

Number of Spans: 3

| Span Number | Span Length<br>(ft) |
|-------------|---------------------|
| 1           | 40.000000           |
| 2           | 50.000000           |
| 3           | 40.000000           |

| Support | Frame Connection |
|---------|------------------|
| 1       |                  |
| 2       |                  |
| 3       |                  |
| 4       |                  |

Pedestrian load: (lb/ft)

**Member Loads**

Member Loads - Settlement

| Support Number | Horizontal<br>(in) | Vertical<br>(in) | Rotational<br>(Radians) | Load Case Name |
|----------------|--------------------|------------------|-------------------------|----------------|
| 1              |                    |                  |                         |                |
| 2              |                    |                  |                         |                |
| 3              |                    |                  |                         |                |
| 4              |                    |                  |                         |                |

**Support Constraints**

General

| Support Number | Support Type | X Translation | Y Translation | Z Rotation |
|----------------|--------------|---------------|---------------|------------|
| 1              | Pinned       | Fixed         | Fixed         | Free       |
| 2              | Roller       | Free          | Fixed         | Free       |
| 3              | Roller       | Free          | Fixed         | Free       |
| 4              | Roller       | Free          | Fixed         | Free       |

Elastic

| Support Number | X Translation<br>(kip/ft) | Y Translation<br>(kip/ft) | Z Rotation<br>(kip-in/rad) | Override Computed<br>Z Rotation |
|----------------|---------------------------|---------------------------|----------------------------|---------------------------------|
| 1              |                           |                           |                            |                                 |
| 2              |                           |                           |                            |                                 |
| 3              |                           |                           |                            |                                 |
| 4              |                           |                           |                            |                                 |

**Member Alternative G4**

Description:

Description

Material Type: Steel

Girder Type: Rolled  
 Member units: US Customary  
 Girder property input method: Schedule based  
 Left end X: (in)  
 Right end X: (in)  
 Additional Self Load: (kip/ft)  
 Additional Self Load %: 2.0 (%)

*Analysis Module*

Analysis Method: ASD  
 Analysis Module: AASHTO ASD  
 Analysis Module Component:  
 Properties:

Analysis Method: LFD  
 Analysis Module: AASHTO LFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFD  
 Analysis Module: AASHTO LRFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFR  
 Analysis Module: AASHTO LRFR  
 Analysis Module Component:  
 Properties:

Analysis Method: Distribution Factors  
 Analysis Module: Virtis Dist Fact  
 Analysis Module Component:  
 Properties:

Default rating method: LRFR

Factors

*Factor Override*

LRFD:

LFD:

*ASD Factors*

|                   | Inventory | Operating |
|-------------------|-----------|-----------|
| Structural steel  |           |           |
| Concrete          |           |           |
| PS Concrete Comp. |           |           |
| PS Concrete Tens. |           |           |
| PS Moment Cap.    |           |           |
| Reinforcement     |           |           |
| Bearing Stiffener |           |           |
| Stirrup           |           |           |
| Timber            | NA        |           |

### Default Materials

Structural steel: ASTM A373  
Deck concrete: Class A (US)  
Deck reinforcement: Grade 40  
Welds:  
Bolts:

### Impact

Standard Impact Factor

Type: Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

### Live Load Distribution

Standard

D i s t r i b u t i o n   F a c t o r (Wheels)

| Lanes      | Shear | Shear at<br>Supports | Moment | Deflection |
|------------|-------|----------------------|--------|------------|
| Loaded     |       |                      |        |            |
| 1 Lane     |       |                      |        |            |
| Multi-Lane |       |                      |        |            |

### LRFD

| Distance<br>(ft) | Length<br>(ft) | Type         | 1 Lane | Multi-Lane |
|------------------|----------------|--------------|--------|------------|
| 0.00             | 29.38          | Moment       | 0.472  | 0.617      |
| 29.38            | 21.50          | Moment       | 0.460  | 0.608      |
| 50.87            | 28.25          | Moment       | 0.436  | 0.582      |
| 79.13            | 21.50          | Moment       | 0.460  | 0.608      |
| 100.62           | 29.38          | Moment       | 0.472  | 0.617      |
| 0.00             | 40.00          | Shear        | 0.660  | 0.779      |
| 40.00            | 50.00          | Shear        | 0.660  | 0.779      |
| 90.00            | 40.00          | Shear        | 0.660  | 0.779      |
| 0.00             | 130.00         | Deflectio... | 0.200  | 0.425      |

### Girder Profile

Shape

Shape: W24x110  
Distance: 0.00 (ft)  
Length: 14.00 (ft)  
Material: ASTM A373  
Shape: W24x110 w/ CP span 1  
Distance: 14.00 (ft)  
Length: 12.00 (ft)  
Material: ASTM A373  
Shape: W24x110  
Distance: 26.00 (ft)

Length: 9.50 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 35.50 *(ft)*  
 Length: 2.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/ CP pier 1  
 Distance: 37.50 *(ft)*  
 Length: 5.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 42.50 *(ft)*  
 Length: 2.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 44.50 *(ft)*  
 Length: 14.50 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/CP span 2  
 Distance: 59.00 *(ft)*  
 Length: 12.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 71.00 *(ft)*  
 Length: 14.50 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 85.50 *(ft)*  
 Length: 2.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/ CP pier 1  
 Distance: 87.50 *(ft)*  
 Length: 5.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 92.50 *(ft)*  
 Length: 2.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 94.50 *(ft)*  
 Length: 9.50 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110 w/ CP span 1  
 Distance: 104.00 *(ft)*  
 Length: 12.00 *(ft)*  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 116.00 *(ft)*  
 Length: 14.00 *(ft)*  
 Material: ASTM A373

**Deck Profile****Deck Concrete**

| Material<br>(LRFD) | Distance<br>n   | Length | Total<br>Thickness<br>(in) | Structural<br>Thickness<br>(in) | Effective<br>Width (Std)<br>(in) | Effective<br>Width<br>(in) |
|--------------------|-----------------|--------|----------------------------|---------------------------------|----------------------------------|----------------------------|
| Class A (US)       | 0.00<br>9.20... | 130.00 |                            | 6.5000                          | 78.0000                          | 90.0000                    |

**Haunch Profile**

|                  |                |              |            |            |
|------------------|----------------|--------------|------------|------------|
| Haunch Type:     |                | Flange edges |            |            |
| Embedded flange: |                | TRUE         |            |            |
| Distance<br>(ft) | Length<br>(ft) | Z1<br>(in)   | Z2<br>(in) | Y1<br>(in) |
| 0.00             | 130.00         | 4.0000       | 4.0000     | 1.0000     |

**Bracing Ranges****Lateral Support**

|                  |                |
|------------------|----------------|
| Distance<br>(ft) | Length<br>(ft) |
| 0.00             | 130.00         |

**Stiffener Ranges****Transverse Stiffener Ranges (Location)**

| Name                  | Distance<br>(ft) | Number | Spacing<br>(in) |
|-----------------------|------------------|--------|-----------------|
| Double Connection ... | 22.00            | 1      | 0.0000          |
| Double Connection ... | 55.00            | 1      | 0.0000          |
| Double Connection ... | 75.00            | 1      | 0.0000          |
| Double Connection ... | 108.00           | 1      | 0.0000          |

**Bearing Stiffener Locations****Member G5**

Link with: None

Description:

Existing: G5 -

Current: G5 -

Number of Spans: 3

| Span<br>Number | Span Length<br>(ft) |
|----------------|---------------------|
| 1              | 40.000000           |
| 2              | 50.000000           |
| 3              | 40.000000           |

| Support | Frame Connection |
|---------|------------------|
| 1       |                  |



2  
3  
4

Pedestrian load: (lb/ft)

### **Member Loads**

#### Distributed Loads

| Distance<br>(ft) | Length<br>(ft) | Start<br>(kip/ft) | End<br>(kip/ft) | Load Case Name |
|------------------|----------------|-------------------|-----------------|----------------|
| 0.00             | 130.00         | 0.205             | 0.205           | DC2            |

#### Member Loads - Settlement

| Support<br>Number | Horizontal<br>(in) | Vertical<br>(in) | Rotational<br>(Radians) | Load Case Name |
|-------------------|--------------------|------------------|-------------------------|----------------|
|-------------------|--------------------|------------------|-------------------------|----------------|

1  
2  
3  
4

### **Support Constraints**

#### General

| Support<br>Number | Support<br>Type | X Translation | Y Translation | Z Rotation |
|-------------------|-----------------|---------------|---------------|------------|
| 1                 | Pinned          | Fixed         | Fixed         | Free       |
| 2                 | Roller          | Free          | Fixed         | Free       |
| 3                 | Roller          | Free          | Fixed         | Free       |
| 4                 | Roller          | Free          | Fixed         | Free       |

#### Elastic

| Support<br>Number | X Translation<br>(kip/ft) | Y Translation<br>(kip/ft) | Z Rotation<br>(kip-in/rad) | Override Computed<br>Z Rotation |
|-------------------|---------------------------|---------------------------|----------------------------|---------------------------------|
|-------------------|---------------------------|---------------------------|----------------------------|---------------------------------|

1  
2  
3  
4

### **Member Alternative G5**

Description:

#### Description

Material Type: Steel  
Girder Type: Rolled  
Member units: US Customary  
Girder property input method: Schedule based  
Left end X: (in)  
Right end X: (in)  
Additional Self Load: (kip/ft)  
Additional Self Load %: 2.0 (%)  
Analysis Module  
Analysis Method: ASD

Analysis Module: AASHTO ASD  
Analysis Module Component:  
Properties:

Analysis Method: LFD  
Analysis Module: AASHTO LFD  
Analysis Module Component:  
Properties:

Analysis Method: LRFD  
Analysis Module: AASHTO LRFD  
Analysis Module Component:  
Properties:

Analysis Method: LRFR  
Analysis Module: AASHTO LRFR  
Analysis Module Component:  
Properties:

Analysis Method: Distribution Factors  
Analysis Module: Virtis Dist Fact  
Analysis Module Component:  
Properties:

Default rating method: LRFR

#### Factors

*Factor Override*

LRFD:

LFD:

*ASD Factors*

|                   | Inventory | Operating |
|-------------------|-----------|-----------|
| Structural steel  |           |           |
| Concrete          |           |           |
| PS Concrete Comp. |           |           |
| PS Concrete Tens. |           |           |
| PS Moment Cap.    |           |           |
| Reinforcement     |           |           |
| Bearing Stiffener |           |           |
| Stirrup           |           |           |
| Timber            | NA        |           |

#### Default Materials

Structural steel: ASTM A373  
Deck concrete: Class A (US)  
Deck reinforcement: Grade 40  
Welds:  
Bolts:

## **Impact**

Standard Impact Factor

Type:

Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

## **Live Load Distribution**

Standard

D i s t r i b u t i o n   F a c t o r (Wheels)

| Lanes      | Shear | Shear at<br>Supports | Moment | Deflection |
|------------|-------|----------------------|--------|------------|
| Loaded     |       |                      |        |            |
| 1 Lane     |       |                      |        |            |
| Multi-Lane |       |                      |        |            |

LRFD

| Distance<br>(ft) | Length<br>(ft) | Type         | 1 Lane | Multi-Lane |
|------------------|----------------|--------------|--------|------------|
| 0.00             | 29.38          | Moment       | 0.472  | 0.617      |
| 29.38            | 21.50          | Moment       | 0.460  | 0.608      |
| 50.87            | 28.25          | Moment       | 0.436  | 0.582      |
| 79.13            | 21.50          | Moment       | 0.460  | 0.608      |
| 100.62           | 29.38          | Moment       | 0.472  | 0.617      |
| 0.00             | 40.00          | Shear        | 0.660  | 0.779      |
| 40.00            | 50.00          | Shear        | 0.660  | 0.779      |
| 90.00            | 40.00          | Shear        | 0.660  | 0.779      |
| 0.00             | 130.00         | Deflectio... | 0.200  | 0.425      |

## **Girder Profile**

Shape

Shape: W24x110

Distance: 0.00 (ft)

Length: 14.00 (ft)

Material: ASTM A373

Shape: W24x110 w/ CP span 1

Distance: 14.00 (ft)

Length: 12.00 (ft)

Material: ASTM A373

Shape: W24x110

Distance: 26.00 (ft)

Length: 9.50 (ft)

Material: ASTM A373

Shape: W24x110 w/CP pier 1 taper

Distance: 35.50 (ft)

Length: 2.00 (ft)

Material: ASTM A373

Shape: W24x110 w/ CP pier 1

Distance: 37.50 (ft)

Length: 5.00 (ft)

Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 42.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 44.50 (ft)  
 Length: 14.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP span 2  
 Distance: 59.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 71.00 (ft)  
 Length: 14.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 85.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP pier 1  
 Distance: 87.50 (ft)  
 Length: 5.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 92.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 94.50 (ft)  
 Length: 9.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP span 1  
 Distance: 104.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 116.00 (ft)  
 Length: 14.00 (ft)  
 Material: ASTM A373

### **Deck Profile**

#### **Deck Concrete**

| Material<br>(LRFD) | Distance<br>n | Length | Total<br>Thickness | Structural<br>Thickness | Effective<br>Width (Std) | Effective<br>Width |
|--------------------|---------------|--------|--------------------|-------------------------|--------------------------|--------------------|
|                    | (ft)          | (ft)   | (in)               | (in)                    | (in)                     | (in)               |
| Class A (US)       | 0.00          | 130.00 |                    | 6.5000                  | 78.0000                  | 90.0000            |
|                    | 9.20...       |        |                    |                         |                          |                    |

**Haunch Profile**

|                  |              |        |        |        |
|------------------|--------------|--------|--------|--------|
| Haunch Type:     | Flange edges |        |        |        |
| Embedded flange: | TRUE         |        |        |        |
| Distance         | Length       | Z1     | Z2     | Y1     |
| (ft)             | (ft)         | (in)   | (in)   | (in)   |
| 0.00             | 130.00       | 4.0000 | 4.0000 | 1.0000 |

**Bracing Ranges**

|                        |        |
|------------------------|--------|
| <u>Lateral Support</u> |        |
| Distance               | Length |
| (ft)                   | (ft)   |
| 0.00                   | 130.00 |

**Stiffener Ranges**Transverse Stiffener Ranges (Location)

| Name                  | Distance | Number | Spacing |
|-----------------------|----------|--------|---------|
|                       | (ft)     |        | (in)    |
| Double Connection ... | 22.00    | 1      | 0.0000  |
| Double Connection ... | 55.00    | 1      | 0.0000  |
| Double Connection ... | 75.00    | 1      | 0.0000  |
| Double Connection ... | 108.00   | 1      | 0.0000  |

**Bearing Stiffener Locations****Member G6**

Link with: None

Description:

Existing: G6 -

Current: G6 -

Number of Spans: 3

| Span   | Span Length |
|--------|-------------|
| Number | (ft)        |
| 1      | 40.000000   |
| 2      | 50.000000   |
| 3      | 40.000000   |

| Support | Frame Connection |
|---------|------------------|
| 1       |                  |
| 2       |                  |
| 3       |                  |
| 4       |                  |

Pedestrian load: (lb/ft)

**Member Loads**Distributed Loads

| Distance<br>(ft) | Length<br>(ft) | Start<br>(kip/ft) | End<br>(kip/ft) | Load Case Name |
|------------------|----------------|-------------------|-----------------|----------------|
| 0.00             | 130.00         | 0.205             | 0.205           | DC2            |

#### Member Loads - Settlement

| Support<br>Number | Horizontal<br>(in) | Vertical<br>(in) | Rotational<br>(Radians) | Load Case Name |
|-------------------|--------------------|------------------|-------------------------|----------------|
| 1                 |                    |                  |                         |                |
| 2                 |                    |                  |                         |                |
| 3                 |                    |                  |                         |                |
| 4                 |                    |                  |                         |                |

#### Support Constraints

##### General

| Support<br>Number | Support<br>Type | X Translation | Y Translation | Z Rotation |
|-------------------|-----------------|---------------|---------------|------------|
| 1                 | Pinned          | Fixed         | Fixed         | Free       |
| 2                 | Roller          | Free          | Fixed         | Free       |
| 3                 | Roller          | Free          | Fixed         | Free       |
| 4                 | Roller          | Free          | Fixed         | Free       |

##### Elastic

| Support<br>Number | X Translation<br>(kip/ft) | Y Translation<br>(kip/ft) | Z Rotation<br>(kip-in/rad) | Override Computed<br>Z Rotation |
|-------------------|---------------------------|---------------------------|----------------------------|---------------------------------|
| 1                 |                           |                           |                            |                                 |
| 2                 |                           |                           |                            |                                 |
| 3                 |                           |                           |                            |                                 |
| 4                 |                           |                           |                            |                                 |

#### Member Alternative G6

##### Description:

##### Description

Material Type: Steel  
 Girder Type: Rolled  
 Member units: US Customary  
 Girder property input method: Schedule based  
 Left end X: (in)  
 Right end X: (in)  
 Additional Self Load: (kip/ft)  
 Additional Self Load %: 2.0 (%)

##### Analysis Module

Analysis Method: ASD  
 Analysis Module: AASHTO ASD  
 Analysis Module Component:  
 Properties:

Analysis Method: LFD  
 Analysis Module: AASHTO LFD  
 Analysis Module Component:  
 Properties:

Analysis Method: LRFD  
Analysis Module: AASHTO LRFD  
Analysis Module Component:  
Properties:

Analysis Method: LRFR  
Analysis Module: AASHTO LRFR  
Analysis Module Component:  
Properties:

Analysis Method: Distribution Factors  
Analysis Module: Virtis Dist Fact  
Analysis Module Component:  
Properties:

Default rating method: LRFR

#### Factors

*Factor Override*

LRFD:

LFD:

*ASD Factors*

|                   | Inventory | Operating |
|-------------------|-----------|-----------|
| Structural steel  |           |           |
| Concrete          |           |           |
| PS Concrete Comp. |           |           |
| PS Concrete Tens. |           |           |
| PS Moment Cap.    |           |           |
| Reinforcement     |           |           |
| Bearing Stiffener |           |           |
| Stirrup           |           |           |
| Timber            | NA        |           |

#### **Default Materials**

Structural steel: ASTM A373  
Deck concrete: Class A (US)  
Deck reinforcement: Grade 40  
Welds:  
Bolts:

#### **Impact**

*Standard Impact Factor*

Type: Standard - AASHTO

*LRFD Dynamic Load Allowance*

Fatigue and fracture limit states: 15.0 (%)

All other limit states: 33.0 (%)

#### **Live Load Distribution**

Standard

## D i s t r i b u t i o n   F a c t o r (Wheels)

|            |       |          |        |            |
|------------|-------|----------|--------|------------|
| Lanes      |       | Shear at |        |            |
| Loaded     | Shear | Supports | Moment | Deflection |
| 1 Lane     |       |          |        |            |
| Multi-Lane |       |          |        |            |

### LRFD

| Distance<br>(ft) | Length<br>(ft) | Type         | 1 Lane | Multi-Lane |
|------------------|----------------|--------------|--------|------------|
| 0.00             | 29.38          | Moment       | 0.600  | 0.676      |
| 29.38            | 21.50          | Moment       | 0.600  | 0.676      |
| 50.87            | 28.25          | Moment       | 0.600  | 0.676      |
| 79.13            | 21.50          | Moment       | 0.600  | 0.676      |
| 100.62           | 29.38          | Moment       | 0.600  | 0.676      |
| 0.00             | 40.00          | Shear        | 0.600  | 0.676      |
| 40.00            | 50.00          | Shear        | 0.600  | 0.676      |
| 90.00            | 40.00          | Shear        | 0.600  | 0.676      |
| 0.00             | 130.00         | Deflectio... | 0.200  | 0.425      |

### Girder Profile

#### Shape

|           |                           |
|-----------|---------------------------|
| Shape:    | W24x110                   |
| Distance: | 0.00 (ft)                 |
| Length:   | 14.00 (ft)                |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/ CP span 1      |
| Distance: | 14.00 (ft)                |
| Length:   | 12.00 (ft)                |
| Material: | ASTM A373                 |
| Shape:    | W24x110                   |
| Distance: | 26.00 (ft)                |
| Length:   | 9.50 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/CP pier 1 taper |
| Distance: | 35.50 (ft)                |
| Length:   | 2.00 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/ CP pier 1      |
| Distance: | 37.50 (ft)                |
| Length:   | 5.00 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110 w/CP pier 1 taper |
| Distance: | 42.50 (ft)                |
| Length:   | 2.00 (ft)                 |
| Material: | ASTM A373                 |
| Shape:    | W24x110                   |
| Distance: | 44.50 (ft)                |
| Length:   | 14.50 (ft)                |
| Material: | ASTM A373                 |



Shape: W24x110 w/CP span 2  
 Distance: 59.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 71.00 (ft)  
 Length: 14.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 85.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP pier 1  
 Distance: 87.50 (ft)  
 Length: 5.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/CP pier 1 taper  
 Distance: 92.50 (ft)  
 Length: 2.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 94.50 (ft)  
 Length: 9.50 (ft)  
 Material: ASTM A373  
 Shape: W24x110 w/ CP span 1  
 Distance: 104.00 (ft)  
 Length: 12.00 (ft)  
 Material: ASTM A373  
 Shape: W24x110  
 Distance: 116.00 (ft)  
 Length: 14.00 (ft)  
 Material: ASTM A373

### **Deck Profile**

#### **Deck Concrete**

| Material<br>(LRFD) | Distance<br>n<br>(ft) | Length<br>(ft) | Total<br>Thickness<br>(in) | Structural<br>Thickness<br>(in) | Effective<br>Width (Std)<br>(in) | Effective<br>Width<br>(in) |
|--------------------|-----------------------|----------------|----------------------------|---------------------------------|----------------------------------|----------------------------|
| Class A (US)       | 0.00<br>9.20...       | 130.00         |                            | 6.5000                          | 68.0028                          | 74.0028                    |

### **Haunch Profile**

| Haunch Type:     |                | Flange edges |            |            |            |            |            |
|------------------|----------------|--------------|------------|------------|------------|------------|------------|
| Embedded flange: |                | TRUE         |            |            |            |            |            |
| Distance<br>(ft) | Length<br>(ft) | Z1<br>(in)   | Z2<br>(in) | Z3<br>(in) | Z4<br>(in) | Y1<br>(in) | Y2<br>(in) |
| 0.00             | 130.00         | 4.0000       | 4.0000     | 4.0000     | 4.0000     | 1.0000     | 1.0000     |

### **Bracing Ranges**

Lateral Support

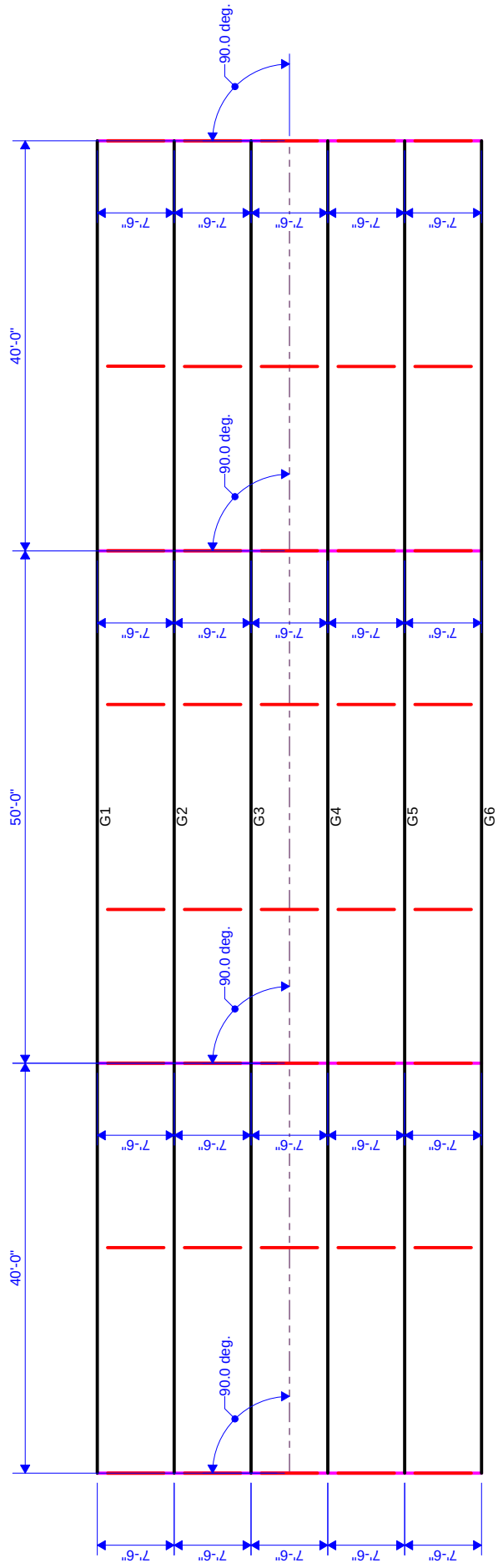
| Distance | Length |
|----------|--------|
| (ft)     | (ft)   |
| 0.00     | 130.00 |

**Stiffener Ranges**

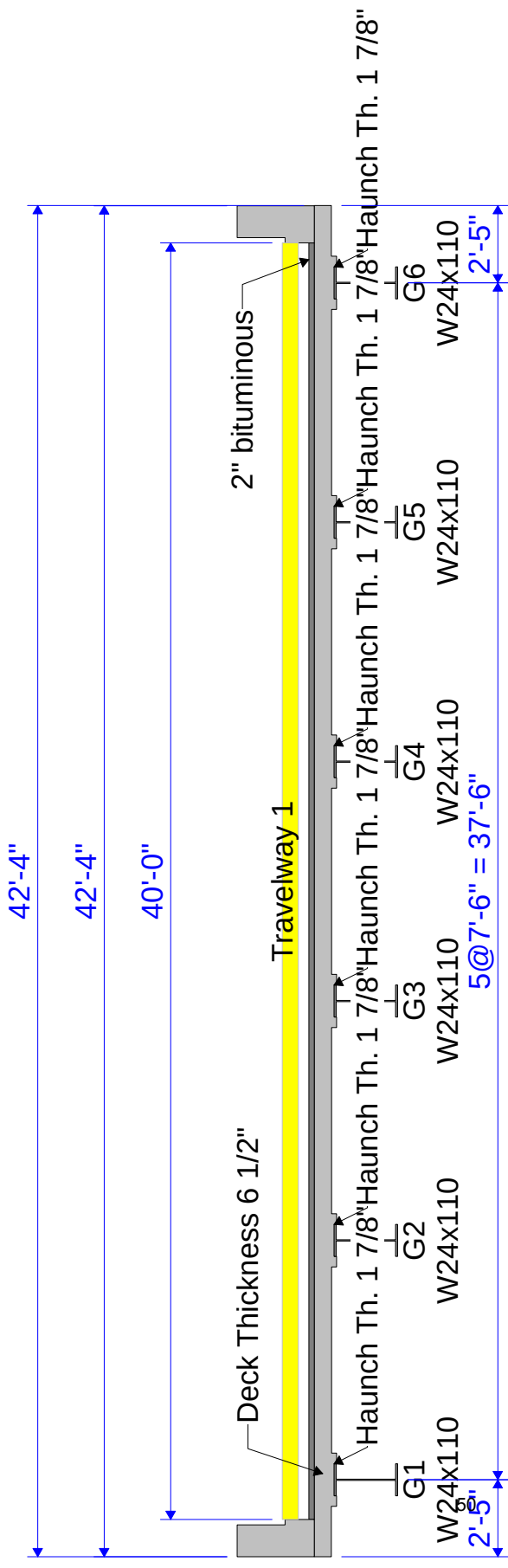
Transverse Stiffener Ranges (Location)

| Name                  | Distance | Number | Spacing |
|-----------------------|----------|--------|---------|
|                       | (ft)     |        | (in)    |
| Single Connection ... | 22.00    | 1      | 0.0000  |
| Single Connection ... | 55.00    | 1      | 0.0000  |
| Single Connection ... | 75.00    | 1      | 0.0000  |
| Single Connection ... | 108.00   | 1      | 0.0000  |

**Bearing Stiffener Locations**

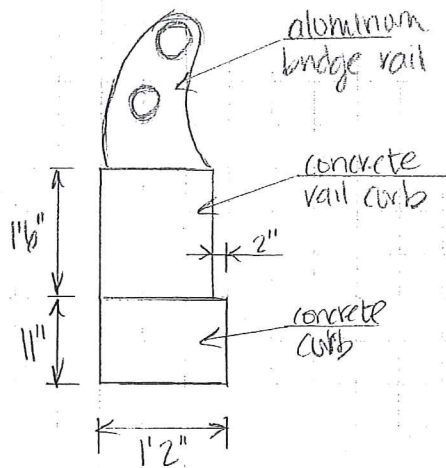


Br. No. 1432+5950  
I95 over Souadabscook Stream Center - 1431+5949  
I95 / Souadabscook  
04/19/13



Project: ManeDOT Load Rating Project # 55005  
 Location: 1421/S949, 1432/S950 Sheet 1 of 1  
 Calculated by: AMS 1433/S951 Date: 4/18/2013  
 Checked by: AMS Date: 4/23/2013  
 Title: Rail Weight

### Rail Weight



$$\text{rail} = 0.025 \text{ k/ft} \quad (\text{NHDOT Design Guide})$$

$$\text{concrete} = 1.5'(1') / (0.150 \text{ kcf}) + 11/12 (12"/12) (0.150) = 0.385 \text{ k/ft}$$

$$\text{Total} = 0.025 + 0.385 = 0.410 \text{ k/ft}$$



## Computations

Project: MaineDOT Local Roads Project # 58005  
Location: Br. No. 1482/5358 Sheet of  
Calculated by: K2S Date: 4/19/2013  
Checked by: AMB Date: 4/23/2013  
Title: Diaphragm Weights

### Diaphragm Weight

$$\text{length} = 7'6" \Rightarrow 7.5'$$

$$\text{Type D1} = W16 \times 36 \Rightarrow 36 \text{ lb/ft}$$

$$\text{Type D2} = C15 \times 33.9 \Rightarrow 33.9 \text{ lb/ft}$$

$$\text{connection plate} = 1'8" \times 6" \times 9'8"$$

$$\text{volume} = 1.667 \times 0.5 \times 0.375 / 12 = 0.026 \text{ ft}^3$$

### Weight type D1

$$\text{diaphragm} = 7.5' (36 \text{ lb/ft}) = 270 \text{ lb}$$

$$\text{connection} = 0.026 \times 2 \times 490 = 25.5 \text{ lb}$$

$$\text{Total} = 270 \text{ lb} + 25.5 \text{ lb} = 295.5 \text{ lb} \Rightarrow 0.2955 \text{ K}$$

### Weight type D2

$$\text{diaphragm} = 7.5' (33.9 \text{ lb/ft}) = 254.3 \text{ lb}$$

$$\text{connection} = 25.5 \text{ lb}$$

$$\text{Total} = 254.3 \text{ lb} + 25.5 \text{ lb} = 279.8 \text{ lb} \Rightarrow 0.2798 \text{ K}$$



# Computations

|               |                                              |           |           |
|---------------|----------------------------------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings                        | Project # | 55005.00  |
| Location      | Br. No. 1432/5950 Hampden, ME                | Sheet     | 1 of 1    |
| Calculated by | DZ                                           | Date      | 4/10/2013 |
| Checked by    | AMG                                          | Date      | 4/23/2013 |
| Title         | Girder Properties with Cover Plates (span 1) |           |           |

## Girder Properties with Cover Plates

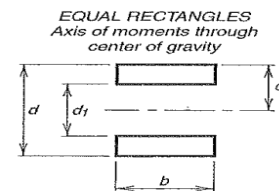
### Girder Without Cover Plates:(taken from Virtis)

= input

Load = 110 lb/ft  
Area = 32.36 in<sup>2</sup>  
I<sub>xo</sub> = 3315 in<sup>4</sup>  
I<sub>yo</sub> = 229.1 in<sup>4</sup>  
Z<sub>xo</sub> = 308 in<sup>3</sup>  
Z<sub>yo</sub> = 64.4 in<sup>3</sup>  
Depth = d<sub>1</sub> = 24.125 in

### Cover Plates: (span 1 near Pier 1)

h = 0.3125 in (thickness)      h  b  
b = 4 in (width)  
d = 24.75 in (distance between top of top cover plate and bottom of bottom cover plate, see fig. below.)  
Load = 8.507 lb/ft      Load = Area \* 490 pcf  
Area = 2.5 in<sup>2</sup>      Area = 2 \* h \* b  
I<sub>x1</sub> = 373.265 in<sup>4</sup>      I<sub>x</sub> =  $\frac{b(d^3 - d_1^3)}{12}$   
I<sub>y1</sub> = 3.333333 in<sup>4</sup>      I<sub>y</sub> =  $\frac{h*b^3}{12} \times 2 \text{ plates}$   
Z<sub>x1</sub> = 30.54688 in<sup>3</sup>      Z<sub>x</sub> =  $\frac{b}{4}(d^2 - d_1^2)$   
Z<sub>y1</sub> = 2.5 in<sup>3</sup>      Z<sub>y</sub> =  $\frac{h*b^2}{4} \times 2 \text{ plates}$



### Girder With Cover Plates:

Load = 118.507 lb/ft      Σ Loads  
Area = 34.86 in<sup>2</sup>      Σ Areas  
I<sub>x</sub> = 3688.265 in<sup>4</sup>      I<sub>x</sub> = I<sub>xo</sub> + I<sub>x1</sub>  
I<sub>y</sub> = 232.433 in<sup>4</sup>      I<sub>y</sub> = I<sub>yo</sub> + I<sub>y1</sub>  
Z<sub>x</sub> = 338.547 in<sup>3</sup>      Z<sub>x</sub> = Z<sub>xo</sub> + Z<sub>x1</sub>  
Z<sub>y</sub> = 66.9 in<sup>3</sup>      Z<sub>y</sub> = Z<sub>yo</sub> + Z<sub>y1</sub>  
Depth = 24.75 in      Depth = d<sub>1</sub> + 2\*h



# Computations

|               |                                              |           |           |
|---------------|----------------------------------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings                        | Project # | 55005.00  |
| Location      | Br. No. 1432/5950 Hampden, ME                | Sheet     | 1 of 1    |
| Calculated by | DZ                                           | Date      | 4/10/2013 |
| Checked by    | AMG                                          | Date      | 4/23/2013 |
| Title         | Girder Properties with Cover Plates (Pier 1) |           |           |

## Girder Properties with Cover Plates

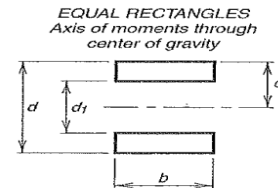
### Girder Without Cover Plates:(taken from Virtis)

= input

Load = 110 lb/ft  
Area = 32.36 in<sup>2</sup>  
I<sub>xo</sub> = 3315 in<sup>4</sup>  
I<sub>yo</sub> = 229.1 in<sup>4</sup>  
Z<sub>xo</sub> = 308 in<sup>3</sup>  
Z<sub>yo</sub> = 64.4 in<sup>3</sup>  
Depth = d<sub>1</sub> = 24.125 in

### Cover Plates: (Pier 1)

h = 0.375 in (thickness)      b   
b = 10 in (width)  
d = 24.875 in (distance between top of top cover plate and bottom of bottom cover plate, see fig. below.)  
Load = 25.521 lb/ft      Load = Area \* 490 pcf  
Area = 7.5 in<sup>2</sup>      Area = 2 \* h \* b  
I<sub>x1</sub> = 1125.557 in<sup>4</sup>      I<sub>x</sub> =  $\frac{b(d^3 - d_1^3)}{12}$   
I<sub>y1</sub> = 62.5 in<sup>4</sup>       $I_y = \frac{h*b^3}{12} \times 2 \text{ plates}$   
Z<sub>x1</sub> = 91.875 in<sup>3</sup>      Z<sub>x</sub> =  $\frac{b}{4}(d^2 - d_1^2)$   
Z<sub>y1</sub> = 18.75 in<sup>3</sup>       $Z_y = \frac{h*b^2}{4} \times 2 \text{ plates}$



### Girder With Cover Plates:

Load = 135.521 lb/ft      Σ Loads  
Area = 39.86 in<sup>2</sup>      Σ Areas  
I<sub>x</sub> = 4440.557 in<sup>4</sup>      I<sub>x</sub> = I<sub>xo</sub> + I<sub>x1</sub>  
I<sub>y</sub> = 291.600 in<sup>4</sup>      I<sub>y</sub> = I<sub>yo</sub> + I<sub>y1</sub>  
Z<sub>x</sub> = 399.875 in<sup>3</sup>      Z<sub>x</sub> = Z<sub>xo</sub> + Z<sub>x1</sub>  
Z<sub>y</sub> = 83.15 in<sup>3</sup>      Z<sub>y</sub> = Z<sub>yo</sub> + Z<sub>y1</sub>  
Depth = 24.875 in      Depth = d<sub>1</sub> + 2\*h





# Computations

|                                                          |                               |           |           |
|----------------------------------------------------------|-------------------------------|-----------|-----------|
| Project                                                  | MaineDOT Load Ratings         | Project # | 55005.00  |
| Location                                                 | Br. No. 1432/5950 Hampden, ME | Sheet     | 1 of 1    |
| Calculated by                                            | KZS                           | Date      | 4/22/2013 |
| Checked by                                               | AMG                           | Date      | 4/23/2013 |
| Title Girder Properties with Cover Plates (Pier 1 taper) |                               |           |           |

## Girder Properties with Cover Plates

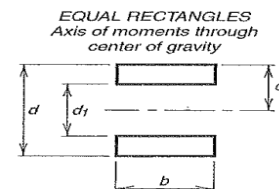
### Girder Without Cover Plates:(taken from Virtis)

= input

Load = 110 lb/ft  
Area = 32.36 in<sup>2</sup>  
I<sub>xo</sub> = 3315 in<sup>4</sup>  
I<sub>yo</sub> = 229.1 in<sup>4</sup>  
Z<sub>xo</sub> = 308 in<sup>3</sup>  
Z<sub>yo</sub> = 64.4 in<sup>3</sup>  
Depth = d<sub>1</sub> = 24.125 in

### Cover Plates: (Pier 1 taper)

h = 0.375 in (thickness)      b   
b = 7 in (width)  
d = 24.875 in (distance between top of top cover plate and bottom of bottom cover plate, see fig. below.)  
Load = 17.865 lb/ft      Load = Area \* 490 pcf  
Area = 5.25 in<sup>2</sup>      Area = 2 \* h \* b  
I<sub>x1</sub> = 787.8896 in<sup>4</sup>      I<sub>x</sub> =  $\frac{b(d^3 - d_1^3)}{12}$   
I<sub>y1</sub> = 21.4375 in<sup>4</sup>      I<sub>y</sub> =  $\frac{h*b^3}{12} \times 2 \text{ plates}$   
Z<sub>x1</sub> = 64.3125 in<sup>3</sup>      Z<sub>x</sub> =  $\frac{b}{4}(d^2 - d_1^2)$   
Z<sub>y1</sub> = 9.1875 in<sup>3</sup>      Z<sub>y</sub> =  $\frac{h*b^2}{4} \times 2 \text{ plates}$



### Girder With Cover Plates:

Load = 127.865 lb/ft      Σ Loads  
Area = 37.61 in<sup>2</sup>      Σ Areas  
I<sub>x</sub> = 4102.89 in<sup>4</sup>      I<sub>x</sub> = I<sub>xo</sub> + I<sub>x1</sub>  
I<sub>y</sub> = 250.538 in<sup>4</sup>      I<sub>y</sub> = I<sub>yo</sub> + I<sub>y1</sub>  
Z<sub>x</sub> = 372.313 in<sup>3</sup>      Z<sub>x</sub> = Z<sub>xo</sub> + Z<sub>x1</sub>  
Z<sub>y</sub> = 73.5875 in<sup>3</sup>      Z<sub>y</sub> = Z<sub>yo</sub> + Z<sub>y1</sub>  
Depth = 24.875 in      Depth = d<sub>1</sub> + 2\*h



# Computations

|               |                                              |           |           |
|---------------|----------------------------------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings                        | Project # | 55005.00  |
| Location      | Br. No. 1432/5950 Hampden, ME                | Sheet     | 1 of 1    |
| Calculated by | DZ                                           | Date      | 4/10/2013 |
| Checked by    | AMG                                          | Date      | 4/23/2013 |
| Title         | Girder Properties with Cover Plates (Span 2) |           |           |

## Girder Properties with Cover Plates

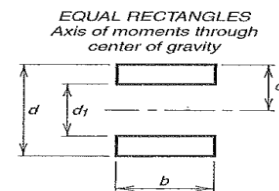
### Girder Without Cover Plates:(taken from Virtis)

= input

Load = 110 lb/ft  
Area = 32.36 in<sup>2</sup>  
I<sub>xo</sub> = 3315 in<sup>4</sup>  
I<sub>yo</sub> = 229.1 in<sup>4</sup>  
Z<sub>xo</sub> = 308 in<sup>3</sup>  
Z<sub>yo</sub> = 64.4 in<sup>3</sup>  
Depth = d<sub>1</sub> = 24.125 in

### Cover Plates: (Span 2)

h = 0.3125 in (thickness)      b   
b = 4 in (width)  
d = 24.75 in (distance between top of top cover plate and bottom of bottom cover plate, see fig. below.)  
Load = 8.507 lb/ft      Load = Area \* 490 pcf  
Area = 2.5 in<sup>2</sup>      Area = 2 \* h \* b  
I<sub>x1</sub> = 373.265 in<sup>4</sup>      I<sub>x</sub> =  $\frac{b(d^3 - d_1^3)}{12}$   
I<sub>y1</sub> = 3.333333 in<sup>4</sup>      I<sub>y</sub> =  $\frac{h*b^3}{12} \times 2 \text{ plates}$   
Z<sub>x1</sub> = 30.54688 in<sup>3</sup>      Z<sub>x</sub> =  $\frac{b}{4}(d^2 - d_1^2)$   
Z<sub>y1</sub> = 2.5 in<sup>3</sup>      Z<sub>y</sub> =  $\frac{h*b^2}{4} \times 2 \text{ plates}$



### Girder With Cover Plates:

Load = 118.507 lb/ft      Σ Loads  
Area = 34.86 in<sup>2</sup>      Σ Areas  
I<sub>x</sub> = 3688.265 in<sup>4</sup>      I<sub>x</sub> = I<sub>xo</sub> + I<sub>x1</sub>  
I<sub>y</sub> = 232.433 in<sup>4</sup>      I<sub>y</sub> = I<sub>yo</sub> + I<sub>y1</sub>  
Z<sub>x</sub> = 338.547 in<sup>3</sup>      Z<sub>x</sub> = Z<sub>xo</sub> + Z<sub>x1</sub>  
Z<sub>y</sub> = 66.9 in<sup>3</sup>      Z<sub>y</sub> = Z<sub>yo</sub> + Z<sub>y1</sub>  
Depth = 24.75 in      Depth = d<sub>1</sub> + 2\*h

## Rating Results Summary Report

Name: I95 over Souadabscook Stream ...  
Struct-Def: 1432+5950

Bridge ID: Br. No. 1432+5950  
Member: G1

NBl: 1432+5950  
Member Alt: G1

| Live Load  | Live Load Type         | Rating Method | Rating Level | Load Rating (Ton) | Rating Factor | Location (ft) | Location Span-(%) | Limit State                     | Impact       | Lane         |
|------------|------------------------|---------------|--------------|-------------------|---------------|---------------|-------------------|---------------------------------|--------------|--------------|
| HL-93 (US) | Truck + Lane           | LRFR          | Inventory    | 29.91             | 0.831         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |
| HL-93 (US) | Truck + Lane           | LRFR          | Operating    | 38.77             | 1.077         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |
| HL-93 (US) | Tandem + Lane          | LRFR          | Inventory    | 33.38             | 0.927         | 14.00         | 1 - (35.0)        | SERVICE-II Steel Flexure Stress | As Requested | As Requested |
| HL-93 (US) | Tandem + Lane          | LRFR          | Operating    | 43.39             | 1.205         | 14.00         | 1 - (35.0)        | SERVICE-II Steel Flexure Stress | As Requested | As Requested |
| HL-93 (US) | 90%(Truck Pair + Lane) | LRFR          | Inventory    | 35.12             | 0.976         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |
| HL-93 (US) | 90%(Truck Pair + Lane) | LRFR          | Operating    | 45.53             | 1.265         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |

Bridge Name: I95 over Souadabscook Stream  
NBI Structure ID: 1431+5949  
Bridge ID: Br. No. 1431+5949

Analyzed By: Virtis  
Analyze Date: Friday, May 10, 2013 08:01:17  
Analysis Engine: AASHTO LRFR Engine Version 6.4.0.3001  
Analysis Preference Setting: None

Report By: virtis  
Report Date: Friday, May 10, 2013 08:23:02

Structure Definition Name: 1431+5949  
Member Name: G1  
Pier Alternative Name: G1

6A.4.2.1 General Load Rating Equation - Steel Flexure Moment

Limit State: Stage: 3  
Vehicle: Flex Sense: N/A

6A Load and Resistance Factor Rating  
6A.4 Load Rating Procedures  
6A.4.2 General Load-Rating Equation  
6A.4.2.1 Steel Flexure Moment General  
(AASHTO Manual for Bridge Evaluation, Second Edition - 2011)

Steel Rolled Shape - At Location = 40.000 (ft) - Left Stage 3

Section at Brace Point

Input:

Section Type: Noncomposite  
Top Flange Laterally Supported: Yes  
Compact: No  
Allow Plastic Analysis Control Option: Yes  
Allow Moment Redistribution Control Option: No  
Moment Redistribution Qualified: No, redistribution did not occur.

For positive flexure, composite, noncompact sections:

Condition Factor = 1.0000  
System Factor = 1.0000  
DC Moment = -180.9288 (kip-ft)  
DW Moment = -36.9119 (kip-ft)  
DW-WS Moment = 0.0000 (kip-ft) (Moment due to wearing surface)

LL total = LL + (1/3)LL<sub>f1</sub>

Location: 40.00 ft  
Pass/Fail: Failed

| Load      | Vehicle                          | Limit State | LL (kip-ft) | LL fl (kip-ft) | DC   | DW   | DW-WS | LL   | Phi  | Mn (kip-ft) | RF    | Capacity (Ton) |
|-----------|----------------------------------|-------------|-------------|----------------|------|------|-------|------|------|-------------|-------|----------------|
| DesignInv | HL-93 (US) - Truck + Lane        | STR-I       | 67.48       | 0.00           | 1.25 | 1.50 | 1.50  | 1.75 | 1.00 | -812.52     | NA    | NA             |
| DesignInv | HL-93 (US) - Truck + Lane        | STR-I       | -365.28     | 0.00           | 1.25 | 1.50 | 1.50  | 1.75 | 1.00 | -812.52     | 0.83  | 29.90          |
| DesignOp  | HL-93 (US) - Truck + Lane        | STR-I       | 67.48       | 0.00           | 1.25 | 1.50 | 1.50  | 1.35 | 1.00 | -812.52     | NA    | NA             |
| DesignOp  | HL-93 (US) - Truck + Lane        | STR-I       | -365.28     | 0.00           | 1.25 | 1.50 | 1.50  | 1.35 | 1.00 | -812.52     | 1.08  | 38.76          |
| DesignInv | HL-93 (US) - Tandem + Lane       | STR-I       | 61.47       | 0.00           | 1.25 | 1.50 | 1.50  | 1.75 | 1.00 | -812.52     | NA    | NA             |
| DesignInv | HL-93 (US) - Tandem + Lane       | STR-I       | -304.77     | 0.00           | 1.25 | 1.50 | 1.50  | 1.75 | 1.00 | -812.52     | 1.00  | 35.84          |
| DesignOp  | HL-93 (US) - Tandem + Lane       | STR-I       | 61.47       | 0.00           | 1.25 | 1.50 | 1.50  | 1.35 | 1.00 | -812.52     | NA    | NA             |
| DesignOp  | HL-93 (US) - Tandem + Lane       | STR-I       | -304.77     | 0.00           | 1.25 | 1.50 | 1.50  | 1.35 | 1.00 | -812.52     | 1.29  | 46.46          |
| DesignInv | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | 0.00        | 0.00           | 1.25 | 1.50 | 1.50  | 1.75 | 1.00 | -812.52     | 99.00 | 3564.00        |
| DesignInv | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | -311.05     | 0.00           | 1.25 | 1.50 | 1.50  | 1.75 | 1.00 | -812.52     | 0.98  | 35.12          |
| DesignOp  | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | 0.00        | 0.00           | 1.25 | 1.50 | 1.50  | 1.35 | 1.00 | -812.52     | 99.00 | 3564.00        |
| DesignOp  | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | -311.05     | 0.00           | 1.25 | 1.50 | 1.50  | 1.35 | 1.00 | -812.52     | 1.26  | 45.52          |
| Legal     | Maine DOT Config. 1 - Legal T~   | STR-I       | 50.65       | 0.00           | 1.25 | 1.50 | 1.50  | 1.31 | 1.00 | -812.52     | NA    | NA             |
| Legal     | Maine DOT Config. 1 - Legal T~   | STR-I       | -344.05     | 0.00           | 1.25 | 1.50 | 1.50  | 1.31 | 1.00 | -812.52     | 1.18  | 58.91          |
| Legal     | Maine DOT Config. 1 x2 - Lega~   | STR-I       | 50.65       | 0.00           | 1.25 | 1.50 | 1.50  | 1.31 | 1.00 | -812.52     | NA    | NA             |
| Legal     | Maine DOT Config. 1 x2 - Lega~   | STR-I       | -358.13     | 0.00           | 1.25 | 1.50 | 1.50  | 1.31 | 1.00 | -812.52     | 1.13  | 113.18         |
| Legal     | Maine DOT Config. 2 - Legal T~   | STR-I       | 60.87       | 0.00           | 1.25 | 1.50 | 1.50  | 1.31 | 1.00 | -812.52     | NA    | NA             |

|       |                                |       |         |      |      |      |      |      |      |         |      |        |  |
|-------|--------------------------------|-------|---------|------|------|------|------|------|------|---------|------|--------|--|
| Legal | Maine DOT Config. 2 - Legal T~ | STR-I | -321.33 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.26 | 59.29  |  |
| Legal | Maine DOT Config. 2 x 2 - Leg~ | STR-I | 60.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 2 x 2 - Leg~ | STR-I | -321.33 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.26 | 118.58 |  |
| Legal | Maine DOT Config. 3 - Legal T~ | STR-I | 61.03   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 3 - Legal T~ | STR-I | -276.68 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.46 | 64.46  |  |
| Legal | Maine DOT Config. 3 x2 - Lega~ | STR-I | 61.03   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 3 x2 - Lega~ | STR-I | -378.42 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.07 | 94.26  |  |
| Legal | Maine DOT Config. 4 - Legal T~ | STR-I | 61.85   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 4 - Legal T~ | STR-I | -277.39 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.46 | 64.29  |  |
| Legal | Maine DOT Config. 4 x 2 - Leg~ | STR-I | 61.85   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 4 x 2 - Leg~ | STR-I | -372.30 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.09 | 95.81  |  |
| Legal | Maine DOT Config. 5 - Legal T~ | STR-I | 57.42   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 5 - Legal T~ | STR-I | -267.21 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.52 | 66.75  |  |
| Legal | Maine DOT Config. 5 x2 - Lega~ | STR-I | 57.42   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 5 x2 - Lega~ | STR-I | -376.15 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.08 | 94.83  |  |
| Legal | Maine DOT Config. 6 - Legal T~ | STR-I | 69.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 6 - Legal T~ | STR-I | -288.88 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.40 | 53.25  |  |
| Legal | Maine DOT Config. 6 x2 - Lega~ | STR-I | 69.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 6 x2 - Lega~ | STR-I | -495.98 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 0.82 | 62.03  |  |
| Legal | Maine DOT Config. 7 - Legal T~ | STR-I | 54.81   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 7 - Legal T~ | STR-I | -229.32 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.77 | 52.50  |  |
| Legal | Maine DOT Config. 7 x 2 - Leg~ | STR-I | 54.81   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 7 x 2 - Leg~ | STR-I | -401.93 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.01 | 59.90  |  |
| Legal | Maine DOT Config. 8 - Legal T~ | STR-I | 34.98   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 8 - Legal T~ | STR-I | -145.62 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 2.78 | 52.05  |  |
| Legal | Maine DOT Config. 8 x2 - Lega~ | STR-I | 34.99   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |  |
| Legal | Maine DOT Config. 8 x2 - Lega~ | STR-I | -263.68 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.54 | 57.49  |  |

Legend:  
NA - Resistance and live load are of opposite sign so rating factor is not applicable.

Controlling Rating Factors

| Limit State | Vehicle                   | Design Inv~ | Capacity (Ton) | Vehicle                   | Design Op~ | Capacity (Ton) | Vehicle                     | Legal Load~ | Capacity (Ton) | Vehicle | Permit Load~ | Capacity (Ton) |
|-------------|---------------------------|-------------|----------------|---------------------------|------------|----------------|-----------------------------|-------------|----------------|---------|--------------|----------------|
| STR-I       | HL-93 (US) - Truck + Lane | 0.83        | 29.90          | HL-93 (US) - Truck + Lane | 1.08       | 38.76          | Maine DOT Config. 6 x2 - L~ | 0.82        | 62.03          |         |              |                |

Steel Rolled Shape - At Location = 40.0000 (ft) - Right Stage 3

Section at Brace Point

Input:

Section Type: Noncomposite

Top Flange Laterally Supported: Yes

Compact: No

Allow Plastic Analysis Control Option: Yes

Allow Moment Redistribution Control Option: No

Moment Redistribution Qualified: No, redistribution did not occur.

For positive flexure, composite, noncompact sections:

Condition Factor = 1.0000  
System Factor = 1.0000  
DC Moment = -180.9288 (kip-ft)  
DW Moment = -36.9119 (kip-ft)  
DW-WS Moment = 0.0000 (kip-ft) (Moment due to wearing surface)

LL total = LL + (1/3)LL<sub>f1</sub>

| Load      | Vehicle                    | Limit State | LL (kip-ft) | LL <sub>f1</sub> (kip-ft) | DC   | DW   | Load Factors | Phi  | Mn (kip-ft) | RF      | Capacity (Ton) |
|-----------|----------------------------|-------------|-------------|---------------------------|------|------|--------------|------|-------------|---------|----------------|
| DesignInv | HL-93 (US) - Truck + Lane  | STR-I       | 67.48       | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | NA             |
| DesignInv | HL-93 (US) - Truck + Lane  | STR-I       | -365.28     | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | 29.90          |
| DesignOp  | HL-93 (US) - Truck + Lane  | STR-I       | 67.48       | 0.00                      | 1.25 | 1.50 | 1.50         | 1.35 | 1.00        | -812.52 | NA             |
| DesignOp  | HL-93 (US) - Truck + Lane  | STR-I       | -365.28     | 0.00                      | 1.25 | 1.50 | 1.50         | 1.35 | 1.00        | -812.52 | 38.76          |
| DesignInv | HL-93 (US) - Tandem + Lane | STR-I       | 61.47       | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | NA             |
| DesignInv | HL-93 (US) - Tandem + Lane | STR-I       | -304.77     | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | 35.84          |

|           |                                      |       |         |      |      |      |      |      |      |         |       |         |    |
|-----------|--------------------------------------|-------|---------|------|------|------|------|------|------|---------|-------|---------|----|
| DesignOp  | HL-93 (US) - Tandem + Lane           | STR-I | 61.47   | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | NA    | NA      | NA |
| DesignOp  | HL-93 (US) - Tandem + Lane           | STR-I | -304.77 | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | 1.29  | 46.46   | NA |
| DesignInv | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | 0.00    | 0.00 | 1.25 | 1.50 | 1.50 | 1.75 | 1.00 | -812.52 | 99.00 | 3564.00 | NA |
| DesignInv | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | -311.05 | 0.00 | 1.25 | 1.50 | 1.50 | 1.75 | 1.00 | -812.52 | 0.98  | 35.12   | NA |
| DesignOp  | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | 0.00    | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | 99.00 | 3564.00 | NA |
| DesignOp  | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | -311.05 | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | 1.26  | 45.52   | NA |
| Legal     | Maine DOT Config. 1 - Legal ~- STR-I | STR-I | 50.65   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 58.91   | NA |
| Legal     | Maine DOT Config. 1 - Legal ~- STR-I | STR-I | -344.05 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.18  | 58.91   | NA |
| Legal     | Maine DOT Config. 1 x2 - Lega~ STR-I | STR-I | 50.65   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 113.18  | NA |
| Legal     | Maine DOT Config. 1 x2 - Lega~ STR-I | STR-I | -358.13 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.13  | 113.18  | NA |
| Legal     | Maine DOT Config. 2 - Legal ~- STR-I | STR-I | 60.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 59.29   | NA |
| Legal     | Maine DOT Config. 2 - Legal ~- STR-I | STR-I | -321.33 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.26  | 59.29   | NA |
| Legal     | Maine DOT Config. 2 x 2 - Leg~ STR-I | STR-I | 60.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 118.58  | NA |
| Legal     | Maine DOT Config. 2 x 2 - Leg~ STR-I | STR-I | -321.33 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.26  | 118.58  | NA |
| Legal     | Maine DOT Config. 3 - Legal ~- STR-I | STR-I | 61.03   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 64.46   | NA |
| Legal     | Maine DOT Config. 3 - Legal ~- STR-I | STR-I | -276.68 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.46  | 64.46   | NA |
| Legal     | Maine DOT Config. 3 x2 - Lega~ STR-I | STR-I | 61.03   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 94.26   | NA |
| Legal     | Maine DOT Config. 3 x2 - Lega~ STR-I | STR-I | -378.42 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.07  | 94.26   | NA |
| Legal     | Maine DOT Config. 4 - Legal ~- STR-I | STR-I | 61.85   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 64.29   | NA |
| Legal     | Maine DOT Config. 4 - Legal ~- STR-I | STR-I | -277.39 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.46  | 64.29   | NA |
| Legal     | Maine DOT Config. 4 x 2 - Leg~ STR-I | STR-I | 61.85   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 95.81   | NA |
| Legal     | Maine DOT Config. 4 x 2 - Leg~ STR-I | STR-I | -372.30 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.09  | 95.81   | NA |
| Legal     | Maine DOT Config. 5 - Legal ~- STR-I | STR-I | 57.42   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 66.75   | NA |
| Legal     | Maine DOT Config. 5 - Legal ~- STR-I | STR-I | -267.21 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.52  | 66.75   | NA |
| Legal     | Maine DOT Config. 5 x2 - Lega~ STR-I | STR-I | 57.42   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 94.83   | NA |
| Legal     | Maine DOT Config. 5 x2 - Lega~ STR-I | STR-I | -376.15 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.08  | 94.83   | NA |
| Legal     | Maine DOT Config. 6 - Legal ~- STR-I | STR-I | 69.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 53.25   | NA |
| Legal     | Maine DOT Config. 6 - Legal ~- STR-I | STR-I | -288.88 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.40  | 53.25   | NA |
| Legal     | Maine DOT Config. 6 x2 - Lega~ STR-I | STR-I | 69.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 62.03   | NA |
| Legal     | Maine DOT Config. 6 x2 - Lega~ STR-I | STR-I | -495.98 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 0.82  | 62.03   | NA |
| Legal     | Maine DOT Config. 7 - Legal ~- STR-I | STR-I | 54.81   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 52.50   | NA |
| Legal     | Maine DOT Config. 7 - Legal ~- STR-I | STR-I | -229.32 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.77  | 52.50   | NA |
| Legal     | Maine DOT Config. 7 x 2 - Leg~ STR-I | STR-I | 54.81   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 59.90   | NA |
| Legal     | Maine DOT Config. 7 x 2 - Leg~ STR-I | STR-I | -401.93 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.01  | 59.90   | NA |
| Legal     | Maine DOT Config. 8 - Legal ~- STR-I | STR-I | 34.98   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 52.05   | NA |
| Legal     | Maine DOT Config. 8 - Legal ~- STR-I | STR-I | -145.62 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 2.78  | 52.05   | NA |
| Legal     | Maine DOT Config. 8 x2 - Lega~ STR-I | STR-I | 34.99   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA    | 57.49   | NA |
| Legal     | Maine DOT Config. 8 x2 - Lega~ STR-I | STR-I | -263.68 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.54  | 57.49   | NA |

Legend:

NA - Resistance and live load are of opposite sign so rating factor is not applicable.

Controlling Rating Factors

| Limit State | Vehicle                   | Design Inv~ RF | Capacity (ton) | Vehicle                   | Design Op~ RF | Capacity (ton) | Vehicle                     | Legal Load~ RF | Capacity (ton) | Vehicle | Permit Load~ RF | Capacity (ton) |
|-------------|---------------------------|----------------|----------------|---------------------------|---------------|----------------|-----------------------------|----------------|----------------|---------|-----------------|----------------|
| STR-I       | HL-93 (US) - Truck + Lane | 0.83           | 29.90          | HL-93 (US) - Truck + Lane | 1.08          | 38.76          | Maine DOT Config. 6 x2 - L~ | 0.82           | 62.03          |         |                 |                |

**Bridge Name:** I95 over Souadabscook Stream Center  
**NBI Structure ID:** 1432+5950  
**Bridge ID:** Br. No. 1432+5950

**Analyzed By:** Virtis  
**Analyze Date:** Wednesday, April 24, 2013 08:07:34  
**Analysis Engine:** AASHTO LRFR Engine Version 6.4.0.3001  
**Analysis Preference Setting:** None

**Report By:** virtis  
**Report Date:** Wednesday, April 24, 2013 08:27:57

**Structure Definition Name:** 1432+5950  
**Member Name:** G1  
**Member Alternative Name:** G1

**Report by Action:** ☒ **Flexure** ☒ **Shear** ☐ **Overload** ☐ **Critical**

**Detailed Rating Results**  
**HL-93 (US)**  
**Truck + Lane**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|          |         |             |        |          |        |        | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|--------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |        | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor    | (Ton)       | Factor    | (Ton)       |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 15.11  | 54.69  | 1.965     | 70.75       | 2.548     | 91.72       |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 52.26  | 185.69 | 2.309     | 83.12       | 2.993     | 107.75      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 11.02  | 45.67  | 2.420     | 87.12       | 3.137     | 112.93      |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 88.18  | 307.42 | 1.308     | 47.10       | 1.696     | 61.06       |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 6.94   | 37.13  | 3.058     | 110.08      | 3.964     | 142.70      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 107.75 | 370.33 | 1.047     | 37.70       | 1.357     | 48.86       |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 2.85   | 29.23  | 3.987     | 143.55      | 5.169     | 186.08      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 111.41 | 384.10 | 0.995     | 35.80       | 1.289     | 46.41       |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 0.81   | 25.71  | 4.565     | 164.35      | 5.918     | 213.05      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 110.97 | 393.58 | 0.971     | 34.97       | 1.259     | 45.33       |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 1.31   | 22.39  | 5.227     | 188.16      | 6.775     | 243.92      |

|       |       |         |        |         |        |         |       |        |       |        |
|-------|-------|---------|--------|---------|--------|---------|-------|--------|-------|--------|
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72  | 384.23  | 1.021 | 36.74  | 1.323 | 47.63  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43   | 26.57   | 4.290 | 154.43 | 5.561 | 200.18 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69  | 354.78  | 1.168 | 42.04  | 1.514 | 54.50  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64   | 34.14   | 3.247 | 116.90 | 4.209 | 151.54 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34  | 320.74  | 1.341 | 48.27  | 1.738 | 62.57  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70  | 37.87   | 2.887 | 103.95 | 3.743 | 134.75 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90  | 280.49  | 1.611 | 58.00  | 2.089 | 75.19  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74  | 41.70   | 2.602 | 93.67  | 3.373 | 121.42 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25 | -243.73 | 1.550 | 55.79  | 2.009 | 72.32  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83  | 49.46   | 2.133 | 76.77  | 2.764 | 99.52  |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -      | -110.92 | 1.170 | 42.12  | 1.517 | 54.59  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41  | 56.10   | 1.833 | 66.00  | 2.376 | 85.55  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -121.75 | 1.320 | 47.51  | 1.711 | 61.59  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93  | 57.02   | 1.797 | 64.69  | 2.329 | 83.86  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -      | -155.81 | 1.137 | 40.93  | 1.474 | 53.06  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49  | 59.71   | 1.686 | 60.68  | 2.185 | 78.66  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -217.79 | 0.831 | 29.91  | 1.077 | 38.77  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84  | 65.53   | 1.509 | 54.34  | 1.957 | 70.43  |

### Span 2

|          |         |             |        |          |             |             | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|-------------|-------------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |             |             | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL          | LL          | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -<br>156.47 | -<br>274.58 | 1.270     | 45.72       | 1.646     | 59.27       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22       | 61.49       | 1.640     | 59.04       | 2.126     | 76.53       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -<br>112.11 | -<br>226.98 | 1.694     | 60.99       | 2.196     | 79.07       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14       | 58.16       | 1.772     | 63.78       | 2.296     | 82.67       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -<br>101.67 | -<br>220.77 | 1.777     | 63.97       | 2.303     | 82.92       |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63       | 57.32       | 1.804     | 64.95       | 2.339     | 84.19       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29      | 191.79      | 2.480     | 89.29       | 3.215     | 115.75      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52       | 48.62       | 2.205     | 79.38       | 2.858     | 102.89      |
| 15.00    | 30.0    | Flexure     | KIP-   | 817.88   | 53.55       | 315.70      | 1.355     | 48.79       | 1.757     | 63.24       |



|       |       |         | FT     |         |        |        |       |        |       |        |
|-------|-------|---------|--------|---------|--------|--------|-------|--------|-------|--------|
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 10.41  | 39.75  | 2.792 | 100.50 | 3.619 | 130.28 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 86.44  | 381.45 | 1.050 | 37.79  | 1.361 | 48.99  |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.18   | 32.78  | 3.460 | 124.57 | 4.486 | 161.48 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 92.11  | 392.04 | 1.011 | 36.39  | 1.310 | 47.17  |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15   | 31.07  | 3.675 | 132.31 | 4.764 | 171.52 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98 | 408.82 | 0.946 | 34.06  | 1.226 | 44.15  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00   | 23.15  | 5.098 | 183.51 | 6.608 | 237.89 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11  | 392.04 | 1.011 | 36.39  | 1.310 | 47.17  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15   | 31.07  | 3.675 | 132.31 | 4.764 | 171.52 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44  | 381.45 | 1.050 | 37.79  | 1.361 | 48.99  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18   | 32.78  | 3.460 | 124.57 | 4.486 | 161.48 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55  | 315.70 | 1.355 | 48.79  | 1.757 | 63.24  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41  | 39.75  | 2.792 | 100.50 | 3.619 | 130.28 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29 | 191.79 | 2.480 | 89.29  | 3.215 | 115.75 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52  | 48.62  | 2.205 | 79.38  | 2.858 | 102.89 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -      | 1.777 | 63.97  | 2.303 | 82.92  |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63  | 57.32  | 1.804 | 64.95  | 2.339 | 84.19  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -      | -      | 1.694 | 60.99  | 2.196 | 79.07  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14  | 58.16  | 1.772 | 63.78  | 2.296 | 82.67  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -      | -      | 1.270 | 45.72  | 1.646 | 59.27  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22  | 61.49  | 1.640 | 59.04  | 2.126 | 76.53  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -      | 0.831 | 29.91  | 1.077 | 38.77  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84  | 65.53  | 1.509 | 54.34  | 1.957 | 70.43  |

### Span 3

|          |         |             |        | Inventory |       | Inventory   |        | Operating |        | Operating   |  |
|----------|---------|-------------|--------|-----------|-------|-------------|--------|-----------|--------|-------------|--|
| Location |         |             |        | Rating    |       | Load Rating |        | Rating    |        | Load Rating |  |
| (ft)     | Percent | Limit State | Units  | Capacity  | DL    | LL          | Factor | (Ton)     | Factor | (Ton)       |  |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52   | -     | -           | 1.137  | 40.93     | 1.474  | 53.06       |  |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48    | 23.49 | 59.71       | 1.686  | 60.68     | 2.185  | 78.66       |  |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88   | -     | -           | 1.320  | 47.51     | 1.711  | 61.59       |  |

|       |       |         |        |         |        |        |        |         |        |         |
|-------|-------|---------|--------|---------|--------|--------|--------|---------|--------|---------|
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 21.93  | 57.02  | 1.797  | 64.69   | 2.329  | 83.86   |
| 4.50  | 11.3  | Flexure | KIP-FT | -715.59 | -      | -      | 1.170  | 42.12   | 1.517  | 54.59   |
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 21.41  | 56.10  | 1.833  | 66.00   | 2.376  | 85.55   |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -42.25 | -      | 1.550  | 55.79   | 2.009  | 72.32   |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 17.83  | 49.46  | 2.133  | 76.77   | 2.764  | 99.52   |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 20.90  | 280.49 | 1.611  | 58.00   | 2.089  | 75.19   |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 13.74  | 41.70  | 2.602  | 93.67   | 3.373  | 121.42  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 46.34  | 320.74 | 1.341  | 48.27   | 1.738  | 62.57   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 11.70  | 37.87  | 2.887  | 103.95  | 3.743  | 134.75  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 67.69  | 354.78 | 1.168  | 42.04   | 1.514  | 54.50   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 9.64   | 34.14  | 3.247  | 116.90  | 4.209  | 151.54  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72  | 384.23 | 1.021  | 36.74   | 1.323  | 47.63   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43   | 26.57  | 4.290  | 154.43  | 5.561  | 200.18  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 110.97 | 393.58 | 0.971  | 34.97   | 1.259  | 45.33   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.31   | 22.39  | 5.227  | 188.16  | 6.775  | 243.92  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 111.41 | 384.10 | 0.995  | 35.80   | 1.289  | 46.41   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.81   | 25.71  | 4.565  | 164.35  | 5.918  | 213.05  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 107.75 | 370.33 | 1.047  | 37.70   | 1.357  | 48.86   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 2.85   | 29.23  | 3.987  | 143.55  | 5.169  | 186.08  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 88.18  | 307.42 | 1.308  | 47.10   | 1.696  | 61.06   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 6.94   | 37.13  | 3.058  | 110.08  | 3.964  | 142.70  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 52.26  | 185.69 | 2.309  | 83.12   | 2.993  | 107.75  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 11.02  | 45.67  | 2.420  | 87.12   | 3.137  | 112.93  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00   | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 15.11  | 54.69  | 1.965  | 70.75   | 2.548  | 91.72   |

**Detailed Rating Results**  
**HL-93 (US)**  
**90%(Truck Pair + Lane)**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

| <b>Location</b> | <b>Inventory Rating</b> | <b>Inventory Load</b> | <b>Operating Rating</b> | <b>Operating Load</b> |
|-----------------|-------------------------|-----------------------|-------------------------|-----------------------|
|-----------------|-------------------------|-----------------------|-------------------------|-----------------------|

|       |         |             |        |          |         |         |        | Rating  |        | Rating  |
|-------|---------|-------------|--------|----------|---------|---------|--------|---------|--------|---------|
| (ft)  | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)   | Factor | (Ton)   |
| 0.00  | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 0.00  | 0.0     | Shear       | KIPS   | 207.64   | 15.11   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 4.00  | 10.0    | Flexure     | KIP-FT | 817.88   | 52.26   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 4.00  | 10.0    | Shear       | KIPS   | 207.64   | 11.02   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 8.00  | 20.0    | Flexure     | KIP-FT | 817.88   | 88.18   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 8.00  | 20.0    | Shear       | KIPS   | 207.64   | 6.94    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 12.00 | 30.0    | Flexure     | KIP-FT | 817.88   | 107.75  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 12.00 | 30.0    | Shear       | KIPS   | 207.64   | 2.85    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 14.00 | 35.0    | Flexure     | KIP-FT | 817.88   | 111.41  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 14.00 | 35.0    | Shear       | KIPS   | 207.64   | 0.81    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 16.00 | 40.0    | Flexure     | KIP-FT | 812.52   | 110.97  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 16.00 | 40.0    | Shear       | KIPS   | 206.48   | 1.31    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 20.00 | 50.0    | Flexure     | KIP-FT | 812.52   | 97.72   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 20.00 | 50.0    | Shear       | KIPS   | 206.48   | 5.43    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 24.00 | 60.0    | Flexure     | KIP-FT | 812.52   | 67.69   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 24.00 | 60.0    | Shear       | KIPS   | 206.48   | 9.64    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 26.00 | 65.0    | Flexure     | KIP-FT | 812.52   | 46.34   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 26.00 | 65.0    | Shear       | KIPS   | 206.48   | 11.70   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 28.00 | 70.0    | Flexure     | KIP-FT | 817.88   | 20.90   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 28.00 | 70.0    | Shear       | KIPS   | 207.64   | 13.74   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 32.00 | 80.0    | Flexure     | KIP-FT | -715.59  | -42.25  | -217.96 | 1.733  | 62.39   | 2.246  | 80.87   |
| 32.00 | 80.0    | Shear       | KIPS   | 207.64   | 17.83   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 35.50 | 88.8    | Flexure     | KIP-FT | -715.59  | -110.92 | -250.01 | 1.308  | 47.09   | 1.695  | 61.04   |
| 35.50 | 88.8    | Shear       | KIPS   | 207.64   | 21.41   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 36.00 | 90.0    | Flexure     | KIP-FT | -817.88  | -121.75 | -255.82 | 1.475  | 53.12   | 1.913  | 68.86   |
| 36.00 | 90.0    | Shear       | KIPS   | 207.64   | 21.93   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 37.50 | 93.8    | Flexure     | KIP-FT | -812.52  | -155.81 | -274.80 | 1.271  | 45.75   | 1.647  | 59.31   |
| 37.50 | 93.8    | Shear       | KIPS   | 207.64   | 23.49   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0   | Flexure     | KIP-FT | -812.52  | -217.79 | -311.05 | 0.976  | 35.12   | 1.265  | 45.53   |
| 40.00 | 100.0   | Shear       | KIPS   | 206.48   | 26.10   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |

**Span 2**

|          |       |         |             |        |          |        | Inventory | Inventory   | Operating | Operating   |         |
|----------|-------|---------|-------------|--------|----------|--------|-----------|-------------|-----------|-------------|---------|
|          |       |         |             |        |          |        | Rating    | Load Rating | Rating    | Load Rating |         |
| Location | (ft)  | Percent | Limit State | Units  | Capacity | DL     | LL        | Factor      | (Ton)     | Factor      | (Ton)   |
|          | 2.50  | 5.0     | Flexure     | KIP-FT | -812.52  | -      | -         | 1.470       | 52.92     | 1.906       | 68.60   |
|          | 2.50  | 5.0     | Shear       | KIPS   | 206.48   | 23.22  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 4.50  | 9.0     | Flexure     | KIP-FT | -817.88  | -      | -         | 1.848       | 66.53     | 2.396       | 86.24   |
|          | 4.50  | 9.0     | Shear       | KIPS   | 207.64   | 21.14  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 5.00  | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -         | 1.948       | 70.12     | 2.525       | 90.90   |
|          | 5.00  | 10.0    | Shear       | KIPS   | 207.64   | 20.63  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 10.00 | 20.0    | Flexure     | KIP-FT | -817.88  | -11.29 | -         | 2.889       | 104.02    | 3.746       | 134.84  |
|          | 10.00 | 20.0    | Shear       | KIPS   | 207.64   | 15.52  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 15.00 | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 15.00 | 30.0    | Shear       | KIPS   | 207.64   | 10.41  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 19.00 | 38.0    | Flexure     | KIP-FT | 817.88   | 86.44  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 19.00 | 38.0    | Shear       | KIPS   | 207.64   | 6.18   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 20.00 | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 20.00 | 40.0    | Shear       | KIPS   | 206.48   | 5.15   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 25.00 | 50.0    | Flexure     | KIP-FT | 812.52   | 104.98 | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 25.00 | 50.0    | Shear       | KIPS   | 206.48   | 0.00   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 30.00 | 60.0    | Flexure     | KIP-FT | 812.52   | 92.11  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 30.00 | 60.0    | Shear       | KIPS   | 206.48   | 5.15   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 31.00 | 62.0    | Flexure     | KIP-FT | 812.52   | 86.44  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 31.00 | 62.0    | Shear       | KIPS   | 206.48   | 6.18   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 35.00 | 70.0    | Flexure     | KIP-FT | 817.88   | 53.55  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 35.00 | 70.0    | Shear       | KIPS   | 207.64   | 10.27  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 40.00 | 80.0    | Flexure     | KIP-FT | -817.88  | -11.29 | -         | 2.889       | 104.02    | 3.746       | 134.84  |
|          | 40.00 | 80.0    | Shear       | KIPS   | 207.64   | 15.52  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 45.00 | 90.0    | Flexure     | KIP-FT | -817.88  | -      | -         | 1.948       | 70.12     | 2.525       | 90.90   |
|          | 45.00 | 90.0    | Shear       | KIPS   | 207.64   | 20.63  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 45.50 | 91.0    | Flexure     | KIP-   | -817.88  | -      | -         | 1.848       | 66.53     | 2.396       | 86.24   |

|       |       |         |        |         |        |        |        |         |        |         |
|-------|-------|---------|--------|---------|--------|--------|--------|---------|--------|---------|
|       |       |         | FT     |         | 112.11 | 208.09 |        |         |        |         |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14  | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -      | -      | 1.470  | 52.92   | 1.906  | 68.60   |
|       |       |         |        |         | 156.47 | 237.23 |        |         |        |         |
| 47.50 | 95.0  | Shear   | KIPS   | 207.64  | 23.22  | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -      | 0.976  | 35.12   | 1.265  | 45.53   |
|       |       |         |        |         | 217.79 | 311.05 |        |         |        |         |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84  | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |

### Span 3

|          |         |             |        |          |        |        | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|--------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |        | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -      | -      | 1.271     | 45.75       | 1.647     | 59.31       |
|          |         |             |        |          | 155.81 | 274.80 |           |             |           |             |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 23.49  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -      | 1.475     | 53.12       | 1.913     | 68.86       |
|          |         |             |        |          | 121.75 | 255.82 |           |             |           |             |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 21.93  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -      | -      | 1.308     | 47.09       | 1.695     | 61.04       |
|          |         |             |        |          | 110.92 | 250.01 |           |             |           |             |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 21.41  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -42.25 | -      | 1.733     | 62.39       | 2.246     | 80.87       |
|          |         |             |        |          |        | 217.96 |           |             |           |             |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 17.83  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 20.90  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 13.74  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 14.00    | 35.0    | Flexure     | KIP-FT | 817.88   | 46.34  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 14.00    | 35.0    | Shear       | KIPS   | 207.64   | 11.70  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 67.69  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 9.64   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 97.72  | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 5.43   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 110.97 | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 1.31   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 111.41 | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 0.81   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 107.75 | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |

|       |       |         |        |        |       |      |        |         |        |         |
|-------|-------|---------|--------|--------|-------|------|--------|---------|--------|---------|
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85  | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94  | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |

**Detailed Rating Results  
HL-93 (US)  
Tandem + Lane  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|          |         |             |        |          |        |        | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|--------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |        | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor    | (Ton)       | Factor    | (Ton)       |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 15.11  | 50.05  | 2.148     | 77.31       | 2.784     | 100.22      |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 52.26  | 174.44 | 2.458     | 88.48       | 3.186     | 114.70      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 11.02  | 42.85  | 2.579     | 92.84       | 3.343     | 120.34      |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 88.18  | 298.21 | 1.349     | 48.56       | 1.748     | 62.94       |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 6.94   | 35.98  | 3.156     | 113.60      | 4.091     | 147.27      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 107.75 | 373.42 | 1.038     | 37.38       | 1.346     | 48.46       |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 2.85   | 29.49  | 3.953     | 142.29      | 5.124     | 184.46      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 111.41 | 393.99 | 0.970     | 34.91       | 1.257     | 45.25       |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 0.81   | 26.42  | 4.443     | 159.96      | 5.760     | 207.35      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 110.97 | 403.12 | 0.948     | 34.14       | 1.229     | 44.26       |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 1.31   | 23.43  | 4.993     | 179.76      | 6.473     | 233.02      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 97.72  | 396.66 | 0.989     | 35.59       | 1.282     | 46.13       |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 5.43   | 28.34  | 4.022     | 144.78      | 5.213     | 187.67      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 67.69  | 358.79 | 1.155     | 41.57       | 1.497     | 53.89       |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 9.64   | 34.22  | 3.239     | 116.62      | 4.199     | 151.17      |

|       |       |         |        |         |        |         |       |        |       |        |
|-------|-------|---------|--------|---------|--------|---------|-------|--------|-------|--------|
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34  | 326.28  | 1.318 | 47.45  | 1.709 | 61.51  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70  | 37.10   | 2.947 | 106.10 | 3.820 | 137.53 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90  | 285.80  | 1.581 | 56.93  | 2.050 | 73.79  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74  | 39.92   | 2.718 | 97.84  | 3.523 | 126.83 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25 | -209.50 | 1.803 | 64.90  | 2.337 | 84.13  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83  | 45.33   | 2.327 | 83.77  | 3.016 | 108.59 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -      | -110.92 | 1.354 | 48.74  | 1.755 | 63.18  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41  | 49.74   | 2.068 | 74.44  | 2.680 | 96.49  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -121.75 | 1.525 | 54.91  | 1.977 | 71.17  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93  | 50.34   | 2.035 | 73.27  | 2.638 | 94.98  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -      | -155.81 | 1.308 | 47.08  | 1.695 | 61.03  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49  | 52.08   | 1.933 | 69.57  | 2.505 | 90.19  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -217.79 | 0.996 | 35.84  | 1.291 | 46.47  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84  | 55.64   | 1.778 | 63.99  | 2.304 | 82.96  |

#### Span 2

|          |         |             |        |          |        |         | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|---------|-----------|-------------|-----------|-------------|
|          |         |             |        |          |        |         | Rating    | Load Rating | Rating    | Load Rating |
| Location |         |             |        |          |        |         |           |             |           |             |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL      | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -      | -156.47 | 1.485     | 53.44       | 1.924     | 69.28       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22  | 52.91   | 1.906     | 68.61       | 2.471     | 88.94       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -      | -112.11 | 1.844     | 66.37       | 2.390     | 86.04       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14  | 50.61   | 2.036     | 73.29       | 2.639     | 95.01       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -101.67 | 1.936     | 69.69       | 2.509     | 90.33       |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63  | 50.02   | 2.067     | 74.43       | 2.680     | 96.48       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29 | 207.76  | 2.290     | 82.43       | 2.968     | 106.85      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52  | 43.79   | 2.448     | 88.13       | 3.173     | 114.24      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55  | 316.81  | 1.350     | 48.62       | 1.751     | 63.02       |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41  | 37.20   | 2.983     | 107.38      | 3.867     | 139.19      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44  | 376.81  | 1.063     | 38.26       | 1.378     | 49.60       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18   | 31.81   | 3.566     | 128.38      | 4.623     | 166.41      |
| 20.00    | 40.0    | Flexure     | KIP-   | 812.52   | 92.11  | 386.55  | 1.025     | 36.91       | 1.329     | 47.84       |

|       |       |         |        |         |        |        |       |        |       |        |
|-------|-------|---------|--------|---------|--------|--------|-------|--------|-------|--------|
|       |       |         | FT     |         |        |        |       |        |       |        |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15   | 30.47  | 3.748 | 134.93 | 4.859 | 174.91 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98 | 406.70 | 0.951 | 34.24  | 1.233 | 44.38  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00   | 23.87  | 4.944 | 177.98 | 6.409 | 230.71 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11  | 386.55 | 1.025 | 36.91  | 1.329 | 47.84  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15   | 30.47  | 3.748 | 134.93 | 4.859 | 174.91 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44  | 376.81 | 1.063 | 38.26  | 1.378 | 49.60  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18   | 31.81  | 3.566 | 128.38 | 4.623 | 166.41 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55  | 316.81 | 1.350 | 48.62  | 1.751 | 63.02  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41  | 37.20  | 2.983 | 107.38 | 3.867 | 139.19 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29 | 207.76 | 2.290 | 82.43  | 2.968 | 106.85 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52  | 43.79  | 2.448 | 88.13  | 3.173 | 114.24 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -      | 1.936 | 69.69  | 2.509 | 90.33  |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63  | 50.02  | 2.067 | 74.43  | 2.680 | 96.48  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -      | -      | 1.844 | 66.37  | 2.390 | 86.04  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14  | 50.61  | 2.036 | 73.29  | 2.639 | 95.01  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -      | -      | 1.485 | 53.44  | 1.924 | 69.28  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22  | 52.91  | 1.906 | 68.61  | 2.471 | 88.94  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -      | 0.996 | 35.84  | 1.291 | 46.47  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84  | 55.64  | 1.778 | 63.99  | 2.304 | 82.96  |

### Span 3

|          |         |                |            |          |             |             | Inventory | Inventory      | Operating | Operating      |
|----------|---------|----------------|------------|----------|-------------|-------------|-----------|----------------|-----------|----------------|
| Location |         |                |            |          |             |             | Rating    | Load<br>Rating | Rating    | Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units      | Capacity | DL          | LL          | Factor    | (Ton)          | Factor    | (Ton)          |
| 2.50     | 6.3     | Flexure        | KIP-<br>FT | -812.52  | -<br>155.81 | -<br>267.05 | 1.308     | 47.08          | 1.695     | 61.03          |
| 2.50     | 6.3     | Shear          | KIPS       | 206.48   | 23.49       | 52.08       | 1.933     | 69.57          | 2.505     | 90.19          |
| 4.00     | 10.0    | Flexure        | KIP-<br>FT | -817.88  | -<br>121.75 | -<br>247.48 | 1.525     | 54.91          | 1.977     | 71.17          |
| 4.00     | 10.0    | Shear          | KIPS       | 207.64   | 21.93       | 50.34       | 2.035     | 73.27          | 2.638     | 94.98          |
| 4.50     | 11.3    | Flexure        | KIP-<br>FT | -715.59  | -<br>110.92 | -<br>241.54 | 1.354     | 48.74          | 1.755     | 63.18          |
| 4.50     | 11.3    | Shear          | KIPS       | 207.64   | 21.41       | 49.74       | 2.068     | 74.44          | 2.680     | 96.49          |
| 8.00     | 20.0    | Flexure        | KIP-<br>FT | -715.59  | -42.25      | -<br>209.50 | 1.803     | 64.90          | 2.337     | 84.13          |



|       |       |         |        |        |        |        |        |         |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|--------|---------|
| 8.00  | 20.0  | Shear   | KIPS   | 207.64 | 17.83  | 45.33  | 2.327  | 83.77   | 3.016  | 108.59  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88 | 20.90  | 285.80 | 1.581  | 56.93   | 2.050  | 73.79   |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64 | 13.74  | 39.92  | 2.718  | 97.84   | 3.523  | 126.83  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52 | 46.34  | 326.28 | 1.318  | 47.45   | 1.709  | 61.51   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48 | 11.70  | 37.10  | 2.947  | 106.10  | 3.820  | 137.53  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52 | 67.69  | 358.79 | 1.155  | 41.57   | 1.497  | 53.89   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48 | 9.64   | 34.22  | 3.239  | 116.62  | 4.199  | 151.17  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52 | 97.72  | 396.66 | 0.989  | 35.59   | 1.282  | 46.13   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48 | 5.43   | 28.34  | 4.022  | 144.78  | 5.213  | 187.67  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52 | 110.97 | 403.12 | 0.948  | 34.14   | 1.229  | 44.26   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48 | 1.31   | 23.43  | 4.993  | 179.76  | 6.473  | 233.02  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 111.41 | 393.99 | 0.970  | 34.91   | 1.257  | 45.25   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.81   | 26.42  | 4.443  | 159.96  | 5.760  | 207.35  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 107.75 | 373.42 | 1.038  | 37.38   | 1.346  | 48.46   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85   | 29.49  | 3.953  | 142.29  | 5.124  | 184.46  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18  | 298.21 | 1.349  | 48.56   | 1.748  | 62.94   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94   | 35.98  | 3.156  | 113.60  | 4.091  | 147.27  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26  | 174.44 | 2.458  | 88.48   | 3.186  | 114.70  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02  | 42.85  | 2.579  | 92.84   | 3.343  | 120.34  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11  | 50.05  | 2.148  | 77.31   | 2.784  | 100.22  |

**Bridge Name:** I95 over Souadabscook Stream Center  
**NBI Structure ID:** 1432+5950  
**Bridge ID:** Br. No. 1432+5950

**Analyzed By:** Virtis  
**Analyze Date:** Thursday, April 25, 2013 09:47:26  
**Analysis Engine:** AASHTO LRFR Engine Version 6.4.0.3001  
**Analysis Preference Setting:** None

**Report By:** virtis  
**Report Date:** Thursday, April 25, 2013 10:10:54

**Structure Definition Name:** 1432+5950  
**Member Name:** G1  
**Member Alternative Name:** G1

**Report by Action:** ☒ **Flexure** ☒ **Shear** ☐ **Overload** ☐ **Critical**

**Detailed Rating Results**  
**Legal Lane Load**  
**Lane**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 0.00                             |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 2.47      | 58.220                  | 0.00                             |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 8.78      | 65.207                  | 0.00                             |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 1.96      | 75.349                  | 0.00                             |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 15.40     | 34.883                  | 0.00                             |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 1.52      | 99.000                  | 0.00                             |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 19.86     | 26.083                  | 0.00                             |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 1.14      | 99.000                  | 0.00                             |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 21.28     | 23.985                  | 0.00                             |
| 14.00           | 35.0           | Shear                  | KIPS         | 207.64          | 0.81      | 0.98      | 99.000                  | 0.00                             |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 22.15     | 23.056                  | 0.00                             |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 1.00      | 99.000                  | 0.00                             |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 22.28     | 23.510                  | 0.00                             |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 1.29      | 99.000                  | 0.00                             |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 20.25     | 27.336                  | 0.00                             |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 1.64      | 90.165                  | 0.00                             |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 18.42     | 31.194                  | 0.00                             |

|       |       |         |        |         |         |        |        |      |
|-------|-------|---------|--------|---------|---------|--------|--------|------|
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 1.84   | 79.508 | 0.00 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 16.05  | 37.619 | 0.00 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 2.04   | 70.894 | 0.00 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -15.07 | 33.480 | 0.00 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 2.49   | 56.497 | 0.00 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -19.57 | 22.322 | 0.00 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 2.92   | 47.023 | 0.00 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -20.64 | 24.430 | 0.00 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 2.99   | 45.852 | 0.00 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -24.39 | 19.127 | 0.00 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 3.18   | 42.299 | 0.00 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -32.24 | 12.573 | 0.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 3.73   | 35.457 | 0.00 |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -156.47   | -23.77    | 19.599                  | 0.00                             |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 23.22     | 3.39      | 39.692                  | 0.00                             |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -112.11   | -18.28    | 28.104                  | 0.00                             |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 21.14     | 3.14      | 43.886                  | 0.00                             |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -17.11    | 30.628                  | 0.00                             |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 20.63     | 3.07      | 44.951                  | 0.00                             |
| 10.00           | 20.0           | Flexure                | KIP-FT       | -817.88         | -11.29    | -10.08    | 60.805                  | 0.00                             |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 15.52     | 2.47      | 57.862                  | 0.00                             |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 16.66     | 34.304                  | 0.00                             |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 10.41     | 1.94      | 76.313                  | 0.00                             |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 20.99     | 25.489                  | 0.00                             |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.18      | 1.57      | 96.531                  | 0.00                             |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 21.73     | 24.360                  | 0.00                             |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.15      | 1.48      | 99.000                  | 0.00                             |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 104.98    | 23.42     | 22.059                  | 0.00                             |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 1.11      | 99.000                  | 0.00                             |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 21.73     | 24.360                  | 0.00                             |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.15      | 1.48      | 99.000                  | 0.00                             |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 20.99     | 25.489                  | 0.00                             |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.18      | 1.57      | 96.531                  | 0.00                             |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 16.66     | 34.304                  | 0.00                             |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 10.41     | 1.94      | 76.313                  | 0.00                             |
| 40.00           | 80.0           | Flexure                | KIP-FT       | -817.88         | -11.29    | -10.08    | 60.805                  | 0.00                             |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 15.52     | 2.47      | 57.862                  | 0.00                             |

|       |       |         |        |         |         |        |        |      |
|-------|-------|---------|--------|---------|---------|--------|--------|------|
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -17.11 | 30.628 | 0.00 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 3.07   | 44.951 | 0.00 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -18.28 | 28.104 | 0.00 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 3.14   | 43.886 | 0.00 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -23.77 | 19.599 | 0.00 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 3.39   | 39.692 | 0.00 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -32.24 | 12.573 | 0.00 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 3.73   | 35.457 | 0.00 |

### Span 3

|          |         |                |        |          |         |        | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|--------|-----------------|-------------------------|
| Location |         |                |        |          |         |        |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL     | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -24.39 | 19.127          | 0.00                    |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 3.18   | 42.299          | 0.00                    |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -20.64 | 24.430          | 0.00                    |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 2.99   | 45.852          | 0.00                    |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -19.57 | 22.322          | 0.00                    |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 2.92   | 47.023          | 0.00                    |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -15.07 | 33.480          | 0.00                    |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 2.49   | 56.497          | 0.00                    |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 16.05  | 37.619          | 0.00                    |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 2.04   | 70.894          | 0.00                    |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 18.42  | 31.194          | 0.00                    |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 1.84   | 79.508          | 0.00                    |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 20.25  | 27.336          | 0.00                    |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 1.64   | 90.165          | 0.00                    |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 22.28  | 23.510          | 0.00                    |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 1.29   | 99.000          | 0.00                    |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 22.15  | 23.056          | 0.00                    |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 1.00   | 99.000          | 0.00                    |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 21.28  | 23.985          | 0.00                    |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.81    | 0.98   | 99.000          | 0.00                    |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 19.86  | 26.083          | 0.00                    |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 2.85    | 1.14   | 99.000          | 0.00                    |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 88.18   | 15.40  | 34.883          | 0.00                    |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 6.94    | 1.52   | 99.000          | 0.00                    |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 52.26   | 8.78   | 65.207          | 0.00                    |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 11.02   | 1.96   | 75.349          | 0.00                    |
| 40.00    | 100.0   | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00   | 99.000          | 0.00                    |
| 40.00    | 100.0   | Shear          | KIPS   | 207.64   | 15.11   | 2.47   | 58.220          | 0.00                    |

**Detailed Rating Results  
Maine DOT Config. 1  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4950.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 45.24     | 3.174                   | 158.70                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 146.45    | 3.911                   | 195.55                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 36.61     | 4.032                   | 201.61                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 233.19    | 2.304                   | 115.21                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 28.68     | 5.287                   | 264.36                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 284.50    | 1.821                   | 91.04                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 23.33     | 6.675                   | 333.75                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 302.48    | 1.687                   | 84.36                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 20.85     | 7.523                   | 376.14                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 313.13    | 1.631                   | 81.56                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 18.42     | 8.488                   | 424.40                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 308.27    | 1.699                   | 84.97                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 23.45     | 6.494                   | 324.69                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 271.90    | 2.036                   | 101.78                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 29.84     | 4.963                   | 248.15                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 250.82    | 2.291                   | 114.53                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 11.70     | 32.72     | 4.464                   | 223.19                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 219.18    | 2.754                   | 137.72                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 13.74     | 35.36     | 4.099                   | 204.95                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -200.62   | 2.515                   | 125.75                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.83     | 40.03     | 3.520                   | 176.00                           |
| 35.50           | 88.8           | Flexure                | KIP-FT       | -715.59         | -110.92   | -222.57   | 1.963                   | 98.13                            |
| 35.50           | 88.8           | Shear                  | KIPS         | 207.64          | 21.41     | 44.73     | 3.072                   | 153.59                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -225.70   | 2.234                   | 111.70                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 21.93     | 45.72     | 2.994                   | 149.68                           |
| 37.50           | 93.8           | Flexure                | KIP-FT       | -812.52         | -155.81   | -249.40   | 1.871                   | 93.53                            |
| 37.50           | 93.8           | Shear                  | KIPS         | 206.48          | 23.49     | 48.58     | 2.767                   | 138.37                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -217.79   | -344.05   | 1.178                   | 58.91                            |
| 40.00           | 100.0          | Shear                  | KIPS         | 206.48          | 25.84     | 57.09     | 2.314                   | 115.71                           |

**Span 2**

**Legal      Legal**

| Location |         |             |        |          |         |         | Rating | Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -253.39 | 1.839  | 91.93       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 52.77   | 2.553  | 127.64      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -182.74 | 2.811  | 140.56      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 49.28   | 2.793  | 139.67      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -166.27 | 3.152  | 157.58      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63   | 48.40   | 2.854  | 142.72      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 157.17  | 4.043  | 202.17      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52   | 39.53   | 3.622  | 181.11      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 263.55  | 2.169  | 108.43      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41   | 32.12   | 4.615  | 230.74      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 305.99  | 1.748  | 87.42       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18    | 26.66   | 5.684  | 284.22      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 310.87  | 1.703  | 85.14       |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.15    | 25.22   | 6.048  | 302.42      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 104.98  | 303.69  | 1.701  | 85.07       |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 17.42   | 9.046  | 452.32      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 310.87  | 1.703  | 85.14       |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.15    | 25.22   | 6.048  | 302.42      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 305.99  | 1.748  | 87.42       |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.18    | 26.66   | 5.684  | 284.22      |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 263.55  | 2.169  | 108.43      |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 10.41   | 32.12   | 4.615  | 230.74      |
| 40.00    | 80.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 157.17  | 4.043  | 202.17      |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 15.52   | 39.53   | 3.622  | 181.11      |
| 45.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -166.27 | 3.152  | 157.58      |
| 45.00    | 90.0    | Shear       | KIPS   | 207.64   | 20.63   | 48.40   | 2.854  | 142.72      |
| 45.50    | 91.0    | Flexure     | KIP-FT | -817.88  | -112.11 | -182.74 | 2.811  | 140.56      |
| 45.50    | 91.0    | Shear       | KIPS   | 207.64   | 21.14   | 49.28   | 2.793  | 139.67      |
| 47.50    | 95.0    | Flexure     | KIP-FT | -812.52  | -156.47 | -253.39 | 1.839  | 91.93       |
| 47.50    | 95.0    | Shear       | KIPS   | 206.48   | 23.22   | 52.77   | 2.553  | 127.64      |
| 50.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -217.79 | -344.05 | 1.178  | 58.91       |
| 50.00    | 100.0   | Shear       | KIPS   | 206.48   | 25.84   | 57.09   | 2.314  | 115.71      |

### Span 3

| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -155.81 | -249.40 | 1.871        | 93.53             |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 23.49   | 48.58   | 2.767        | 138.37            |

|       |       |         |        |         |         |         |        |         |
|-------|-------|---------|--------|---------|---------|---------|--------|---------|
| 4.00  | 10.0  | Flexure | KIP-FT | -817.88 | -121.75 | -225.70 | 2.234  | 111.70  |
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 21.93   | 45.72   | 2.994  | 149.68  |
| 4.50  | 11.3  | Flexure | KIP-FT | -715.59 | -110.92 | -222.57 | 1.963  | 98.13   |
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 21.41   | 44.73   | 3.072  | 153.59  |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -42.25  | -200.62 | 2.515  | 125.75  |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 17.83   | 40.03   | 3.520  | 176.00  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 20.90   | 219.18  | 2.754  | 137.72  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 13.74   | 35.36   | 4.099  | 204.95  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 46.34   | 250.82  | 2.291  | 114.53  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 11.70   | 32.72   | 4.464  | 223.19  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 67.69   | 271.90  | 2.036  | 101.78  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 9.64    | 29.84   | 4.963  | 248.15  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 308.27  | 1.699  | 84.97   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 23.45   | 6.494  | 324.69  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 110.97  | 313.13  | 1.631  | 81.56   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.31    | 18.42   | 8.488  | 424.40  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 111.41  | 302.48  | 1.687  | 84.36   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.81    | 20.85   | 7.523  | 376.14  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 107.75  | 284.50  | 1.821  | 91.04   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 2.85    | 23.33   | 6.675  | 333.75  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 88.18   | 233.19  | 2.304  | 115.21  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 6.94    | 28.68   | 5.287  | 264.36  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 52.26   | 146.45  | 3.911  | 195.55  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 11.02   | 36.61   | 4.032  | 201.61  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00    | 0.00    | 99.000 | 4950.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 15.11   | 45.24   | 3.174  | 158.70  |

**Detailed Rating Results**  
**Maine DOT Config. 1 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 9900.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 45.24     | 3.174                   | 317.41                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 146.45    | 3.911                   | 391.10                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 36.61     | 4.032                   | 403.21                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 233.19    | 2.304                   | 230.43                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 28.68     | 5.287                   | 528.72                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 107.75  | 284.50  | 1.821 | 182.08 |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 2.85    | 23.33   | 6.675 | 667.49 |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 111.41  | 302.48  | 1.687 | 168.71 |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.81    | 20.85   | 7.523 | 752.28 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 110.97  | 313.13  | 1.631 | 163.12 |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.31    | 22.20   | 7.043 | 704.30 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 308.27  | 1.699 | 169.93 |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 26.80   | 5.682 | 568.22 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69   | 271.90  | 2.036 | 203.56 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64    | 30.89   | 4.794 | 479.43 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34   | 250.82  | 2.291 | 229.06 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 32.79   | 4.455 | 445.49 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 219.18  | 2.754 | 275.44 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 35.36   | 4.099 | 409.89 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -186.97 | 2.699 | 269.87 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 40.09   | 3.515 | 351.46 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -256.14 | 1.705 | 170.55 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 46.47   | 2.957 | 295.67 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -266.52 | 1.892 | 189.19 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 47.35   | 2.891 | 289.08 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -298.98 | 1.560 | 156.04 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 49.88   | 2.695 | 269.52 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -358.13 | 1.132 | 113.19 |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 57.63   | 2.293 | 229.26 |

#### Span 2

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -273.83 | 1.701  | 170.14      |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 53.71   | 2.508  | 250.82      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -214.60 | 2.394  | 239.39      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 50.57   | 2.722  | 272.17      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -201.70 | 2.598  | 259.81      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63   | 49.82   | 2.773  | 277.28      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 159.80  | 3.977  | 397.67      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52   | 42.15   | 3.397  | 339.71      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 260.00  | 2.198  | 219.81      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41   | 34.41   | 4.307  | 430.72      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 303.76  | 1.761  | 176.12      |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18    | 28.31   | 5.352  | 535.18      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 309.19  | 1.712  | 171.21      |



|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15    | 26.82   | 5.688 | 568.79 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98  | 302.38  | 1.709 | 170.87 |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 19.57   | 8.052 | 805.23 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 309.19  | 1.712 | 171.21 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 26.82   | 5.688 | 568.79 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 303.76  | 1.761 | 176.12 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 28.31   | 5.352 | 535.18 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 260.00  | 2.198 | 219.81 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 34.41   | 4.307 | 430.72 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 159.80  | 3.977 | 397.67 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 42.15   | 3.397 | 339.71 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -201.70 | 2.598 | 259.81 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 49.82   | 2.773 | 277.28 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -214.60 | 2.394 | 239.39 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 50.57   | 2.722 | 272.17 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -273.83 | 1.701 | 170.14 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 53.71   | 2.508 | 250.82 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -358.13 | 1.132 | 113.19 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 57.63   | 2.293 | 229.26 |

**Span 3**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 6.3            | Flexure                | KIP-FT       | -812.52         | -155.81   | -298.98   | 1.560                   | 156.04                           |
| 2.50            | 6.3            | Shear                  | KIPS         | 206.48          | 23.49     | 49.88     | 2.695                   | 269.52                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -266.52   | 1.892                   | 189.19                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 21.93     | 47.35     | 2.891                   | 289.08                           |
| 4.50            | 11.3           | Flexure                | KIP-FT       | -715.59         | -110.92   | -256.14   | 1.705                   | 170.55                           |
| 4.50            | 11.3           | Shear                  | KIPS         | 207.64          | 21.41     | 46.47     | 2.957                   | 295.67                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -186.97   | 2.699                   | 269.87                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 17.83     | 40.09     | 3.515                   | 351.46                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 219.18    | 2.754                   | 275.44                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 13.74     | 35.36     | 4.099                   | 409.89                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 250.82    | 2.291                   | 229.06                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 11.70     | 32.79     | 4.455                   | 445.49                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 271.90    | 2.036                   | 203.56                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 9.64      | 30.89     | 4.794                   | 479.43                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 308.27    | 1.699                   | 169.93                           |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 26.80     | 5.682                   | 568.22                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 313.13    | 1.631                   | 163.12                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 1.31      | 22.20     | 7.043                   | 704.30                           |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 111.41 | 302.48 | 1.687  | 168.71  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.81   | 20.85  | 7.523  | 752.28  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 107.75 | 284.50 | 1.821  | 182.08  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85   | 23.33  | 6.675  | 667.49  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18  | 233.19 | 2.304  | 230.43  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94   | 28.68  | 5.287  | 528.72  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26  | 146.45 | 3.911  | 391.10  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02  | 36.61  | 4.032  | 403.21  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 9900.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11  | 45.24  | 3.174  | 317.41  |

**Detailed Rating Results**  
**Maine DOT Config. 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4653.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 46.78     | 3.070                   | 144.27                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 155.37    | 3.686                   | 173.26                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 38.84     | 3.801                   | 178.63                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 251.03    | 2.141                   | 100.61                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 31.37     | 4.834                   | 227.22                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 317.22    | 1.633                   | 76.75                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 23.89     | 6.517                   | 306.28                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 342.40    | 1.490                   | 70.05                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 20.12     | 7.794                   | 366.32                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 354.11    | 1.442                   | 67.79                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 16.49     | 9.482                   | 445.67                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 359.63    | 1.457                   | 68.46                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 21.08     | 7.223                   | 339.50                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 317.67    | 1.742                   | 81.89                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 28.57     | 5.185                   | 243.68                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 281.19    | 2.043                   | 96.03                            |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 11.70     | 32.15     | 4.544                   | 213.58                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 235.51    | 2.563                   | 120.48                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 13.74     | 35.60     | 4.072                   | 191.38                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -207.17   | 2.436                   | 114.47                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.83     | 42.05     | 3.351                   | 157.49                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -240.26 | 1.818 | 85.45  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 47.14   | 2.915 | 136.99 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -249.17 | 2.024 | 95.11  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 47.82   | 2.862 | 134.52 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -275.95 | 1.691 | 79.46  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 49.78   | 2.701 | 126.94 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -321.33 | 1.262 | 59.29  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 56.21   | 2.351 | 110.47 |

### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -156.47 | -237.05 | 1.965           | 92.37                   |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 23.22   | 52.60   | 2.561           | 120.38                  |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -112.11 | -204.55 | 2.511           | 118.04                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 21.14   | 49.55   | 2.778           | 130.56                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -101.67 | -196.47 | 2.667           | 125.36                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 20.63   | 48.79   | 2.832           | 133.09                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | -817.88  | -11.29  | -156.32 | 3.923           | 184.37                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 15.52   | 40.77   | 3.512           | 165.06                  |
| 15.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 53.55   | 282.40  | 2.024           | 95.12                   |
| 15.00    | 30.0    | Shear          | KIPS   | 207.64   | 10.41   | 32.41   | 4.573           | 214.94                  |
| 19.00    | 38.0    | Flexure        | KIP-FT | 812.52   | 86.44   | 342.13  | 1.564           | 73.49                   |
| 19.00    | 38.0    | Shear          | KIPS   | 206.48   | 6.18    | 25.85   | 5.862           | 275.50                  |
| 20.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 92.11   | 351.61  | 1.506           | 70.76                   |
| 20.00    | 40.0    | Shear          | KIPS   | 206.48   | 5.15    | 24.24   | 6.293           | 295.76                  |
| 25.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 104.98  | 364.49  | 1.418           | 66.62                   |
| 25.00    | 50.0    | Shear          | KIPS   | 206.48   | 0.00    | 15.97   | 9.870           | 463.87                  |
| 30.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 92.11   | 351.61  | 1.506           | 70.76                   |
| 30.00    | 60.0    | Shear          | KIPS   | 206.48   | 5.15    | 24.24   | 6.293           | 295.76                  |
| 31.00    | 62.0    | Flexure        | KIP-FT | 812.52   | 86.44   | 342.13  | 1.564           | 73.49                   |
| 31.00    | 62.0    | Shear          | KIPS   | 206.48   | 6.18    | 25.85   | 5.862           | 275.50                  |
| 35.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 53.55   | 282.40  | 2.024           | 95.12                   |
| 35.00    | 70.0    | Shear          | KIPS   | 207.64   | 10.41   | 32.41   | 4.573           | 214.94                  |
| 40.00    | 80.0    | Flexure        | KIP-FT | -817.88  | -11.29  | -156.32 | 3.923           | 184.37                  |
| 40.00    | 80.0    | Shear          | KIPS   | 207.64   | 15.52   | 40.77   | 3.512           | 165.06                  |
| 45.00    | 90.0    | Flexure        | KIP-FT | -817.88  | -101.67 | -196.47 | 2.667           | 125.36                  |
| 45.00    | 90.0    | Shear          | KIPS   | 207.64   | 20.63   | 48.79   | 2.832           | 133.09                  |
| 45.50    | 91.0    | Flexure        | KIP-FT | -817.88  | -112.11 | -204.55 | 2.511           | 118.04                  |
| 45.50    | 91.0    | Shear          | KIPS   | 207.64   | 21.14   | 49.55   | 2.778           | 130.56                  |
| 47.50    | 95.0    | Flexure        | KIP-FT | -812.52  | -156.47 | -237.05 | 1.965           | 92.37                   |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 52.60   | 2.561 | 120.38 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -321.33 | 1.262 | 59.29  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 56.21   | 2.351 | 110.47 |

**Span 3**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 6.3            | Flexure                | KIP-FT       | -812.52         | -155.81   | -275.95   | 1.691                   | 79.46                            |
| 2.50            | 6.3            | Shear                  | KIPS         | 206.48          | 23.49     | 49.78     | 2.701                   | 126.94                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -249.17   | 2.024                   | 95.11                            |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 21.93     | 47.82     | 2.862                   | 134.52                           |
| 4.50            | 11.3           | Flexure                | KIP-FT       | -715.59         | -110.92   | -240.26   | 1.818                   | 85.45                            |
| 4.50            | 11.3           | Shear                  | KIPS         | 207.64          | 21.41     | 47.14     | 2.915                   | 136.99                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -207.17   | 2.436                   | 114.47                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 17.83     | 42.05     | 3.351                   | 157.49                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 235.51    | 2.563                   | 120.48                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 13.74     | 35.60     | 4.072                   | 191.38                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 281.19    | 2.043                   | 96.03                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 11.70     | 32.15     | 4.544                   | 213.58                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 317.67    | 1.742                   | 81.89                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 9.64      | 28.57     | 5.185                   | 243.68                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 359.63    | 1.457                   | 68.46                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 21.08     | 7.223                   | 339.50                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 354.11    | 1.442                   | 67.79                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 1.31      | 16.49     | 9.482                   | 445.67                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 342.40    | 1.490                   | 70.05                            |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 0.81      | 20.12     | 7.794                   | 366.32                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 317.22    | 1.633                   | 76.75                            |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 2.85      | 23.89     | 6.517                   | 306.28                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 251.03    | 2.141                   | 100.61                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 6.94      | 31.37     | 4.834                   | 227.22                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 155.37    | 3.686                   | 173.26                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 11.02     | 38.84     | 3.801                   | 178.63                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4653.00                          |
| 40.00           | 100.0          | Shear                  | KIPS         | 207.64          | 15.11     | 46.78     | 3.070                   | 144.27                           |

**Detailed Rating Results**  
**Maine DOT Config. 2 x 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

| Span 1   |         |                |        |          |         |         |                 |                         |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 0.00     | 0.0     | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000          | 9306.00                 |
| 0.00     | 0.0     | Shear          | KIPS   | 207.64   | 15.11   | 46.78   | 3.070           | 288.54                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | 817.88   | 52.26   | 155.37  | 3.686           | 346.53                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 11.02   | 38.84   | 3.801           | 357.26                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | 817.88   | 88.18   | 251.11  | 2.140           | 201.14                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 6.94    | 31.39   | 4.832           | 454.18                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 317.22  | 1.633           | 153.50                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 2.85    | 24.51   | 6.353           | 597.14                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 342.40  | 1.490           | 140.10                  |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 0.81    | 20.97   | 7.477           | 702.84                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 354.11  | 1.442           | 135.59                  |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 1.31    | 17.57   | 8.895           | 836.14                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 359.63  | 1.457           | 136.92                  |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 22.66   | 6.719           | 631.61                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 317.67  | 1.742           | 163.78                  |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 9.64    | 29.41   | 5.037           | 473.44                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 281.58  | 2.040           | 191.79                  |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 11.70   | 32.67   | 4.471           | 420.27                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 242.28  | 2.492           | 234.23                  |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 13.74   | 35.82   | 4.046           | 380.34                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -203.82 | 2.476           | 232.71                  |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 17.83   | 42.05   | 3.351           | 314.98                  |
| 35.50    | 88.8    | Flexure        | KIP-FT | -715.59  | -110.92 | -247.39 | 1.766           | 165.98                  |
| 35.50    | 88.8    | Shear          | KIPS   | 207.64   | 21.41   | 47.14   | 2.915           | 273.97                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -254.11 | 1.984           | 186.53                  |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 21.93   | 47.82   | 2.862           | 269.04                  |
| 37.50    | 93.8    | Flexure        | KIP-FT | -812.52  | -155.81 | -275.95 | 1.691           | 158.92                  |
| 37.50    | 93.8    | Shear          | KIPS   | 206.48   | 23.49   | 49.78   | 2.701           | 253.88                  |
| 40.00    | 100.0   | Flexure        | KIP-FT | -812.52  | -217.79 | -321.33 | 1.262           | 118.59                  |
| 40.00    | 100.0   | Shear          | KIPS   | 206.48   | 25.84   | 56.21   | 2.351           | 220.95                  |

| Span 2   |         |                |       |          |    |    |                 |                         |
|----------|---------|----------------|-------|----------|----|----|-----------------|-------------------------|
| Location |         |                |       |          |    |    | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units | Capacity | DL | LL | Factor          | (Ton)                   |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 2.50  | 5.0   | Flexure | KIP-FT | -812.52 | -156.47 | -237.05 | 1.965 | 184.74 |
| 2.50  | 5.0   | Shear   | KIPS   | 206.48  | 23.22   | 52.84   | 2.549 | 239.65 |
| 4.50  | 9.0   | Flexure | KIP-FT | -817.88 | -112.11 | -204.55 | 2.511 | 236.08 |
| 4.50  | 9.0   | Shear   | KIPS   | 207.64  | 21.14   | 49.99   | 2.754 | 258.84 |
| 5.00  | 10.0  | Flexure | KIP-FT | -817.88 | -101.67 | -196.47 | 2.667 | 250.72 |
| 5.00  | 10.0  | Shear   | KIPS   | 207.64  | 20.63   | 49.27   | 2.804 | 263.57 |
| 10.00 | 20.0  | Flexure | KIP-FT | 817.88  | -11.29  | 162.43  | 3.912 | 367.76 |
| 10.00 | 20.0  | Shear   | KIPS   | 207.64  | 15.52   | 41.69   | 3.434 | 322.84 |
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 53.55   | 279.99  | 2.041 | 191.87 |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 10.41   | 33.67   | 4.402 | 413.81 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 86.44   | 339.22  | 1.577 | 148.24 |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.18    | 27.13   | 5.585 | 524.95 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 92.11   | 348.80  | 1.518 | 142.66 |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15    | 25.50   | 5.981 | 562.20 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98  | 363.96  | 1.420 | 133.44 |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 17.91   | 8.800 | 827.15 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 348.80  | 1.518 | 142.66 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 25.50   | 5.981 | 562.20 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 339.22  | 1.577 | 148.24 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 27.13   | 5.585 | 524.95 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 279.99  | 2.041 | 191.87 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 33.67   | 4.402 | 413.81 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 162.43  | 3.912 | 367.76 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 41.69   | 3.434 | 322.84 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -196.47 | 2.667 | 250.72 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 49.27   | 2.804 | 263.57 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -204.55 | 2.511 | 236.08 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 49.99   | 2.754 | 258.84 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -237.05 | 1.965 | 184.74 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 52.84   | 2.549 | 239.65 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -321.33 | 1.262 | 118.59 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 56.21   | 2.351 | 220.95 |

### Span 3

| Location |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -275.95 | 1.691           | 158.92                  |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 49.78   | 2.701           | 253.88                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -254.11 | 1.984           | 186.53                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 47.82   | 2.862           | 269.04                  |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -247.39 | 1.766           | 165.98                  |

|       |       |         |        |         |        |         |        |         |
|-------|-------|---------|--------|---------|--------|---------|--------|---------|
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 21.41  | 47.14   | 2.915  | 273.97  |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -42.25 | -203.82 | 2.476  | 232.71  |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 17.83  | 42.05   | 3.351  | 314.98  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 20.90  | 242.28  | 2.492  | 234.23  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 13.74  | 35.82   | 4.046  | 380.34  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 46.34  | 281.58  | 2.040  | 191.79  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 11.70  | 32.67   | 4.471  | 420.27  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 67.69  | 317.67  | 1.742  | 163.78  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 9.64   | 29.41   | 5.037  | 473.44  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72  | 359.63  | 1.457  | 136.92  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43   | 22.66   | 6.719  | 631.61  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 110.97 | 354.11  | 1.442  | 135.59  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.31   | 17.57   | 8.895  | 836.14  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 111.41 | 342.40  | 1.490  | 140.10  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.81   | 20.97   | 7.477  | 702.84  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 107.75 | 317.22  | 1.633  | 153.50  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 2.85   | 24.51   | 6.353  | 597.14  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 88.18  | 251.11  | 2.140  | 201.14  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 6.94   | 31.39   | 4.832  | 454.18  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 52.26  | 155.37  | 3.686  | 346.53  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 11.02  | 38.84   | 3.801  | 357.26  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00   | 0.00    | 99.000 | 9306.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 15.11  | 46.78   | 3.070  | 288.54  |

**Detailed Rating Results**  
**Maine DOT Config. 3**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |              |              |                 |           |           | <b>Legal</b>  | <b>Legal</b>  |
|-----------------|----------------|--------------|--------------|-----------------|-----------|-----------|---------------|---------------|
|                 |                |              |              |                 |           |           | <b>Rating</b> | <b>Load</b>   |
| <b>Location</b> |                |              |              |                 |           |           |               | <b>Rating</b> |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b> | <b>(Ton)</b>  |
| 0.00            | 0.0            | Flexure      | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000        | 4356.00       |
| 0.00            | 0.0            | Shear        | KIPS         | 207.64          | 15.11     | 48.32     | 2.971         | 130.74        |
| 4.00            | 10.0           | Flexure      | KIP-FT       | 817.88          | 52.26     | 161.35    | 3.550         | 156.19        |
| 4.00            | 10.0           | Shear        | KIPS         | 207.64          | 11.02     | 40.34     | 3.660         | 161.03        |
| 8.00            | 20.0           | Flexure      | KIP-FT       | 817.88          | 88.18     | 262.99    | 2.043         | 89.90         |
| 8.00            | 20.0           | Shear        | KIPS         | 207.64          | 6.94      | 32.74     | 4.632         | 203.82        |
| 12.00           | 30.0           | Flexure      | KIP-FT       | 817.88          | 107.75    | 333.16    | 1.555         | 68.41         |
| 12.00           | 30.0           | Shear        | KIPS         | 207.64          | 2.85      | 25.08     | 6.207         | 273.12        |
| 14.00           | 35.0           | Flexure      | KIP-FT       | 812.52          | 111.41    | 348.57    | 1.464         | 64.42         |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.81    | 21.22   | 7.391 | 325.19 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 110.97  | 359.59  | 1.420 | 62.50  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.31    | 17.68   | 8.843 | 389.10 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 343.83  | 1.524 | 67.04  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 20.12   | 7.566 | 332.90 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69   | 316.34  | 1.750 | 76.98  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64    | 27.52   | 5.383 | 236.83 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34   | 283.53  | 2.026 | 89.16  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 31.49   | 4.639 | 204.13 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 238.62  | 2.530 | 111.32 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 35.58   | 4.074 | 179.26 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -221.34 | 2.280 | 100.30 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 43.29   | 3.255 | 143.22 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -245.55 | 1.779 | 78.27  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 49.47   | 2.777 | 122.19 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -249.01 | 2.025 | 89.10  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 50.31   | 2.720 | 119.70 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -259.39 | 1.799 | 79.14  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 52.71   | 2.551 | 112.23 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -276.68 | 1.465 | 64.47  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 57.44   | 2.300 | 101.21 |

#### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -156.47 | -197.56 | 2.358           | 103.76                  |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 23.22   | 53.98   | 2.496           | 109.80                  |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -112.11 | -186.67 | 2.752           | 121.09                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 21.14   | 51.03   | 2.697           | 118.69                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -101.67 | -183.95 | 2.849           | 125.35                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 20.63   | 50.28   | 2.748           | 120.91                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | -817.88  | -11.29  | -156.73 | 3.913           | 172.15                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 15.52   | 42.30   | 3.385           | 148.93                  |
| 15.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 53.55   | 286.54  | 1.995           | 87.76                   |
| 15.00    | 30.0    | Shear          | KIPS   | 207.64   | 10.41   | 33.85   | 4.380           | 192.71                  |
| 19.00    | 38.0    | Flexure        | KIP-FT | 812.52   | 86.44   | 351.64  | 1.521           | 66.94                   |
| 19.00    | 38.0    | Shear          | KIPS   | 206.48   | 6.18    | 26.95   | 5.621           | 247.34                  |
| 20.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 92.11   | 362.43  | 1.461           | 64.27                   |
| 20.00    | 40.0    | Shear          | KIPS   | 206.48   | 5.15    | 25.24   | 6.044           | 265.95                  |
| 25.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 104.98  | 379.25  | 1.362           | 59.94                   |
| 25.00    | 50.0    | Shear          | KIPS   | 206.48   | 0.00    | 16.88   | 9.338           | 410.88                  |



|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 362.43  | 1.461 | 64.27  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 25.24   | 6.044 | 265.95 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 351.64  | 1.521 | 66.94  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 26.95   | 5.621 | 247.34 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 286.54  | 1.995 | 87.76  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 33.85   | 4.380 | 192.71 |
| 40.00 | 80.0  | Flexure | KIP-FT | -817.88 | -11.29  | -156.73 | 3.913 | 172.15 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 42.30   | 3.385 | 148.93 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -183.95 | 2.849 | 125.35 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 50.28   | 2.748 | 120.91 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -186.67 | 2.752 | 121.09 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 51.03   | 2.697 | 118.69 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -197.56 | 2.358 | 103.76 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 53.98   | 2.496 | 109.80 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -276.68 | 1.465 | 64.47  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 57.44   | 2.300 | 101.21 |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -259.39 | 1.799           | 79.14                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 52.71   | 2.551           | 112.23                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -249.01 | 2.025           | 89.10                   |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 50.31   | 2.720           | 119.70                  |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -245.55 | 1.779           | 78.27                   |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 49.47   | 2.777           | 122.19                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -221.34 | 2.280           | 100.30                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 43.29   | 3.255           | 143.22                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 238.62  | 2.530           | 111.32                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 35.58   | 4.074           | 179.26                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 283.53  | 2.026           | 89.16                   |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 31.49   | 4.639           | 204.13                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 316.34  | 1.750           | 76.98                   |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 27.52   | 5.383           | 236.83                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 343.83  | 1.524           | 67.04                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 20.12   | 7.566           | 332.90                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 359.59  | 1.420           | 62.50                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 17.68   | 8.843           | 389.10                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 348.57  | 1.464           | 64.42                   |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.81    | 21.22   | 7.391           | 325.19                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 333.16  | 1.555           | 68.41                   |

|       |       |         |        |        |       |        |        |         |
|-------|-------|---------|--------|--------|-------|--------|--------|---------|
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85  | 25.08  | 6.207  | 273.12  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18 | 262.99 | 2.043  | 89.90   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94  | 32.74  | 4.632  | 203.82  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26 | 161.35 | 3.550  | 156.19  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02 | 40.34  | 3.660  | 161.03  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00   | 99.000 | 4356.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11 | 48.32  | 2.971  | 130.74  |

**Detailed Rating Results**  
**Maine DOT Config. 3 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 8712.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 48.32     | 2.971                   | 261.49                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 161.35    | 3.550                   | 312.39                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 40.34     | 3.660                   | 322.06                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 262.99    | 2.043                   | 179.80                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 32.74     | 4.632                   | 407.65                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 333.16    | 1.555                   | 136.83                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 25.08     | 6.207                   | 546.24                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 348.57    | 1.464                   | 128.84                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 21.22     | 7.391                   | 650.39                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 359.59    | 1.420                   | 125.00                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 19.76     | 7.913                   | 696.33                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 343.83    | 1.524                   | 134.07                           |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 24.71     | 6.161                   | 542.21                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 316.34    | 1.750                   | 153.97                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 30.75     | 4.816                   | 423.85                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 283.53    | 2.026                   | 178.31                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 11.70     | 34.40     | 4.247                   | 373.74                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 238.62    | 2.530                   | 222.64                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 13.74     | 37.92     | 3.822                   | 336.34                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -215.80   | 2.338                   | 205.76                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.83     | 44.60     | 3.160                   | 278.06                           |
| 35.50           | 88.8           | Flexure                | KIP-FT       | -715.59         | -110.92   | -272.79   | 1.601                   | 140.92                           |
| 35.50           | 88.8           | Shear                  | KIPS         | 207.64          | 21.41     | 49.96     | 2.750                   | 241.99                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -281.24   | 1.793                   | 157.77                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 50.69   | 2.700 | 237.60 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -314.12 | 1.485 | 130.70 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 52.78   | 2.547 | 224.15 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -378.42 | 1.071 | 94.27  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 57.44   | 2.300 | 202.42 |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -156.47   | -297.42   | 1.566                   | 137.84                           |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 23.22     | 54.18     | 2.486                   | 218.79                           |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -112.11   | -249.11   | 2.062                   | 181.48                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 21.14     | 51.43     | 2.677                   | 235.53                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -232.59   | 2.253                   | 198.27                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 20.63     | 50.75     | 2.722                   | 239.54                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | 817.88          | -11.29    | 164.64    | 3.860                   | 339.66                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 15.52     | 43.53     | 3.289                   | 289.46                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 272.35    | 2.098                   | 184.66                           |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 10.41     | 35.71     | 4.151                   | 365.33                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 329.89    | 1.622                   | 142.70                           |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.18      | 29.46     | 5.144                   | 452.67                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 340.31    | 1.556                   | 136.89                           |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.15      | 27.91     | 5.465                   | 480.94                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 104.98    | 361.21    | 1.430                   | 125.87                           |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 20.72     | 7.607                   | 669.41                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 340.31    | 1.556                   | 136.89                           |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.15      | 27.91     | 5.465                   | 480.94                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 329.89    | 1.622                   | 142.70                           |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.18      | 29.46     | 5.144                   | 452.67                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 272.35    | 2.098                   | 184.66                           |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 10.41     | 35.71     | 4.151                   | 365.33                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | -11.29    | 164.64    | 3.860                   | 339.66                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 15.52     | 43.53     | 3.289                   | 289.46                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -232.59   | 2.253                   | 198.27                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 20.63     | 50.75     | 2.722                   | 239.54                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -112.11   | -249.11   | 2.062                   | 181.48                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 21.14     | 51.43     | 2.677                   | 235.53                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -156.47   | -297.42   | 1.566                   | 137.84                           |
| 47.50           | 95.0           | Shear                  | KIPS         | 206.48          | 23.22     | 54.18     | 2.486                   | 218.79                           |
| 50.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -217.79   | -378.42   | 1.071                   | 94.27                            |
| 50.00           | 100.0          | Shear                  | KIPS         | 206.48          | 25.84     | 57.44     | 2.300                   | 202.42                           |

| Span 3   |         |                |        |          |         |         |                 |                         |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -314.12 | 1.485           | 130.70                  |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 52.78   | 2.547           | 224.15                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -281.24 | 1.793           | 157.77                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 50.69   | 2.700           | 237.60                  |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -272.79 | 1.601           | 140.92                  |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 49.96   | 2.750           | 241.99                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -215.80 | 2.338           | 205.76                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 44.60   | 3.160           | 278.06                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 238.62  | 2.530           | 222.64                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 37.92   | 3.822           | 336.34                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 283.53  | 2.026           | 178.31                  |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 34.40   | 4.247           | 373.74                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 316.34  | 1.750           | 153.97                  |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 30.75   | 4.816           | 423.85                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 343.83  | 1.524           | 134.07                  |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 24.71   | 6.161           | 542.21                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 359.59  | 1.420           | 125.00                  |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 19.76   | 7.913           | 696.33                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 348.57  | 1.464           | 128.84                  |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.81    | 21.22   | 7.391           | 650.39                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 333.16  | 1.555           | 136.83                  |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 2.85    | 25.08   | 6.207           | 546.24                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 88.18   | 262.99  | 2.043           | 179.80                  |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 6.94    | 32.74   | 4.632           | 407.65                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 52.26   | 161.35  | 3.550           | 312.39                  |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 11.02   | 40.34   | 3.660           | 322.06                  |
| 40.00    | 100.0   | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000          | 8712.00                 |
| 40.00    | 100.0   | Shear          | KIPS   | 207.64   | 15.11   | 48.32   | 2.971           | 261.49                  |

**Detailed Rating Results**  
**Maine DOT Config. 4**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

**Legal      Legal**

| Location |         |             |        |          |         |         | Rating | Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 4356.00     |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 15.11   | 49.51   | 2.901  | 127.62      |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 52.26   | 163.72  | 3.498  | 153.93      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 11.02   | 40.93   | 3.607  | 158.70      |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 88.18   | 262.49  | 2.047  | 90.07       |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 6.94    | 32.81   | 4.622  | 203.38      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 107.75  | 326.11  | 1.589  | 69.89       |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 2.85    | 25.30   | 6.153  | 270.72      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 111.41  | 338.33  | 1.508  | 66.37       |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 0.81    | 21.82   | 7.187  | 316.25      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 110.97  | 338.91  | 1.507  | 66.31       |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 1.31    | 18.49   | 8.454  | 371.98      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 97.72   | 329.55  | 1.590  | 69.94       |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 5.43    | 22.30   | 6.828  | 300.43      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 67.69   | 306.26  | 1.807  | 79.52       |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 9.64    | 28.55   | 5.188  | 228.28      |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 46.34   | 278.80  | 2.061  | 90.67       |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 11.70   | 32.45   | 4.501  | 198.06      |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 20.90   | 239.92  | 2.516  | 110.72      |
| 28.00    | 70.0    | Shear       | KIPS   | 207.64   | 13.74   | 36.25   | 3.998  | 175.93      |
| 32.00    | 80.0    | Flexure     | KIP-FT | -715.59  | -42.25  | -221.92 | 2.274  | 100.04      |
| 32.00    | 80.0    | Shear       | KIPS   | 207.64   | 17.83   | 43.46   | 3.242  | 142.65      |
| 35.50    | 88.8    | Flexure     | KIP-FT | -715.59  | -110.92 | -246.19 | 1.774  | 78.07       |
| 35.50    | 88.8    | Shear       | KIPS   | 207.64   | 21.41   | 49.74   | 2.762  | 121.52      |
| 36.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -121.75 | -249.66 | 2.020  | 88.87       |
| 36.00    | 90.0    | Shear       | KIPS   | 207.64   | 21.93   | 50.68   | 2.700  | 118.82      |
| 37.50    | 93.8    | Flexure     | KIP-FT | -812.52  | -155.81 | -260.06 | 1.794  | 78.93       |
| 37.50    | 93.8    | Shear       | KIPS   | 206.48   | 23.49   | 53.40   | 2.518  | 110.78      |
| 40.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -217.79 | -277.39 | 1.461  | 64.30       |
| 40.00    | 100.0   | Shear       | KIPS   | 206.48   | 25.84   | 59.58   | 2.218  | 97.57       |

#### Span 2

| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -198.55 | 2.346        | 103.24            |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 55.77   | 2.415        | 106.28            |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -189.18 | 2.716        | 119.49            |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 52.59   | 2.617        | 115.16            |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 5.00  | 10.0  | Flexure | KIP-FT | -817.88 | -101.67 | -186.42 | 2.811 | 123.69 |
| 5.00  | 10.0  | Shear   | KIPS   | 207.64  | 20.63   | 51.78   | 2.668 | 117.39 |
| 10.00 | 20.0  | Flexure | KIP-FT | -817.88 | -11.29  | -158.83 | 3.861 | 169.87 |
| 10.00 | 20.0  | Shear   | KIPS   | 207.64  | 15.52   | 43.41   | 3.299 | 145.15 |
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 53.55   | 281.06  | 2.033 | 89.47  |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 10.41   | 34.90   | 4.247 | 186.88 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 86.44   | 335.08  | 1.597 | 70.25  |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.18    | 28.17   | 5.378 | 236.63 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 92.11   | 342.08  | 1.548 | 68.09  |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15    | 26.54   | 5.748 | 252.93 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98  | 358.91  | 1.440 | 63.34  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 18.74   | 8.409 | 370.01 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 342.08  | 1.548 | 68.09  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 26.54   | 5.748 | 252.93 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 335.08  | 1.597 | 70.25  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 28.17   | 5.378 | 236.63 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 281.06  | 2.033 | 89.47  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 34.90   | 4.247 | 186.88 |
| 40.00 | 80.0  | Flexure | KIP-FT | -817.88 | -11.29  | -158.83 | 3.861 | 169.87 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 43.41   | 3.299 | 145.15 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -186.42 | 2.811 | 123.69 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 51.78   | 2.668 | 117.39 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -189.18 | 2.716 | 119.49 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 52.59   | 2.617 | 115.16 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -198.55 | 2.346 | 103.24 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 55.77   | 2.415 | 106.28 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -277.39 | 1.461 | 64.30  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 59.58   | 2.218 | 97.57  |

### Span 3

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -155.81 | -260.06 | 1.794  | 78.93       |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 23.49   | 53.40   | 2.518  | 110.78      |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -121.75 | -249.66 | 2.020  | 88.87       |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 21.93   | 50.68   | 2.700  | 118.82      |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -110.92 | -246.19 | 1.774  | 78.07       |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 21.41   | 49.74   | 2.762  | 121.52      |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -42.25  | -221.92 | 2.274  | 100.04      |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 17.83   | 43.46   | 3.242  | 142.65      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 20.90   | 239.92  | 2.516  | 110.72      |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 12.00 | 30.0  | Shear   | KIPS   | 207.64 | 13.74  | 36.25  | 3.998  | 175.93  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52 | 46.34  | 278.80 | 2.061  | 90.67   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48 | 11.70  | 32.45  | 4.501  | 198.06  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52 | 67.69  | 306.26 | 1.807  | 79.52   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48 | 9.64   | 28.55  | 5.188  | 228.28  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52 | 97.72  | 329.55 | 1.590  | 69.94   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48 | 5.43   | 22.30  | 6.828  | 300.43  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52 | 110.97 | 338.91 | 1.507  | 66.31   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48 | 1.31   | 18.49  | 8.454  | 371.98  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 111.41 | 338.33 | 1.508  | 66.37   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.81   | 21.82  | 7.187  | 316.25  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 107.75 | 326.11 | 1.589  | 69.89   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85   | 25.30  | 6.153  | 270.72  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18  | 262.49 | 2.047  | 90.07   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94   | 32.81  | 4.622  | 203.38  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26  | 163.72 | 3.498  | 153.93  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02  | 40.93  | 3.607  | 158.70  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 4356.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11  | 49.51  | 2.901  | 127.62  |

**Detailed Rating Results**  
**Maine DOT Config. 4 x 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 8712.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 49.51     | 2.901                   | 255.25                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 163.72    | 3.498                   | 307.86                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 40.93     | 3.607                   | 317.40                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 262.49    | 2.047                   | 180.14                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 32.81     | 4.622                   | 406.76                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 326.11    | 1.589                   | 139.79                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 25.30     | 6.153                   | 541.45                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 338.33    | 1.508                   | 132.73                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 21.82     | 7.187                   | 632.50                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 338.91    | 1.507                   | 132.62                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 21.96     | 7.120                   | 626.53                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 329.55    | 1.590                   | 139.88                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 27.82   | 5.472 | 481.54 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69   | 306.26  | 1.807 | 159.03 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64    | 33.13   | 4.470 | 393.40 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34   | 278.80  | 2.061 | 181.34 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 36.53   | 3.999 | 351.89 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 239.92  | 2.516 | 221.44 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 39.80   | 3.642 | 320.51 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -212.66 | 2.373 | 208.80 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 45.94   | 3.067 | 269.92 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -271.36 | 1.610 | 141.66 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 51.33   | 2.677 | 235.54 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -280.39 | 1.798 | 158.25 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 52.15   | 2.625 | 230.97 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -310.15 | 1.504 | 132.37 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 54.50   | 2.467 | 217.09 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -372.30 | 1.089 | 95.82  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 60.12   | 2.198 | 193.39 |

#### Span 2

| Location |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
|          |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -296.32 | 1.572  | 138.36      |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 56.65   | 2.378  | 209.25      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -249.05 | 2.063  | 181.52      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 53.73   | 2.562  | 225.44      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -238.06 | 2.201  | 193.71      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63   | 52.98   | 2.608  | 229.47      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 167.19  | 3.801  | 334.48      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52   | 45.14   | 3.172  | 279.16      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 271.04  | 2.109  | 185.56      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41   | 37.66   | 3.936  | 346.41      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 320.70  | 1.668  | 146.79      |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18    | 31.51   | 4.808  | 423.14      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 327.54  | 1.616  | 142.23      |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.15    | 29.99   | 5.087  | 447.63      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 104.98  | 335.40  | 1.540  | 135.56      |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 23.06   | 6.835  | 601.52      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 327.54  | 1.616  | 142.23      |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.15    | 29.99   | 5.087  | 447.63      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 320.70  | 1.668  | 146.79      |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.18    | 31.51   | 4.808  | 423.14      |



|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 271.04  | 2.109 | 185.56 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 37.66   | 3.936 | 346.41 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 167.19  | 3.801 | 334.48 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 45.14   | 3.172 | 279.16 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -238.06 | 2.201 | 193.71 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 52.98   | 2.608 | 229.47 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -249.05 | 2.063 | 181.52 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 53.73   | 2.562 | 225.44 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -296.32 | 1.572 | 138.36 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 56.65   | 2.378 | 209.25 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -372.30 | 1.089 | 95.82  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 60.12   | 2.198 | 193.39 |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -310.15 | 1.504           | 132.37                  |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 54.50   | 2.467           | 217.09                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -280.39 | 1.798           | 158.25                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 52.15   | 2.625           | 230.97                  |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -271.36 | 1.610           | 141.66                  |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 51.33   | 2.677           | 235.54                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -212.66 | 2.373           | 208.80                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 45.94   | 3.067           | 269.92                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 239.92  | 2.516           | 221.44                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 39.80   | 3.642           | 320.51                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 278.80  | 2.061           | 181.34                  |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 36.53   | 3.999           | 351.89                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 306.26  | 1.807           | 159.03                  |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 33.13   | 4.470           | 393.40                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 329.55  | 1.590           | 139.88                  |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 27.82   | 5.472           | 481.54                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 338.91  | 1.507           | 132.62                  |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 21.96   | 7.120           | 626.53                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 338.33  | 1.508           | 132.73                  |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.81    | 21.82   | 7.187           | 632.50                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 326.11  | 1.589           | 139.79                  |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 2.85    | 25.30   | 6.153           | 541.45                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 88.18   | 262.49  | 2.047           | 180.14                  |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 6.94    | 32.81   | 4.622           | 406.76                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 52.26   | 163.72  | 3.498           | 307.86                  |

|       |       |         |        |        |       |       |        |         |
|-------|-------|---------|--------|--------|-------|-------|--------|---------|
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02 | 40.93 | 3.607  | 317.40  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00  | 99.000 | 8712.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11 | 49.51 | 2.901  | 255.25  |

**Detailed Rating Results  
Maine DOT Config. 5  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4356.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 47.98     | 2.993                   | 131.69                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 160.29    | 3.573                   | 157.23                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 40.07     | 3.684                   | 162.10                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 260.47    | 2.063                   | 90.77                            |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 32.56     | 4.658                   | 204.95                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 318.01    | 1.629                   | 71.67                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 25.03     | 6.220                   | 273.70                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 332.79    | 1.533                   | 67.47                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 22.38     | 7.007                   | 308.31                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 338.88    | 1.507                   | 66.32                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 19.79     | 7.899                   | 347.58                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 324.42    | 1.615                   | 71.05                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 22.09     | 6.893                   | 303.28                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 297.35    | 1.861                   | 81.90                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 28.97     | 5.113                   | 224.97                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 272.19    | 2.111                   | 92.87                            |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 11.70     | 32.14     | 4.545                   | 199.99                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 237.19    | 2.545                   | 111.99                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 13.74     | 35.13     | 4.126                   | 181.53                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -213.77   | 2.360                   | 103.86                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.83     | 42.50     | 3.315                   | 145.87                           |
| 35.50           | 88.8           | Flexure                | KIP-FT       | -715.59         | -110.92   | -237.15   | 1.842                   | 81.05                            |
| 35.50           | 88.8           | Shear                  | KIPS         | 207.64          | 21.41     | 48.66     | 2.824                   | 124.24                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -240.49   | 2.097                   | 92.25                            |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 21.93     | 49.49     | 2.766                   | 121.69                           |
| 37.50           | 93.8           | Flexure                | KIP-FT       | -812.52         | -155.81   | -250.51   | 1.862                   | 81.94                            |
| 37.50           | 93.8           | Shear                  | KIPS         | 206.48          | 23.49     | 51.88     | 2.591                   | 114.03                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -217.79   | -267.21   | 1.517                   | 66.75                            |

|                 |                |                        |              |                 |           |           |                         |                                  |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| 40.00           | 100.0          | Shear                  | KIPS         | 206.48          | 25.84     | 56.71     | 2.330                   | 102.51                           |
| <b>Span 2</b>   |                |                        |              |                 |           |           |                         |                                  |
| <b>Location</b> |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -156.47   | -185.88   | 2.506                   | 110.28                           |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 23.22     | 53.29     | 2.528                   | 111.22                           |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -112.11   | -175.64   | 2.925                   | 128.70                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 21.14     | 50.40     | 2.731                   | 120.18                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -173.08   | 3.028                   | 133.22                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 20.63     | 49.65     | 2.782                   | 122.42                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | 817.88          | -11.29    | 162.81    | 3.903                   | 171.74                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 15.52     | 41.78     | 3.427                   | 150.80                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 279.60    | 2.044                   | 89.94                            |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 10.41     | 33.46     | 4.431                   | 194.95                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 334.78    | 1.598                   | 70.31                            |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.18      | 26.67     | 5.681                   | 249.95                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 345.11    | 1.534                   | 67.49                            |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.15      | 24.98     | 6.105                   | 268.64                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 104.98    | 361.53    | 1.429                   | 62.88                            |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 16.79     | 9.387                   | 413.02                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 345.11    | 1.534                   | 67.49                            |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.15      | 24.98     | 6.105                   | 268.64                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 334.78    | 1.598                   | 70.31                            |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.18      | 26.67     | 5.681                   | 249.95                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 279.60    | 2.044                   | 89.94                            |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 10.41     | 33.46     | 4.431                   | 194.95                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | -11.29    | 162.81    | 3.903                   | 171.74                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 15.52     | 41.78     | 3.427                   | 150.80                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -173.08   | 3.028                   | 133.22                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 20.63     | 49.65     | 2.782                   | 122.42                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -112.11   | -175.64   | 2.925                   | 128.70                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 21.14     | 50.40     | 2.731                   | 120.18                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -156.47   | -185.88   | 2.506                   | 110.28                           |
| 47.50           | 95.0           | Shear                  | KIPS         | 206.48          | 23.22     | 53.29     | 2.528                   | 111.22                           |
| 50.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -217.79   | -267.21   | 1.517                   | 66.75                            |
| 50.00           | 100.0          | Shear                  | KIPS         | 206.48          | 25.84     | 56.71     | 2.330                   | 102.51                           |

|                 |  |  |  |  |  |  |                         |                       |
|-----------------|--|--|--|--|--|--|-------------------------|-----------------------|
| <b>Span 3</b>   |  |  |  |  |  |  |                         |                       |
| <b>Location</b> |  |  |  |  |  |  | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load</b> |

|       |         |             |        |          |         |         |        | Rating  |
|-------|---------|-------------|--------|----------|---------|---------|--------|---------|
| (ft)  | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)   |
| 2.50  | 6.3     | Flexure     | KIP-FT | -812.52  | -155.81 | -250.51 | 1.862  | 81.94   |
| 2.50  | 6.3     | Shear       | KIPS   | 206.48   | 23.49   | 51.88   | 2.591  | 114.03  |
| 4.00  | 10.0    | Flexure     | KIP-FT | -817.88  | -121.75 | -240.49 | 2.097  | 92.25   |
| 4.00  | 10.0    | Shear       | KIPS   | 207.64   | 21.93   | 49.49   | 2.766  | 121.69  |
| 4.50  | 11.3    | Flexure     | KIP-FT | -715.59  | -110.92 | -237.15 | 1.842  | 81.05   |
| 4.50  | 11.3    | Shear       | KIPS   | 207.64   | 21.41   | 48.66   | 2.824  | 124.24  |
| 8.00  | 20.0    | Flexure     | KIP-FT | -715.59  | -42.25  | -213.77 | 2.360  | 103.86  |
| 8.00  | 20.0    | Shear       | KIPS   | 207.64   | 17.83   | 42.50   | 3.315  | 145.87  |
| 12.00 | 30.0    | Flexure     | KIP-FT | 817.88   | 20.90   | 237.19  | 2.545  | 111.99  |
| 12.00 | 30.0    | Shear       | KIPS   | 207.64   | 13.74   | 35.13   | 4.126  | 181.53  |
| 14.00 | 35.0    | Flexure     | KIP-FT | 812.52   | 46.34   | 272.19  | 2.111  | 92.87   |
| 14.00 | 35.0    | Shear       | KIPS   | 206.48   | 11.70   | 32.14   | 4.545  | 199.99  |
| 16.00 | 40.0    | Flexure     | KIP-FT | 812.52   | 67.69   | 297.35  | 1.861  | 81.90   |
| 16.00 | 40.0    | Shear       | KIPS   | 206.48   | 9.64    | 28.97   | 5.113  | 224.97  |
| 20.00 | 50.0    | Flexure     | KIP-FT | 812.52   | 97.72   | 324.42  | 1.615  | 71.05   |
| 20.00 | 50.0    | Shear       | KIPS   | 206.48   | 5.43    | 22.09   | 6.893  | 303.28  |
| 24.00 | 60.0    | Flexure     | KIP-FT | 812.52   | 110.97  | 338.88  | 1.507  | 66.32   |
| 24.00 | 60.0    | Shear       | KIPS   | 206.48   | 1.31    | 19.79   | 7.899  | 347.58  |
| 26.00 | 65.0    | Flexure     | KIP-FT | 812.52   | 111.41  | 332.79  | 1.533  | 67.47   |
| 26.00 | 65.0    | Shear       | KIPS   | 206.48   | 0.81    | 22.38   | 7.007  | 308.31  |
| 28.00 | 70.0    | Flexure     | KIP-FT | 817.88   | 107.75  | 318.01  | 1.629  | 71.67   |
| 28.00 | 70.0    | Shear       | KIPS   | 207.64   | 2.85    | 25.03   | 6.220  | 273.70  |
| 32.00 | 80.0    | Flexure     | KIP-FT | 817.88   | 88.18   | 260.47  | 2.063  | 90.77   |
| 32.00 | 80.0    | Shear       | KIPS   | 207.64   | 6.94    | 32.56   | 4.658  | 204.95  |
| 36.00 | 90.0    | Flexure     | KIP-FT | 817.88   | 52.26   | 160.29  | 3.573  | 157.23  |
| 36.00 | 90.0    | Shear       | KIPS   | 207.64   | 11.02   | 40.07   | 3.684  | 162.10  |
| 40.00 | 100.0   | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 4356.00 |
| 40.00 | 100.0   | Shear       | KIPS   | 207.64   | 15.11   | 47.98   | 2.993  | 131.69  |

**Detailed Rating Results**  
**Maine DOT Config. 5 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

| Location |         |             |        |          |      |      | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|------|------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL   | LL   | Factor       | (Ton)             |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00 | 0.00 | 99.000       | 8712.00           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 0.00  | 0.0   | Shear   | KIPS   | 207.64  | 15.11   | 47.98   | 2.993 | 263.38 |
| 4.00  | 10.0  | Flexure | KIP-FT | 817.88  | 52.26   | 160.29  | 3.573 | 314.46 |
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 11.02   | 40.07   | 3.684 | 324.20 |
| 8.00  | 20.0  | Flexure | KIP-FT | 817.88  | 88.18   | 260.47  | 2.063 | 181.54 |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 6.94    | 32.56   | 4.658 | 409.91 |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 107.75  | 318.01  | 1.629 | 143.35 |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 2.85    | 25.03   | 6.220 | 547.39 |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 111.41  | 332.79  | 1.533 | 134.94 |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.81    | 22.38   | 7.007 | 616.63 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 110.97  | 338.88  | 1.507 | 132.64 |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.31    | 20.04   | 7.800 | 686.43 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 324.42  | 1.615 | 142.09 |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 24.35   | 6.253 | 550.25 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69   | 297.35  | 1.861 | 163.80 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64    | 30.08   | 4.924 | 433.27 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34   | 272.19  | 2.111 | 185.75 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 33.75   | 4.328 | 380.83 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 237.19  | 2.545 | 223.99 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 37.28   | 3.888 | 342.11 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -205.46 | 2.456 | 216.12 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 43.97   | 3.205 | 282.02 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -270.22 | 1.617 | 142.26 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 49.33   | 2.785 | 245.11 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -279.62 | 1.803 | 158.68 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 50.06   | 2.734 | 240.63 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -312.98 | 1.491 | 131.18 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 52.14   | 2.579 | 226.91 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -376.15 | 1.078 | 94.84  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 56.71   | 2.330 | 205.03 |

#### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -156.47 | -292.74 | 1.591           | 140.05                  |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 23.22   | 53.54   | 2.516           | 221.43                  |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -112.11 | -238.87 | 2.151           | 189.26                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 21.14   | 50.88   | 2.705           | 238.07                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -101.67 | -228.11 | 2.297           | 202.16                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 20.63   | 50.23   | 2.750           | 242.02                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | 817.88   | -11.29  | 167.60  | 3.792           | 333.66                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 15.52   | 43.27   | 3.309           | 291.20                  |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 53.55   | 268.13  | 2.132 | 187.58 |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 10.41   | 35.72   | 4.150 | 365.23 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 86.44   | 318.92  | 1.677 | 147.62 |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.18    | 29.36   | 5.161 | 454.13 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 92.11   | 326.26  | 1.623 | 142.79 |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15    | 27.77   | 5.494 | 483.46 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98  | 340.96  | 1.515 | 133.35 |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 20.52   | 7.683 | 676.08 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 326.26  | 1.623 | 142.79 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 27.77   | 5.494 | 483.46 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 318.92  | 1.677 | 147.62 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 29.36   | 5.161 | 454.13 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 268.13  | 2.132 | 187.58 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 35.72   | 4.150 | 365.23 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 167.60  | 3.792 | 333.66 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 43.27   | 3.309 | 291.20 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -228.11 | 2.297 | 202.16 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 50.23   | 2.750 | 242.02 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -238.87 | 2.151 | 189.26 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 50.88   | 2.705 | 238.07 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -292.74 | 1.591 | 140.05 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 53.54   | 2.516 | 221.43 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -376.15 | 1.078 | 94.84  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 56.71   | 2.330 | 205.03 |

### Span 3

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -155.81 | -312.98 | 1.491  | 131.18      |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 23.49   | 52.14   | 2.579  | 226.91      |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -121.75 | -279.62 | 1.803  | 158.68      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 21.93   | 50.06   | 2.734  | 240.63      |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -110.92 | -270.22 | 1.617  | 142.26      |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 21.41   | 49.33   | 2.785  | 245.11      |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -42.25  | -205.46 | 2.456  | 216.12      |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 17.83   | 43.97   | 3.205  | 282.02      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 20.90   | 237.19  | 2.545  | 223.99      |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 13.74   | 37.28   | 3.888  | 342.11      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 46.34   | 272.19  | 2.111  | 185.75      |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 11.70   | 33.75   | 4.328  | 380.83      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 67.69   | 297.35  | 1.861  | 163.80      |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 16.00 | 40.0  | Shear   | KIPS   | 206.48 | 9.64   | 30.08  | 4.924  | 433.27  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52 | 97.72  | 324.42 | 1.615  | 142.09  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48 | 5.43   | 24.35  | 6.253  | 550.25  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52 | 110.97 | 338.88 | 1.507  | 132.64  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48 | 1.31   | 20.04  | 7.800  | 686.43  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 111.41 | 332.79 | 1.533  | 134.94  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.81   | 22.38  | 7.007  | 616.63  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 107.75 | 318.01 | 1.629  | 143.35  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85   | 25.03  | 6.220  | 547.39  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18  | 260.47 | 2.063  | 181.54  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94   | 32.56  | 4.658  | 409.91  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26  | 160.29 | 3.573  | 314.46  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02  | 40.07  | 3.684  | 324.20  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 8712.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11  | 47.98  | 2.993  | 263.38  |

**Detailed Rating Results  
Maine DOT Config. 6  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 3757.05                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 55.64     | 2.581                   | 97.94                            |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 189.67    | 3.020                   | 114.60                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 47.42     | 3.113                   | 118.15                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 315.71    | 1.702                   | 64.59                            |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 39.46     | 3.843                   | 145.84                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 396.94    | 1.305                   | 49.53                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 31.87     | 4.885                   | 185.38                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 422.26    | 1.209                   | 45.86                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 28.25     | 5.551                   | 210.67                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 433.34    | 1.179                   | 44.73                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 24.74     | 6.318                   | 239.78                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 423.03    | 1.238                   | 46.99                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 28.71     | 5.302                   | 201.23                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 378.83    | 1.461                   | 55.45                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 36.32     | 4.078                   | 154.76                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 340.94    | 1.685                   | 63.95                            |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 39.95   | 3.657 | 138.77 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 293.12  | 2.060 | 78.16  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 43.48   | 3.333 | 126.50 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -231.11 | 2.183 | 82.86  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 50.08   | 2.814 | 106.77 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -256.38 | 1.704 | 64.66  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 55.29   | 2.485 | 94.29  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -259.99 | 1.939 | 73.60  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 56.00   | 2.444 | 92.75  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -270.83 | 1.723 | 65.37  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 57.99   | 2.318 | 87.98  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -288.88 | 1.403 | 53.25  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 61.51   | 2.148 | 81.52  |

### Span 2

|          |         |             |        |          |         |         | Legal  | Legal  |
|----------|---------|-------------|--------|----------|---------|---------|--------|--------|
|          |         |             |        |          |         |         | Rating | Load   |
| Location |         |             |        |          |         |         |        | Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)  |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -224.80 | 2.072  | 78.65  |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 58.55   | 2.301  | 87.32  |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -212.41 | 2.419  | 91.78  |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 55.98   | 2.459  | 93.32  |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -209.32 | 2.504  | 95.01  |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63   | 55.31   | 2.498  | 94.78  |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 214.81  | 2.958  | 112.27 |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52   | 48.23   | 2.969  | 112.68 |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 338.33  | 1.689  | 64.11  |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41   | 40.53   | 3.658  | 138.81 |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 404.48  | 1.323  | 50.19  |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18    | 34.14   | 4.438  | 168.42 |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 416.02  | 1.272  | 48.29  |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.15    | 32.55   | 4.687  | 177.86 |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 104.98  | 438.48  | 1.178  | 44.72  |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 24.63   | 6.401  | 242.91 |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 416.02  | 1.272  | 48.29  |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.15    | 32.55   | 4.687  | 177.86 |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 404.48  | 1.323  | 50.19  |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.18    | 34.14   | 4.438  | 168.42 |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 338.33  | 1.689  | 64.11  |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 10.41   | 40.53   | 3.658  | 138.81 |
| 40.00    | 80.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 214.81  | 2.958  | 112.27 |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 15.52   | 48.23   | 2.969  | 112.68 |



|       |       |         |        |         |         |         |       |       |
|-------|-------|---------|--------|---------|---------|---------|-------|-------|
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -209.32 | 2.504 | 95.01 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 55.31   | 2.498 | 94.78 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -212.41 | 2.419 | 91.78 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 55.98   | 2.459 | 93.32 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -224.80 | 2.072 | 78.65 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 58.55   | 2.301 | 87.32 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -288.88 | 1.403 | 53.25 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 61.51   | 2.148 | 81.52 |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -270.83 | 1.723           | 65.37                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 57.99   | 2.318           | 87.98                   |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -259.99 | 1.939           | 73.60                   |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 56.00   | 2.444           | 92.75                   |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -256.38 | 1.704           | 64.66                   |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 55.29   | 2.485           | 94.29                   |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -231.11 | 2.183           | 82.86                   |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 50.08   | 2.814           | 106.77                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 293.12  | 2.060           | 78.16                   |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 43.48   | 3.333           | 126.50                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 340.94  | 1.685           | 63.95                   |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 39.95   | 3.657           | 138.77                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 378.83  | 1.461           | 55.45                   |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 36.32   | 4.078           | 154.76                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 423.03  | 1.238           | 46.99                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 28.71   | 5.302           | 201.23                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 433.34  | 1.179           | 44.73                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 24.74   | 6.318           | 239.78                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 422.26  | 1.209           | 45.86                   |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.81    | 28.25   | 5.551           | 210.67                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 396.94  | 1.305           | 49.53                   |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 2.85    | 31.87   | 4.885           | 185.38                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 88.18   | 315.71  | 1.702           | 64.59                   |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 6.94    | 39.46   | 3.843           | 145.84                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 52.26   | 189.67  | 3.020           | 114.60                  |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 11.02   | 47.42   | 3.113           | 118.15                  |
| 40.00    | 100.0   | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000          | 3757.05                 |
| 40.00    | 100.0   | Shear          | KIPS   | 207.64   | 15.11   | 55.64   | 2.581           | 97.94                   |

**Detailed Rating Results  
Maine DOT Config. 6 x2  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 7514.10                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 55.64     | 2.581                   | 195.89                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 189.67    | 3.020                   | 229.20                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 47.42     | 3.113                   | 236.30                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 315.71    | 1.702                   | 129.18                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 39.46     | 3.843                   | 291.69                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 396.94    | 1.305                   | 99.05                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 31.87     | 4.885                   | 370.76                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 422.26    | 1.209                   | 91.73                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 28.25     | 5.551                   | 421.35                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 433.34    | 1.179                   | 89.46                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 28.15     | 5.554                   | 421.52                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 423.03    | 1.238                   | 93.99                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 35.84     | 4.249                   | 322.49                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 378.83    | 1.461                   | 110.89                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 43.03     | 3.442                   | 261.23                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 340.94    | 1.685                   | 127.90                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 11.70     | 46.35     | 3.152                   | 239.21                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 293.12    | 2.060                   | 156.33                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 13.74     | 49.47     | 2.930                   | 222.38                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -210.46   | 2.397                   | 181.97                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.83     | 55.07     | 2.559                   | 194.21                           |
| 35.50           | 88.8           | Flexure                | KIP-FT       | -715.59         | -110.92   | -320.36   | 1.364                   | 103.49                           |
| 35.50           | 88.8           | Shear                  | KIPS         | 207.64          | 21.41     | 59.27     | 2.318                   | 175.92                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -338.37   | 1.490                   | 113.10                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 21.93     | 59.83     | 2.288                   | 173.63                           |
| 37.50           | 93.8           | Flexure                | KIP-FT       | -812.52         | -155.81   | -393.44   | 1.186                   | 90.00                            |
| 37.50           | 93.8           | Shear                  | KIPS         | 206.48          | 23.49     | 61.37     | 2.191                   | 166.29                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -217.79   | -495.98   | 0.817                   | 62.04                            |
| 40.00           | 100.0          | Shear                  | KIPS         | 206.48          | 26.10     | 63.79     | 2.067                   | 156.89                           |

**Span 2**

**Legal      Legal**

| Location |         |             |        |          |         |         | Rating | Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -398.68 | 1.169  | 88.69       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 59.75   | 2.255  | 171.12      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -327.10 | 1.571  | 119.21      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 57.68   | 2.386  | 181.11      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -310.13 | 1.690  | 128.25      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63   | 57.16   | 2.417  | 183.44      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 220.43  | 2.883  | 218.82      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52   | 51.71   | 2.769  | 210.17      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 315.74  | 1.810  | 137.39      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41   | 45.51   | 3.257  | 247.19      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 356.22  | 1.502  | 113.99      |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18    | 39.92   | 3.796  | 288.08      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 362.13  | 1.462  | 110.95      |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.15    | 38.43   | 3.969  | 301.24      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 104.98  | 362.94  | 1.424  | 108.05      |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 30.66   | 5.141  | 390.18      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 362.13  | 1.462  | 110.95      |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.15    | 38.43   | 3.969  | 301.24      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 356.22  | 1.502  | 113.99      |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.18    | 39.92   | 3.796  | 288.08      |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 315.74  | 1.810  | 137.39      |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 10.41   | 45.51   | 3.257  | 247.19      |
| 40.00    | 80.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 220.43  | 2.883  | 218.82      |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 15.52   | 51.71   | 2.769  | 210.17      |
| 45.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -310.13 | 1.690  | 128.25      |
| 45.00    | 90.0    | Shear       | KIPS   | 207.64   | 20.63   | 57.16   | 2.417  | 183.44      |
| 45.50    | 91.0    | Flexure     | KIP-FT | -817.88  | -112.11 | -327.10 | 1.571  | 119.21      |
| 45.50    | 91.0    | Shear       | KIPS   | 207.64   | 21.14   | 57.68   | 2.386  | 181.11      |
| 47.50    | 95.0    | Flexure     | KIP-FT | -812.52  | -156.47 | -398.68 | 1.169  | 88.69       |
| 47.50    | 95.0    | Shear       | KIPS   | 206.48   | 23.22   | 59.75   | 2.255  | 171.12      |
| 50.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -217.79 | -495.98 | 0.817  | 62.04       |
| 50.00    | 100.0   | Shear       | KIPS   | 206.48   | 26.10   | 63.79   | 2.067  | 156.89      |

### Span 3

| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -155.81 | -393.44 | 1.186        | 90.00             |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 23.49   | 61.37   | 2.191        | 166.29            |

|       |       |         |        |         |         |         |        |         |
|-------|-------|---------|--------|---------|---------|---------|--------|---------|
| 4.00  | 10.0  | Flexure | KIP-FT | -817.88 | -121.75 | -338.37 | 1.490  | 113.10  |
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 21.93   | 59.83   | 2.288  | 173.63  |
| 4.50  | 11.3  | Flexure | KIP-FT | -715.59 | -110.92 | -320.36 | 1.364  | 103.49  |
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 21.41   | 59.27   | 2.318  | 175.92  |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -42.25  | -210.46 | 2.397  | 181.97  |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 17.83   | 55.07   | 2.559  | 194.21  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 20.90   | 293.12  | 2.060  | 156.33  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 13.74   | 49.47   | 2.930  | 222.38  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 46.34   | 340.94  | 1.685  | 127.90  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 11.70   | 46.35   | 3.152  | 239.21  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 67.69   | 378.83  | 1.461  | 110.89  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 9.64    | 43.03   | 3.442  | 261.23  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 423.03  | 1.238  | 93.99   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 35.84   | 4.249  | 322.49  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 110.97  | 433.34  | 1.179  | 89.46   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.31    | 28.15   | 5.554  | 421.52  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 111.41  | 422.26  | 1.209  | 91.73   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.81    | 28.25   | 5.551  | 421.35  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 107.75  | 396.94  | 1.305  | 99.05   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 2.85    | 31.87   | 4.885  | 370.76  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 88.18   | 315.71  | 1.702  | 129.18  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 6.94    | 39.46   | 3.843  | 291.69  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 52.26   | 189.67  | 3.020  | 229.20  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 11.02   | 47.42   | 3.113  | 236.30  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00    | 0.00    | 99.000 | 7514.10 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 15.11   | 55.64   | 2.581  | 195.89  |

**Detailed Rating Results**  
**Maine DOT Config. 7**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 2940.30                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 45.70     | 3.142                   | 93.32                            |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 156.89    | 3.651                   | 108.43                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 39.22     | 3.764                   | 111.79                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 263.21    | 2.041                   | 60.63                            |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 32.90     | 4.610                   | 136.91                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 107.75  | 322.16  | 1.608 | 47.76  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 2.85    | 26.85   | 5.799 | 172.24 |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 111.41  | 335.38  | 1.522 | 45.19  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.81    | 23.96   | 6.546 | 194.43 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 110.97  | 346.81  | 1.473 | 43.74  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.31    | 21.14   | 7.396 | 219.67 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 340.55  | 1.538 | 45.69  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 24.51   | 6.212 | 184.49 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69   | 301.82  | 1.834 | 54.46  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64    | 30.37   | 4.877 | 144.86 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34   | 275.25  | 2.087 | 61.99  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 33.16   | 4.405 | 130.83 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 240.53  | 2.510 | 74.55  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 35.85   | 4.043 | 120.09 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -183.46 | 2.750 | 81.69  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 40.85   | 3.450 | 102.45 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -203.52 | 2.146 | 63.75  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 44.78   | 3.068 | 91.13  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -206.39 | 2.443 | 72.56  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 45.30   | 3.021 | 89.73  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -214.99 | 2.170 | 64.45  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 46.78   | 2.874 | 85.35  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -229.32 | 1.768 | 52.50  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 49.33   | 2.679 | 79.56  |

#### Span 2

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -156.47 | -177.43 | 2.626  | 77.98       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 23.22   | 47.13   | 2.858  | 84.90       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -112.11 | -167.65 | 3.064  | 91.01       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 21.14   | 45.22   | 3.044  | 90.40       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -101.67 | -165.21 | 3.172  | 94.21       |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 20.63   | 44.72   | 3.089  | 91.74       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -11.29  | 177.23  | 3.586  | 106.49      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 15.52   | 39.31   | 3.642  | 108.18      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 53.55   | 271.33  | 2.106  | 62.56       |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 10.41   | 33.38   | 4.441  | 131.90      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 86.44   | 322.11  | 1.661  | 49.33       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.18    | 28.39   | 5.338  | 158.52      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 92.11   | 331.80  | 1.595  | 47.39       |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15    | 27.13   | 5.623 | 166.99 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98  | 352.92  | 1.464 | 43.48  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 20.89   | 7.546 | 224.13 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 331.80  | 1.595 | 47.39  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 27.13   | 5.623 | 166.99 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 322.11  | 1.661 | 49.33  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 28.39   | 5.338 | 158.52 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 271.33  | 2.106 | 62.56  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 33.38   | 4.441 | 131.90 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 177.23  | 3.586 | 106.49 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 39.31   | 3.642 | 108.18 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -165.21 | 3.172 | 94.21  |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 44.72   | 3.089 | 91.74  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -167.65 | 3.064 | 91.01  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 45.22   | 3.044 | 90.40  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -177.43 | 2.626 | 77.98  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 47.13   | 2.858 | 84.90  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -229.32 | 1.768 | 52.50  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 49.33   | 2.679 | 79.56  |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -214.99 | 2.170           | 64.45                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 46.78   | 2.874           | 85.35                   |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -206.39 | 2.443           | 72.56                   |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 45.30   | 3.021           | 89.73                   |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -203.52 | 2.146           | 63.75                   |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 44.78   | 3.068           | 91.13                   |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -183.46 | 2.750           | 81.69                   |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 40.85   | 3.450           | 102.45                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 240.53  | 2.510           | 74.55                   |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 35.85   | 4.043           | 120.09                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 275.25  | 2.087           | 61.99                   |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 33.16   | 4.405           | 130.83                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 301.82  | 1.834           | 54.46                   |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 30.37   | 4.877           | 144.86                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 340.55  | 1.538           | 45.69                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 24.51   | 6.212           | 184.49                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 346.81  | 1.473           | 43.74                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 21.14   | 7.396           | 219.67                  |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 111.41 | 335.38 | 1.522  | 45.19   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.81   | 23.96  | 6.546  | 194.43  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 107.75 | 322.16 | 1.608  | 47.76   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85   | 26.85  | 5.799  | 172.24  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18  | 263.21 | 2.041  | 60.63   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94   | 32.90  | 4.610  | 136.91  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26  | 156.89 | 3.651  | 108.43  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02  | 39.22  | 3.764  | 111.79  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 2940.30 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11  | 45.70  | 3.142  | 93.32   |

**Detailed Rating Results**  
**Maine DOT Config. 7 x 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 5880.60                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 15.11     | 45.70     | 3.142                   | 186.65                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 156.89    | 3.651                   | 216.86                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 11.02     | 39.22     | 3.764                   | 223.58                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 263.21    | 2.041                   | 121.26                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 6.94      | 32.90     | 4.610                   | 273.81                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 322.16    | 1.608                   | 95.51                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 2.85      | 26.85     | 5.799                   | 344.48                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 335.38    | 1.522                   | 90.38                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.81      | 23.96     | 6.546                   | 388.85                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 346.81    | 1.473                   | 87.48                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.31      | 23.77     | 6.575                   | 390.57                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 340.55    | 1.538                   | 91.37                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 30.16     | 5.048                   | 299.86                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 301.82    | 1.834                   | 108.93                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 9.64      | 35.81     | 4.136                   | 245.66                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 275.25    | 2.087                   | 123.99                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 11.70     | 38.42     | 3.802                   | 225.83                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 240.53    | 2.510                   | 149.09                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 13.74     | 40.82     | 3.551                   | 210.91                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -157.53   | 3.203                   | 190.26                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.83     | 45.11     | 3.124                   | 185.57                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -254.81 | 1.714 | 101.83 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 48.28   | 2.845 | 169.02 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -270.22 | 1.866 | 110.84 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 48.69   | 2.811 | 166.98 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -317.77 | 1.468 | 87.21  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 49.82   | 2.699 | 160.31 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -401.93 | 1.009 | 59.91  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 26.10   | 51.58   | 2.556 | 151.85 |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -156.47   | -321.25   | 1.450                   | 86.14                            |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 23.22     | 48.33     | 2.787                   | 165.57                           |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -112.11   | -259.60   | 1.979                   | 117.55                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 21.14     | 46.85     | 2.938                   | 174.53                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -245.20   | 2.137                   | 126.95                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 20.63     | 46.50     | 2.971                   | 176.47                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | 817.88          | -11.29    | 181.61    | 3.499                   | 207.85                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 15.52     | 42.49     | 3.370                   | 200.19                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 253.83    | 2.252                   | 133.74                           |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 10.41     | 37.61     | 3.941                   | 234.12                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 285.74    | 1.872                   | 111.21                           |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.18      | 33.09     | 4.580                   | 272.04                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 289.89    | 1.826                   | 108.47                           |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.15      | 31.90     | 4.781                   | 284.00                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 104.98    | 286.73    | 1.802                   | 107.04                           |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 25.54     | 6.173                   | 366.65                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 92.11     | 289.89    | 1.826                   | 108.47                           |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.15      | 31.90     | 4.781                   | 284.00                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 86.44     | 285.74    | 1.872                   | 111.21                           |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.18      | 33.09     | 4.580                   | 272.04                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 53.55     | 253.83    | 2.252                   | 133.74                           |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 10.41     | 37.61     | 3.941                   | 234.12                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | -11.29    | 181.61    | 3.499                   | 207.85                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 15.52     | 42.49     | 3.370                   | 200.19                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -101.67   | -245.20   | 2.137                   | 126.95                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 20.63     | 46.50     | 2.971                   | 176.47                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -112.11   | -259.60   | 1.979                   | 117.55                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 21.14     | 46.85     | 2.938                   | 174.53                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -156.47   | -321.25   | 1.450                   | 86.14                            |



|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 48.33   | 2.787 | 165.57 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -401.93 | 1.009 | 59.91  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 26.10   | 51.58   | 2.556 | 151.85 |

**Span 3**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 6.3            | Flexure                | KIP-FT       | -812.52         | -155.81   | -317.77   | 1.468                   | 87.21                            |
| 2.50            | 6.3            | Shear                  | KIPS         | 206.48          | 23.49     | 49.82     | 2.699                   | 160.31                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -121.75   | -270.22   | 1.866                   | 110.84                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 21.93     | 48.69     | 2.811                   | 166.98                           |
| 4.50            | 11.3           | Flexure                | KIP-FT       | -715.59         | -110.92   | -254.81   | 1.714                   | 101.83                           |
| 4.50            | 11.3           | Shear                  | KIPS         | 207.64          | 21.41     | 48.28     | 2.845                   | 169.02                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | -715.59         | -42.25    | -157.53   | 3.203                   | 190.26                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 17.83     | 45.11     | 3.124                   | 185.57                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 20.90     | 240.53    | 2.510                   | 149.09                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 13.74     | 40.82     | 3.551                   | 210.91                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 46.34     | 275.25    | 2.087                   | 123.99                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 11.70     | 38.42     | 3.802                   | 225.83                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 67.69     | 301.82    | 1.834                   | 108.93                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 9.64      | 35.81     | 4.136                   | 245.66                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 97.72     | 340.55    | 1.538                   | 91.37                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 5.43      | 30.16     | 5.048                   | 299.86                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 110.97    | 346.81    | 1.473                   | 87.48                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 1.31      | 23.77     | 6.575                   | 390.57                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 111.41    | 335.38    | 1.522                   | 90.38                            |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 0.81      | 23.96     | 6.546                   | 388.85                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 107.75    | 322.16    | 1.608                   | 95.51                            |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 2.85      | 26.85     | 5.799                   | 344.48                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | 88.18     | 263.21    | 2.041                   | 121.26                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 6.94      | 32.90     | 4.610                   | 273.81                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | 817.88          | 52.26     | 156.89    | 3.651                   | 216.86                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 11.02     | 39.22     | 3.764                   | 223.58                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 5880.60                          |
| 40.00           | 100.0          | Shear                  | KIPS         | 207.64          | 15.11     | 45.70     | 3.142                   | 186.65                           |

**Detailed Rating Results**  
**Maine DOT Config. 8**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

| Span 1   |         |             |        |          |         |         |              |                   |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000       | 1851.30           |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 15.11   | 29.97   | 4.791        | 89.58             |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 52.26   | 103.43  | 5.538        | 103.56            |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 11.02   | 25.86   | 5.710        | 106.77            |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 88.18   | 174.78  | 3.074        | 57.49             |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 6.94    | 21.85   | 6.942        | 129.81            |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 107.75  | 215.58  | 2.403        | 44.94             |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 2.85    | 17.96   | 8.667        | 162.06            |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 111.41  | 225.38  | 2.264        | 42.34             |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 0.81    | 16.10   | 9.741        | 182.16            |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 110.97  | 228.58  | 2.234        | 41.78             |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 1.31    | 14.29   | 10.942       | 204.62            |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 97.72   | 222.67  | 2.353        | 43.99             |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 5.43    | 16.57   | 9.191        | 171.88            |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 67.69   | 203.78  | 2.716        | 50.79             |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 9.64    | 20.20   | 7.333        | 137.13            |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 46.34   | 185.82  | 3.092        | 57.82             |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 11.70   | 21.92   | 6.664        | 124.61            |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 20.90   | 163.21  | 3.699        | 69.17             |
| 28.00    | 70.0    | Shear       | KIPS   | 207.64   | 13.74   | 23.57   | 6.151        | 115.02            |
| 32.00    | 80.0    | Flexure     | KIP-FT | -715.59  | -42.25  | -116.49 | 4.331        | 81.00             |
| 32.00    | 80.0    | Shear       | KIPS   | 207.64   | 17.83   | 26.64   | 5.290        | 98.92             |
| 35.50    | 88.8    | Flexure     | KIP-FT | -715.59  | -110.92 | -129.23 | 3.380        | 63.21             |
| 35.50    | 88.8    | Shear       | KIPS   | 207.64   | 21.41   | 29.01   | 4.735        | 88.54             |
| 36.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -121.75 | -131.05 | 3.847        | 71.95             |
| 36.00    | 90.0    | Shear       | KIPS   | 207.64   | 21.93   | 29.33   | 4.666        | 87.26             |
| 37.50    | 93.8    | Flexure     | KIP-FT | -812.52  | -155.81 | -136.52 | 3.417        | 63.91             |
| 37.50    | 93.8    | Shear       | KIPS   | 206.48   | 23.49   | 30.24   | 4.446        | 83.14             |
| 40.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -217.79 | -145.62 | 2.784        | 52.06             |
| 40.00    | 100.0   | Shear       | KIPS   | 206.48   | 25.84   | 31.73   | 4.164        | 77.87             |

| Span 2   |         |             |       |          |    |    |              |                   |
|----------|---------|-------------|-------|----------|----|----|--------------|-------------------|
| Location |         |             |       |          |    |    | Legal Rating | Legal Load Rating |
| (ft)     | Percent | Limit State | Units | Capacity | DL | LL | Factor       | (Ton)             |

|       |       |         |        |         |         |         |        |        |
|-------|-------|---------|--------|---------|---------|---------|--------|--------|
| 2.50  | 5.0   | Flexure | KIP-FT | -812.52 | -156.47 | -113.25 | 4.114  | 76.93  |
| 2.50  | 5.0   | Shear   | KIPS   | 206.48  | 23.22   | 30.38   | 4.433  | 82.91  |
| 4.50  | 9.0   | Flexure | KIP-FT | -817.88 | -112.11 | -107.01 | 4.801  | 89.78  |
| 4.50  | 9.0   | Shear   | KIPS   | 207.64  | 21.14   | 29.24   | 4.708  | 88.03  |
| 5.00  | 10.0  | Flexure | KIP-FT | -817.88 | -101.67 | -105.45 | 4.970  | 92.93  |
| 5.00  | 10.0  | Shear   | KIPS   | 207.64  | 20.63   | 28.94   | 4.773  | 89.26  |
| 10.00 | 20.0  | Flexure | KIP-FT | 817.88  | -11.29  | 122.25  | 5.198  | 97.21  |
| 10.00 | 20.0  | Shear   | KIPS   | 207.64  | 15.52   | 25.63   | 5.587  | 104.47 |
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 53.55   | 183.23  | 3.119  | 58.33  |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 10.41   | 21.93   | 6.760  | 126.41 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 86.44   | 214.87  | 2.490  | 46.56  |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.18    | 18.80   | 8.060  | 150.72 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 92.11   | 219.70  | 2.410  | 45.06  |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.15    | 18.00   | 8.473  | 158.45 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 104.98  | 227.95  | 2.267  | 42.39  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 14.03   | 11.235 | 210.09 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 219.70  | 2.410  | 45.06  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 18.00   | 8.473  | 158.45 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 214.87  | 2.490  | 46.56  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 18.80   | 8.060  | 150.72 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 183.23  | 3.119  | 58.33  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 21.93   | 6.760  | 126.41 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 122.25  | 5.198  | 97.21  |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 25.63   | 5.587  | 104.47 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -105.45 | 4.970  | 92.93  |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 28.94   | 4.773  | 89.26  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -107.01 | 4.801  | 89.78  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 29.24   | 4.708  | 88.03  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -113.25 | 4.114  | 76.93  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 30.38   | 4.433  | 82.91  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -145.62 | 2.784  | 52.06  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 31.73   | 4.164  | 77.87  |

### Span 3

| Location |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -136.52 | 3.417           | 63.91                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 30.24   | 4.446           | 83.14                   |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -131.05 | 3.847           | 71.95                   |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 29.33   | 4.666           | 87.26                   |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -129.23 | 3.380           | 63.21                   |

|       |       |         |        |         |        |         |        |         |
|-------|-------|---------|--------|---------|--------|---------|--------|---------|
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 21.41  | 29.01   | 4.735  | 88.54   |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -42.25 | -116.49 | 4.331  | 81.00   |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 17.83  | 26.64   | 5.290  | 98.92   |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 20.90  | 163.21  | 3.699  | 69.17   |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 13.74  | 23.57   | 6.151  | 115.02  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 46.34  | 185.82  | 3.092  | 57.82   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 11.70  | 21.92   | 6.664  | 124.61  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 67.69  | 203.78  | 2.716  | 50.79   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 9.64   | 20.20   | 7.333  | 137.13  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72  | 222.67  | 2.353  | 43.99   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43   | 16.57   | 9.191  | 171.88  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 110.97 | 228.58  | 2.234  | 41.78   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.31   | 14.29   | 10.942 | 204.62  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 111.41 | 225.38  | 2.264  | 42.34   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.81   | 16.10   | 9.741  | 182.16  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 107.75 | 215.58  | 2.403  | 44.94   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 2.85   | 17.96   | 8.667  | 162.06  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 88.18  | 174.78  | 3.074  | 57.49   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 6.94   | 21.85   | 6.942  | 129.81  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 52.26  | 103.43  | 5.538  | 103.56  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 11.02  | 25.86   | 5.710  | 106.77  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00   | 0.00    | 99.000 | 1851.30 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 15.11  | 29.97   | 4.791  | 89.58   |

**Detailed Rating Results  
Maine DOT Config. 8 x2  
Axle Load  
Impact: As Requested  
Lane: As Requested**

| Span 1   |       |         |                |        |          |        |                 |                         |         |
|----------|-------|---------|----------------|--------|----------|--------|-----------------|-------------------------|---------|
|          |       |         |                |        |          |        | Legal<br>Rating | Legal<br>Load<br>Rating |         |
| Location | (ft)  | Percent | Limit<br>State | Units  | Capacity | DL     | LL              | Factor                  | (Ton)   |
|          | 0.00  | 0.0     | Flexure        | KIP-FT | 817.88   | 0.00   | 0.00            | 99.000                  | 3702.60 |
|          | 0.00  | 0.0     | Shear          | KIPS   | 207.64   | 15.11  | 29.97           | 4.791                   | 179.17  |
|          | 4.00  | 10.0    | Flexure        | KIP-FT | 817.88   | 52.26  | 103.43          | 5.538                   | 207.12  |
|          | 4.00  | 10.0    | Shear          | KIPS   | 207.64   | 11.02  | 25.86           | 5.710                   | 213.54  |
|          | 8.00  | 20.0    | Flexure        | KIP-FT | 817.88   | 88.18  | 174.78          | 3.074                   | 114.98  |
|          | 8.00  | 20.0    | Shear          | KIPS   | 207.64   | 6.94   | 21.85           | 6.942                   | 259.62  |
|          | 12.00 | 30.0    | Flexure        | KIP-FT | 817.88   | 107.75 | 215.58          | 2.403                   | 89.87   |
|          | 12.00 | 30.0    | Shear          | KIPS   | 207.64   | 2.85   | 17.96           | 8.667                   | 324.13  |
|          | 14.00 | 35.0    | Flexure        | KIP-FT | 812.52   | 111.41 | 225.38          | 2.264                   | 84.68   |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.81    | 16.10   | 9.741 | 364.33 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 110.97  | 228.58  | 2.234 | 83.57  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.31    | 15.91   | 9.823 | 367.38 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 97.72   | 222.67  | 2.353 | 87.99  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 5.43    | 20.12   | 7.567 | 283.00 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 67.69   | 203.78  | 2.716 | 101.58 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 9.64    | 23.78   | 6.229 | 232.96 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 46.34   | 185.82  | 3.092 | 115.63 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 11.70   | 25.45   | 5.741 | 214.70 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 20.90   | 163.21  | 3.699 | 138.34 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 13.74   | 26.97   | 5.375 | 201.02 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -42.25  | -97.58  | 5.171 | 193.38 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.83   | 29.68   | 4.748 | 177.57 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -110.92 | -160.75 | 2.717 | 101.63 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 21.41   | 31.64   | 4.342 | 162.40 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -121.75 | -171.79 | 2.935 | 109.77 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 21.93   | 31.88   | 4.293 | 160.55 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -155.81 | -203.15 | 2.296 | 85.89  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 23.49   | 32.58   | 4.127 | 154.35 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -263.68 | 1.537 | 57.50  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 35.22   | 3.751 | 140.30 |

#### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -156.47 | -207.25 | 2.248           | 84.07                   |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 23.22   | 32.51   | 4.143           | 154.95                  |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -112.11 | -164.27 | 3.127           | 116.96                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 21.14   | 30.82   | 4.467           | 167.05                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -101.67 | -154.11 | 3.400           | 127.17                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 20.63   | 30.61   | 4.514           | 168.81                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | 817.88   | -11.29  | 123.45  | 5.147           | 192.52                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 15.52   | 28.08   | 5.100           | 190.74                  |
| 15.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 53.55   | 174.56  | 3.274           | 122.45                  |
| 15.00    | 30.0    | Shear          | KIPS   | 207.64   | 10.41   | 24.88   | 5.958           | 222.85                  |
| 19.00    | 38.0    | Flexure        | KIP-FT | 812.52   | 86.44   | 192.35  | 2.781           | 104.02                  |
| 19.00    | 38.0    | Shear          | KIPS   | 206.48   | 6.18    | 21.88   | 6.926           | 259.03                  |
| 20.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 92.11   | 193.63  | 2.734           | 102.25                  |
| 20.00    | 40.0    | Shear          | KIPS   | 206.48   | 5.15    | 21.09   | 7.234           | 270.55                  |
| 25.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 104.98  | 190.21  | 2.716           | 101.59                  |
| 25.00    | 50.0    | Shear          | KIPS   | 206.48   | 0.00    | 16.77   | 9.401           | 351.59                  |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 92.11   | 193.63  | 2.734 | 102.25 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.15    | 21.09   | 7.234 | 270.55 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 86.44   | 192.35  | 2.781 | 104.02 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.18    | 21.88   | 6.926 | 259.03 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 53.55   | 174.56  | 3.274 | 122.45 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 10.41   | 24.88   | 5.958 | 222.85 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -11.29  | 123.45  | 5.147 | 192.52 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 15.52   | 28.08   | 5.100 | 190.74 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -101.67 | -154.11 | 3.400 | 127.17 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 20.63   | 30.61   | 4.514 | 168.81 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -112.11 | -164.27 | 3.127 | 116.96 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 21.14   | 30.82   | 4.467 | 167.05 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -156.47 | -207.25 | 2.248 | 84.07  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 23.22   | 32.51   | 4.143 | 154.95 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -217.79 | -263.68 | 1.537 | 57.50  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 25.84   | 35.22   | 3.751 | 140.30 |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -155.81 | -203.15 | 2.296           | 85.89                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 23.49   | 32.58   | 4.127           | 154.35                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -121.75 | -171.79 | 2.935           | 109.77                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 21.93   | 31.88   | 4.293           | 160.55                  |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -110.92 | -160.75 | 2.717           | 101.63                  |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 21.41   | 31.64   | 4.342           | 162.40                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -42.25  | -97.58  | 5.171           | 193.38                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 17.83   | 29.68   | 4.748           | 177.57                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 20.90   | 163.21  | 3.699           | 138.34                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 13.74   | 26.97   | 5.375           | 201.02                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 46.34   | 185.82  | 3.092           | 115.63                  |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 11.70   | 25.45   | 5.741           | 214.70                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 67.69   | 203.78  | 2.716           | 101.58                  |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 9.64    | 23.78   | 6.229           | 232.96                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 97.72   | 222.67  | 2.353           | 87.99                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 5.43    | 20.12   | 7.567           | 283.00                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 110.97  | 228.58  | 2.234           | 83.57                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.31    | 15.91   | 9.823           | 367.38                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 111.41  | 225.38  | 2.264           | 84.68                   |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.81    | 16.10   | 9.741           | 364.33                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 107.75  | 215.58  | 2.403           | 89.87                   |

|       |       |         |        |        |       |        |        |         |
|-------|-------|---------|--------|--------|-------|--------|--------|---------|
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 2.85  | 17.96  | 8.667  | 324.13  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 88.18 | 174.78 | 3.074  | 114.98  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 6.94  | 21.85  | 6.942  | 259.62  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 52.26 | 103.43 | 5.538  | 207.12  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 11.02 | 25.86  | 5.710  | 213.54  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00   | 99.000 | 3702.60 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 15.11 | 29.97  | 4.791  | 179.17  |



# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Legal Load Rating

### Objective

Rate girder for legal loads using combined legal trucks and legal lane load output from Virtis

### Location of Interest

Girder 1, Pier 1

### Moments (Taken From Virtis)

| Maximum Live Load Forces |                |
|--------------------------|----------------|
| Load Case/Configuration: | Moment, kip-ft |
| Config.                  |                |
| DC Moment                | 180.90         |
| DW Moment                | 36.90          |
| Legal Lane               | 32.24          |
| Config. 1                | 358.13         |
| Config. 2                | 321.33         |
| Config. 3                | 378.42         |
| Config. 4                | 372.30         |
| Config. 5                | 376.15         |
| Config. 6                | 495.98         |
| Config. 7                | 401.93         |
| Config. 8                | 263.68         |

(All loads are unfactored)

Legal Lane = 42.99

0.75 factor is only applied to truck, not lane. Since the entire legal load live load factor is multiplied by 0.75, the inputted lane must be divided by 0.75 so it cancels out.

| Capacity       |        |
|----------------|--------|
| Moment, kip-ft | 812.52 |

### Load and Resistance Factors

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c =$ | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s =$ | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f =$ | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s =$ | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

|             |      |
|-------------|------|
| $*V_{DC} =$ | 1.25 |
| $*V_{DW} =$ | 1.50 |

$*V_{LL} = 1.31$  Maine Truck Config. 1-5, 7-8

$*V_{LL} = 1.31$  Maine Truck Config. 6

$*V_{LL} = 0.98$  Maine Truck Config. 1-5, 7-8

$*V_{LL} = 0.98$  Maine Truck Config. 6

0.75 factor applied per MaineDOT Load Rating Guide (3.3.3.3)





*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 1

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 401                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 1<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.35 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 2

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 364                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c$ = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s$ = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f$ = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s$ = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

$C = \phi_c \phi_s \phi R_n$  for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1

| Configuration 2<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.48 |



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 3

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 421                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 3<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.28 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 4

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 415                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 4<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.30 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 5

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 419                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 5<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.29 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 6

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 539                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 6<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.00 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 7

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 445                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 7<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.21 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 8

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 181          | 37           | 307                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c$ = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s$ = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f$ = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s$ = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

$C = \phi_c \phi_s \phi R_n$  for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 8<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.76 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1





*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Summary of Ratings

| Rating Summary           |            |
|--------------------------|------------|
| Load Case/Configuration: | Strength I |
| Config.                  |            |
| Config. 1                | 1.35       |
| Config. 2                | 1.48       |
| Config. 3                | 1.28       |
| Config. 4                | 1.30       |
| Config. 5                | 1.29       |
| Config. 6                | 1.00       |
| Config. 7                | 1.21       |
| Config. 8                | 1.76       |

## Rating Results Summary Report

Name: I95 over Souadabscook Stream ...  
Struct-Def: 1432+5950

Bridge ID: Br. No. 1432+5950  
Member: G2

NBl: 1432+5950  
Member Alt: G2

| Live Load  | Live Load Type         | Rating Method | Rating Level | Load Rating (Ton) | Rating Factor | Location (ft) | Location Span-(%) | Limit State                     | Impact       | Lane         |
|------------|------------------------|---------------|--------------|-------------------|---------------|---------------|-------------------|---------------------------------|--------------|--------------|
| HL-93 (US) | Truck + Lane           | LRFR          | Inventory    | 31.36             | 0.871         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |
| HL-93 (US) | Truck + Lane           | LRFR          | Operating    | 40.65             | 1.129         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |
| HL-93 (US) | Tandem + Lane          | LRFR          | Inventory    | 35.64             | 0.990         | 14.00         | 1 - (35.0)        | SERVICE-II Steel Flexure Stress | As Requested | As Requested |
| HL-93 (US) | Tandem + Lane          | LRFR          | Operating    | 46.33             | 1.287         | 14.00         | 1 - (35.0)        | SERVICE-II Steel Flexure Stress | As Requested | As Requested |
| HL-93 (US) | 90%(Truck Pair + Lane) | LRFR          | Inventory    | 36.82             | 1.023         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |
| HL-93 (US) | 90%(Truck Pair + Lane) | LRFR          | Operating    | 47.74             | 1.326         | 40.00         | 1 - (100.0)       | STRENGTH-I Steel Flexure Moment | As Requested | As Requested |

Bridge Name: I95 over Souadabscook Stream  
NBI Structure ID: 1431+5949  
Bridge ID: Br. No. 1431+5949

Analyzed By: Virtis  
Analyze Date: Friday, May 10, 2013 08:01:17  
Analysis Engine: AASHTO LRFR Engine Version 6.4.0.3001  
Analysis Preference Setting: None

Report By: virtis  
Report Date: Friday, May 10, 2013 08:20:38

Structure Definition Name: 1431+5949  
Member Name: G2  
Pier Alternative Name: G2

6A.4.2.1 General Load Rating Equation - Steel Flexure Moment

Limit State: Stage: 3  
Vehicle: Flex Sense: N/A

6A Load and Resistance Factor Rating  
6A.4 Load Rating Procedures  
6A.4.2 General Load-Rating Equation  
6A.4.2.1 Steel Flexure Moment General  
(AASHTO Manual for Bridge Evaluation, Second Edition - 2011)

Steel Rolled Shape - At Location = 40.0000 (ft) - Left Stage 3

Section at Brace Point

Input:

Section Type: Noncomposite  
Top Flange Laterally Supported: Yes  
Compact: No  
Allow Plastic Analysis Control Option: Yes  
Allow Moment Redistribution Control Option: No  
Moment Redistribution Qualified: No, redistribution did not occur.

For positive flexure, composite, noncompact sections:

Condition Factor = 1.0000  
System Factor = 1.0000  
DC Moment = -205.2746 (kip-ft)  
DW Moment = -36.9119 (kip-ft)  
DW-WS Moment = 0.0000 (kip-ft) (Moment due to wearing surface)

LL total = LL + (1/3)LL<sub>f1</sub>

Location: 40.00 ft  
Pass/Fail: Failed

| Load      | Vehicle                          | Limit State | LL (kip-ft) |  | LL fl (kip-ft) | DC   | Load Factors |       | Phi  | Mn (kip-ft) | RF      | Capacity (Ton) |
|-----------|----------------------------------|-------------|-------------|--|----------------|------|--------------|-------|------|-------------|---------|----------------|
|           |                                  |             | LL          |  |                |      | DW           | DW-WS |      |             |         |                |
| DesignInv | HL-93 (US) - Truck + Lane        | STR-I       | 60.67       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.75 | 1.00        | -812.52 | NA             |
| DesignInv | HL-93 (US) - Truck + Lane        | STR-I       | -328.45     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.75 | 1.00        | -812.52 | 31.35          |
| DesignOp  | HL-93 (US) - Truck + Lane        | STR-I       | 60.67       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.35 | 1.00        | -812.52 | NA             |
| DesignOp  | HL-93 (US) - Truck + Lane        | STR-I       | -328.45     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.35 | 1.00        | -812.52 | 40.64          |
| DesignInv | HL-93 (US) - Tandem + Lane       | STR-I       | 55.27       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.75 | 1.00        | -812.52 | NA             |
| DesignInv | HL-93 (US) - Tandem + Lane       | STR-I       | -274.04     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.75 | 1.00        | -812.52 | 37.58          |
| DesignOp  | HL-93 (US) - Tandem + Lane       | STR-I       | 55.27       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.35 | 1.00        | -812.52 | NA             |
| DesignOp  | HL-93 (US) - Tandem + Lane       | STR-I       | -274.04     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.35 | 1.00        | -812.52 | 48.71          |
| DesignInv | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | 0.00        |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.75 | 1.00        | -812.52 | 3564.00        |
| DesignInv | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | -279.69     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.75 | 1.00        | -812.52 | 36.82          |
| DesignOp  | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | 0.00        |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.35 | 1.00        | -812.52 | 3564.00        |
| DesignOp  | HL-93 (US) - 90% (Truck Pair +-) | STR-I       | -279.69     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.35 | 1.00        | -812.52 | 47.72          |
| Legal     | Maine DOT Config. 1 - Legal T~   | STR-I       | 45.54       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.31 | 1.00        | -812.52 | NA             |
| Legal     | Maine DOT Config. 1 - Legal T~   | STR-I       | -309.37     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.31 | 1.00        | -812.52 | 61.76          |
| Legal     | Maine DOT Config. 1 x2 - Lega~   | STR-I       | 45.54       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.31 | 1.00        | -812.52 | NA             |
| Legal     | Maine DOT Config. 1 x2 - Lega~   | STR-I       | -322.03     |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.31 | 1.00        | -812.52 | 118.66         |
| Legal     | Maine DOT Config. 2 - Legal T~   | STR-I       | 54.73       |  | 0.00           | 1.25 | 1.50         | 1.50  | 1.31 | 1.00        | -812.52 | NA             |

|       |                                |       |         |      |      |      |      |      |      |         |      |        |
|-------|--------------------------------|-------|---------|------|------|------|------|------|------|---------|------|--------|
| Legal | Maine DOT Config. 2 - Legal T~ | STR-I | -288.93 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.32 | 62.16  |
| Legal | Maine DOT Config. 2 x 2 - Leg~ | STR-I | 54.73   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 2 x 2 - Leg~ | STR-I | -288.93 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.32 | 124.31 |
| Legal | Maine DOT Config. 3 - Legal T~ | STR-I | 54.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 3 - Legal T~ | STR-I | -248.79 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.54 | 67.58  |
| Legal | Maine DOT Config. 3 x2 - Lega~ | STR-I | 54.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 3 x2 - Lega~ | STR-I | -340.27 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.12 | 98.82  |
| Legal | Maine DOT Config. 4 - Legal T~ | STR-I | 55.61   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 4 - Legal T~ | STR-I | -249.43 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.53 | 67.40  |
| Legal | Maine DOT Config. 4 x 2 - Leg~ | STR-I | 55.61   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 4 x 2 - Leg~ | STR-I | -334.77 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.14 | 100.44 |
| Legal | Maine DOT Config. 5 - Legal T~ | STR-I | 51.63   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 5 - Legal T~ | STR-I | -240.27 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.59 | 69.97  |
| Legal | Maine DOT Config. 5 x2 - Lega~ | STR-I | 51.63   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 5 x2 - Lega~ | STR-I | -338.23 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.13 | 99.41  |
| Legal | Maine DOT Config. 6 - Legal T~ | STR-I | 62.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 6 - Legal T~ | STR-I | -259.76 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.47 | 55.82  |
| Legal | Maine DOT Config. 6 x2 - Lega~ | STR-I | 62.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 6 x2 - Lega~ | STR-I | -445.98 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 0.86 | 65.03  |
| Legal | Maine DOT Config. 7 - Legal T~ | STR-I | 49.28   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 7 - Legal T~ | STR-I | -206.20 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.85 | 55.04  |
| Legal | Maine DOT Config. 7 x 2 - Leg~ | STR-I | 49.28   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 7 x 2 - Leg~ | STR-I | -361.40 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.06 | 62.80  |
| Legal | Maine DOT Config. 8 - Legal T~ | STR-I | 31.46   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 8 - Legal T~ | STR-I | -130.94 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 2.92 | 54.57  |
| Legal | Maine DOT Config. 8 x2 - Lega~ | STR-I | 31.46   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA   | NA     |
| Legal | Maine DOT Config. 8 x2 - Lega~ | STR-I | -237.10 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 1.61 | 60.27  |

Legend:  
NA - Resistance and live load are of opposite sign so rating factor is not applicable.

Controlling Rating Factors

| Limit State | Vehicle                   | Design Inv- | Capacity (Ton) | Vehicle                   | Design Op- | Capacity (Ton) | Vehicle                     | Legal Load- | Capacity (Ton) | Vehicle | Permit Load- | Capacity (Ton) |
|-------------|---------------------------|-------------|----------------|---------------------------|------------|----------------|-----------------------------|-------------|----------------|---------|--------------|----------------|
| STR-I       | HL-93 (US) - Truck + Lane | 0.87        | 31.35          | HL-93 (US) - Truck + Lane | 1.13       | 40.64          | Maine DOT Config. 6 x2 - L~ | 0.86        | 65.03          |         |              |                |

Steel Rolled Shape - At Location = 40.0000 (ft) - Right Stage 3

Section at Brace Point

Input:

Section Type: Noncomposite

Top Flange Laterally Supported: Yes

Compact: No

Allow Plastic Analysis Control Option: Yes

Allow Moment Redistribution Control Option: No

Moment Redistribution Qualified: No, redistribution did not occur.

For positive flexure, composite, noncompact sections:

Condition Factor = 1.0000  
System Factor = 1.0000  
DC Moment = -205.2746 (kip-ft)  
DW Moment = -36.9119 (kip-ft)  
DW-WS Moment = 0.0000 (kip-ft) (Moment due to wearing surface)

LL total = LL + (1/3)LL<sub>f1</sub>

| Load      | Vehicle                    | Limit State | LL (kip-ft) | LL <sub>f1</sub> (kip-ft) | DC   | DW   | Load Factors | Phi  | Mn (kip-ft) | RF      | Capacity (Ton) |
|-----------|----------------------------|-------------|-------------|---------------------------|------|------|--------------|------|-------------|---------|----------------|
| DesignInv | HL-93 (US) - Truck + Lane  | STR-I       | 60.67       | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | NA             |
| DesignInv | HL-93 (US) - Truck + Lane  | STR-I       | -328.45     | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | 0.87           |
| DesignOp  | HL-93 (US) - Truck + Lane  | STR-I       | 60.67       | 0.00                      | 1.25 | 1.50 | 1.50         | 1.35 | 1.00        | -812.52 | NA             |
| DesignOp  | HL-93 (US) - Truck + Lane  | STR-I       | -328.45     | 0.00                      | 1.25 | 1.50 | 1.50         | 1.35 | 1.00        | -812.52 | 1.13           |
| DesignInv | HL-93 (US) - Tandem + Lane | STR-I       | 55.27       | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | NA             |
| DesignInv | HL-93 (US) - Tandem + Lane | STR-I       | -274.04     | 0.00                      | 1.25 | 1.50 | 1.50         | 1.75 | 1.00        | -812.52 | 1.04           |

|           |                                      |       |         |      |      |      |      |      |      |         |         |    |
|-----------|--------------------------------------|-------|---------|------|------|------|------|------|------|---------|---------|----|
| DesignOp  | HL-93 (US) - Tandem + Lane           | STR-I | 55.27   | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | NA      | NA |
| DesignOp  | HL-93 (US) - Tandem + Lane           | STR-I | -274.04 | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | 48.71   | NA |
| DesignInv | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | 0.00    | 0.00 | 1.25 | 1.50 | 1.50 | 1.75 | 1.00 | -812.52 | 3564.00 | NA |
| DesignInv | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | -279.69 | 0.00 | 1.25 | 1.50 | 1.50 | 1.75 | 1.00 | -812.52 | 36.82   | NA |
| DesignOp  | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | 0.00    | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | 3564.00 | NA |
| DesignOp  | HL-93 (US) - 90%(Truck Fair +- STR-I | STR-I | -279.69 | 0.00 | 1.25 | 1.50 | 1.50 | 1.35 | 1.00 | -812.52 | 47.72   | NA |
| Legal     | Maine DOT Config. 1 - Legal ~- STR-I | STR-I | 45.54   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 1 - Legal ~- STR-I | STR-I | -309.37 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 61.76   | NA |
| Legal     | Maine DOT Config. 1 - Legal ~- STR-I | STR-I | 45.54   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 1 x2 - Lega~ STR-I | STR-I | -322.03 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 118.66  | NA |
| Legal     | Maine DOT Config. 2 - Lega~ STR-I    | STR-I | 54.73   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 2 - Lega~ STR-I    | STR-I | -288.93 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 62.16   | NA |
| Legal     | Maine DOT Config. 2 x 2 - Leg~ STR-I | STR-I | 54.73   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 2 x 2 - Leg~ STR-I | STR-I | -288.93 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 124.31  | NA |
| Legal     | Maine DOT Config. 3 - Lega~ STR-I    | STR-I | 54.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 3 - Lega~ STR-I    | STR-I | -248.79 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 67.58   | NA |
| Legal     | Maine DOT Config. 3 x2 - Lega~ STR-I | STR-I | 54.87   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 3 x2 - Lega~ STR-I | STR-I | -340.27 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 98.82   | NA |
| Legal     | Maine DOT Config. 4 - Lega~ STR-I    | STR-I | 55.61   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 4 - Lega~ STR-I    | STR-I | -249.43 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 67.40   | NA |
| Legal     | Maine DOT Config. 4 x 2 - Leg~ STR-I | STR-I | 55.61   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 4 x 2 - Leg~ STR-I | STR-I | -334.77 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 100.44  | NA |
| Legal     | Maine DOT Config. 5 - Lega~ STR-I    | STR-I | 51.63   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 5 - Lega~ STR-I    | STR-I | -240.27 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 69.97   | NA |
| Legal     | Maine DOT Config. 5 x2 - Lega~ STR-I | STR-I | 51.63   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 5 x2 - Lega~ STR-I | STR-I | -338.23 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 99.41   | NA |
| Legal     | Maine DOT Config. 6 - Lega~ STR-I    | STR-I | 62.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 6 - Lega~ STR-I    | STR-I | -259.76 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 55.82   | NA |
| Legal     | Maine DOT Config. 6 x2 - Lega~ STR-I | STR-I | 62.44   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 6 x2 - Lega~ STR-I | STR-I | -445.98 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 65.03   | NA |
| Legal     | Maine DOT Config. 7 - Lega~ STR-I    | STR-I | 49.28   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 7 - Lega~ STR-I    | STR-I | -206.20 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 55.04   | NA |
| Legal     | Maine DOT Config. 7 x 2 - Leg~ STR-I | STR-I | 49.28   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 7 x 2 - Leg~ STR-I | STR-I | -361.40 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 62.80   | NA |
| Legal     | Maine DOT Config. 8 - Lega~ STR-I    | STR-I | 31.46   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 8 - Lega~ STR-I    | STR-I | -130.94 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 54.57   | NA |
| Legal     | Maine DOT Config. 8 x2 - Lega~ STR-I | STR-I | 31.46   | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | NA      | NA |
| Legal     | Maine DOT Config. 8 x2 - Lega~ STR-I | STR-I | -237.10 | 0.00 | 1.25 | 1.50 | 1.50 | 1.31 | 1.00 | -812.52 | 60.27   | NA |

Legend:

NA ~ Resistance and live load are of opposite sign so rating factor is not applicable.

Controlling Rating Factors

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Limit State

-----Design Inv-----Design Op-----Legal Load-----Permit Load-----

Vehicle

Capacity (ton)

Vehicle

Capacity (ton)

RF

Capacity (ton)

Vehicle

Capacity (ton)

RF

Capacity (ton)

STR-I

HL-93 (US) - Truck + Lane

0.87

31.35

HL-93 (US) - Truck + Lane

1.13

40.64

Maine DOT Config. 6 x2 - L~

0.86

65.03

5/10/2013

**Bridge Name:** I95 over Souadabscook Stream Center  
**NBI Structure ID:** 1432+5950  
**Bridge ID:** Br. No. 1432+5950

**Analyzed By:** Virtis  
**Analyze Date:** Wednesday, April 24, 2013 08:07:34  
**Analysis Engine:** AASHTO LRFR Engine Version 6.4.0.3001  
**Analysis Preference Setting:** None

**Report By:** virtis  
**Report Date:** Wednesday, April 24, 2013 08:34:33

**Structure Definition Name:** 1432+5950  
**Member Name:** G2  
**Member Alternative Name:** G2

**Report by Action:** ☒ **Flexure** ☒ **Shear** ☐ **Overload** ☐ **Critical**

**Detailed Rating Results**  
**HL-93 (US)**  
**Truck + Lane**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |         |             |        |          |        |        | <b>Inventory</b> | <b>Inventory</b> | <b>Operating</b> | <b>Operating</b> |
|-----------------|---------|-------------|--------|----------|--------|--------|------------------|------------------|------------------|------------------|
|                 |         |             |        |          |        |        | <b>Rating</b>    | <b>Load</b>      | <b>Rating</b>    | <b>Load</b>      |
| <b>Location</b> |         |             |        |          |        |        |                  | <b>Rating</b>    |                  |                  |
| (ft)            | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor           | (Ton)            | Factor           | (Ton)            |
| 0.00            | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00   | 0.00   | 99.000           | 3564.00          | 99.000           | 3564.00          |
| 0.00            | 0.0     | Shear       | KIPS   | 207.64   | 16.73  | 63.02  | 1.687            | 60.74            | 2.187            | 78.74            |
| 4.00            | 10.0    | Flexure     | KIP-FT | 817.88   | 57.90  | 169.45 | 2.507            | 90.24            | 3.249            | 116.97           |
| 4.00            | 10.0    | Shear       | KIPS   | 207.64   | 12.21  | 52.62  | 2.084            | 75.03            | 2.702            | 97.26            |
| 8.00            | 20.0    | Flexure     | KIP-FT | 817.88   | 97.72  | 280.53 | 1.410            | 50.74            | 1.827            | 65.78            |
| 8.00            | 20.0    | Shear       | KIPS   | 207.64   | 7.70   | 42.78  | 2.641            | 95.08            | 3.424            | 123.26           |
| 12.00           | 30.0    | Flexure     | KIP-FT | 817.88   | 119.46 | 337.94 | 1.123            | 40.42            | 1.455            | 52.39            |
| 12.00           | 30.0    | Shear       | KIPS   | 207.64   | 3.18   | 33.68  | 3.454            | 124.34           | 4.477            | 161.18           |
| 14.00           | 35.0    | Flexure     | KIP-FT | 812.52   | 123.56 | 350.50 | 1.065            | 38.35            | 1.381            | 49.71            |
| 14.00           | 35.0    | Shear       | KIPS   | 206.48   | 0.92   | 29.63  | 3.960            | 142.55           | 5.133            | 184.78           |
| 16.00           | 40.0    | Flexure     | KIP-FT | 812.52   | 123.11 | 359.15 | 1.040            | 37.46            | 1.349            | 48.55            |
| 16.00           | 40.0    | Shear       | KIPS   | 206.48   | 1.48   | 25.80  | 4.532            | 163.14           | 5.874            | 211.48           |

|       |       |         |        |         |        |         |       |        |       |        |
|-------|-------|---------|--------|---------|--------|---------|-------|--------|-------|--------|
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56 | 350.62  | 1.096 | 39.47  | 1.421 | 51.16  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04   | 30.61   | 3.709 | 133.52 | 4.808 | 173.08 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21  | 323.74  | 1.263 | 45.47  | 1.637 | 58.95  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76  | 39.34   | 2.798 | 100.73 | 3.627 | 130.57 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40  | 292.68  | 1.457 | 52.45  | 1.889 | 68.00  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04  | 43.63   | 2.484 | 89.43  | 3.220 | 115.93 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06  | 255.95  | 1.760 | 63.35  | 2.281 | 82.12  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30  | 48.05   | 2.235 | 80.46  | 2.897 | 104.31 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18 | -219.16 | 1.707 | 61.47  | 2.213 | 79.68  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82  | 56.99   | 1.826 | 65.73  | 2.367 | 85.21  |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -      | -123.46 | 1.265 | 45.55  | 1.640 | 59.05  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77  | 64.64   | 1.565 | 56.34  | 2.029 | 73.03  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -135.49 | 1.430 | 51.47  | 1.853 | 66.71  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35  | 65.70   | 1.533 | 55.20  | 1.988 | 71.55  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -      | -173.31 | 1.219 | 43.89  | 1.580 | 56.90  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07  | 68.80   | 1.436 | 51.70  | 1.862 | 67.02  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -242.09 | 0.871 | 31.36  | 1.129 | 40.65  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69  | 75.51   | 1.283 | 46.19  | 1.663 | 59.87  |

### Span 2

|          |         |             |        |          |             |             | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|-------------|-------------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |             |             | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL          | LL          | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -<br>173.97 | -<br>246.90 | 1.362     | 49.03       | 1.765     | 63.55       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80       | 70.85       | 1.397     | 50.30       | 1.811     | 65.20       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -<br>124.66 | -<br>204.09 | 1.840     | 66.25       | 2.386     | 85.88       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51       | 67.02       | 1.512     | 54.44       | 1.960     | 70.57       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -<br>113.04 | -<br>198.52 | 1.935     | 69.66       | 2.508     | 90.31       |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94       | 66.05       | 1.541     | 55.47       | 1.997     | 71.90       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45      | 172.45      | 2.763     | 99.48       | 3.582     | 128.95      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29       | 56.01       | 1.891     | 68.08       | 2.451     | 88.25       |
| 15.00    | 30.0    | Flexure     | KIP-   | 817.88   | 59.90       | 271.70      | 1.558     | 56.09       | 2.020     | 72.70       |

| FT    |       |         |            |         |             |             |       |        |       |        |
|-------|-------|---------|------------|---------|-------------|-------------|-------|--------|-------|--------|
| 15.00 | 30.0  | Shear   | KIPS       | 207.64  | 11.65       | 45.80       | 2.404 | 86.53  | 3.116 | 112.17 |
| 19.00 | 38.0  | Flexure | KIP-<br>FT | 812.52  | 96.27       | 328.28      | 1.199 | 43.15  | 1.554 | 55.93  |
| 19.00 | 38.0  | Shear   | KIPS       | 206.48  | 6.83        | 37.77       | 2.991 | 107.68 | 3.877 | 139.58 |
| 20.00 | 40.0  | Flexure | KIP-<br>FT | 812.52  | 102.53      | 337.40      | 1.152 | 41.49  | 1.494 | 53.78  |
| 20.00 | 40.0  | Shear   | KIPS       | 206.48  | 5.69        | 35.80       | 3.179 | 114.45 | 4.121 | 148.36 |
| 25.00 | 50.0  | Flexure | KIP-<br>FT | 812.52  | 116.76      | 351.84      | 1.075 | 38.71  | 1.394 | 50.18  |
| 25.00 | 50.0  | Shear   | KIPS       | 206.48  | 0.00        | 26.67       | 4.424 | 159.27 | 5.735 | 206.46 |
| 30.00 | 60.0  | Flexure | KIP-<br>FT | 812.52  | 102.53      | 337.40      | 1.152 | 41.49  | 1.494 | 53.78  |
| 30.00 | 60.0  | Shear   | KIPS       | 206.48  | 5.69        | 35.80       | 3.179 | 114.45 | 4.121 | 148.36 |
| 31.00 | 62.0  | Flexure | KIP-<br>FT | 812.52  | 96.27       | 328.28      | 1.199 | 43.15  | 1.554 | 55.93  |
| 31.00 | 62.0  | Shear   | KIPS       | 206.48  | 6.83        | 37.77       | 2.991 | 107.68 | 3.877 | 139.58 |
| 35.00 | 70.0  | Flexure | KIP-<br>FT | 817.88  | 59.90       | 271.70      | 1.558 | 56.09  | 2.020 | 72.70  |
| 35.00 | 70.0  | Shear   | KIPS       | 207.64  | 11.65       | 45.80       | 2.404 | 86.53  | 3.116 | 112.17 |
| 40.00 | 80.0  | Flexure | KIP-<br>FT | 817.88  | -12.45      | 172.45      | 2.763 | 99.48  | 3.582 | 128.95 |
| 40.00 | 80.0  | Shear   | KIPS       | 207.64  | 17.29       | 56.01       | 1.891 | 68.08  | 2.451 | 88.25  |
| 45.00 | 90.0  | Flexure | KIP-<br>FT | -817.88 | -<br>113.04 | -<br>198.52 | 1.935 | 69.66  | 2.508 | 90.31  |
| 45.00 | 90.0  | Shear   | KIPS       | 207.64  | 22.94       | 66.05       | 1.541 | 55.47  | 1.997 | 71.90  |
| 45.50 | 91.0  | Flexure | KIP-<br>FT | -817.88 | -<br>124.66 | -<br>204.09 | 1.840 | 66.25  | 2.386 | 85.88  |
| 45.50 | 91.0  | Shear   | KIPS       | 207.64  | 23.51       | 67.02       | 1.512 | 54.44  | 1.960 | 70.57  |
| 47.50 | 95.0  | Flexure | KIP-<br>FT | -812.52 | -<br>173.97 | -<br>246.90 | 1.362 | 49.03  | 1.765 | 63.55  |
| 47.50 | 95.0  | Shear   | KIPS       | 206.48  | 25.80       | 70.85       | 1.397 | 50.30  | 1.811 | 65.20  |
| 50.00 | 100.0 | Flexure | KIP-<br>FT | -812.52 | -<br>242.09 | -<br>328.45 | 0.871 | 31.36  | 1.129 | 40.65  |
| 50.00 | 100.0 | Shear   | KIPS       | 206.48  | 28.69       | 75.51       | 1.283 | 46.19  | 1.663 | 59.87  |

### Span 3

|          |         |                |            |          |       |       | Inventory | Inventory      | Operating | Operating      |
|----------|---------|----------------|------------|----------|-------|-------|-----------|----------------|-----------|----------------|
| Location |         |                |            |          |       |       | Rating    | Load<br>Rating | Rating    | Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units      | Capacity | DL    | LL    | Factor    | (Ton)          | Factor    | (Ton)          |
| 2.50     | 6.3     | Flexure        | KIP-<br>FT | -812.52  | -     | -     | 1.219     | 43.89          | 1.580     | 56.90          |
| 2.50     | 6.3     | Shear          | KIPS       | 206.48   | 26.07 | 68.80 | 1.436     | 51.70          | 1.862     | 67.02          |
| 4.00     | 10.0    | Flexure        | KIP-<br>FT | -817.88  | -     | -     | 1.430     | 51.47          | 1.853     | 66.71          |



|       |       |         |        |         |        |        |        |         |        |         |
|-------|-------|---------|--------|---------|--------|--------|--------|---------|--------|---------|
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 24.35  | 65.70  | 1.533  | 55.20   | 1.988  | 71.55   |
| 4.50  | 11.3  | Flexure | KIP-FT | -715.59 | -      | -      | 1.265  | 45.55   | 1.640  | 59.05   |
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 23.77  | 64.64  | 1.565  | 56.34   | 2.029  | 73.03   |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -47.18 | -      | 1.707  | 61.47   | 2.213  | 79.68   |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 19.82  | 56.99  | 1.826  | 65.73   | 2.367  | 85.21   |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 23.06  | 255.95 | 1.760  | 63.35   | 2.281  | 82.12   |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 15.30  | 48.05  | 2.235  | 80.46   | 2.897  | 104.31  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 51.40  | 292.68 | 1.457  | 52.45   | 1.889  | 68.00   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 13.04  | 43.63  | 2.484  | 89.43   | 3.220  | 115.93  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 75.21  | 323.74 | 1.263  | 45.47   | 1.637  | 58.95   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 10.76  | 39.34  | 2.798  | 100.73  | 3.627  | 130.57  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56 | 350.62 | 1.096  | 39.47   | 1.421  | 51.16   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04   | 30.61  | 3.709  | 133.52  | 4.808  | 173.08  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 123.11 | 359.15 | 1.040  | 37.46   | 1.349  | 48.55   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.48   | 25.80  | 4.532  | 163.14  | 5.874  | 211.48  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 123.56 | 350.50 | 1.065  | 38.35   | 1.381  | 49.71   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.92   | 29.63  | 3.960  | 142.55  | 5.133  | 184.78  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 119.46 | 337.94 | 1.123  | 40.42   | 1.455  | 52.39   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 3.18   | 33.68  | 3.454  | 124.34  | 4.477  | 161.18  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 97.72  | 280.53 | 1.410  | 50.74   | 1.827  | 65.78   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 7.70   | 42.78  | 2.641  | 95.08   | 3.424  | 123.26  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 57.90  | 169.45 | 2.507  | 90.24   | 3.249  | 116.97  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 12.21  | 52.62  | 2.084  | 75.03   | 2.702  | 97.26   |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00   | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 16.73  | 63.02  | 1.687  | 60.74   | 2.187  | 78.74   |

**Detailed Rating Results**  
**HL-93 (US)**  
**90%(Truck Pair + Lane)**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

| <b>Location</b> | <b>Inventory Rating</b> | <b>Inventory Load</b> | <b>Operating Rating</b> | <b>Operating Load</b> |
|-----------------|-------------------------|-----------------------|-------------------------|-----------------------|
|-----------------|-------------------------|-----------------------|-------------------------|-----------------------|

|       |         |             |        |          |         |         |        | Rating  |        | Rating  |
|-------|---------|-------------|--------|----------|---------|---------|--------|---------|--------|---------|
| (ft)  | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)   | Factor | (Ton)   |
| 0.00  | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 0.00  | 0.0     | Shear       | KIPS   | 207.64   | 16.73   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 4.00  | 10.0    | Flexure     | KIP-FT | 817.88   | 57.90   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 4.00  | 10.0    | Shear       | KIPS   | 207.64   | 12.21   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 8.00  | 20.0    | Flexure     | KIP-FT | 817.88   | 97.72   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 8.00  | 20.0    | Shear       | KIPS   | 207.64   | 7.70    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 12.00 | 30.0    | Flexure     | KIP-FT | 817.88   | 119.46  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 12.00 | 30.0    | Shear       | KIPS   | 207.64   | 3.18    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 14.00 | 35.0    | Flexure     | KIP-FT | 817.88   | 123.56  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 14.00 | 35.0    | Shear       | KIPS   | 207.64   | 0.92    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 16.00 | 40.0    | Flexure     | KIP-FT | 812.52   | 123.11  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 16.00 | 40.0    | Shear       | KIPS   | 206.48   | 1.48    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 20.00 | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56  | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 20.00 | 50.0    | Shear       | KIPS   | 206.48   | 6.04    | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 24.00 | 60.0    | Flexure     | KIP-FT | 812.52   | 75.21   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 24.00 | 60.0    | Shear       | KIPS   | 206.48   | 10.76   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 26.00 | 65.0    | Flexure     | KIP-FT | 812.52   | 51.40   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 26.00 | 65.0    | Shear       | KIPS   | 206.48   | 13.04   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 28.00 | 70.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 28.00 | 70.0    | Shear       | KIPS   | 207.64   | 15.30   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 32.00 | 80.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -195.98 | 1.909  | 68.73   | 2.475  | 89.10   |
| 32.00 | 80.0    | Shear       | KIPS   | 207.64   | 19.82   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 35.50 | 88.8    | Flexure     | KIP-FT | -715.59  | -123.46 | -224.80 | 1.415  | 50.93   | 1.834  | 66.02   |
| 35.50 | 88.8    | Shear       | KIPS   | 207.64   | 23.77   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 36.00 | 90.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -230.03 | 1.598  | 57.54   | 2.072  | 74.58   |
| 36.00 | 90.0    | Shear       | KIPS   | 207.64   | 24.35   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 37.50 | 93.8    | Flexure     | KIP-FT | -812.52  | -173.31 | -247.10 | 1.363  | 49.06   | 1.767  | 63.60   |
| 37.50 | 93.8    | Shear       | KIPS   | 207.64   | 26.07   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0   | Flexure     | KIP-FT | -812.52  | -242.09 | -279.69 | 1.023  | 36.82   | 1.326  | 47.74   |
| 40.00 | 100.0   | Shear       | KIPS   | 206.48   | 28.96   | 0.00    | 99.000 | 3564.00 | 99.000 | 3564.00 |

**Span 2**

|          |         |             |        |          |        |      | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |      | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL   | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -      | -    | 1.576     | 56.75       | 2.043     | 73.56       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -      | -    | 2.007     | 72.27       | 2.602     | 93.68       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -    | 2.121     | 76.37       | 2.750     | 99.00       |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 10.00    | 20.0    | Flexure     | KIP-FT | -817.88  | -12.45 | -    | 3.208     | 115.47      | 4.158     | 149.69      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 19.00    | 38.0    | Flexure     | KIP-FT | 817.88   | 96.27  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 19.00    | 38.0    | Shear       | KIPS   | 207.64   | 6.83   | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53 | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.69   | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 116.76 | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00   | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 102.53 | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.69   | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 96.27  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.83   | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 59.90  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 11.35  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 40.00    | 80.0    | Flexure     | KIP-FT | -817.88  | -12.45 | -    | 3.208     | 115.47      | 4.158     | 149.69      |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 17.29  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 45.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -      | -    | 2.121     | 76.37       | 2.750     | 99.00       |
| 45.00    | 90.0    | Shear       | KIPS   | 207.64   | 22.94  | 0.00 | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 45.50    | 91.0    | Flexure     | KIP-   | -817.88  | -      | -    | 2.007     | 72.27       | 2.602     | 93.68       |

|       |       |         |        |         |        |        |        |         |        |         |
|-------|-------|---------|--------|---------|--------|--------|--------|---------|--------|---------|
|       |       |         | FT     |         | 124.66 | 187.11 |        |         |        |         |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51  | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -      | -      | 1.576  | 56.75   | 2.043  | 73.56   |
|       |       |         |        |         | 173.97 | 213.31 |        |         |        |         |
| 47.50 | 95.0  | Shear   | KIPS   | 207.64  | 25.80  | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -      | 1.023  | 36.82   | 1.326  | 47.74   |
|       |       |         |        |         | 242.09 | 279.69 |        |         |        |         |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69  | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |

### Span 3

|          |       |         |             |        |          |        | Inventory | Inventory   | Operating | Operating   |         |
|----------|-------|---------|-------------|--------|----------|--------|-----------|-------------|-----------|-------------|---------|
|          |       |         |             |        |          |        | Rating    | Load Rating | Rating    | Load Rating |         |
| Location | (ft)  | Percent | Limit State | Units  | Capacity | DL     | LL        | Factor      | (Ton)     | Factor      | (Ton)   |
|          | 2.50  | 6.3     | Flexure     | KIP-FT | -812.52  | -      | -         | 1.363       | 49.06     | 1.767       | 63.60   |
|          |       |         |             |        | 173.31   | 247.10 |           |             |           |             |         |
|          | 2.50  | 6.3     | Shear       | KIPS   | 206.48   | 26.07  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 4.00  | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -         | 1.598       | 57.54     | 2.072       | 74.58   |
|          |       |         |             |        | 135.49   | 230.03 |           |             |           |             |         |
|          | 4.00  | 10.0    | Shear       | KIPS   | 207.64   | 24.35  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 4.50  | 11.3    | Flexure     | KIP-FT | -715.59  | -      | -         | 1.415       | 50.93     | 1.834       | 66.02   |
|          |       |         |             |        | 123.46   | 224.80 |           |             |           |             |         |
|          | 4.50  | 11.3    | Shear       | KIPS   | 207.64   | 23.77  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 8.00  | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18 | -         | 1.909       | 68.73     | 2.475       | 89.10   |
|          |       |         |             |        |          | 195.98 |           |             |           |             |         |
|          | 8.00  | 20.0    | Shear       | KIPS   | 207.64   | 19.82  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 12.00 | 30.0    | Flexure     | KIP-FT | 817.88   | 23.06  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 12.00 | 30.0    | Shear       | KIPS   | 207.64   | 15.30  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 14.00 | 35.0    | Flexure     | KIP-FT | 817.88   | 51.40  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 14.00 | 35.0    | Shear       | KIPS   | 207.64   | 13.04  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 16.00 | 40.0    | Flexure     | KIP-FT | 812.52   | 75.21  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 16.00 | 40.0    | Shear       | KIPS   | 206.48   | 10.76  | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 20.00 | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56 | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 20.00 | 50.0    | Shear       | KIPS   | 206.48   | 6.04   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 24.00 | 60.0    | Flexure     | KIP-FT | 812.52   | 123.11 | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 24.00 | 60.0    | Shear       | KIPS   | 206.48   | 1.48   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 26.00 | 65.0    | Flexure     | KIP-FT | 812.52   | 123.56 | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 26.00 | 65.0    | Shear       | KIPS   | 206.48   | 0.92   | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |
|          | 28.00 | 70.0    | Flexure     | KIP-ET | 817.88   | 119.46 | 0.00      | 99.000      | 3564.00   | 99.000      | 3564.00 |

|       |       |         |        |        |       |      |        |         |        |         |
|-------|-------|---------|--------|--------|-------|------|--------|---------|--------|---------|
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18  | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70  | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73 | 0.00 | 99.000 | 3564.00 | 99.000 | 3564.00 |

**Detailed Rating Results  
HL-93 (US)  
Tandem + Lane  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|          |         |             |        |          |        |        | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|--------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |        | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor    | (Ton)       | Factor    | (Ton)       |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00   | 0.00   | 99.000    | 3564.00     | 99.000    | 3564.00     |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 16.73  | 57.67  | 1.844     | 66.38       | 2.390     | 86.04       |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 57.90  | 159.18 | 2.668     | 96.06       | 3.459     | 124.52      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 12.21  | 49.38  | 2.221     | 79.95       | 2.879     | 103.64      |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 97.72  | 272.12 | 1.453     | 52.31       | 1.884     | 67.81       |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 7.70   | 41.45  | 2.726     | 98.13       | 3.533     | 127.20      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 119.46 | 340.75 | 1.113     | 40.08       | 1.443     | 51.96       |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 3.18   | 33.97  | 3.424     | 123.25      | 4.438     | 159.77      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 123.56 | 359.52 | 1.038     | 37.38       | 1.346     | 48.46       |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 0.92   | 30.44  | 3.854     | 138.74      | 4.996     | 179.84      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 123.11 | 367.86 | 1.016     | 36.57       | 1.317     | 47.40       |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 1.48   | 27.00  | 4.329     | 155.86      | 5.612     | 202.03      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56 | 361.96 | 1.062     | 38.23       | 1.377     | 49.56       |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 6.04   | 32.65  | 3.477     | 125.18      | 4.507     | 162.27      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 75.21  | 327.40 | 1.249     | 44.97       | 1.619     | 58.29       |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 10.76  | 39.43  | 2.791     | 100.48      | 3.618     | 130.26      |

|       |       |         |        |         |        |         |       |       |       |        |
|-------|-------|---------|--------|---------|--------|---------|-------|-------|-------|--------|
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40  | 297.74  | 1.432 | 51.56 | 1.857 | 66.84  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04  | 42.75   | 2.535 | 91.28 | 3.287 | 118.32 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06  | 260.80  | 1.727 | 62.17 | 2.239 | 80.59  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30  | 46.00   | 2.335 | 84.05 | 3.026 | 108.95 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18 | -188.38 | 1.986 | 71.51 | 2.575 | 92.70  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82  | 52.23   | 1.992 | 71.72 | 2.583 | 92.98  |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -      | -123.46 | 1.464 | 52.72 | 1.898 | 68.34  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77  | 57.31   | 1.765 | 63.54 | 2.288 | 82.37  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -135.49 | 1.652 | 59.47 | 2.142 | 77.10  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35  | 58.00   | 1.737 | 62.52 | 2.251 | 81.04  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -      | -173.31 | 1.402 | 50.48 | 1.818 | 65.44  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07  | 60.00   | 1.647 | 59.28 | 2.134 | 76.84  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -242.09 | 1.044 | 37.58 | 1.353 | 48.72  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69  | 64.11   | 1.511 | 54.40 | 1.959 | 70.51  |

**Span 2**

|          |         |             |        |          |        |        | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|--------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |        | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -      | -      | 1.592     | 57.31       | 2.064     | 74.29       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80  | 60.96  | 1.624     | 58.46       | 2.105     | 75.78       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -      | -      | 2.003     | 72.09       | 2.596     | 93.46       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51  | 58.32  | 1.738     | 62.57       | 2.253     | 81.10       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -      | 2.108     | 75.89       | 2.733     | 98.38       |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94  | 57.63  | 1.766     | 63.56       | 2.289     | 82.40       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45 | 186.81 | 2.551     | 91.83       | 3.307     | 119.04      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29  | 50.45  | 2.100     | 75.58       | 2.722     | 97.98       |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90  | 272.65 | 1.552     | 55.89       | 2.012     | 72.45       |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65  | 42.86  | 2.568     | 92.46       | 3.329     | 119.85      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27  | 324.28 | 1.213     | 43.68       | 1.573     | 56.62       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83   | 36.65  | 3.082     | 110.96      | 3.996     | 143.84      |
| 20.00    | 40.0    | Flexure     | KIP-   | 812.52   | 102.53 | 332.67 | 1.169     | 42.08       | 1.515     | 54.55       |

|       |       |         | FT     |         |        |        |       |        |       |        |
|-------|-------|---------|--------|---------|--------|--------|-------|--------|-------|--------|
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69   | 35.10  | 3.242 | 116.71 | 4.203 | 151.29 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76 | 350.01 | 1.081 | 38.92  | 1.401 | 50.45  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00   | 27.50  | 4.291 | 154.47 | 5.562 | 200.24 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53 | 332.67 | 1.169 | 42.08  | 1.515 | 54.55  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69   | 35.10  | 3.242 | 116.71 | 4.203 | 151.29 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27  | 324.28 | 1.213 | 43.68  | 1.573 | 56.62  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83   | 36.65  | 3.082 | 110.96 | 3.996 | 143.84 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90  | 272.65 | 1.552 | 55.89  | 2.012 | 72.45  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65  | 42.86  | 2.568 | 92.46  | 3.329 | 119.85 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45 | 186.81 | 2.551 | 91.83  | 3.307 | 119.04 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29  | 50.45  | 2.100 | 75.58  | 2.722 | 97.98  |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -      | -      | 2.108 | 75.89  | 2.733 | 98.38  |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94  | 57.63  | 1.766 | 63.56  | 2.289 | 82.40  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -      | -      | 2.003 | 72.09  | 2.596 | 93.46  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51  | 58.32  | 1.738 | 62.57  | 2.253 | 81.10  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -      | -      | 1.592 | 57.31  | 2.064 | 74.29  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80  | 60.96  | 1.624 | 58.46  | 2.105 | 75.78  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -      | -      | 1.044 | 37.58  | 1.353 | 48.72  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69  | 64.11  | 1.511 | 54.40  | 1.959 | 70.51  |

### Span 3

|          |         |             |        |          |        |       | Inventory | Inventory   | Operating | Operating   |
|----------|---------|-------------|--------|----------|--------|-------|-----------|-------------|-----------|-------------|
| Location |         |             |        |          |        |       | Rating    | Load Rating | Rating    | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL    | Factor    | (Ton)       | Factor    | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -      | -     | 1.402     | 50.48       | 1.818     | 65.44       |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07  | 60.00 | 1.647     | 59.28       | 2.134     | 76.84       |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -      | -     | 1.652     | 59.47       | 2.142     | 77.10       |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35  | 58.00 | 1.737     | 62.52       | 2.251     | 81.04       |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -      | -     | 1.464     | 52.72       | 1.898     | 68.34       |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 23.77  | 57.31 | 1.765     | 63.54       | 2.288     | 82.37       |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18 | -     | 1.986     | 71.51       | 2.575     | 92.70       |

|       |       |         |        |        |        |        |        |         |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|--------|---------|
| 8.00  | 20.0  | Shear   | KIPS   | 207.64 | 19.82  | 52.23  | 1.992  | 71.72   | 2.583  | 92.98   |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88 | 23.06  | 260.80 | 1.727  | 62.17   | 2.239  | 80.59   |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64 | 15.30  | 46.00  | 2.335  | 84.05   | 3.026  | 108.95  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52 | 51.40  | 297.74 | 1.432  | 51.56   | 1.857  | 66.84   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48 | 13.04  | 42.75  | 2.535  | 91.28   | 3.287  | 118.32  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52 | 75.21  | 327.40 | 1.249  | 44.97   | 1.619  | 58.29   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48 | 10.76  | 39.43  | 2.791  | 100.48  | 3.618  | 130.26  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52 | 108.56 | 361.96 | 1.062  | 38.23   | 1.377  | 49.56   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48 | 6.04   | 32.65  | 3.477  | 125.18  | 4.507  | 162.27  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52 | 123.11 | 367.86 | 1.016  | 36.57   | 1.317  | 47.40   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48 | 1.48   | 27.00  | 4.329  | 155.86  | 5.612  | 202.03  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 123.56 | 359.52 | 1.038  | 37.38   | 1.346  | 48.46   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.92   | 30.44  | 3.854  | 138.74  | 4.996  | 179.84  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 119.46 | 340.75 | 1.113  | 40.08   | 1.443  | 51.96   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18   | 33.97  | 3.424  | 123.25  | 4.438  | 159.77  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72  | 272.12 | 1.453  | 52.31   | 1.884  | 67.81   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70   | 41.45  | 2.726  | 98.13   | 3.533  | 127.20  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90  | 159.18 | 2.668  | 96.06   | 3.459  | 124.52  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21  | 49.38  | 2.221  | 79.95   | 2.879  | 103.64  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 3564.00 | 99.000 | 3564.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73  | 57.67  | 1.844  | 66.38   | 2.390  | 86.04   |



**Bridge Name:** I95 over Souadabscook Stream Center  
**NBI Structure ID:** 1432+5950  
**Bridge ID:** Br. No. 1432+5950

**Analyzed By:** Virtis  
**Analyze Date:** Thursday, April 25, 2013 09:47:26  
**Analysis Engine:** AASHTO LRFR Engine Version 6.4.0.3001  
**Analysis Preference Setting:** None

**Report By:** virtis  
**Report Date:** Thursday, April 25, 2013 10:12:36

**Structure Definition Name:** 1432+5950  
**Member Name:** G2  
**Member Alternative Name:** G2

**Report by Action:** ☒ **Flexure** ☒ **Shear** ☐ **Overload** ☐ **Critical**

**Detailed Rating Results**  
**Legal Lane Load**  
**Lane**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 0.00                             |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 2.84      | 49.984                  | 0.00                             |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 8.02      | 70.787                  | 0.00                             |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 2.26      | 64.892                  | 0.00                             |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 14.06     | 37.579                  | 0.00                             |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 1.75      | 86.232                  | 0.00                             |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 18.12     | 27.967                  | 0.00                             |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 1.32      | 99.000                  | 0.00                             |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 19.42     | 25.687                  | 0.00                             |
| 14.00           | 35.0           | Shear                  | KIPS         | 207.64          | 0.92      | 1.13      | 99.000                  | 0.00                             |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 20.21     | 24.694                  | 0.00                             |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 1.16      | 99.000                  | 0.00                             |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 20.33     | 25.255                  | 0.00                             |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 1.49      | 99.000                  | 0.00                             |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 18.48     | 29.569                  | 0.00                             |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 10.76     | 1.89      | 77.689                  | 0.00                             |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 16.81     | 33.897                  | 0.00                             |

|       |       |         |        |         |         |        |        |      |
|-------|-------|---------|--------|---------|---------|--------|--------|------|
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 2.12   | 68.402 | 0.00 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 14.64  | 41.084 | 0.00 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 2.36   | 60.899 | 0.00 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -13.55 | 36.887 | 0.00 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 2.87   | 48.374 | 0.00 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -17.60 | 24.144 | 0.00 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 3.37   | 40.140 | 0.00 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -18.56 | 26.462 | 0.00 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 3.44   | 39.123 | 0.00 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -21.93 | 20.510 | 0.00 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 3.66   | 36.038 | 0.00 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -28.99 | 13.183 | 0.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 4.29   | 30.139 | 0.00 |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -173.97   | -21.37    | 21.015                  | 0.00                             |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 25.80     | 3.91      | 33.818                  | 0.00                             |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -124.66   | -16.44    | 30.527                  | 0.00                             |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 23.51     | 3.61      | 37.463                  | 0.00                             |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -15.38    | 33.357                  | 0.00                             |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 22.94     | 3.54      | 38.389                  | 0.00                             |
| 10.00           | 20.0           | Flexure                | KIP-FT       | -817.88         | -12.45    | -9.07     | 67.501                  | 0.00                             |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 17.29     | 2.85      | 49.626                  | 0.00                             |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 14.34     | 39.437                  | 0.00                             |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 11.65     | 2.24      | 65.708                  | 0.00                             |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 18.06     | 29.099                  | 0.00                             |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.83      | 1.81      | 83.437                  | 0.00                             |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 18.70     | 27.773                  | 0.00                             |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.69      | 1.71      | 88.893                  | 0.00                             |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 116.76    | 20.16     | 25.075                  | 0.00                             |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 1.27      | 99.000                  | 0.00                             |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 18.70     | 27.773                  | 0.00                             |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.69      | 1.71      | 88.893                  | 0.00                             |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 18.06     | 29.099                  | 0.00                             |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.83      | 1.81      | 83.437                  | 0.00                             |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 14.34     | 39.437                  | 0.00                             |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 11.65     | 2.24      | 65.708                  | 0.00                             |
| 40.00           | 80.0           | Flexure                | KIP-FT       | -817.88         | -12.45    | -9.07     | 67.501                  | 0.00                             |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.29     | 2.85      | 49.626                  | 0.00                             |

|       |       |         |        |         |         |        |        |      |
|-------|-------|---------|--------|---------|---------|--------|--------|------|
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -15.38 | 33.357 | 0.00 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 3.54   | 38.389 | 0.00 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -16.44 | 30.527 | 0.00 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 3.61   | 37.463 | 0.00 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -21.37 | 21.015 | 0.00 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 3.91   | 33.818 | 0.00 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -28.99 | 13.183 | 0.00 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 4.29   | 30.139 | 0.00 |

### Span 3

|          |         |                |        |          |         |        | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|--------|-----------------|-------------------------|
| Location |         |                |        |          |         |        |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL     | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -173.31 | -21.93 | 20.510          | 0.00                    |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 26.07   | 3.66   | 36.038          | 0.00                    |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -18.56 | 26.462          | 0.00                    |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 24.35   | 3.44   | 39.123          | 0.00                    |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -123.46 | -17.60 | 24.144          | 0.00                    |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 23.77   | 3.37   | 40.140          | 0.00                    |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -13.55 | 36.887          | 0.00                    |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 19.82   | 2.87   | 48.374          | 0.00                    |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 14.64  | 41.084          | 0.00                    |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 15.30   | 2.36   | 60.899          | 0.00                    |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 16.81  | 33.897          | 0.00                    |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 13.04   | 2.12   | 68.402          | 0.00                    |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 18.48  | 29.569          | 0.00                    |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 10.76   | 1.89   | 77.689          | 0.00                    |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 108.56  | 20.33  | 25.255          | 0.00                    |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 6.04    | 1.49   | 99.000          | 0.00                    |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 123.11  | 20.21  | 24.694          | 0.00                    |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.48    | 1.16   | 99.000          | 0.00                    |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 123.56  | 19.42  | 25.687          | 0.00                    |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.92    | 1.13   | 99.000          | 0.00                    |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 119.46  | 18.12  | 27.967          | 0.00                    |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 3.18    | 1.32   | 99.000          | 0.00                    |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 97.72   | 14.06  | 37.579          | 0.00                    |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 7.70    | 1.75   | 86.232          | 0.00                    |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 57.90   | 8.02   | 70.787          | 0.00                    |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 12.21   | 2.26   | 64.892          | 0.00                    |
| 40.00    | 100.0   | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00   | 99.000          | 0.00                    |
| 40.00    | 100.0   | Shear          | KIPS   | 207.64   | 16.73   | 2.84   | 49.984          | 0.00                    |

**Detailed Rating Results  
Maine DOT Config. 1  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4950.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 52.13     | 2.725                   | 136.25                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 133.64    | 4.246                   | 212.28                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 42.19     | 3.473                   | 173.63                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 212.79    | 2.482                   | 124.12                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 33.05     | 4.567                   | 228.34                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 259.61    | 1.952                   | 97.62                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 26.88     | 5.782                   | 289.08                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 276.02    | 1.807                   | 90.34                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.92      | 24.02     | 6.525                   | 326.24                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 285.73    | 1.747                   | 87.35                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 21.22     | 7.359                   | 367.96                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 281.30    | 1.825                   | 91.27                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 27.02     | 5.615                   | 280.74                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 248.11    | 2.202                   | 110.09                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 10.76     | 34.38     | 4.276                   | 213.81                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 228.88    | 2.489                   | 124.46                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 13.04     | 37.71     | 3.840                   | 192.01                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 200.01    | 3.008                   | 150.41                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 15.30     | 40.74     | 3.521                   | 176.05                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -180.40   | 2.771                   | 138.55                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 19.82     | 46.12     | 3.014                   | 150.69                           |
| 35.50           | 88.8           | Flexure                | KIP-FT       | -715.59         | -123.46   | -200.13   | 2.123                   | 106.15                           |
| 35.50           | 88.8           | Shear                  | KIPS         | 207.64          | 23.77     | 51.53     | 2.622                   | 131.11                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -135.49   | -202.95   | 2.420                   | 121.00                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 24.35     | 52.68     | 2.554                   | 127.72                           |
| 37.50           | 93.8           | Flexure                | KIP-FT       | -812.52         | -173.31   | -224.26   | 2.006                   | 100.29                           |
| 37.50           | 93.8           | Shear                  | KIPS         | 206.48          | 26.07     | 55.98     | 2.358                   | 117.89                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -242.09   | -309.37   | 1.235                   | 61.77                            |
| 40.00           | 100.0          | Shear                  | KIPS         | 206.48          | 28.69     | 65.78     | 1.967                   | 98.36                            |

**Span 2**

**Legal      Legal**

| Location |         |             |        |          |         |         | Rating | Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -227.84 | 1.971  | 98.57       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 60.80   | 2.175  | 108.75      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -164.32 | 3.054  | 152.68      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 56.78   | 2.385  | 119.23      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -149.51 | 3.432  | 171.62      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94   | 55.77   | 2.438  | 121.89      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 141.32  | 4.504  | 225.22      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29   | 45.55   | 3.107  | 155.33      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 226.82  | 2.493  | 124.65      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65   | 37.01   | 3.974  | 198.68      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 263.34  | 1.996  | 99.79       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83    | 30.71   | 4.913  | 245.67      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 267.54  | 1.942  | 97.08       |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.69    | 29.06   | 5.232  | 261.58      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 116.76  | 261.36  | 1.934  | 96.69       |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 20.08   | 7.851  | 392.57      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 267.54  | 1.942  | 97.08       |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.69    | 29.06   | 5.232  | 261.58      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 263.34  | 1.996  | 99.79       |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.83    | 30.71   | 4.913  | 245.67      |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 226.82  | 2.493  | 124.65      |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 11.65   | 37.01   | 3.974  | 198.68      |
| 40.00    | 80.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 141.32  | 4.504  | 225.22      |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 17.29   | 45.55   | 3.107  | 155.33      |
| 45.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -149.51 | 3.432  | 171.62      |
| 45.00    | 90.0    | Shear       | KIPS   | 207.64   | 22.94   | 55.77   | 2.438  | 121.89      |
| 45.50    | 91.0    | Flexure     | KIP-FT | -817.88  | -124.66 | -164.32 | 3.054  | 152.68      |
| 45.50    | 91.0    | Shear       | KIPS   | 207.64   | 23.51   | 56.78   | 2.385  | 119.23      |
| 47.50    | 95.0    | Flexure     | KIP-FT | -812.52  | -173.97 | -227.84 | 1.971  | 98.57       |
| 47.50    | 95.0    | Shear       | KIPS   | 206.48   | 25.80   | 60.80   | 2.175  | 108.75      |
| 50.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -242.09 | -309.37 | 1.235  | 61.77       |
| 50.00    | 100.0   | Shear       | KIPS   | 206.48   | 28.69   | 65.78   | 1.967  | 98.36       |

**Span 3**

| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -224.26 | 2.006        | 100.29            |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 55.98   | 2.358        | 117.89            |

|       |       |         |        |         |         |         |        |         |
|-------|-------|---------|--------|---------|---------|---------|--------|---------|
| 4.00  | 10.0  | Flexure | KIP-FT | -817.88 | -135.49 | -202.95 | 2.420  | 121.00  |
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 24.35   | 52.68   | 2.554  | 127.72  |
| 4.50  | 11.3  | Flexure | KIP-FT | -715.59 | -123.46 | -200.13 | 2.123  | 106.15  |
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 23.77   | 51.53   | 2.622  | 131.11  |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -47.18  | -180.40 | 2.771  | 138.55  |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 19.82   | 46.12   | 3.014  | 150.69  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 23.06   | 200.01  | 3.008  | 150.41  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 15.30   | 40.74   | 3.521  | 176.05  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 51.40   | 228.88  | 2.489  | 124.46  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 13.04   | 37.71   | 3.840  | 192.01  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 75.21   | 248.11  | 2.202  | 110.09  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 10.76   | 34.38   | 4.276  | 213.81  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 281.30  | 1.825  | 91.27   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 27.02   | 5.615  | 280.74  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 123.11  | 285.73  | 1.747  | 87.35   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.48    | 21.22   | 7.359  | 367.96  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 123.56  | 276.02  | 1.807  | 90.34   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.92    | 24.02   | 6.525  | 326.24  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 119.46  | 259.61  | 1.952  | 97.62   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 3.18    | 26.88   | 5.782  | 289.08  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 97.72   | 212.79  | 2.482  | 124.12  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 7.70    | 33.05   | 4.567  | 228.34  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 57.90   | 133.64  | 4.246  | 212.28  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 12.21   | 42.19   | 3.473  | 173.63  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00    | 0.00    | 99.000 | 4950.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 16.73   | 52.13   | 2.725  | 136.25  |

**Detailed Rating Results**  
**Maine DOT Config. 1 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 9900.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 52.13     | 2.725                   | 272.50                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 133.64    | 4.246                   | 424.57                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 42.19     | 3.473                   | 347.25                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 212.79    | 2.482                   | 248.24                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 33.05     | 4.567                   | 456.69                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 119.46  | 259.61  | 1.952 | 195.23 |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 3.18    | 26.88   | 5.782 | 578.16 |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 123.56  | 276.02  | 1.807 | 180.69 |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.92    | 24.02   | 6.525 | 652.47 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 123.11  | 285.73  | 1.747 | 174.70 |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.48    | 25.57   | 6.106 | 610.64 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 281.30  | 1.825 | 182.54 |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 30.87   | 4.913 | 491.30 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21   | 248.11  | 2.202 | 220.18 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76   | 35.59   | 4.131 | 413.09 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40   | 228.88  | 2.489 | 248.91 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 37.78   | 3.833 | 383.26 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 200.01  | 3.008 | 300.81 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 40.74   | 3.521 | 352.11 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -168.12 | 2.973 | 297.34 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 46.20   | 3.009 | 300.93 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -230.31 | 1.845 | 184.47 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 53.54   | 2.524 | 252.40 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -239.65 | 2.049 | 204.93 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 54.55   | 2.467 | 246.66 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -268.84 | 1.673 | 167.32 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 57.48   | 2.296 | 229.63 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -322.03 | 1.187 | 118.68 |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 66.41   | 1.949 | 194.87 |

#### Span 2

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -246.22 | 1.824  | 182.43      |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 61.88   | 2.137  | 213.70      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -192.97 | 2.600  | 260.03      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 58.27   | 2.323  | 232.34      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -181.36 | 2.830  | 282.96      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94   | 57.41   | 2.368  | 236.81      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 143.69  | 4.430  | 443.03      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29   | 48.57   | 2.914  | 291.35      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 223.76  | 2.527  | 252.71      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65   | 39.65   | 3.709  | 370.87      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 261.42  | 2.011  | 201.05      |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83    | 32.62   | 4.626  | 462.59      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 266.10  | 1.952  | 195.21      |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69    | 30.90   | 4.920 | 491.98 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76  | 260.23  | 1.942 | 194.23 |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 22.55   | 6.989 | 698.87 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 266.10  | 1.952 | 195.21 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 30.90   | 4.920 | 491.98 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 261.42  | 2.011 | 201.05 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 32.62   | 4.626 | 462.59 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 223.76  | 2.527 | 252.71 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 39.65   | 3.709 | 370.87 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45  | 143.69  | 4.430 | 443.03 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 48.57   | 2.914 | 291.35 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -181.36 | 2.830 | 282.96 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 57.41   | 2.368 | 236.81 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -192.97 | 2.600 | 260.03 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 58.27   | 2.323 | 232.34 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -246.22 | 1.824 | 182.43 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 61.88   | 2.137 | 213.70 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -322.03 | 1.187 | 118.68 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 66.41   | 1.949 | 194.87 |

**Span 3**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 6.3            | Flexure                | KIP-FT       | -812.52         | -173.31   | -268.84   | 1.673                   | 167.32                           |
| 2.50            | 6.3            | Shear                  | KIPS         | 206.48          | 26.07     | 57.48     | 2.296                   | 229.63                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -135.49   | -239.65   | 2.049                   | 204.93                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 24.35     | 54.55     | 2.467                   | 246.66                           |
| 4.50            | 11.3           | Flexure                | KIP-FT       | -715.59         | -123.46   | -230.31   | 1.845                   | 184.47                           |
| 4.50            | 11.3           | Shear                  | KIPS         | 207.64          | 23.77     | 53.54     | 2.524                   | 252.40                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -168.12   | 2.973                   | 297.34                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 19.82     | 46.20     | 3.009                   | 300.93                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 200.01    | 3.008                   | 300.81                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 15.30     | 40.74     | 3.521                   | 352.11                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 228.88    | 2.489                   | 248.91                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 13.04     | 37.78     | 3.833                   | 383.26                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 248.11    | 2.202                   | 220.18                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 10.76     | 35.59     | 4.131                   | 413.09                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 281.30    | 1.825                   | 182.54                           |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 30.87     | 4.913                   | 491.30                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 285.73    | 1.747                   | 174.70                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 1.48      | 25.57     | 6.106                   | 610.64                           |



|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 123.56 | 276.02 | 1.807  | 180.69  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.92   | 24.02  | 6.525  | 652.47  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 119.46 | 259.61 | 1.952  | 195.23  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18   | 26.88  | 5.782  | 578.16  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72  | 212.79 | 2.482  | 248.24  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70   | 33.05  | 4.567  | 456.69  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90  | 133.64 | 4.246  | 424.57  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21  | 42.19  | 3.473  | 347.25  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 9900.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73  | 52.13  | 2.725  | 272.50  |

**Detailed Rating Results**  
**Maine DOT Config. 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4653.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 53.90     | 2.635                   | 123.86                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 141.78    | 4.002                   | 188.09                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 44.75     | 3.273                   | 153.84                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 229.07    | 2.306                   | 108.38                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 36.15     | 4.176                   | 196.26                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 289.47    | 1.751                   | 82.29                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 27.53     | 5.645                   | 265.29                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 312.45    | 1.596                   | 75.02                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.92      | 23.18     | 6.760                   | 317.72                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 323.13    | 1.545                   | 72.61                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 18.99     | 8.221                   | 386.40                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 328.17    | 1.565                   | 73.54                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 24.29     | 6.246                   | 293.55                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 289.88    | 1.885                   | 88.57                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 10.76     | 32.91     | 4.467                   | 209.96                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 256.59    | 2.220                   | 104.35                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 13.04     | 37.04     | 3.909                   | 183.74                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 214.90    | 2.800                   | 131.58                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 15.30     | 41.01     | 3.498                   | 164.40                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -186.28   | 2.683                   | 126.12                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 19.82     | 48.45     | 2.869                   | 134.85                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -216.03 | 1.967 | 92.43  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 54.31   | 2.488 | 116.94 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -224.05 | 2.192 | 103.02 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 55.10   | 2.442 | 114.78 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -248.13 | 1.813 | 85.21  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 57.36   | 2.301 | 108.15 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -288.93 | 1.323 | 62.17  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 64.77   | 1.998 | 93.90  |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -173.97   | -213.15   | 2.107                   | 99.05                            |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 25.80     | 60.60     | 2.182                   | 102.57                           |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -124.66   | -183.93   | 2.728                   | 128.22                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 23.51     | 57.09     | 2.371                   | 111.46                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -176.67   | 2.905                   | 136.53                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 22.94     | 56.21     | 2.418                   | 113.66                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | -817.88         | -12.45    | -140.56   | 4.355                   | 204.67                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 17.29     | 46.98     | 3.012                   | 141.56                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 243.04    | 2.327                   | 109.35                           |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 11.65     | 37.35     | 3.938                   | 185.07                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 294.44    | 1.785                   | 83.90                            |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.83      | 29.78     | 5.067                   | 238.13                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 302.60    | 1.717                   | 80.68                            |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.69      | 27.93     | 5.443                   | 255.82                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 116.76    | 313.69    | 1.611                   | 75.73                            |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 18.40     | 8.566                   | 402.60                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 302.60    | 1.717                   | 80.68                            |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.69      | 27.93     | 5.443                   | 255.82                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 294.44    | 1.785                   | 83.90                            |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.83      | 29.78     | 5.067                   | 238.13                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 243.04    | 2.327                   | 109.35                           |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 11.65     | 37.35     | 3.938                   | 185.07                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | -817.88         | -12.45    | -140.56   | 4.355                   | 204.67                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.29     | 46.98     | 3.012                   | 141.56                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -176.67   | 2.905                   | 136.53                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 22.94     | 56.21     | 2.418                   | 113.66                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -124.66   | -183.93   | 2.728                   | 128.22                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 23.51     | 57.09     | 2.371                   | 111.46                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -173.97   | -213.15   | 2.107                   | 99.05                            |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 60.60   | 2.182 | 102.57 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -288.93 | 1.323 | 62.17  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 64.77   | 1.998 | 93.90  |

**Span 3**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 6.3            | Flexure                | KIP-FT       | -812.52         | -173.31   | -248.13   | 1.813                   | 85.21                            |
| 2.50            | 6.3            | Shear                  | KIPS         | 206.48          | 26.07     | 57.36     | 2.301                   | 108.15                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -135.49   | -224.05   | 2.192                   | 103.02                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 24.35     | 55.10     | 2.442                   | 114.78                           |
| 4.50            | 11.3           | Flexure                | KIP-FT       | -715.59         | -123.46   | -216.03   | 1.967                   | 92.43                            |
| 4.50            | 11.3           | Shear                  | KIPS         | 207.64          | 23.77     | 54.31     | 2.488                   | 116.94                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -186.28   | 2.683                   | 126.12                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 19.82     | 48.45     | 2.869                   | 134.85                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 214.90    | 2.800                   | 131.58                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 15.30     | 41.01     | 3.498                   | 164.40                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 256.59    | 2.220                   | 104.35                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 13.04     | 37.04     | 3.909                   | 183.74                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 289.88    | 1.885                   | 88.57                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 10.76     | 32.91     | 4.467                   | 209.96                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 328.17    | 1.565                   | 73.54                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 24.29     | 6.246                   | 293.55                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 323.13    | 1.545                   | 72.61                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 1.48      | 18.99     | 8.221                   | 386.40                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 312.45    | 1.596                   | 75.02                            |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 0.92      | 23.18     | 6.760                   | 317.72                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 289.47    | 1.751                   | 82.29                            |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 3.18      | 27.53     | 5.645                   | 265.29                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 229.07    | 2.306                   | 108.38                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 7.70      | 36.15     | 4.176                   | 196.26                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 141.78    | 4.002                   | 188.09                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 12.21     | 44.75     | 3.273                   | 153.84                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4653.00                          |
| 40.00           | 100.0          | Shear                  | KIPS         | 207.64          | 16.73     | 53.90     | 2.635                   | 123.86                           |

**Detailed Rating Results**  
**Maine DOT Config. 2 x 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

| Span 1   |         |                |        |          |         |         |                 |                         |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 0.00     | 0.0     | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000          | 9306.00                 |
| 0.00     | 0.0     | Shear          | KIPS   | 207.64   | 16.73   | 53.90   | 2.635           | 247.72                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | 817.88   | 57.90   | 141.78  | 4.002           | 376.18                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 12.21   | 44.75   | 3.273           | 307.68                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | 817.88   | 97.72   | 229.14  | 2.305           | 216.69                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 7.70    | 36.17   | 4.173           | 392.30                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 119.46  | 289.47  | 1.751           | 164.59                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 3.18    | 28.24   | 5.502           | 517.22                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 123.56  | 312.45  | 1.596           | 150.04                  |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 0.92    | 24.17   | 6.485           | 609.60                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 123.11  | 323.13  | 1.545           | 145.21                  |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 1.48    | 20.25   | 7.712           | 724.95                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 108.56  | 328.17  | 1.565           | 147.09                  |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 6.04    | 26.11   | 5.810           | 546.11                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 289.88  | 1.885           | 177.15                  |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 10.76   | 33.88   | 4.340           | 407.93                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 256.95  | 2.217           | 208.41                  |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 13.04   | 37.65   | 3.846           | 361.56                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 221.09  | 2.721           | 255.81                  |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 15.30   | 41.27   | 3.476           | 326.72                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -183.27 | 2.728           | 256.39                  |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 19.82   | 48.45   | 2.869           | 269.69                  |
| 35.50    | 88.8    | Flexure        | KIP-FT | -715.59  | -123.46 | -222.45 | 1.910           | 179.53                  |
| 35.50    | 88.8    | Shear          | KIPS   | 207.64   | 23.77   | 54.31   | 2.488           | 233.87                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -228.49 | 2.149           | 202.04                  |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 24.35   | 55.10   | 2.442           | 229.56                  |
| 37.50    | 93.8    | Flexure        | KIP-FT | -812.52  | -173.31 | -248.13 | 1.813           | 170.41                  |
| 37.50    | 93.8    | Shear          | KIPS   | 206.48   | 26.07   | 57.36   | 2.301           | 216.30                  |
| 40.00    | 100.0   | Flexure        | KIP-FT | -812.52  | -242.09 | -288.93 | 1.323           | 124.34                  |
| 40.00    | 100.0   | Shear          | KIPS   | 206.48   | 28.69   | 64.77   | 1.998           | 187.81                  |

| Span 2   |         |                |       |          |    |    |                 |                         |
|----------|---------|----------------|-------|----------|----|----|-----------------|-------------------------|
| Location |         |                |       |          |    |    | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units | Capacity | DL | LL | Factor          | (Ton)                   |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 2.50  | 5.0   | Flexure | KIP-FT | -812.52 | -173.97 | -213.15 | 2.107 | 198.09 |
| 2.50  | 5.0   | Shear   | KIPS   | 206.48  | 25.80   | 60.88   | 2.172 | 204.18 |
| 4.50  | 9.0   | Flexure | KIP-FT | -817.88 | -124.66 | -183.93 | 2.728 | 256.43 |
| 4.50  | 9.0   | Shear   | KIPS   | 207.64  | 23.51   | 57.60   | 2.351 | 220.96 |
| 5.00  | 10.0  | Flexure | KIP-FT | -817.88 | -113.04 | -176.67 | 2.905 | 273.05 |
| 5.00  | 10.0  | Shear   | KIPS   | 207.64  | 22.94   | 56.77   | 2.395 | 225.10 |
| 10.00 | 20.0  | Flexure | KIP-FT | -817.88 | -12.45  | -140.56 | 4.355 | 409.34 |
| 10.00 | 20.0  | Shear   | KIPS   | 207.64  | 17.29   | 48.04   | 2.946 | 276.88 |
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 59.90   | 240.96  | 2.347 | 220.58 |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 11.65   | 38.80   | 3.790 | 356.30 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 96.27   | 291.94  | 1.800 | 169.23 |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.83    | 31.26   | 4.827 | 453.75 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 102.53  | 300.19  | 1.730 | 162.66 |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69    | 29.39   | 5.173 | 486.29 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76  | 313.23  | 1.614 | 151.68 |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 20.64   | 7.637 | 717.89 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 300.19  | 1.730 | 162.66 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 29.39   | 5.173 | 486.29 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 291.94  | 1.800 | 169.23 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 31.26   | 4.827 | 453.75 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 240.96  | 2.347 | 220.58 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 38.80   | 3.790 | 356.30 |
| 40.00 | 80.0  | Flexure | KIP-FT | -817.88 | -12.45  | -140.56 | 4.355 | 409.34 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 48.04   | 2.946 | 276.88 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -176.67 | 2.905 | 273.05 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 56.77   | 2.395 | 225.10 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -183.93 | 2.728 | 256.43 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 57.60   | 2.351 | 220.96 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -213.15 | 2.107 | 198.09 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 60.88   | 2.172 | 204.18 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -288.93 | 1.323 | 124.34 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 64.77   | 1.998 | 187.81 |

### Span 3

| Location |         | Limit State | Units  | Capacity | DL      | LL      | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent |             |        |          |         |         | Factor       | (Ton)             |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -248.13 | 1.813        | 170.41            |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 57.36   | 2.301        | 216.30            |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -228.49 | 2.149        | 202.04            |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 55.10   | 2.442        | 229.56            |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -222.45 | 1.910        | 179.53            |

|       |       |         |        |         |        |         |        |         |
|-------|-------|---------|--------|---------|--------|---------|--------|---------|
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 23.77  | 54.31   | 2.488  | 233.87  |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -47.18 | -183.27 | 2.728  | 256.39  |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 19.82  | 48.45   | 2.869  | 269.69  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 23.06  | 221.09  | 2.721  | 255.81  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 15.30  | 41.27   | 3.476  | 326.72  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 51.40  | 256.95  | 2.217  | 208.41  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 13.04  | 37.65   | 3.846  | 361.56  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 75.21  | 289.88  | 1.885  | 177.15  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 10.76  | 33.88   | 4.340  | 407.93  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56 | 328.17  | 1.565  | 147.09  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04   | 26.11   | 5.810  | 546.11  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 123.11 | 323.13  | 1.545  | 145.21  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.48   | 20.25   | 7.712  | 724.95  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 123.56 | 312.45  | 1.596  | 150.04  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.92   | 24.17   | 6.485  | 609.60  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 119.46 | 289.47  | 1.751  | 164.59  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 3.18   | 28.24   | 5.502  | 517.22  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 97.72  | 229.14  | 2.305  | 216.69  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 7.70   | 36.17   | 4.173  | 392.30  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 57.90  | 141.78  | 4.002  | 376.18  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 12.21  | 44.75   | 3.273  | 307.68  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00   | 0.00    | 99.000 | 9306.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 16.73  | 53.90   | 2.635  | 247.72  |

**Detailed Rating Results  
Maine DOT Config. 3  
Axle Load  
Impact: As Requested  
Lane: As Requested**

| Span 1   |         |             |        |          |        |        |        |             |
|----------|---------|-------------|--------|----------|--------|--------|--------|-------------|
|          |         |             |        |          |        |        | Legal  | Legal       |
| Location |         |             |        |          |        |        | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL     | LL     | Factor | (Ton)       |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00   | 0.00   | 99.000 | 4356.00     |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 16.73  | 55.68  | 2.551  | 112.25      |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 57.90  | 147.23 | 3.854  | 169.56      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 12.21  | 46.48  | 3.152  | 138.68      |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 97.72  | 239.98 | 2.201  | 96.85       |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 7.70   | 37.72  | 4.001  | 176.05      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 119.46 | 304.01 | 1.667  | 73.36       |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 3.18   | 28.90  | 5.377  | 236.57      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 123.56 | 318.07 | 1.568  | 68.99       |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.92    | 24.45   | 6.410 | 282.05 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 123.11  | 328.13  | 1.521 | 66.94  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.48    | 20.37   | 7.667 | 337.36 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 313.75  | 1.637 | 72.01  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 23.19   | 6.542 | 287.84 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21   | 288.66  | 1.893 | 83.27  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76   | 31.70   | 4.638 | 204.06 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40   | 258.73  | 2.202 | 96.88  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 36.28   | 3.991 | 175.62 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 217.75  | 2.763 | 121.57 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 40.99   | 3.500 | 153.99 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -199.03 | 2.512 | 110.51 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 49.88   | 2.787 | 122.63 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -220.80 | 1.924 | 84.66  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 57.00   | 2.371 | 104.30 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -223.91 | 2.193 | 96.51  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 57.97   | 2.321 | 102.13 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -233.24 | 1.929 | 84.86  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 60.73   | 2.173 | 95.62  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -248.79 | 1.536 | 67.59  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 66.18   | 1.955 | 86.03  |

### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -173.97 | -177.64 | 2.529           | 111.26                  |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 25.80   | 62.20   | 2.126           | 93.55                   |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -124.66 | -167.85 | 2.989           | 131.53                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 23.51   | 58.79   | 2.303           | 101.32                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -113.04 | -165.40 | 3.103           | 136.52                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 22.94   | 57.93   | 2.347           | 103.26                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | -817.88  | -12.45  | -140.93 | 4.343           | 191.11                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 17.29   | 48.74   | 2.903           | 127.73                  |
| 15.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 59.90   | 246.60  | 2.293           | 100.89                  |
| 15.00    | 30.0    | Shear          | KIPS   | 207.64   | 11.65   | 39.00   | 3.771           | 165.93                  |
| 19.00    | 38.0    | Flexure        | KIP-FT | 812.52   | 96.27   | 302.62  | 1.737           | 76.42                   |
| 19.00    | 38.0    | Shear          | KIPS   | 206.48   | 6.83    | 31.06   | 4.859           | 213.79                  |
| 20.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 102.53  | 311.91  | 1.665           | 73.28                   |
| 20.00    | 40.0    | Shear          | KIPS   | 206.48   | 5.69    | 29.08   | 5.228           | 230.04                  |
| 25.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 116.76  | 326.39  | 1.549           | 68.14                   |
| 25.00    | 50.0    | Shear          | KIPS   | 206.48   | 0.00    | 19.45   | 8.105           | 356.61                  |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 311.91  | 1.665 | 73.28  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 29.08   | 5.228 | 230.04 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 302.62  | 1.737 | 76.42  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 31.06   | 4.859 | 213.79 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 246.60  | 2.293 | 100.89 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 39.00   | 3.771 | 165.93 |
| 40.00 | 80.0  | Flexure | KIP-FT | -817.88 | -12.45  | -140.93 | 4.343 | 191.11 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 48.74   | 2.903 | 127.73 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -165.40 | 3.103 | 136.52 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 57.93   | 2.347 | 103.26 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -167.85 | 2.989 | 131.53 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 58.79   | 2.303 | 101.32 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -177.64 | 2.529 | 111.26 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 62.20   | 2.126 | 93.55  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -248.79 | 1.536 | 67.59  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 66.18   | 1.955 | 86.03  |

### Span 3

| Location |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
|          |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -233.24 | 1.929  | 84.86       |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 60.73   | 2.173  | 95.62       |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -223.91 | 2.193  | 96.51       |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 57.97   | 2.321  | 102.13      |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -220.80 | 1.924  | 84.66       |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 23.77   | 57.00   | 2.371  | 104.30      |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -199.03 | 2.512  | 110.51      |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 19.82   | 49.88   | 2.787  | 122.63      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 217.75  | 2.763  | 121.57      |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 15.30   | 40.99   | 3.500  | 153.99      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 51.40   | 258.73  | 2.202  | 96.88       |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 13.04   | 36.28   | 3.991  | 175.62      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 75.21   | 288.66  | 1.893  | 83.27       |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 10.76   | 31.70   | 4.638  | 204.06      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56  | 313.75  | 1.637  | 72.01       |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 6.04    | 23.19   | 6.542  | 287.84      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 123.11  | 328.13  | 1.521  | 66.94       |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 1.48    | 20.37   | 7.667  | 337.36      |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 123.56  | 318.07  | 1.568  | 68.99       |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 0.92    | 24.45   | 6.410  | 282.05      |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 119.46  | 304.01  | 1.667  | 73.36       |



|       |       |         |        |        |       |        |        |         |
|-------|-------|---------|--------|--------|-------|--------|--------|---------|
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18  | 28.90  | 5.377  | 236.57  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72 | 239.98 | 2.201  | 96.85   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70  | 37.72  | 4.001  | 176.05  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90 | 147.23 | 3.854  | 169.56  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21 | 46.48  | 3.152  | 138.68  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00   | 99.000 | 4356.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73 | 55.68  | 2.551  | 112.25  |

**Detailed Rating Results**  
**Maine DOT Config. 3 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                    |              |                 |           |           | <b>Legal</b>  | <b>Legal</b>  |
|-----------------|----------------|--------------------|--------------|-----------------|-----------|-----------|---------------|---------------|
|                 |                |                    |              |                 |           |           | <b>Rating</b> | <b>Load</b>   |
| <b>Location</b> |                |                    |              |                 |           |           | <b>Factor</b> | <b>Rating</b> |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> |               | <b>(Ton)</b>  |
| 0.00            | 0.0            | Flexure            | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000        | 8712.00       |
| 0.00            | 0.0            | Shear              | KIPS         | 207.64          | 16.73     | 55.68     | 2.551         | 224.50        |
| 4.00            | 10.0           | Flexure            | KIP-FT       | 817.88          | 57.90     | 147.23    | 3.854         | 339.12        |
| 4.00            | 10.0           | Shear              | KIPS         | 207.64          | 12.21     | 46.48     | 3.152         | 277.37        |
| 8.00            | 20.0           | Flexure            | KIP-FT       | 817.88          | 97.72     | 239.98    | 2.201         | 193.70        |
| 8.00            | 20.0           | Shear              | KIPS         | 207.64          | 7.70      | 37.72     | 4.001         | 352.11        |
| 12.00           | 30.0           | Flexure            | KIP-FT       | 817.88          | 119.46    | 304.01    | 1.667         | 146.71        |
| 12.00           | 30.0           | Shear              | KIPS         | 207.64          | 3.18      | 28.90     | 5.377         | 473.14        |
| 14.00           | 35.0           | Flexure            | KIP-FT       | 812.52          | 123.56    | 318.07    | 1.568         | 137.98        |
| 14.00           | 35.0           | Shear              | KIPS         | 206.48          | 0.92      | 24.45     | 6.410         | 564.10        |
| 16.00           | 40.0           | Flexure            | KIP-FT       | 812.52          | 123.11    | 328.13    | 1.521         | 133.87        |
| 16.00           | 40.0           | Shear              | KIPS         | 206.48          | 1.48      | 22.76     | 6.861         | 603.73        |
| 20.00           | 50.0           | Flexure            | KIP-FT       | 812.52          | 108.56    | 313.75    | 1.637         | 144.02        |
| 20.00           | 50.0           | Shear              | KIPS         | 206.48          | 6.04      | 28.47     | 5.327         | 468.81        |
| 24.00           | 60.0           | Flexure            | KIP-FT       | 812.52          | 75.21     | 288.66    | 1.893         | 166.54        |
| 24.00           | 60.0           | Shear              | KIPS         | 206.48          | 10.76     | 35.43     | 4.150         | 365.20        |
| 26.00           | 65.0           | Flexure            | KIP-FT       | 812.52          | 51.40     | 258.73    | 2.202         | 193.77        |
| 26.00           | 65.0           | Shear              | KIPS         | 206.48          | 13.04     | 39.63     | 3.654         | 321.53        |
| 28.00           | 70.0           | Flexure            | KIP-FT       | 817.88          | 23.06     | 217.75    | 2.763         | 243.15        |
| 28.00           | 70.0           | Shear              | KIPS         | 207.64          | 15.30     | 43.70     | 3.283         | 288.92        |
| 32.00           | 80.0           | Flexure            | KIP-FT       | -715.59         | -47.18    | -194.04   | 2.576         | 226.70        |
| 32.00           | 80.0           | Shear              | KIPS         | 207.64          | 19.82     | 51.38     | 2.705         | 238.08        |
| 35.50           | 88.8           | Flexure            | KIP-FT       | -715.59         | -123.46   | -245.29   | 1.732         | 152.42        |
| 35.50           | 88.8           | Shear              | KIPS         | 207.64          | 23.77     | 57.56     | 2.347         | 206.57        |
| 36.00           | 90.0           | Flexure            | KIP-FT       | -817.88         | -135.49   | -252.89   | 1.942         | 170.90        |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 58.41   | 2.304 | 202.73 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -282.45 | 1.593 | 140.15 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 60.82   | 2.170 | 190.98 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -340.27 | 1.123 | 98.84  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 66.18   | 1.955 | 172.06 |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -173.97   | -267.44   | 1.680                   | 147.80                           |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 25.80     | 62.43     | 2.118                   | 186.41                           |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -124.66   | -224.00   | 2.240                   | 197.12                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 23.51     | 59.25     | 2.285                   | 201.07                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -209.14   | 2.454                   | 215.93                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 22.94     | 58.48     | 2.325                   | 204.57                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | 817.88          | -12.45    | 148.04    | 4.300                   | 378.40                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 17.29     | 50.16     | 2.821                   | 248.25                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 234.39    | 2.412                   | 212.29                           |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 11.65     | 41.14     | 3.575                   | 314.56                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 283.91    | 1.851                   | 162.91                           |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.83      | 33.94     | 4.446                   | 391.27                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 292.88    | 1.774                   | 156.07                           |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.69      | 32.16     | 4.727                   | 416.00                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 116.76    | 310.87    | 1.626                   | 143.08                           |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 23.87     | 6.602                   | 580.98                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 292.88    | 1.774                   | 156.07                           |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.69      | 32.16     | 4.727                   | 416.00                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 283.91    | 1.851                   | 162.91                           |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.83      | 33.94     | 4.446                   | 391.27                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 234.39    | 2.412                   | 212.29                           |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 11.65     | 41.14     | 3.575                   | 314.56                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | -12.45    | 148.04    | 4.300                   | 378.40                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.29     | 50.16     | 2.821                   | 248.25                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -209.14   | 2.454                   | 215.93                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 22.94     | 58.48     | 2.325                   | 204.57                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -124.66   | -224.00   | 2.240                   | 197.12                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 23.51     | 59.25     | 2.285                   | 201.07                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -173.97   | -267.44   | 1.680                   | 147.80                           |
| 47.50           | 95.0           | Shear                  | KIPS         | 206.48          | 25.80     | 62.43     | 2.118                   | 186.41                           |
| 50.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -242.09   | -340.27   | 1.123                   | 98.84                            |
| 50.00           | 100.0          | Shear                  | KIPS         | 206.48          | 28.69     | 66.18     | 1.955                   | 172.06                           |

| Span 3   |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -282.45 | 1.593  | 140.15      |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 60.82   | 2.170  | 190.98      |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -252.89 | 1.942  | 170.90      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 58.41   | 2.304  | 202.73      |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -245.29 | 1.732  | 152.42      |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 23.77   | 57.56   | 2.347  | 206.57      |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -194.04 | 2.576  | 226.70      |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 19.82   | 51.38   | 2.705  | 238.08      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 217.75  | 2.763  | 243.15      |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 15.30   | 43.70   | 3.283  | 288.92      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 51.40   | 258.73  | 2.202  | 193.77      |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 13.04   | 39.63   | 3.654  | 321.53      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 75.21   | 288.66  | 1.893  | 166.54      |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 10.76   | 35.43   | 4.150  | 365.20      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56  | 313.75  | 1.637  | 144.02      |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 6.04    | 28.47   | 5.327  | 468.81      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 123.11  | 328.13  | 1.521  | 133.87      |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 1.48    | 22.76   | 6.861  | 603.73      |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 123.56  | 318.07  | 1.568  | 137.98      |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 0.92    | 24.45   | 6.410  | 564.10      |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 119.46  | 304.01  | 1.667  | 146.71      |
| 28.00    | 70.0    | Shear       | KIPS   | 207.64   | 3.18    | 28.90   | 5.377  | 473.14      |
| 32.00    | 80.0    | Flexure     | KIP-FT | 817.88   | 97.72   | 239.98  | 2.201  | 193.70      |
| 32.00    | 80.0    | Shear       | KIPS   | 207.64   | 7.70    | 37.72   | 4.001  | 352.11      |
| 36.00    | 90.0    | Flexure     | KIP-FT | 817.88   | 57.90   | 147.23  | 3.854  | 339.12      |
| 36.00    | 90.0    | Shear       | KIPS   | 207.64   | 12.21   | 46.48   | 3.152  | 277.37      |
| 40.00    | 100.0   | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 8712.00     |
| 40.00    | 100.0   | Shear       | KIPS   | 207.64   | 16.73   | 55.68   | 2.551  | 224.50      |

**Detailed Rating Results**  
**Maine DOT Config. 4**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

**Legal      Legal**

| Location |         |             |        |          |         |         | Rating | Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 4356.00     |
| 0.00     | 0.0     | Shear       | KIPS   | 207.64   | 16.73   | 57.04   | 2.490  | 109.57      |
| 4.00     | 10.0    | Flexure     | KIP-FT | 817.88   | 57.90   | 149.40  | 3.798  | 167.10      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 12.21   | 47.16   | 3.106  | 136.68      |
| 8.00     | 20.0    | Flexure     | KIP-FT | 817.88   | 97.72   | 239.53  | 2.205  | 97.03       |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 7.70    | 37.80   | 3.993  | 175.67      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 119.46  | 297.58  | 1.703  | 74.94       |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 3.18    | 29.16   | 5.329  | 234.49      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 123.56  | 308.73  | 1.615  | 71.08       |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 0.92    | 25.14   | 6.234  | 274.29      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 123.11  | 309.26  | 1.614  | 71.02       |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 1.48    | 21.30   | 7.330  | 322.52      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56  | 300.72  | 1.708  | 75.13       |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 6.04    | 25.69   | 5.904  | 259.76      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 75.21   | 279.47  | 1.955  | 86.01       |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 10.76   | 32.89   | 4.470  | 196.70      |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 51.40   | 254.41  | 2.239  | 98.53       |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 13.04   | 37.39   | 3.873  | 170.39      |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 218.93  | 2.748  | 120.92      |
| 28.00    | 70.0    | Shear       | KIPS   | 207.64   | 15.30   | 41.77   | 3.435  | 151.13      |
| 32.00    | 80.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -199.54 | 2.505  | 110.22      |
| 32.00    | 80.0    | Shear       | KIPS   | 207.64   | 19.82   | 50.08   | 2.776  | 122.14      |
| 35.50    | 88.8    | Flexure     | KIP-FT | -715.59  | -123.46 | -221.37 | 1.919  | 84.45       |
| 35.50    | 88.8    | Shear       | KIPS   | 207.64   | 23.77   | 57.31   | 2.358  | 103.74      |
| 36.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -224.49 | 2.188  | 96.26       |
| 36.00    | 90.0    | Shear       | KIPS   | 207.64   | 24.35   | 58.40   | 2.304  | 101.38      |
| 37.50    | 93.8    | Flexure     | KIP-FT | -812.52  | -173.31 | -233.84 | 1.924  | 84.64       |
| 37.50    | 93.8    | Shear       | KIPS   | 206.48   | 26.07   | 61.53   | 2.145  | 94.38       |
| 40.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -242.09 | -249.43 | 1.532  | 67.42       |
| 40.00    | 100.0   | Shear       | KIPS   | 206.48   | 28.69   | 68.65   | 1.885  | 82.94       |

#### Span 2

| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -178.54 | 2.516        | 110.70            |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 64.26   | 2.058        | 90.55             |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -170.11 | 2.950        | 129.79            |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 60.60   | 2.234        | 98.31             |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 5.00  | 10.0  | Flexure | KIP-FT | -817.88 | -113.04 | -167.63 | 3.061 | 134.71 |
| 5.00  | 10.0  | Shear   | KIPS   | 207.64  | 22.94   | 59.66   | 2.279 | 100.25 |
| 10.00 | 20.0  | Flexure | KIP-FT | -817.88 | -12.45  | -142.82 | 4.286 | 188.57 |
| 10.00 | 20.0  | Shear   | KIPS   | 207.64  | 17.29   | 50.01   | 2.829 | 124.49 |
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 59.90   | 241.88  | 2.338 | 102.86 |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 11.65   | 40.21   | 3.657 | 160.91 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 96.27   | 288.37  | 1.823 | 80.20  |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.83    | 32.46   | 4.648 | 204.53 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 102.53  | 294.40  | 1.764 | 77.63  |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69    | 30.57   | 4.972 | 218.77 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76  | 308.89  | 1.636 | 72.00  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 21.60   | 7.298 | 321.13 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 294.40  | 1.764 | 77.63  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 30.57   | 4.972 | 218.77 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 288.37  | 1.823 | 80.20  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 32.46   | 4.648 | 204.53 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 241.88  | 2.338 | 102.86 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 40.21   | 3.657 | 160.91 |
| 40.00 | 80.0  | Flexure | KIP-FT | -817.88 | -12.45  | -142.82 | 4.286 | 188.57 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 50.01   | 2.829 | 124.49 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -167.63 | 3.061 | 134.71 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 59.66   | 2.279 | 100.25 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -170.11 | 2.950 | 129.79 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 60.60   | 2.234 | 98.31  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -178.54 | 2.516 | 110.70 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 64.26   | 2.058 | 90.55  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -249.43 | 1.532 | 67.42  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 68.65   | 1.885 | 82.94  |

### Span 3

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -233.84 | 1.924  | 84.64       |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 61.53   | 2.145  | 94.38       |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -224.49 | 2.188  | 96.26       |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 58.40   | 2.304  | 101.38      |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -221.37 | 1.919  | 84.45       |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 23.77   | 57.31   | 2.358  | 103.74      |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -199.54 | 2.505  | 110.22      |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 19.82   | 50.08   | 2.776  | 122.14      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 218.93  | 2.748  | 120.92      |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 12.00 | 30.0  | Shear   | KIPS   | 207.64 | 15.30  | 41.77  | 3.435  | 151.13  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52 | 51.40  | 254.41 | 2.239  | 98.53   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48 | 13.04  | 37.39  | 3.873  | 170.39  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52 | 75.21  | 279.47 | 1.955  | 86.01   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48 | 10.76  | 32.89  | 4.470  | 196.70  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52 | 108.56 | 300.72 | 1.708  | 75.13   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48 | 6.04   | 25.69  | 5.904  | 259.76  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52 | 123.11 | 309.26 | 1.614  | 71.02   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48 | 1.48   | 21.30  | 7.330  | 322.52  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 123.56 | 308.73 | 1.615  | 71.08   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.92   | 25.14  | 6.234  | 274.29  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 119.46 | 297.58 | 1.703  | 74.94   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18   | 29.16  | 5.329  | 234.49  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72  | 239.53 | 2.205  | 97.03   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70   | 37.80  | 3.993  | 175.67  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90  | 149.40 | 3.798  | 167.10  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21  | 47.16  | 3.106  | 136.68  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 4356.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73  | 57.04  | 2.490  | 109.57  |

**Detailed Rating Results**  
**Maine DOT Config. 4 x 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 8712.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 57.04     | 2.490                   | 219.14                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 149.40    | 3.798                   | 334.21                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 47.16     | 3.106                   | 273.35                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 239.53    | 2.205                   | 194.07                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 37.80     | 3.993                   | 351.34                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 297.58    | 1.703                   | 149.89                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 29.16     | 5.329                   | 468.99                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 308.73    | 1.615                   | 142.16                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.92      | 25.14     | 6.234                   | 548.59                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 309.26    | 1.614                   | 142.04                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 25.30     | 6.173                   | 543.21                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 300.72    | 1.708                   | 150.26                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 32.06   | 4.731 | 416.36 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21   | 279.47  | 1.955 | 172.02 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76   | 38.17   | 3.852 | 338.97 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40   | 254.41  | 2.239 | 197.05 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 42.09   | 3.440 | 302.74 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 218.93  | 2.748 | 241.83 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 45.85   | 3.129 | 275.33 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -191.22 | 2.614 | 230.05 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 52.93   | 2.626 | 231.11 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -244.00 | 1.741 | 153.23 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 59.14   | 2.285 | 201.06 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -252.12 | 1.948 | 171.42 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 60.09   | 2.239 | 197.07 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -278.88 | 1.613 | 141.94 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 62.80   | 2.102 | 184.96 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -334.77 | 1.142 | 100.47 |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 69.28   | 1.868 | 164.38 |

#### Span 2

| Location |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
|          |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -266.44 | 1.686  | 148.35      |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 65.27   | 2.026  | 178.29      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -223.94 | 2.241  | 197.17      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 61.91   | 2.187  | 192.45      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -214.06 | 2.397  | 210.97      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94   | 61.04   | 2.227  | 195.98      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 150.34  | 4.234  | 372.62      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29   | 52.01   | 2.721  | 239.42      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 233.26  | 2.424  | 213.32      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65   | 43.39   | 3.389  | 298.27      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 276.00  | 1.904  | 167.58      |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83    | 36.31   | 4.156  | 365.74      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 281.89  | 1.843  | 162.16      |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.69    | 34.55   | 4.400  | 387.18      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 116.76  | 288.65  | 1.751  | 154.09      |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 26.57   | 5.933  | 522.07      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 281.89  | 1.843  | 162.16      |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.69    | 34.55   | 4.400  | 387.18      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 276.00  | 1.904  | 167.58      |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.83    | 36.31   | 4.156  | 365.74      |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 233.26  | 2.424 | 213.32 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 43.39   | 3.389 | 298.27 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45  | 150.34  | 4.234 | 372.62 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 52.01   | 2.721 | 239.42 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -214.06 | 2.397 | 210.97 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 61.04   | 2.227 | 195.98 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -223.94 | 2.241 | 197.17 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 61.91   | 2.187 | 192.45 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -266.44 | 1.686 | 148.35 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 65.27   | 2.026 | 178.29 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -334.77 | 1.142 | 100.47 |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 69.28   | 1.868 | 164.38 |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -173.31 | -278.88 | 1.613           | 141.94                  |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 26.07   | 62.80   | 2.102           | 184.96                  |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -252.12 | 1.948           | 171.42                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 24.35   | 60.09   | 2.239           | 197.07                  |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -123.46 | -244.00 | 1.741           | 153.23                  |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 23.77   | 59.14   | 2.285           | 201.06                  |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -191.22 | 2.614           | 230.05                  |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 19.82   | 52.93   | 2.626           | 231.11                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 218.93  | 2.748           | 241.83                  |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 15.30   | 45.85   | 3.129           | 275.33                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 254.41  | 2.239           | 197.05                  |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 13.04   | 42.09   | 3.440           | 302.74                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 279.47  | 1.955           | 172.02                  |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 10.76   | 38.17   | 3.852           | 338.97                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 108.56  | 300.72  | 1.708           | 150.26                  |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 6.04    | 32.06   | 4.731           | 416.36                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 123.11  | 309.26  | 1.614           | 142.04                  |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.48    | 25.30   | 6.173           | 543.21                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 123.56  | 308.73  | 1.615           | 142.16                  |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.92    | 25.14   | 6.234           | 548.59                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 119.46  | 297.58  | 1.703           | 149.89                  |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 3.18    | 29.16   | 5.329           | 468.99                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 97.72   | 239.53  | 2.205           | 194.07                  |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 7.70    | 37.80   | 3.993           | 351.34                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 57.90   | 149.40  | 3.798           | 334.21                  |



|       |       |         |        |        |       |       |        |         |
|-------|-------|---------|--------|--------|-------|-------|--------|---------|
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21 | 47.16 | 3.106  | 273.35  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00  | 99.000 | 8712.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73 | 57.04 | 2.490  | 219.14  |

**Detailed Rating Results  
Maine DOT Config. 5  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 4356.00                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 55.28     | 2.570                   | 113.06                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 146.26    | 3.879                   | 170.69                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 46.17     | 3.173                   | 139.61                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 237.68    | 2.222                   | 97.79                            |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 37.51     | 4.023                   | 177.03                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 290.19    | 1.747                   | 76.85                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 28.84     | 5.388                   | 237.07                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 303.68    | 1.642                   | 72.26                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.92      | 25.79     | 6.078                   | 267.41                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 309.23    | 1.614                   | 71.03                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 22.80     | 6.849                   | 301.35                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 296.04    | 1.735                   | 76.32                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 25.45     | 5.960                   | 262.23                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 271.33    | 2.013                   | 88.59                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 10.76     | 33.38     | 4.406                   | 193.84                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 248.37    | 2.294                   | 100.92                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 13.04     | 37.03     | 3.910                   | 172.05                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 216.44    | 2.780                   | 122.31                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 15.30     | 40.48     | 3.544                   | 155.94                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -192.22   | 2.601                   | 114.43                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 19.82     | 48.97     | 2.839                   | 124.90                           |
| 35.50           | 88.8           | Flexure                | KIP-FT       | -715.59         | -123.46   | -213.24   | 1.992                   | 87.67                            |
| 35.50           | 88.8           | Shear                  | KIPS         | 207.64          | 23.77     | 56.06     | 2.410                   | 106.05                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -135.49   | -216.24   | 2.271                   | 99.93                            |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 24.35     | 57.02     | 2.360                   | 103.83                           |
| 37.50           | 93.8           | Flexure                | KIP-FT       | -812.52         | -173.31   | -225.25   | 1.997                   | 87.87                            |
| 37.50           | 93.8           | Shear                  | KIPS         | 206.48          | 26.07     | 59.78     | 2.208                   | 97.15                            |
| 40.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -242.09   | -240.27   | 1.591                   | 69.99                            |

|                 |                |                        |              |                 |           |           |                         |                                  |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| 40.00           | 100.0          | Shear                  | KIPS         | 206.48          | 28.69     | 65.34     | 1.980                   | 87.14                            |
| <b>Span 2</b>   |                |                        |              |                 |           |           |                         |                                  |
| <b>Location</b> |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -173.97   | -167.14   | 2.687                   | 118.24                           |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 25.80     | 61.40     | 2.154                   | 94.76                            |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -124.66   | -157.93   | 3.177                   | 139.79                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 23.51     | 58.07     | 2.332                   | 102.59                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -155.63   | 3.297                   | 145.09                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 22.94     | 57.21     | 2.376                   | 104.55                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | 817.88          | -12.45    | 146.40    | 4.348                   | 191.33                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 17.29     | 48.14     | 2.939                   | 129.34                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 240.63    | 2.350                   | 103.40                           |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 11.65     | 38.55     | 3.815                   | 167.86                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 288.12    | 1.824                   | 80.27                            |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.83      | 30.73     | 4.910                   | 216.04                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 297.01    | 1.749                   | 76.95                            |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.69      | 28.79     | 5.281                   | 232.36                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 116.76    | 311.14    | 1.624                   | 71.48                            |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 19.35     | 8.147                   | 358.47                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 297.01    | 1.749                   | 76.95                            |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.69      | 28.79     | 5.281                   | 232.36                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 288.12    | 1.824                   | 80.27                            |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.83      | 30.73     | 4.910                   | 216.04                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 240.63    | 2.350                   | 103.40                           |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 11.65     | 38.55     | 3.815                   | 167.86                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | -12.45    | 146.40    | 4.348                   | 191.33                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.29     | 48.14     | 2.939                   | 129.34                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -155.63   | 3.297                   | 145.09                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 22.94     | 57.21     | 2.376                   | 104.55                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -124.66   | -157.93   | 3.177                   | 139.79                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 23.51     | 58.07     | 2.332                   | 102.59                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -173.97   | -167.14   | 2.687                   | 118.24                           |
| 47.50           | 95.0           | Shear                  | KIPS         | 206.48          | 25.80     | 61.40     | 2.154                   | 94.76                            |
| 50.00           | 100.0          | Flexure                | KIP-FT       | -812.52         | -242.09   | -240.27   | 1.591                   | 69.99                            |
| 50.00           | 100.0          | Shear                  | KIPS         | 206.48          | 28.69     | 65.34     | 1.980                   | 87.14                            |

|                 |  |  |  |  |  |  |                         |                       |
|-----------------|--|--|--|--|--|--|-------------------------|-----------------------|
| <b>Span 3</b>   |  |  |  |  |  |  |                         |                       |
| <b>Location</b> |  |  |  |  |  |  | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load</b> |

|       |         |             |        |          |         |         |        | Rating  |
|-------|---------|-------------|--------|----------|---------|---------|--------|---------|
| (ft)  | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)   |
| 2.50  | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -225.25 | 1.997  | 87.87   |
| 2.50  | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 59.78   | 2.208  | 97.15   |
| 4.00  | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -216.24 | 2.271  | 99.93   |
| 4.00  | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 57.02   | 2.360  | 103.83  |
| 4.50  | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -213.24 | 1.992  | 87.67   |
| 4.50  | 11.3    | Shear       | KIPS   | 207.64   | 23.77   | 56.06   | 2.410  | 106.05  |
| 8.00  | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -192.22 | 2.601  | 114.43  |
| 8.00  | 20.0    | Shear       | KIPS   | 207.64   | 19.82   | 48.97   | 2.839  | 124.90  |
| 12.00 | 30.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 216.44  | 2.780  | 122.31  |
| 12.00 | 30.0    | Shear       | KIPS   | 207.64   | 15.30   | 40.48   | 3.544  | 155.94  |
| 14.00 | 35.0    | Flexure     | KIP-FT | 812.52   | 51.40   | 248.37  | 2.294  | 100.92  |
| 14.00 | 35.0    | Shear       | KIPS   | 206.48   | 13.04   | 37.03   | 3.910  | 172.05  |
| 16.00 | 40.0    | Flexure     | KIP-FT | 812.52   | 75.21   | 271.33  | 2.013  | 88.59   |
| 16.00 | 40.0    | Shear       | KIPS   | 206.48   | 10.76   | 33.38   | 4.406  | 193.84  |
| 20.00 | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56  | 296.04  | 1.735  | 76.32   |
| 20.00 | 50.0    | Shear       | KIPS   | 206.48   | 6.04    | 25.45   | 5.960  | 262.23  |
| 24.00 | 60.0    | Flexure     | KIP-FT | 812.52   | 123.11  | 309.23  | 1.614  | 71.03   |
| 24.00 | 60.0    | Shear       | KIPS   | 206.48   | 1.48    | 22.80   | 6.849  | 301.35  |
| 26.00 | 65.0    | Flexure     | KIP-FT | 812.52   | 123.56  | 303.68  | 1.642  | 72.26   |
| 26.00 | 65.0    | Shear       | KIPS   | 206.48   | 0.92    | 25.79   | 6.078  | 267.41  |
| 28.00 | 70.0    | Flexure     | KIP-FT | 817.88   | 119.46  | 290.19  | 1.747  | 76.85   |
| 28.00 | 70.0    | Shear       | KIPS   | 207.64   | 3.18    | 28.84   | 5.388  | 237.07  |
| 32.00 | 80.0    | Flexure     | KIP-FT | 817.88   | 97.72   | 237.68  | 2.222  | 97.79   |
| 32.00 | 80.0    | Shear       | KIPS   | 207.64   | 7.70    | 37.51   | 4.023  | 177.03  |
| 36.00 | 90.0    | Flexure     | KIP-FT | 817.88   | 57.90   | 146.26  | 3.879  | 170.69  |
| 36.00 | 90.0    | Shear       | KIPS   | 207.64   | 12.21   | 46.17   | 3.173  | 139.61  |
| 40.00 | 100.0   | Flexure     | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000 | 4356.00 |
| 40.00 | 100.0   | Shear       | KIPS   | 207.64   | 16.73   | 55.28   | 2.570  | 113.06  |

**Detailed Rating Results**  
**Maine DOT Config. 5 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

| Span 1   |         |             |        |          |      |      | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|------|------|--------------|-------------------|
| Location |         |             |        |          |      |      |              |                   |
| (ft)     | Percent | Limit State | Units  | Capacity | DL   | LL   | Factor       | (Ton)             |
| 0.00     | 0.0     | Flexure     | KIP-FT | 817.88   | 0.00 | 0.00 | 99.000       | 8712.00           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 0.00  | 0.0   | Shear   | KIPS   | 207.64  | 16.73   | 55.28   | 2.570 | 226.12 |
| 4.00  | 10.0  | Flexure | KIP-FT | 817.88  | 57.90   | 146.26  | 3.879 | 341.37 |
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 12.21   | 46.17   | 3.173 | 279.21 |
| 8.00  | 20.0  | Flexure | KIP-FT | 817.88  | 97.72   | 237.68  | 2.222 | 195.57 |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 7.70    | 37.51   | 4.023 | 354.06 |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 119.46  | 290.19  | 1.747 | 153.70 |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 3.18    | 28.84   | 5.388 | 474.14 |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 123.56  | 303.68  | 1.642 | 144.52 |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.92    | 25.79   | 6.078 | 534.82 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 123.11  | 309.23  | 1.614 | 142.05 |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.48    | 23.09   | 6.763 | 595.15 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 296.04  | 1.735 | 152.64 |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 28.06   | 5.406 | 475.76 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21   | 271.33  | 2.013 | 177.18 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76   | 34.66   | 4.242 | 373.32 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40   | 248.37  | 2.294 | 201.84 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 38.89   | 3.723 | 327.63 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 216.44  | 2.780 | 244.62 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 42.96   | 3.340 | 293.88 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -184.74 | 2.706 | 238.11 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 50.66   | 2.744 | 241.47 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -242.98 | 1.749 | 153.87 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 56.83   | 2.378 | 209.23 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -251.43 | 1.953 | 171.89 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 57.67   | 2.333 | 205.32 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -281.42 | 1.598 | 140.66 |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 60.08   | 2.197 | 193.33 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -338.23 | 1.130 | 99.44  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 65.34   | 1.980 | 174.27 |

### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -173.97 | -263.22 | 1.706           | 150.17                  |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 25.80   | 61.69   | 2.144           | 188.66                  |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -124.66 | -214.79 | 2.336           | 205.58                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 23.51   | 58.62   | 2.309           | 203.23                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -113.04 | -205.11 | 2.502           | 220.17                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 22.94   | 57.88   | 2.349           | 206.69                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | 817.88   | -12.45  | 150.70  | 4.224           | 371.71                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 17.29   | 49.86   | 2.838           | 249.75                  |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 59.90   | 230.75  | 2.450 | 215.64 |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 11.65   | 41.15   | 3.574 | 314.47 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 96.27   | 274.47  | 1.915 | 168.52 |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.83    | 33.83   | 4.461 | 392.53 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 102.53  | 280.78  | 1.850 | 162.80 |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69    | 31.99   | 4.752 | 418.17 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76  | 293.44  | 1.722 | 151.58 |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 23.64   | 6.668 | 586.77 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 280.78  | 1.850 | 162.80 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 31.99   | 4.752 | 418.17 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 274.47  | 1.915 | 168.52 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 33.83   | 4.461 | 392.53 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 230.75  | 2.450 | 215.64 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 41.15   | 3.574 | 314.47 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45  | 150.70  | 4.224 | 371.71 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 49.86   | 2.838 | 249.75 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -205.11 | 2.502 | 220.17 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 57.88   | 2.349 | 206.69 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -214.79 | 2.336 | 205.58 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 58.62   | 2.309 | 203.23 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -263.22 | 1.706 | 150.17 |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 61.69   | 2.144 | 188.66 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -338.23 | 1.130 | 99.44  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 65.34   | 1.980 | 174.27 |

### Span 3

|          |         |                |        |          |         |         | Legal  | Legal          |
|----------|---------|----------------|--------|----------|---------|---------|--------|----------------|
| Location |         |                |        |          |         |         | Rating | Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor | (Ton)          |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -173.31 | -281.42 | 1.598  | 140.66         |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 26.07   | 60.08   | 2.197  | 193.33         |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -251.43 | 1.953  | 171.89         |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 24.35   | 57.67   | 2.333  | 205.32         |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -123.46 | -242.98 | 1.749  | 153.87         |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 23.77   | 56.83   | 2.378  | 209.23         |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -184.74 | 2.706  | 238.11         |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 19.82   | 50.66   | 2.744  | 241.47         |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 216.44  | 2.780  | 244.62         |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 15.30   | 42.96   | 3.340  | 293.88         |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 248.37  | 2.294  | 201.84         |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 13.04   | 38.89   | 3.723  | 327.63         |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 271.33  | 2.013  | 177.18         |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 16.00 | 40.0  | Shear   | KIPS   | 206.48 | 10.76  | 34.66  | 4.242  | 373.32  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52 | 108.56 | 296.04 | 1.735  | 152.64  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48 | 6.04   | 28.06  | 5.406  | 475.76  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52 | 123.11 | 309.23 | 1.614  | 142.05  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48 | 1.48   | 23.09  | 6.763  | 595.15  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 123.56 | 303.68 | 1.642  | 144.52  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.92   | 25.79  | 6.078  | 534.82  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 119.46 | 290.19 | 1.747  | 153.70  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18   | 28.84  | 5.388  | 474.14  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72  | 237.68 | 2.222  | 195.57  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70   | 37.51  | 4.023  | 354.06  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90  | 146.26 | 3.879  | 341.37  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21  | 46.17  | 3.173  | 279.21  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 8712.00 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73  | 55.28  | 2.570  | 226.12  |

**Detailed Rating Results  
Maine DOT Config. 6  
Axle Load  
Impact: As Requested  
Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 3757.05                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 64.11     | 2.216                   | 84.09                            |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 173.08    | 3.278                   | 124.41                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 54.63     | 2.681                   | 101.75                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 288.09    | 1.834                   | 69.58                            |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 45.47     | 3.319                   | 125.97                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 362.21    | 1.399                   | 53.10                            |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 36.72     | 4.231                   | 160.57                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 385.32    | 1.294                   | 49.12                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.92      | 32.55     | 4.815                   | 182.72                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 395.43    | 1.262                   | 47.91                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 28.51     | 5.478                   | 207.90                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 386.02    | 1.330                   | 50.48                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 33.08     | 4.585                   | 173.99                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 345.69    | 1.580                   | 59.97                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 10.76     | 41.85     | 3.514                   | 133.35                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 311.12    | 1.831                   | 69.49                            |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 46.03   | 3.146 | 119.39 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 267.47  | 2.249 | 85.36  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 50.10   | 2.863 | 108.67 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -207.81 | 2.405 | 91.29  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 57.71   | 2.409 | 91.42  |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -230.54 | 1.843 | 69.94  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 63.71   | 2.121 | 80.49  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -233.78 | 2.101 | 79.72  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 64.53   | 2.085 | 79.14  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -243.52 | 1.847 | 70.10  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 66.82   | 1.975 | 74.96  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -259.76 | 1.471 | 55.84  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 70.87   | 1.826 | 69.29  |

### Span 2

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -202.14 | 2.222  | 84.33       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 67.46   | 1.960  | 74.39       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -191.00 | 2.627  | 99.70       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 64.50   | 2.099  | 79.66       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -188.21 | 2.727  | 103.47      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94   | 63.73   | 2.133  | 80.95       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 193.15  | 3.296  | 125.07      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29   | 55.57   | 2.546  | 96.64       |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 291.17  | 1.942  | 73.70       |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65   | 46.69   | 3.149  | 119.52      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 348.10  | 1.510  | 57.30       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83    | 39.34   | 3.836  | 145.57      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 358.03  | 1.451  | 55.06       |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.69    | 37.50   | 4.054  | 153.84      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 116.76  | 377.36  | 1.339  | 50.83       |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 28.37   | 5.555  | 210.82      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 358.03  | 1.451  | 55.06       |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.69    | 37.50   | 4.054  | 153.84      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 348.10  | 1.510  | 57.30       |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.83    | 39.34   | 3.836  | 145.57      |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 291.17  | 1.942  | 73.70       |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 11.65   | 46.69   | 3.149  | 119.52      |
| 40.00    | 80.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 193.15  | 3.296  | 125.07      |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 17.29   | 55.57   | 2.546  | 96.64       |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -188.21 | 2.727 | 103.47 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 63.73   | 2.133 | 80.95  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -191.00 | 2.627 | 99.70  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 64.50   | 2.099 | 79.66  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -202.14 | 2.222 | 84.33  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 67.46   | 1.960 | 74.39  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -259.76 | 1.471 | 55.84  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 70.87   | 1.826 | 69.29  |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -173.31 | -243.52 | 1.847           | 70.10                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 26.07   | 66.82   | 1.975           | 74.96                   |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -233.78 | 2.101           | 79.72                   |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 24.35   | 64.53   | 2.085           | 79.14                   |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -123.46 | -230.54 | 1.843           | 69.94                   |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 23.77   | 63.71   | 2.121           | 80.49                   |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -207.81 | 2.405           | 91.29                   |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 19.82   | 57.71   | 2.409           | 91.42                   |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 267.47  | 2.249           | 85.36                   |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 15.30   | 50.10   | 2.863           | 108.67                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 311.12  | 1.831           | 69.49                   |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 13.04   | 46.03   | 3.146           | 119.39                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 345.69  | 1.580           | 59.97                   |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 10.76   | 41.85   | 3.514           | 133.35                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 108.56  | 386.02  | 1.330           | 50.48                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 6.04    | 33.08   | 4.585           | 173.99                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 123.11  | 395.43  | 1.262           | 47.91                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.48    | 28.51   | 5.478           | 207.90                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 123.56  | 385.32  | 1.294           | 49.12                   |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 0.92    | 32.55   | 4.815           | 182.72                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 119.46  | 362.21  | 1.399           | 53.10                   |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 3.18    | 36.72   | 4.231           | 160.57                  |
| 32.00    | 80.0    | Flexure        | KIP-FT | 817.88   | 97.72   | 288.09  | 1.834           | 69.58                   |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 7.70    | 45.47   | 3.319           | 125.97                  |
| 36.00    | 90.0    | Flexure        | KIP-FT | 817.88   | 57.90   | 173.08  | 3.278           | 124.41                  |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 12.21   | 54.63   | 2.681           | 101.75                  |
| 40.00    | 100.0   | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000          | 3757.05                 |
| 40.00    | 100.0   | Shear          | KIPS   | 207.64   | 16.73   | 64.11   | 2.216           | 84.09                   |



**Detailed Rating Results**  
**Maine DOT Config. 6 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                    |              |                 |           |           | <b>Legal</b>  | <b>Legal</b>       |
|-----------------|----------------|--------------------|--------------|-----------------|-----------|-----------|---------------|--------------------|
|                 |                |                    |              |                 |           |           | <b>Rating</b> | <b>Load Rating</b> |
| <b>Location</b> |                |                    |              |                 |           |           |               |                    |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b> | <b>(Ton)</b>       |
| 0.00            | 0.0            | Flexure            | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000        | 7514.10            |
| 0.00            | 0.0            | Shear              | KIPS         | 207.64          | 16.73     | 64.11     | 2.216         | 168.18             |
| 4.00            | 10.0           | Flexure            | KIP-FT       | 817.88          | 57.90     | 173.08    | 3.278         | 248.82             |
| 4.00            | 10.0           | Shear              | KIPS         | 207.64          | 12.21     | 54.63     | 2.681         | 203.51             |
| 8.00            | 20.0           | Flexure            | KIP-FT       | 817.88          | 97.72     | 288.09    | 1.834         | 139.17             |
| 8.00            | 20.0           | Shear              | KIPS         | 207.64          | 7.70      | 45.47     | 3.319         | 251.95             |
| 12.00           | 30.0           | Flexure            | KIP-FT       | 817.88          | 119.46    | 362.21    | 1.399         | 106.21             |
| 12.00           | 30.0           | Shear              | KIPS         | 207.64          | 3.18      | 36.72     | 4.231         | 321.14             |
| 14.00           | 35.0           | Flexure            | KIP-FT       | 812.52          | 123.56    | 385.32    | 1.294         | 98.24              |
| 14.00           | 35.0           | Shear              | KIPS         | 206.48          | 0.92      | 32.55     | 4.815         | 365.45             |
| 16.00           | 40.0           | Flexure            | KIP-FT       | 812.52          | 123.11    | 395.43    | 1.262         | 95.81              |
| 16.00           | 40.0           | Shear              | KIPS         | 206.48          | 1.48      | 32.43     | 4.815         | 365.46             |
| 20.00           | 50.0           | Flexure            | KIP-FT       | 812.52          | 108.56    | 386.02    | 1.330         | 100.96             |
| 20.00           | 50.0           | Shear              | KIPS         | 206.48          | 6.04      | 41.29     | 3.674         | 278.83             |
| 24.00           | 60.0           | Flexure            | KIP-FT       | 812.52          | 75.21     | 345.69    | 1.580         | 119.95             |
| 24.00           | 60.0           | Shear              | KIPS         | 206.48          | 10.76     | 49.58     | 2.966         | 225.09             |
| 26.00           | 65.0           | Flexure            | KIP-FT       | 812.52          | 51.40     | 311.12    | 1.831         | 138.98             |
| 26.00           | 65.0           | Shear              | KIPS         | 206.48          | 13.04     | 53.40     | 2.711         | 205.80             |
| 28.00           | 70.0           | Flexure            | KIP-FT       | 817.88          | 23.06     | 267.47    | 2.249         | 170.73             |
| 28.00           | 70.0           | Shear              | KIPS         | 207.64          | 15.30     | 57.00     | 2.517         | 191.03             |
| 32.00           | 80.0           | Flexure            | KIP-FT       | -715.59         | -47.18    | -189.24   | 2.641         | 200.49             |
| 32.00           | 80.0           | Shear              | KIPS         | 207.64          | 19.82     | 63.45     | 2.191         | 166.29             |
| 35.50           | 88.8           | Flexure            | KIP-FT       | -715.59         | -123.46   | -288.06   | 1.475         | 111.94             |
| 35.50           | 88.8           | Shear              | KIPS         | 207.64          | 23.77     | 68.29     | 1.979         | 150.17             |
| 36.00           | 90.0           | Flexure            | KIP-FT       | -817.88         | -135.49   | -304.26   | 1.614         | 122.51             |
| 36.00           | 90.0           | Shear              | KIPS         | 207.64          | 24.35     | 68.94     | 1.952         | 148.15             |
| 37.50           | 93.8           | Flexure            | KIP-FT       | -812.52         | -173.31   | -353.77   | 1.272         | 96.51              |
| 37.50           | 93.8           | Shear              | KIPS         | 206.48          | 26.07     | 70.71     | 1.867         | 141.68             |
| 40.00           | 100.0          | Flexure            | KIP-FT       | -812.52         | -242.09   | -445.98   | 0.857         | 65.04              |
| 40.00           | 100.0          | Shear              | KIPS         | 206.48          | 28.96     | 73.50     | 1.757         | 133.36             |

**Span 2**

**Legal      Legal**

| Location |         |             |        |          |         |         | Rating | Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -358.49 | 1.253  | 95.10       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 68.85   | 1.921  | 145.79      |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -294.12 | 1.706  | 129.48      |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 66.46   | 2.037  | 154.61      |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -278.87 | 1.840  | 139.67      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94   | 65.86   | 2.064  | 156.66      |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 198.20  | 3.212  | 243.77      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29   | 59.58   | 2.375  | 180.25      |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 271.73  | 2.081  | 157.94      |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65   | 52.44   | 2.804  | 212.84      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 306.57  | 1.714  | 130.13      |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83    | 46.00   | 3.281  | 249.00      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 311.65  | 1.667  | 126.50      |
| 20.00    | 40.0    | Shear       | KIPS   | 206.48   | 5.69    | 44.28   | 3.433  | 260.56      |
| 25.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 116.76  | 312.35  | 1.618  | 122.82      |
| 25.00    | 50.0    | Shear       | KIPS   | 206.48   | 0.00    | 35.33   | 4.462  | 338.64      |
| 30.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 311.65  | 1.667  | 126.50      |
| 30.00    | 60.0    | Shear       | KIPS   | 206.48   | 5.69    | 44.28   | 3.433  | 260.56      |
| 31.00    | 62.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 306.57  | 1.714  | 130.13      |
| 31.00    | 62.0    | Shear       | KIPS   | 206.48   | 6.83    | 46.00   | 3.281  | 249.00      |
| 35.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 271.73  | 2.081  | 157.94      |
| 35.00    | 70.0    | Shear       | KIPS   | 207.64   | 11.65   | 52.44   | 2.804  | 212.84      |
| 40.00    | 80.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 198.20  | 3.212  | 243.77      |
| 40.00    | 80.0    | Shear       | KIPS   | 207.64   | 17.29   | 59.58   | 2.375  | 180.25      |
| 45.00    | 90.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -278.87 | 1.840  | 139.67      |
| 45.00    | 90.0    | Shear       | KIPS   | 207.64   | 22.94   | 65.86   | 2.064  | 156.66      |
| 45.50    | 91.0    | Flexure     | KIP-FT | -817.88  | -124.66 | -294.12 | 1.706  | 129.48      |
| 45.50    | 91.0    | Shear       | KIPS   | 207.64   | 23.51   | 66.46   | 2.037  | 154.61      |
| 47.50    | 95.0    | Flexure     | KIP-FT | -812.52  | -173.97 | -358.49 | 1.253  | 95.10       |
| 47.50    | 95.0    | Shear       | KIPS   | 206.48   | 25.80   | 68.85   | 1.921  | 145.79      |
| 50.00    | 100.0   | Flexure     | KIP-FT | -812.52  | -242.09 | -445.98 | 0.857  | 65.04       |
| 50.00    | 100.0   | Shear       | KIPS   | 206.48   | 28.96   | 73.50   | 1.757  | 133.36      |

### Span 3

| Location |         |             |        |          |         |         | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor       | (Ton)             |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -353.77 | 1.272        | 96.51             |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 70.71   | 1.867        | 141.68            |

|       |       |         |        |         |         |         |        |         |
|-------|-------|---------|--------|---------|---------|---------|--------|---------|
| 4.00  | 10.0  | Flexure | KIP-FT | -817.88 | -135.49 | -304.26 | 1.614  | 122.51  |
| 4.00  | 10.0  | Shear   | KIPS   | 207.64  | 24.35   | 68.94   | 1.952  | 148.15  |
| 4.50  | 11.3  | Flexure | KIP-FT | -715.59 | -123.46 | -288.06 | 1.475  | 111.94  |
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 23.77   | 68.29   | 1.979  | 150.17  |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -47.18  | -189.24 | 2.641  | 200.49  |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 19.82   | 63.45   | 2.191  | 166.29  |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 23.06   | 267.47  | 2.249  | 170.73  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 15.30   | 57.00   | 2.517  | 191.03  |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 51.40   | 311.12  | 1.831  | 138.98  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 13.04   | 53.40   | 2.711  | 205.80  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 75.21   | 345.69  | 1.580  | 119.95  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 10.76   | 49.58   | 2.966  | 225.09  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 386.02  | 1.330  | 100.96  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 41.29   | 3.674  | 278.83  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 123.11  | 395.43  | 1.262  | 95.81   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.48    | 32.43   | 4.815  | 365.46  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 123.56  | 385.32  | 1.294  | 98.24   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.92    | 32.55   | 4.815  | 365.45  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 119.46  | 362.21  | 1.399  | 106.21  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 3.18    | 36.72   | 4.231  | 321.14  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 97.72   | 288.09  | 1.834  | 139.17  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 7.70    | 45.47   | 3.319  | 251.95  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 57.90   | 173.08  | 3.278  | 248.82  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 12.21   | 54.63   | 2.681  | 203.51  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00    | 0.00    | 99.000 | 7514.10 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 16.73   | 64.11   | 2.216  | 168.18  |

**Detailed Rating Results**  
**Maine DOT Config. 7**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 2940.30                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 52.65     | 2.698                   | 80.12                            |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 143.16    | 3.963                   | 117.71                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 45.19     | 3.242                   | 96.27                            |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 240.18    | 2.199                   | 65.32                            |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 37.91     | 3.982                   | 118.25                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 119.46  | 293.97  | 1.724 | 51.21  |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 3.18    | 30.93   | 5.023 | 149.19 |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 123.56  | 306.04  | 1.630 | 48.40  |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.92    | 27.60   | 5.678 | 168.63 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 123.11  | 316.47  | 1.577 | 46.85  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.48    | 24.35   | 6.413 | 190.46 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 310.76  | 1.652 | 49.08  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 28.24   | 5.371 | 159.52 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21   | 275.42  | 1.984 | 58.91  |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76   | 34.99   | 4.203 | 124.82 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40   | 251.17  | 2.268 | 67.36  |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 38.21   | 3.790 | 112.55 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 219.49  | 2.741 | 81.41  |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 41.30   | 3.473 | 103.16 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -164.96 | 3.030 | 90.00  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 47.07   | 2.954 | 87.72  |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -183.01 | 2.322 | 68.95  |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 51.59   | 2.619 | 77.79  |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -185.58 | 2.646 | 78.60  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 52.20   | 2.578 | 76.57  |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -193.32 | 2.327 | 69.11  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 53.90   | 2.449 | 72.72  |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -206.20 | 1.853 | 55.05  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 56.83   | 2.277 | 67.62  |

### Span 2

|          |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
| Location |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 5.0     | Flexure     | KIP-FT | -812.52  | -173.97 | -159.54 | 2.815  | 83.62       |
| 2.50     | 5.0     | Shear       | KIPS   | 206.48   | 25.80   | 54.30   | 2.435  | 72.33       |
| 4.50     | 9.0     | Flexure     | KIP-FT | -817.88  | -124.66 | -150.75 | 3.328  | 98.86       |
| 4.50     | 9.0     | Shear       | KIPS   | 207.64   | 23.51   | 52.10   | 2.598  | 77.17       |
| 5.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -113.04 | -148.55 | 3.455  | 102.60      |
| 5.00     | 10.0    | Shear       | KIPS   | 207.64   | 22.94   | 51.53   | 2.638  | 78.35       |
| 10.00    | 20.0    | Flexure     | KIP-FT | 817.88   | -12.45  | 159.36  | 3.995  | 118.64      |
| 10.00    | 20.0    | Shear       | KIPS   | 207.64   | 17.29   | 45.30   | 3.124  | 92.78       |
| 15.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 59.90   | 233.51  | 2.422  | 71.92       |
| 15.00    | 30.0    | Shear       | KIPS   | 207.64   | 11.65   | 38.46   | 3.824  | 113.57      |
| 19.00    | 38.0    | Flexure     | KIP-FT | 812.52   | 96.27   | 277.21  | 1.896  | 56.31       |
| 19.00    | 38.0    | Shear       | KIPS   | 206.48   | 6.83    | 32.71   | 4.613  | 137.02      |
| 20.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 102.53  | 285.55  | 1.819  | 54.03       |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69    | 31.26   | 4.863 | 144.44 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76  | 303.73  | 1.664 | 49.42  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 24.07   | 6.550 | 194.52 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 285.55  | 1.819 | 54.03  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 31.26   | 4.863 | 144.44 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 277.21  | 1.896 | 56.31  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 32.71   | 4.613 | 137.02 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 233.51  | 2.422 | 71.92  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 38.46   | 3.824 | 113.57 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45  | 159.36  | 3.995 | 118.64 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 45.30   | 3.124 | 92.78  |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -148.55 | 3.455 | 102.60 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 51.53   | 2.638 | 78.35  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -150.75 | 3.328 | 98.86  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 52.10   | 2.598 | 77.17  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -159.54 | 2.815 | 83.62  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 54.30   | 2.435 | 72.33  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -206.20 | 1.853 | 55.05  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 56.83   | 2.277 | 67.62  |

### Span 3

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 6.3     | Flexure        | KIP-FT | -812.52  | -173.31 | -193.32 | 2.327           | 69.11                   |
| 2.50     | 6.3     | Shear          | KIPS   | 206.48   | 26.07   | 53.90   | 2.449           | 72.72                   |
| 4.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -185.58 | 2.646           | 78.60                   |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 24.35   | 52.20   | 2.578           | 76.57                   |
| 4.50     | 11.3    | Flexure        | KIP-FT | -715.59  | -123.46 | -183.01 | 2.322           | 68.95                   |
| 4.50     | 11.3    | Shear          | KIPS   | 207.64   | 23.77   | 51.59   | 2.619           | 77.79                   |
| 8.00     | 20.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -164.96 | 3.030           | 90.00                   |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 19.82   | 47.07   | 2.954           | 87.72                   |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 219.49  | 2.741           | 81.41                   |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 15.30   | 41.30   | 3.473           | 103.16                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 251.17  | 2.268           | 67.36                   |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 13.04   | 38.21   | 3.790           | 112.55                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 275.42  | 1.984           | 58.91                   |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 10.76   | 34.99   | 4.203           | 124.82                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 108.56  | 310.76  | 1.652           | 49.08                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 6.04    | 28.24   | 5.371           | 159.52                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 123.11  | 316.47  | 1.577           | 46.85                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 1.48    | 24.35   | 6.413           | 190.46                  |

|       |       |         |        |        |        |        |        |         |
|-------|-------|---------|--------|--------|--------|--------|--------|---------|
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52 | 123.56 | 306.04 | 1.630  | 48.40   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48 | 0.92   | 27.60  | 5.678  | 168.63  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88 | 119.46 | 293.97 | 1.724  | 51.21   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18   | 30.93  | 5.023  | 149.19  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72  | 240.18 | 2.199  | 65.32   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70   | 37.91  | 3.982  | 118.25  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90  | 143.16 | 3.963  | 117.71  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21  | 45.19  | 3.242  | 96.27   |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00   | 0.00   | 99.000 | 2940.30 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73  | 52.65  | 2.698  | 80.12   |

**Detailed Rating Results**  
**Maine DOT Config. 7 x 2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 0.00            | 0.0            | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 5880.60                          |
| 0.00            | 0.0            | Shear                  | KIPS         | 207.64          | 16.73     | 52.65     | 2.698                   | 160.24                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 143.16    | 3.963                   | 235.42                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 12.21     | 45.19     | 3.242                   | 192.55                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 240.18    | 2.199                   | 130.64                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 7.70      | 37.91     | 3.982                   | 236.51                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 293.97    | 1.724                   | 102.41                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 3.18      | 30.93     | 5.023                   | 298.38                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 306.04    | 1.630                   | 96.80                            |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 0.92      | 27.60     | 5.678                   | 337.26                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 316.47    | 1.577                   | 93.69                            |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 1.48      | 27.39     | 5.701                   | 338.63                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 310.76    | 1.652                   | 98.15                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 34.75     | 4.365                   | 259.27                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 275.42    | 1.984                   | 117.82                           |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 10.76     | 41.26     | 3.563                   | 211.67                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 251.17    | 2.268                   | 134.73                           |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 13.04     | 44.27     | 3.271                   | 194.28                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 219.49    | 2.741                   | 162.83                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 15.30     | 47.03     | 3.050                   | 181.18                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -141.65   | 3.529                   | 209.62                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 19.82     | 51.97     | 2.675                   | 158.89                           |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -229.12 | 1.854 | 110.14 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 55.63   | 2.429 | 144.28 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -242.98 | 2.021 | 120.06 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 56.10   | 2.399 | 142.47 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -285.73 | 1.574 | 93.52  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 57.40   | 2.299 | 136.58 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -361.40 | 1.058 | 62.82  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.96   | 59.43   | 2.173 | 129.07 |

**Span 2**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 5.0            | Flexure                | KIP-FT       | -812.52         | -173.97   | -288.86   | 1.555                   | 92.37                            |
| 2.50            | 5.0            | Shear                  | KIPS         | 206.48          | 25.80     | 55.69     | 2.375                   | 141.06                           |
| 4.50            | 9.0            | Flexure                | KIP-FT       | -817.88         | -124.66   | -233.43   | 2.150                   | 127.68                           |
| 4.50            | 9.0            | Shear                  | KIPS         | 207.64          | 23.51     | 53.98     | 2.508                   | 148.99                           |
| 5.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -220.48   | 2.328                   | 138.26                           |
| 5.00            | 10.0           | Shear                  | KIPS         | 207.64          | 22.94     | 53.58     | 2.537                   | 150.71                           |
| 10.00           | 20.0           | Flexure                | KIP-FT       | 817.88          | -12.45    | 163.30    | 3.898                   | 231.55                           |
| 10.00           | 20.0           | Shear                  | KIPS         | 207.64          | 17.29     | 48.96     | 2.890                   | 171.69                           |
| 15.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 218.45    | 2.588                   | 153.75                           |
| 15.00           | 30.0           | Shear                  | KIPS         | 207.64          | 11.65     | 43.33     | 3.394                   | 201.58                           |
| 19.00           | 38.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 245.91    | 2.137                   | 126.96                           |
| 19.00           | 38.0           | Shear                  | KIPS         | 206.48          | 6.83      | 38.12     | 3.959                   | 235.14                           |
| 20.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 249.48    | 2.082                   | 123.68                           |
| 20.00           | 40.0           | Shear                  | KIPS         | 206.48          | 5.69      | 36.76     | 4.136                   | 245.65                           |
| 25.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 116.76    | 246.76    | 2.048                   | 121.67                           |
| 25.00           | 50.0           | Shear                  | KIPS         | 206.48          | 0.00      | 29.42     | 5.357                   | 318.22                           |
| 30.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 102.53    | 249.48    | 2.082                   | 123.68                           |
| 30.00           | 60.0           | Shear                  | KIPS         | 206.48          | 5.69      | 36.76     | 4.136                   | 245.65                           |
| 31.00           | 62.0           | Flexure                | KIP-FT       | 812.52          | 96.27     | 245.91    | 2.137                   | 126.96                           |
| 31.00           | 62.0           | Shear                  | KIPS         | 206.48          | 6.83      | 38.12     | 3.959                   | 235.14                           |
| 35.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 59.90     | 218.45    | 2.588                   | 153.75                           |
| 35.00           | 70.0           | Shear                  | KIPS         | 207.64          | 11.65     | 43.33     | 3.394                   | 201.58                           |
| 40.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | -12.45    | 163.30    | 3.898                   | 231.55                           |
| 40.00           | 80.0           | Shear                  | KIPS         | 207.64          | 17.29     | 48.96     | 2.890                   | 171.69                           |
| 45.00           | 90.0           | Flexure                | KIP-FT       | -817.88         | -113.04   | -220.48   | 2.328                   | 138.26                           |
| 45.00           | 90.0           | Shear                  | KIPS         | 207.64          | 22.94     | 53.58     | 2.537                   | 150.71                           |
| 45.50           | 91.0           | Flexure                | KIP-FT       | -817.88         | -124.66   | -233.43   | 2.150                   | 127.68                           |
| 45.50           | 91.0           | Shear                  | KIPS         | 207.64          | 23.51     | 53.98     | 2.508                   | 148.99                           |
| 47.50           | 95.0           | Flexure                | KIP-FT       | -812.52         | -173.97   | -288.86   | 1.555                   | 92.37                            |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 55.69   | 2.375 | 141.06 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -361.40 | 1.058 | 62.82  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.96   | 59.43   | 2.173 | 129.07 |

**Span 3**

|                 |                |                        |              |                 |           |           | <b>Legal<br/>Rating</b> | <b>Legal<br/>Load<br/>Rating</b> |
|-----------------|----------------|------------------------|--------------|-----------------|-----------|-----------|-------------------------|----------------------------------|
| <b>Location</b> |                |                        |              |                 |           |           |                         |                                  |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit<br/>State</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b>           | <b>(Ton)</b>                     |
| 2.50            | 6.3            | Flexure                | KIP-FT       | -812.52         | -173.31   | -285.73   | 1.574                   | 93.52                            |
| 2.50            | 6.3            | Shear                  | KIPS         | 206.48          | 26.07     | 57.40     | 2.299                   | 136.58                           |
| 4.00            | 10.0           | Flexure                | KIP-FT       | -817.88         | -135.49   | -242.98   | 2.021                   | 120.06                           |
| 4.00            | 10.0           | Shear                  | KIPS         | 207.64          | 24.35     | 56.10     | 2.399                   | 142.47                           |
| 4.50            | 11.3           | Flexure                | KIP-FT       | -715.59         | -123.46   | -229.12   | 1.854                   | 110.14                           |
| 4.50            | 11.3           | Shear                  | KIPS         | 207.64          | 23.77     | 55.63     | 2.429                   | 144.28                           |
| 8.00            | 20.0           | Flexure                | KIP-FT       | -715.59         | -47.18    | -141.65   | 3.529                   | 209.62                           |
| 8.00            | 20.0           | Shear                  | KIPS         | 207.64          | 19.82     | 51.97     | 2.675                   | 158.89                           |
| 12.00           | 30.0           | Flexure                | KIP-FT       | 817.88          | 23.06     | 219.49    | 2.741                   | 162.83                           |
| 12.00           | 30.0           | Shear                  | KIPS         | 207.64          | 15.30     | 47.03     | 3.050                   | 181.18                           |
| 14.00           | 35.0           | Flexure                | KIP-FT       | 812.52          | 51.40     | 251.17    | 2.268                   | 134.73                           |
| 14.00           | 35.0           | Shear                  | KIPS         | 206.48          | 13.04     | 44.27     | 3.271                   | 194.28                           |
| 16.00           | 40.0           | Flexure                | KIP-FT       | 812.52          | 75.21     | 275.42    | 1.984                   | 117.82                           |
| 16.00           | 40.0           | Shear                  | KIPS         | 206.48          | 10.76     | 41.26     | 3.563                   | 211.67                           |
| 20.00           | 50.0           | Flexure                | KIP-FT       | 812.52          | 108.56    | 310.76    | 1.652                   | 98.15                            |
| 20.00           | 50.0           | Shear                  | KIPS         | 206.48          | 6.04      | 34.75     | 4.365                   | 259.27                           |
| 24.00           | 60.0           | Flexure                | KIP-FT       | 812.52          | 123.11    | 316.47    | 1.577                   | 93.69                            |
| 24.00           | 60.0           | Shear                  | KIPS         | 206.48          | 1.48      | 27.39     | 5.701                   | 338.63                           |
| 26.00           | 65.0           | Flexure                | KIP-FT       | 812.52          | 123.56    | 306.04    | 1.630                   | 96.80                            |
| 26.00           | 65.0           | Shear                  | KIPS         | 206.48          | 0.92      | 27.60     | 5.678                   | 337.26                           |
| 28.00           | 70.0           | Flexure                | KIP-FT       | 817.88          | 119.46    | 293.97    | 1.724                   | 102.41                           |
| 28.00           | 70.0           | Shear                  | KIPS         | 207.64          | 3.18      | 30.93     | 5.023                   | 298.38                           |
| 32.00           | 80.0           | Flexure                | KIP-FT       | 817.88          | 97.72     | 240.18    | 2.199                   | 130.64                           |
| 32.00           | 80.0           | Shear                  | KIPS         | 207.64          | 7.70      | 37.91     | 3.982                   | 236.51                           |
| 36.00           | 90.0           | Flexure                | KIP-FT       | 817.88          | 57.90     | 143.16    | 3.963                   | 235.42                           |
| 36.00           | 90.0           | Shear                  | KIPS         | 207.64          | 12.21     | 45.19     | 3.242                   | 192.55                           |
| 40.00           | 100.0          | Flexure                | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000                  | 5880.60                          |
| 40.00           | 100.0          | Shear                  | KIPS         | 207.64          | 16.73     | 52.65     | 2.698                   | 160.24                           |

**Detailed Rating Results**  
**Maine DOT Config. 8**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**



| Span 1   |         |                |        |          |         |         |                 |                         |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 0.00     | 0.0     | Flexure        | KIP-FT | 817.88   | 0.00    | 0.00    | 99.000          | 1851.30                 |
| 0.00     | 0.0     | Shear          | KIPS   | 207.64   | 16.73   | 34.54   | 4.113           | 76.91                   |
| 4.00     | 10.0    | Flexure        | KIP-FT | 817.88   | 57.90   | 94.38   | 6.012           | 112.42                  |
| 4.00     | 10.0    | Shear          | KIPS   | 207.64   | 12.21   | 29.79   | 4.917           | 91.95                   |
| 8.00     | 20.0    | Flexure        | KIP-FT | 817.88   | 97.72   | 159.49  | 3.312           | 61.93                   |
| 8.00     | 20.0    | Shear          | KIPS   | 207.64   | 7.70    | 25.17   | 5.996           | 112.13                  |
| 12.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 119.46  | 196.72  | 2.577           | 48.18                   |
| 12.00    | 30.0    | Shear          | KIPS   | 207.64   | 3.18    | 20.70   | 7.507           | 140.38                  |
| 14.00    | 35.0    | Flexure        | KIP-FT | 812.52   | 123.56  | 205.66  | 2.425           | 45.35                   |
| 14.00    | 35.0    | Shear          | KIPS   | 206.48   | 0.92    | 18.55   | 8.449           | 158.00                  |
| 16.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 123.11  | 208.59  | 2.393           | 44.75                   |
| 16.00    | 40.0    | Shear          | KIPS   | 206.48   | 1.48    | 16.46   | 9.487           | 177.40                  |
| 20.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 108.56  | 203.19  | 2.527           | 47.26                   |
| 20.00    | 50.0    | Shear          | KIPS   | 206.48   | 6.04    | 19.09   | 7.947           | 148.61                  |
| 24.00    | 60.0    | Flexure        | KIP-FT | 812.52   | 75.21   | 185.95  | 2.938           | 54.94                   |
| 24.00    | 60.0    | Shear          | KIPS   | 206.48   | 10.76   | 23.27   | 6.318           | 118.15                  |
| 26.00    | 65.0    | Flexure        | KIP-FT | 812.52   | 51.40   | 169.57  | 3.360           | 62.83                   |
| 26.00    | 65.0    | Shear          | KIPS   | 206.48   | 13.04   | 25.26   | 5.733           | 107.20                  |
| 28.00    | 70.0    | Flexure        | KIP-FT | 817.88   | 23.06   | 148.93  | 4.040           | 75.54                   |
| 28.00    | 70.0    | Shear          | KIPS   | 207.64   | 15.30   | 27.15   | 5.284           | 98.80                   |
| 32.00    | 80.0    | Flexure        | KIP-FT | -715.59  | -47.18  | -104.75 | 4.772           | 89.24                   |
| 32.00    | 80.0    | Shear          | KIPS   | 207.64   | 19.82   | 30.69   | 4.529           | 84.70                   |
| 35.50    | 88.8    | Flexure        | KIP-FT | -715.59  | -123.46 | -116.21 | 3.656           | 68.37                   |
| 35.50    | 88.8    | Shear          | KIPS   | 207.64   | 23.77   | 33.43   | 4.042           | 75.58                   |
| 36.00    | 90.0    | Flexure        | KIP-FT | -817.88  | -135.49 | -117.84 | 4.168           | 77.93                   |
| 36.00    | 90.0    | Shear          | KIPS   | 207.64   | 24.35   | 33.80   | 3.981           | 74.45                   |
| 37.50    | 93.8    | Flexure        | KIP-FT | -812.52  | -173.31 | -122.75 | 3.665           | 68.53                   |
| 37.50    | 93.8    | Shear          | KIPS   | 206.48   | 26.07   | 34.84   | 3.788           | 70.83                   |
| 40.00    | 100.0   | Flexure        | KIP-FT | -812.52  | -242.09 | -130.94 | 2.919           | 54.58                   |
| 40.00    | 100.0   | Shear          | KIPS   | 206.48   | 28.69   | 36.56   | 3.540           | 66.19                   |

| Span 2   |         |                |       |          |    |    |                 |                         |
|----------|---------|----------------|-------|----------|----|----|-----------------|-------------------------|
| Location |         |                |       |          |    |    | Legal<br>Rating | Legal<br>Load<br>Rating |
| (ft)     | Percent | Limit<br>State | Units | Capacity | DL | LL | Factor          | (Ton)                   |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 2.50  | 5.0   | Flexure | KIP-FT | -812.52 | -173.97 | -101.83 | 4.411 | 82.48  |
| 2.50  | 5.0   | Shear   | KIPS   | 206.48  | 25.80   | 35.01   | 3.777 | 70.64  |
| 4.50  | 9.0   | Flexure | KIP-FT | -817.88 | -124.66 | -96.22  | 5.215 | 97.51  |
| 4.50  | 9.0   | Shear   | KIPS   | 207.64  | 23.51   | 33.69   | 4.019 | 75.15  |
| 5.00  | 10.0  | Flexure | KIP-FT | -817.88 | -113.04 | -94.82  | 5.412 | 101.21 |
| 5.00  | 10.0  | Shear   | KIPS   | 207.64  | 22.94   | 33.35   | 4.077 | 76.23  |
| 10.00 | 20.0  | Flexure | KIP-FT | 817.88  | -12.45  | 109.92  | 5.791 | 108.29 |
| 10.00 | 20.0  | Shear   | KIPS   | 207.64  | 17.29   | 29.53   | 4.792 | 89.60  |
| 15.00 | 30.0  | Flexure | KIP-FT | 817.88  | 59.90   | 157.69  | 3.586 | 67.06  |
| 15.00 | 30.0  | Shear   | KIPS   | 207.64  | 11.65   | 25.26   | 5.821 | 108.85 |
| 19.00 | 38.0  | Flexure | KIP-FT | 812.52  | 96.27   | 184.92  | 2.842 | 53.15  |
| 19.00 | 38.0  | Shear   | KIPS   | 206.48  | 6.83    | 21.66   | 6.966 | 130.27 |
| 20.00 | 40.0  | Flexure | KIP-FT | 812.52  | 102.53  | 189.07  | 2.747 | 51.37  |
| 20.00 | 40.0  | Shear   | KIPS   | 206.48  | 5.69    | 20.74   | 7.329 | 137.05 |
| 25.00 | 50.0  | Flexure | KIP-FT | 812.52  | 116.76  | 196.18  | 2.576 | 48.18  |
| 25.00 | 50.0  | Shear   | KIPS   | 206.48  | 0.00    | 16.16   | 9.751 | 182.34 |
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 189.07  | 2.747 | 51.37  |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 20.74   | 7.329 | 137.05 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 184.92  | 2.842 | 53.15  |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 21.66   | 6.966 | 130.27 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 157.69  | 3.586 | 67.06  |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 25.26   | 5.821 | 108.85 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45  | 109.92  | 5.791 | 108.29 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 29.53   | 4.792 | 89.60  |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -94.82  | 5.412 | 101.21 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 33.35   | 4.077 | 76.23  |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -96.22  | 5.215 | 97.51  |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 33.69   | 4.019 | 75.15  |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -101.83 | 4.411 | 82.48  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 35.01   | 3.777 | 70.64  |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -130.94 | 2.919 | 54.58  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 36.56   | 3.540 | 66.19  |

### Span 3

| Location |         | Limit State | Units  | Capacity | DL      | LL      | Legal Rating | Legal Load Rating |
|----------|---------|-------------|--------|----------|---------|---------|--------------|-------------------|
| (ft)     | Percent |             |        |          |         |         | Factor       | (Ton)             |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -122.75 | 3.665        | 68.53             |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 34.84   | 3.788        | 70.83             |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -117.84 | 4.168        | 77.93             |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 33.80   | 3.981        | 74.45             |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -116.21 | 3.656        | 68.37             |

|       |       |         |        |         |        |         |        |         |
|-------|-------|---------|--------|---------|--------|---------|--------|---------|
| 4.50  | 11.3  | Shear   | KIPS   | 207.64  | 23.77  | 33.43   | 4.042  | 75.58   |
| 8.00  | 20.0  | Flexure | KIP-FT | -715.59 | -47.18 | -104.75 | 4.772  | 89.24   |
| 8.00  | 20.0  | Shear   | KIPS   | 207.64  | 19.82  | 30.69   | 4.529  | 84.70   |
| 12.00 | 30.0  | Flexure | KIP-FT | 817.88  | 23.06  | 148.93  | 4.040  | 75.54   |
| 12.00 | 30.0  | Shear   | KIPS   | 207.64  | 15.30  | 27.15   | 5.284  | 98.80   |
| 14.00 | 35.0  | Flexure | KIP-FT | 812.52  | 51.40  | 169.57  | 3.360  | 62.83   |
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 13.04  | 25.26   | 5.733  | 107.20  |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 75.21  | 185.95  | 2.938  | 54.94   |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 10.76  | 23.27   | 6.318  | 118.15  |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56 | 203.19  | 2.527  | 47.26   |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04   | 19.09   | 7.947  | 148.61  |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 123.11 | 208.59  | 2.393  | 44.75   |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 1.48   | 16.46   | 9.487  | 177.40  |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 123.56 | 205.66  | 2.425  | 45.35   |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 0.92   | 18.55   | 8.449  | 158.00  |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 119.46 | 196.72  | 2.577  | 48.18   |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 3.18   | 20.70   | 7.507  | 140.38  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88  | 97.72  | 159.49  | 3.312  | 61.93   |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 7.70   | 25.17   | 5.996  | 112.13  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88  | 57.90  | 94.38   | 6.012  | 112.42  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 12.21  | 29.79   | 4.917  | 91.95   |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88  | 0.00   | 0.00    | 99.000 | 1851.30 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64  | 16.73  | 34.54   | 4.113  | 76.91   |

**Detailed Rating Results**  
**Maine DOT Config. 8 x2**  
**Axle Load**  
**Impact: As Requested**  
**Lane: As Requested**

**Span 1**

|                 |                |              |              |                 |           |           | <b>Legal</b>  | <b>Legal</b>  |
|-----------------|----------------|--------------|--------------|-----------------|-----------|-----------|---------------|---------------|
|                 |                |              |              |                 |           |           | <b>Rating</b> | <b>Load</b>   |
| <b>Location</b> |                |              |              |                 |           |           |               | <b>Rating</b> |
| <b>(ft)</b>     | <b>Percent</b> | <b>Limit</b> | <b>Units</b> | <b>Capacity</b> | <b>DL</b> | <b>LL</b> | <b>Factor</b> | <b>(Ton)</b>  |
| 0.00            | 0.0            | Flexure      | KIP-FT       | 817.88          | 0.00      | 0.00      | 99.000        | 3702.60       |
| 0.00            | 0.0            | Shear        | KIPS         | 207.64          | 16.73     | 34.54     | 4.113         | 153.82        |
| 4.00            | 10.0           | Flexure      | KIP-FT       | 817.88          | 57.90     | 94.38     | 6.012         | 224.84        |
| 4.00            | 10.0           | Shear        | KIPS         | 207.64          | 12.21     | 29.79     | 4.917         | 183.90        |
| 8.00            | 20.0           | Flexure      | KIP-FT       | 817.88          | 97.72     | 159.49    | 3.312         | 123.87        |
| 8.00            | 20.0           | Shear        | KIPS         | 207.64          | 7.70      | 25.17     | 5.996         | 224.25        |
| 12.00           | 30.0           | Flexure      | KIP-FT       | 817.88          | 119.46    | 196.72    | 2.577         | 96.36         |
| 12.00           | 30.0           | Shear        | KIPS         | 207.64          | 3.18      | 20.70     | 7.507         | 280.75        |
| 14.00           | 35.0           | Flexure      | KIP-FT       | 812.52          | 123.56    | 205.66    | 2.425         | 90.69         |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 14.00 | 35.0  | Shear   | KIPS   | 206.48  | 0.92    | 18.55   | 8.449 | 315.99 |
| 16.00 | 40.0  | Flexure | KIP-FT | 812.52  | 123.11  | 208.59  | 2.393 | 89.50  |
| 16.00 | 40.0  | Shear   | KIPS   | 206.48  | 1.48    | 18.34   | 8.517 | 318.53 |
| 20.00 | 50.0  | Flexure | KIP-FT | 812.52  | 108.56  | 203.19  | 2.527 | 94.52  |
| 20.00 | 50.0  | Shear   | KIPS   | 206.48  | 6.04    | 23.18   | 6.542 | 244.69 |
| 24.00 | 60.0  | Flexure | KIP-FT | 812.52  | 75.21   | 185.95  | 2.938 | 109.88 |
| 24.00 | 60.0  | Shear   | KIPS   | 206.48  | 10.76   | 27.40   | 5.367 | 200.73 |
| 26.00 | 65.0  | Flexure | KIP-FT | 812.52  | 51.40   | 169.57  | 3.360 | 125.65 |
| 26.00 | 65.0  | Shear   | KIPS   | 206.48  | 13.04   | 29.32   | 4.939 | 184.71 |
| 28.00 | 70.0  | Flexure | KIP-FT | 817.88  | 23.06   | 148.93  | 4.040 | 151.09 |
| 28.00 | 70.0  | Shear   | KIPS   | 207.64  | 15.30   | 31.07   | 4.617 | 172.68 |
| 32.00 | 80.0  | Flexure | KIP-FT | -715.59 | -47.18  | -87.75  | 5.697 | 213.06 |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64  | 19.82   | 34.20   | 4.065 | 152.04 |
| 35.50 | 88.8  | Flexure | KIP-FT | -715.59 | -123.46 | -144.54 | 2.939 | 109.93 |
| 35.50 | 88.8  | Shear   | KIPS   | 207.64  | 23.77   | 36.45   | 3.707 | 138.63 |
| 36.00 | 90.0  | Flexure | KIP-FT | -817.88 | -135.49 | -154.47 | 3.179 | 118.91 |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64  | 24.35   | 36.74   | 3.663 | 136.99 |
| 37.50 | 93.8  | Flexure | KIP-FT | -812.52 | -173.31 | -182.67 | 2.463 | 92.10  |
| 37.50 | 93.8  | Shear   | KIPS   | 206.48  | 26.07   | 37.54   | 3.516 | 131.50 |
| 40.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -237.10 | 1.612 | 60.29  |
| 40.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 40.58   | 3.189 | 119.26 |

### Span 2

|          |         |                |        |          |         |         | Legal<br>Rating | Legal<br>Load<br>Rating |
|----------|---------|----------------|--------|----------|---------|---------|-----------------|-------------------------|
| Location |         |                |        |          |         |         |                 |                         |
| (ft)     | Percent | Limit<br>State | Units  | Capacity | DL      | LL      | Factor          | (Ton)                   |
| 2.50     | 5.0     | Flexure        | KIP-FT | -812.52  | -173.97 | -186.36 | 2.410           | 90.15                   |
| 2.50     | 5.0     | Shear          | KIPS   | 206.48   | 25.80   | 37.46   | 3.530           | 132.02                  |
| 4.50     | 9.0     | Flexure        | KIP-FT | -817.88  | -124.66 | -147.71 | 3.397           | 127.05                  |
| 4.50     | 9.0     | Shear          | KIPS   | 207.64   | 23.51   | 35.51   | 3.813           | 142.61                  |
| 5.00     | 10.0    | Flexure        | KIP-FT | -817.88  | -113.04 | -138.58 | 3.703           | 138.50                  |
| 5.00     | 10.0    | Shear          | KIPS   | 207.64   | 22.94   | 35.27   | 3.855           | 144.17                  |
| 10.00    | 20.0    | Flexure        | KIP-FT | 817.88   | -12.45  | 111.01  | 5.735           | 214.47                  |
| 10.00    | 20.0    | Shear          | KIPS   | 207.64   | 17.29   | 32.35   | 4.374           | 163.59                  |
| 15.00    | 30.0    | Flexure        | KIP-FT | 817.88   | 59.90   | 150.23  | 3.764           | 140.77                  |
| 15.00    | 30.0    | Shear          | KIPS   | 207.64   | 11.65   | 28.66   | 5.130           | 191.88                  |
| 19.00    | 38.0    | Flexure        | KIP-FT | 812.52   | 96.27   | 165.54  | 3.175           | 118.75                  |
| 19.00    | 38.0    | Shear          | KIPS   | 206.48   | 6.83    | 25.21   | 5.986           | 223.89                  |
| 20.00    | 40.0    | Flexure        | KIP-FT | 812.52   | 102.53  | 166.64  | 3.117           | 116.58                  |
| 20.00    | 40.0    | Shear          | KIPS   | 206.48   | 5.69    | 24.30   | 6.257           | 234.02                  |
| 25.00    | 50.0    | Flexure        | KIP-FT | 812.52   | 116.76  | 163.70  | 3.088           | 115.48                  |
| 25.00    | 50.0    | Shear          | KIPS   | 206.48   | 0.00    | 19.32   | 8.159           | 305.15                  |

|       |       |         |        |         |         |         |       |        |
|-------|-------|---------|--------|---------|---------|---------|-------|--------|
| 30.00 | 60.0  | Flexure | KIP-FT | 812.52  | 102.53  | 166.64  | 3.117 | 116.58 |
| 30.00 | 60.0  | Shear   | KIPS   | 206.48  | 5.69    | 24.30   | 6.257 | 234.02 |
| 31.00 | 62.0  | Flexure | KIP-FT | 812.52  | 96.27   | 165.54  | 3.175 | 118.75 |
| 31.00 | 62.0  | Shear   | KIPS   | 206.48  | 6.83    | 25.21   | 5.986 | 223.89 |
| 35.00 | 70.0  | Flexure | KIP-FT | 817.88  | 59.90   | 150.23  | 3.764 | 140.77 |
| 35.00 | 70.0  | Shear   | KIPS   | 207.64  | 11.65   | 28.66   | 5.130 | 191.88 |
| 40.00 | 80.0  | Flexure | KIP-FT | 817.88  | -12.45  | 111.01  | 5.735 | 214.47 |
| 40.00 | 80.0  | Shear   | KIPS   | 207.64  | 17.29   | 32.35   | 4.374 | 163.59 |
| 45.00 | 90.0  | Flexure | KIP-FT | -817.88 | -113.04 | -138.58 | 3.703 | 138.50 |
| 45.00 | 90.0  | Shear   | KIPS   | 207.64  | 22.94   | 35.27   | 3.855 | 144.17 |
| 45.50 | 91.0  | Flexure | KIP-FT | -817.88 | -124.66 | -147.71 | 3.397 | 127.05 |
| 45.50 | 91.0  | Shear   | KIPS   | 207.64  | 23.51   | 35.51   | 3.813 | 142.61 |
| 47.50 | 95.0  | Flexure | KIP-FT | -812.52 | -173.97 | -186.36 | 2.410 | 90.15  |
| 47.50 | 95.0  | Shear   | KIPS   | 206.48  | 25.80   | 37.46   | 3.530 | 132.02 |
| 50.00 | 100.0 | Flexure | KIP-FT | -812.52 | -242.09 | -237.10 | 1.612 | 60.29  |
| 50.00 | 100.0 | Shear   | KIPS   | 206.48  | 28.69   | 40.58   | 3.189 | 119.26 |

### Span 3

| Location |         |             |        |          |         |         | Legal  | Legal       |
|----------|---------|-------------|--------|----------|---------|---------|--------|-------------|
|          |         |             |        |          |         |         | Rating | Load Rating |
| (ft)     | Percent | Limit State | Units  | Capacity | DL      | LL      | Factor | (Ton)       |
| 2.50     | 6.3     | Flexure     | KIP-FT | -812.52  | -173.31 | -182.67 | 2.463  | 92.10       |
| 2.50     | 6.3     | Shear       | KIPS   | 206.48   | 26.07   | 37.54   | 3.516  | 131.50      |
| 4.00     | 10.0    | Flexure     | KIP-FT | -817.88  | -135.49 | -154.47 | 3.179  | 118.91      |
| 4.00     | 10.0    | Shear       | KIPS   | 207.64   | 24.35   | 36.74   | 3.663  | 136.99      |
| 4.50     | 11.3    | Flexure     | KIP-FT | -715.59  | -123.46 | -144.54 | 2.939  | 109.93      |
| 4.50     | 11.3    | Shear       | KIPS   | 207.64   | 23.77   | 36.45   | 3.707  | 138.63      |
| 8.00     | 20.0    | Flexure     | KIP-FT | -715.59  | -47.18  | -87.75  | 5.697  | 213.06      |
| 8.00     | 20.0    | Shear       | KIPS   | 207.64   | 19.82   | 34.20   | 4.065  | 152.04      |
| 12.00    | 30.0    | Flexure     | KIP-FT | 817.88   | 23.06   | 148.93  | 4.040  | 151.09      |
| 12.00    | 30.0    | Shear       | KIPS   | 207.64   | 15.30   | 31.07   | 4.617  | 172.68      |
| 14.00    | 35.0    | Flexure     | KIP-FT | 812.52   | 51.40   | 169.57  | 3.360  | 125.65      |
| 14.00    | 35.0    | Shear       | KIPS   | 206.48   | 13.04   | 29.32   | 4.939  | 184.71      |
| 16.00    | 40.0    | Flexure     | KIP-FT | 812.52   | 75.21   | 185.95  | 2.938  | 109.88      |
| 16.00    | 40.0    | Shear       | KIPS   | 206.48   | 10.76   | 27.40   | 5.367  | 200.73      |
| 20.00    | 50.0    | Flexure     | KIP-FT | 812.52   | 108.56  | 203.19  | 2.527  | 94.52       |
| 20.00    | 50.0    | Shear       | KIPS   | 206.48   | 6.04    | 23.18   | 6.542  | 244.69      |
| 24.00    | 60.0    | Flexure     | KIP-FT | 812.52   | 123.11  | 208.59  | 2.393  | 89.50       |
| 24.00    | 60.0    | Shear       | KIPS   | 206.48   | 1.48    | 18.34   | 8.517  | 318.53      |
| 26.00    | 65.0    | Flexure     | KIP-FT | 812.52   | 123.56  | 205.66  | 2.425  | 90.69       |
| 26.00    | 65.0    | Shear       | KIPS   | 206.48   | 0.92    | 18.55   | 8.449  | 315.99      |
| 28.00    | 70.0    | Flexure     | KIP-FT | 817.88   | 119.46  | 196.72  | 2.577  | 96.36       |

|       |       |         |        |        |       |        |        |         |
|-------|-------|---------|--------|--------|-------|--------|--------|---------|
| 28.00 | 70.0  | Shear   | KIPS   | 207.64 | 3.18  | 20.70  | 7.507  | 280.75  |
| 32.00 | 80.0  | Flexure | KIP-FT | 817.88 | 97.72 | 159.49 | 3.312  | 123.87  |
| 32.00 | 80.0  | Shear   | KIPS   | 207.64 | 7.70  | 25.17  | 5.996  | 224.25  |
| 36.00 | 90.0  | Flexure | KIP-FT | 817.88 | 57.90 | 94.38  | 6.012  | 224.84  |
| 36.00 | 90.0  | Shear   | KIPS   | 207.64 | 12.21 | 29.79  | 4.917  | 183.90  |
| 40.00 | 100.0 | Flexure | KIP-FT | 817.88 | 0.00  | 0.00   | 99.000 | 3702.60 |
| 40.00 | 100.0 | Shear   | KIPS   | 207.64 | 16.73 | 34.54  | 4.113  | 153.82  |



# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Legal Load Rating

### Objective

Rate girder for legal loads using combined legal trucks and legal lane load output from Virtis

### Location of Interest

Girder 2, Pier 1

### Moments (Taken From Virtis)

| Maximum Live Load Forces |                |
|--------------------------|----------------|
| Load Case/Configuration: | Moment, kip-ft |
| Config.                  |                |
| DC Moment                | 205.20         |
| DW Moment                | 36.90          |
| Legal Lane               | 28.99          |
| Config. 1                | 322.03         |
| Config. 2                | 288.93         |
| Config. 3                | 340.27         |
| Config. 4                | 334.77         |
| Config. 5                | 338.23         |
| Config. 6                | 445.98         |
| Config. 7                | 361.40         |
| Config. 8                | 237.10         |

(All loads are unfactored)

Legal Lane = 38.65

0.75 factor is only applied to truck, not lane. Since the entire legal load live load factor is multiplied by 0.75, the inputted lane must be divided by 0.75 so it cancels out.

| Capacity       |        |
|----------------|--------|
| Moment, kip-ft | 812.52 |

### Load and Resistance Factors

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c =$ | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s =$ | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f =$ | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s =$ | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

|             |      |
|-------------|------|
| $*V_{DC} =$ | 1.25 |
| $*V_{DW} =$ | 1.50 |

$*V_{LL} = 1.31$  Maine Truck Config. 1-5, 7-8

$*V_{LL} = 1.31$  Maine Truck Config. 6

$*V_{LL} = 0.98$  Maine Truck Config. 1-5, 7-8

$*V_{LL} = 0.98$  Maine Truck Config. 6

0.75 factor applied per MaineDOT Load Rating Guide (3.3.3.3)



*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 1

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 361                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 1<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.41 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1





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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 2

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 328                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c$ = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s$ = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f$ = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s$ = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

$C = \phi_c \phi_s \phi_R$  for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 2<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.56 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 3

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 379                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 3<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.34 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 4

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 373                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 4<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.36 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 5

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 377                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c$ = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s$ = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f$ = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s$ = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

$C = \phi_c \phi_s \phi_R$  for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 5<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.35 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 6

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 485                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c$ = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s$ = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f$ = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s$ = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

$C = \phi_c \phi_s \phi_R$  for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 6<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.05 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 7

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 400                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|            |      |                                                  |
|------------|------|--------------------------------------------------|
| $\phi_c$ = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| $\phi_s$ = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| $\phi_f$ = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| $\phi_s$ = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

$C = \phi_c \phi_s \phi_R$  for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 7<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.27 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



*Vanasse Hangen Brustlin, Inc.*

# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Configuration 8

### Summary for Stringer

|                | Dead Load DC | Dead Load DW | Dist. Live Load +<br>Impact | Nominal Capacity<br>R <sub>n</sub> |
|----------------|--------------|--------------|-----------------------------|------------------------------------|
| Moment, kip-ft | 205          | 37           | 276                         | 813                                |

### General Load-Rating Equation:

MBE Eq. 6A.4.2.1-1

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW) \pm (\gamma_p)(P)}{(\gamma_{LL})(LL + IM)}$$

|                  |      |                                                  |
|------------------|------|--------------------------------------------------|
| φ <sub>c</sub> = | 1.00 | Condition Factor, MBE 6A.4.2.3                   |
| φ <sub>s</sub> = | 1.00 | System Factor, MBE 6A.4.2.4                      |
| φ <sub>f</sub> = | 1.00 | LRFD Resistance Factor for flexure, LRFD 6.5.4.2 |
| φ <sub>s</sub> = | 1.00 | LRFD Resistance Factor for shear, LRFD 6.5.4.2   |

### Strength I Limit State

C = φ<sub>c</sub> φ<sub>s</sub> φ<sub>R<sub>n</sub></sub> for Strength Limit States

$$RF = \frac{C - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_{LL})(LL + IM)}$$

|                     |      |
|---------------------|------|
| *V <sub>DC</sub> =  | 1.25 |
| *V <sub>DW</sub> =  | 1.50 |
| **V <sub>LL</sub> = | 0.98 |

| Configuration 8<br>Strength I |      |
|-------------------------------|------|
| RF <sub>Flexure</sub> =       | 1.85 |

\* Ref. MBE Table 6A.4.2.2-1

\*\* MBE Table 6A.4.4.2.3b-1



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# Computations

|               |                       |           |           |
|---------------|-----------------------|-----------|-----------|
| Project       | MaineDOT Load Ratings | Project # | 55005.00  |
| Location      | Br. No. 1432 & 5950   | Sheet     |           |
| Calculated by | KZS                   | Date      | 4/25/2013 |
| Checked by    | DZ                    | Date      | 4/26/2013 |
| Title         | Legal Load Ratings    |           |           |

## Summary of Ratings

| Rating Summary           |            |
|--------------------------|------------|
| Load Case/Configuration: | Strength I |
| Config.                  |            |
| Config. 1                | 1.41       |
| Config. 2                | 1.56       |
| Config. 3                | 1.34       |
| Config. 4                | 1.36       |
| Config. 5                | 1.35       |
| Config. 6                | 1.05       |
| Config. 7                | 1.27       |
| Config. 8                | 1.85       |



Bridge # **Br. No. 1432/5950**  
**I-95 over Souadabscook**

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Mid Span

### Fatigue Rating Input Values

#### Designations

= input value

= result

#### References

a = AASHTO Manual for Bridge Evaluation, 2011 2nd Edition  
 b = AASHTO LRFD Bridge Design Guide, 2012

#### Inputs

Partial load factor =  $R_{sa} = 1$

a 7.2.2.1.1-2 Use 0.95 if using refined method of analysis  
 a 7.2.2.1.1-3 Else, use 1

Truck-weight partial load factor =  $R_{st} = 1$

a 7.2.2.1.1-4 Use 0.95 if truck weight estimate through weight-in-motion study  
 a 7.2.2.1.1-5 Else, use 1

Detail Category =  $A = E'$

a 7.2.5.2 Number of stress-range cycles per truck =  $n = 2$   
 This is assumed for continuous, near support, span  $\leq 40'$

b 3.6.1.4.2 Average number of trucks per day in single lane  $(ADTT)_{SL} = 1877$

Year built = **1961**

#### Loading

Description of Point of Interest

|                |
|----------------|
| Span 1 - 0.35L |
| Span 1 - 0.65L |
| Span 2 - 0.38L |
|                |
|                |
|                |

\*0.75 Factor

|     | Live Load Moment |       | *Factored |       |       |
|-----|------------------|-------|-----------|-------|-------|
|     | Max              | Min   | Max       | Min   |       |
| A = | 161.3            | -34.2 | 121.0     | -25.7 | k -ft |
| B = | 122.7            | -63.6 | 92.0      | -47.7 | k -ft |
| C = | 149.8            | -40.3 | 112.3     | -30.2 | k -ft |
| D = |                  |       | 0.0       | 0.0   | k -ft |
| E = |                  |       | 0.0       | 0.0   | k -ft |
| F = |                  |       | 0.0       | 0.0   | k -ft |

#### Geometry

Welded or bolted cover plates? = (W/B) **W**

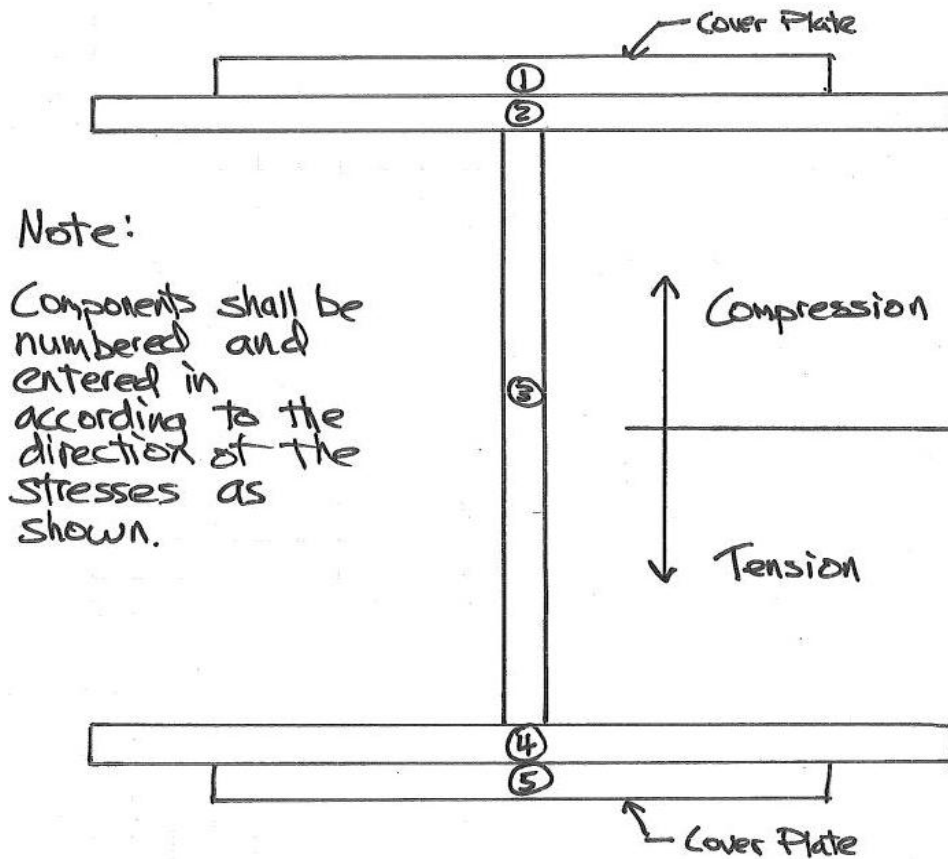
(For bolted cover plates only)

Diameter of rivets/bolts =  $\phi = 0.000$  in  
 Pitch =  $s = 0.000$  in  
 Gage =  $g = 0.000$  in

Bridge # **Br. No. 1432/5950**

|                |                                             |           |           |
|----------------|---------------------------------------------|-----------|-----------|
| Project:       | MaineDOT Ratings                            | Project # | 55005.00  |
| Location:      | Hampden, ME                                 | Sheet:    |           |
| Calculated by: | KZS                                         | Date:     | 4/24/2013 |
| Checked by:    | AMG                                         | Date:     | 4/24/2013 |
| Title:         | Fatigue Calculations - Cover Plate Mid Span |           |           |

### Section Component Labeling



Note:

Spreadsheet is only valid if points of interest have same dimension properties in tension and compression. If not, a separate spreadsheet with the different properties must be created.

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings

Project # 55005.00

Location: Hampden, ME

Sheet:

Calculated by: KZS

Date: 4/24/2013

Checked by: AMG

Date: 4/24/2013

Title: Fatigue Calculations - Cover Plate Mid Span

### Gross Section Properties

| Component No.* | Dimensions & Centroid Distances |        |        |        | Gross Component Properties |                    |                    |
|----------------|---------------------------------|--------|--------|--------|----------------------------|--------------------|--------------------|
|                | w                               | h      | x      | y      | A                          | I <sub>x</sub>     | I <sub>y</sub>     |
|                | (in)                            | (in)   | (in)   | (in)   | (in <sup>2</sup> )         | (in <sup>4</sup> ) | (in <sup>4</sup> ) |
| C              | 1                               | 4.000  | 0.313  | 0.0000 | 1.250                      | 0.010              | 1.667              |
| ↑              | 2                               | 12.000 | 0.875  | 0.0000 | 10.500                     | 0.67               | 126.000            |
| ↓              | 3                               | 0.500  | 22.375 | 0.0000 | 11.188                     | 466.743            | 0.233              |
| ↓              | 4                               | 12.000 | 0.875  | 0.0000 | 10.500                     | 0.670              | 126.000            |
| T              | 5                               | 4.000  | 0.313  | 0.0000 | 1.250                      | 0.010              | 1.667              |
| d = 24.750     |                                 |        |        |        | 34.688                     |                    |                    |

| Component No.*            | A                  | (A)(y)                 | I <sub>x</sub>     | d      | Ad <sup>2</sup>    | I <sub>x</sub> + Ad <sup>2</sup> |
|---------------------------|--------------------|------------------------|--------------------|--------|--------------------|----------------------------------|
|                           | (in <sup>2</sup> ) | (in <sup>3</sup> )     | (in <sup>4</sup> ) | (in)   | (in <sup>4</sup> ) | (in <sup>4</sup> )               |
| 1                         | 1.250              | 30.742                 | 0.010              | 12.219 | 186.622            | 186.632                          |
| 2                         | 10.500             | 252.000                | 0.670              | 11.625 | 1418.977           | 1419.646                         |
| 3                         | 11.188             | 138.445                | 466.743            | 0.000  | 0.000              | 466.743                          |
| 4                         | 10.500             | 7.875                  | 0.670              | 11.625 | 1418.977           | 1419.646                         |
| 5                         | 1.250              | 0.195                  | 0.010              | 12.219 | 186.622            | 186.632                          |
| Y <sub>x-x</sub> = 12.375 |                    | I <sub>xx</sub> = 3679 |                    |        |                    |                                  |

\* See diagram for definition of components.

#### Definition of Variables

w = component width ( x direction)

h = component height (y direction)

x = horizontal distance from center of web to component center

y = vertical distance from bottom of entire section to component center

A = component area  $A = wh$

I<sub>x</sub> = moment of inertia about component x-x axis

$$I_x = \frac{1}{12} w h^3$$

$$I_y = \frac{1}{12} h w^3$$

I<sub>y</sub> = moment of inertia about component y-y axis

#### Definition of Variables

$$Y_{x-x} = \text{x-x centroidal axis measured from bottom of section, in} \quad Y_{x-x} = \frac{\sum (Ay)}{\sum A}$$

$$d = \text{distance between member x-x centroidal axis and the center of the component} \quad d = |Y_{x-x} - y|$$

$$I_{xx} = \text{gross moment of inertia of the section about x-x axis, in}^4 \quad I_{xx} = \sum (I_x + Ad^2)$$

#### Gross Top Section Modulus

S<sub>top gross</sub> = gross section modulus for compression (top)

$$S_{top\_gross} = \frac{I_{xx}}{d_{tot} - Y_{x-x}}$$

$$S_{top\_gross} = 297 \text{ in}^3$$

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings

Project # 55005.00

Location: Hampden, ME

Sheet:

Calculated by: KZS

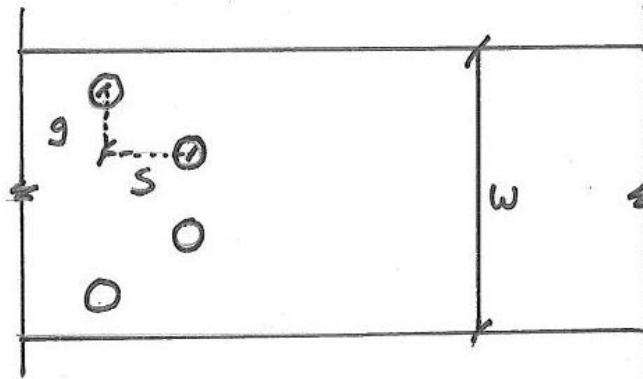
Date: 4/24/2013

Checked by: AMG

Date: 4/24/2013

Title: Fatigue Calculations - Cover Plate Mid Span

### Tension Net Width



#### Effective Hole Diameter

$$d = \frac{1}{16}'' + \phi_{\text{rivet or bolt}}$$

$$d = \boxed{\text{N/A}} \text{ in}$$

#### Consider Straight Line Through One Row of Bolts

$$w_n = w - 2d$$

|             |                                  |
|-------------|----------------------------------|
| Flange      | $w_{n1} = \boxed{\text{N/A}}$ in |
| Cover Plate | $w_{n1} = \boxed{\text{N/A}}$ in |

#### Consider line through staggered bolt holes

$$w_n = w - 4d + 2 \frac{s^2}{4g}$$

|             |                                  |
|-------------|----------------------------------|
| Flange      | $w_{n2} = \boxed{\text{N/A}}$ in |
| Cover Plate | $w_{n2} = \boxed{\text{N/A}}$ in |

#### Use minimum value for net width

|             |                           |
|-------------|---------------------------|
| Flange      | $w_n = \boxed{12.000}$ in |
| Cover Plate | $w_n = \boxed{4.000}$ in  |

Note: This sheet valid only for bolted cover plates.

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Mid Span

### Gross Section Properties

#### Gross Section Properties About Y-Y Axis (for the area in compression only)

$y_c$  = depth of section in compression, measured from top of section:  $y_c = d_{tot} - Y_{x-x} = 12.375$  in

| Component No.*    | A<br>(in <sup>2</sup> ) | (A)(x)<br>(in <sup>3</sup> ) | $h_c$<br>(in)       | $A_c$<br>(in <sup>2</sup> ) | d<br>(in)             | $A_c d^2$<br>(in <sup>4</sup> ) | $I_{y_c}$<br>(in <sup>4</sup> ) | $I_{y_c} + A_c d^2$<br>(in <sup>4</sup> ) |
|-------------------|-------------------------|------------------------------|---------------------|-----------------------------|-----------------------|---------------------------------|---------------------------------|-------------------------------------------|
| 1                 | 1.250                   | 0.000                        | 0.3125              | 1.250                       | 0.000                 | 0.000                           | 1.667                           | 1.667                                     |
| 2                 | 10.500                  | 0.000                        | 0.8750              | 10.500                      | 0.000                 | 0.000                           | 126.000                         | 126.000                                   |
| 3                 | 11.188                  | 0.000                        | 11.1875             | 5.594                       | 0.000                 | 0.000                           | 0.117                           | 0.117                                     |
| 4                 | 10.500                  | 0.000                        | 0.0000              | 0.000                       | 0.000                 | 0.000                           | 0.000                           | 0.000                                     |
| 5                 | 1.250                   | 0.000                        | 0.0000              | 0.000                       | 0.000                 | 0.000                           | 0.000                           | 0.000                                     |
| $X_{y-y} = 0.000$ |                         |                              | $A_{c\_tot} = 17.3$ |                             | $I_{yy\_c} = 127.783$ |                                 |                                 |                                           |

| Component No.* | Dimensions & Centroid Distances |        |       |        |
|----------------|---------------------------------|--------|-------|--------|
|                | $w_n$                           | $h_n$  | x     | y      |
|                | (in)                            | (in)   | (in)  | (in)   |
| 1              | 4.000                           | 0.313  | 0.000 | 24.594 |
| 2              | 12.000                          | 0.875  | 0.000 | 24.000 |
| 3              | 0.500                           | 22.375 | 0.000 | 12.375 |
| 4              | 12.000                          | 0.875  | 0.000 | 0.750  |
| 5              | 4.000                           | 0.313  | 0.000 | 0.156  |

#### Definition of Variables

$w_n$  = net width  
 $h_n$  = net height  
 x = horizontal distance from center of web to component center  
 y = vertical distance from bottom of entire section to component center

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Mid Span

### Gross Section Properties

| Component No. * | Net Member Properties |                    |                    |                    |        |                    |                    |
|-----------------|-----------------------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|
|                 | $A_n$                 | $(A_n)(y)$         | $I_{xn}$           | $I_{yn}$           | $d$    | $A_n d^2$          | $I_{xn} + A_n d^2$ |
|                 | (in <sup>2</sup> )    | (in <sup>3</sup> ) | (in <sup>4</sup> ) | (in <sup>4</sup> ) | (in)   | (in <sup>4</sup> ) | (in <sup>4</sup> ) |
| 1               | 1.250                 | 30.742             | 0.010              | 1.667              | 12.219 | 186.622            | 186.632            |
| 2               | 10.500                | 252.000            | 0.670              | 126.000            | 11.625 | 1418.977           | 1419.646           |
| 3               | 11.188                | 138.445            | 466.743            | 0.233              | 0.000  | 0.000              | 466.743            |
| 4               | 10.500                | 7.875              | 0.670              | 126.000            | 11.625 | 1418.977           | 1419.646           |
| 5               | 1.250                 | 0.195              | 0.010              | 1.667              | 12.219 | 186.622            | 186.632            |
| $Y_{x-xn} =$    |                       | 12.375             |                    |                    |        |                    |                    |
|                 |                       |                    | $I_{xxn} =$        |                    |        |                    |                    |
|                 |                       |                    | 3679               |                    |        |                    |                    |

#### Definition of Variables

$I_{xn}$  = net moment of inertia about component x-x axis

$$I_{xn} = \frac{1}{12} w_n h_n^3$$

$I_{yn}$  = net moment of inertia about component y-y axis

$$I_{yn} = \frac{1}{12} h_n w_n^3$$

$Y_{x-xn}$  = x-x centroidal axis measured from bottom of the net section, in

$$Y_{x-xn} = \frac{\sum (A_n y)}{\sum A_n}$$

$I_{xxn}$  = net moment of inertia of the section about x-x axis, in<sup>4</sup>

$$I_{xxn} = \sum (I_{xn} + A_n d^2)$$

#### Net bottom Section Modulus

$S_{bot\_net}$  = net section modulus for tension (bottom)

$$S_{bot\_net} = \frac{I_{xxn}}{Y_{x-xn}}$$

$$S_{bot\_net} = 297 \text{ in}^3$$

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Mid Span

### Fatigue Stresses

#### Moments

|       |     |     |      |
|-------|-----|-----|------|
| POI 1 | 121 | -26 | ft-k |
| POI 2 | 92  | -48 | ft-k |
| POI 3 | 112 | -30 | ft-k |
| POI 4 | 0   | 0   | ft-k |
| POI 5 | 0   | 0   | ft-k |
| POI 6 | 0   | 0   | ft-k |

#### Section Properties

|                                              |     |                 |
|----------------------------------------------|-----|-----------------|
| Top Flange Section Modulus, gross section =  | 297 | in <sup>3</sup> |
| Bottom Flange Section Modulus, net section = | 297 | in <sup>3</sup> |

#### Actual Stresses

|       |       |        |     |
|-------|-------|--------|-----|
| POI 1 | 4.883 | -1.036 | ksi |
| POI 2 | 3.714 | -1.925 | ksi |
| POI 3 | 4.533 | -1.221 | ksi |
| POI 4 | 0.000 | 0.000  | ksi |
| POI 5 | 0.000 | 0.000  | ksi |
| POI 6 | 0.000 | 0.000  | ksi |

$$\Delta f = \frac{M}{S}$$

#### Effective Stress Range

$$(\Delta f)_{eff} = R_s \Delta f \quad R_s = 1$$

where:

$$R_s = R_{sa} R_{st}$$

|       |                                 |       |     |
|-------|---------------------------------|-------|-----|
| POI 1 | ( $\Delta f$ ) <sub>eff</sub> = | 5.919 | ksi |
| POI 2 | ( $\Delta f$ ) <sub>eff</sub> = | 5.639 | ksi |
| POI 3 | ( $\Delta f$ ) <sub>eff</sub> = | 5.754 | ksi |
| POI 4 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |
| POI 5 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |
| POI 6 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Mid Span

### Fatigue Life

#### Check Infinite-Life

If  $(\Delta f)_{\max} \leq (\Delta F)_{TH}$  where:  $(\Delta f)_{\max} = 2.0(\Delta f)_{\text{eff}}$   
 $(\Delta F)_{TH} = (\text{From Table 6.6.1.2.5-3, Ref b})$   
 Then  $Y = \infty$

|   | $(\Delta f)_{\max}$ |   | $(\Delta F)_{TH}$ |              | RF    |
|---|---------------------|---|-------------------|--------------|-------|
| 1 | 11.839              | > | 2.6               | NOT INFINITE | 0.220 |
| 2 | 11.279              | > | 2.6               | NOT INFINITE | 0.231 |
| 3 | 11.507              | > | 2.6               | NOT INFINITE | 0.226 |
| 4 | 0.000               | < | 2.6               | N/A          |       |
| 5 | 0.000               | < | 2.6               | N/A          |       |
| 6 | 0.000               | < | 2.6               | N/A          |       |

#### Calculate Remaining Fatigue Life for Non-Infinite Points

$$Y = \frac{R_R A}{365n(ADTT)_{SL} [(\Delta f)_{\text{eff}}]^B}$$

AASHTO MBE Table 7.2.5.2-1

| Detail Category | Evaluation Life | Minimum Life | Mean Life |
|-----------------|-----------------|--------------|-----------|
| A               | 1.7             | 1.0          | 2.8       |
| B               | 1.4             | 1.0          | 2.0       |
| B'              | 1.5             | 1.0          | 2.4       |
| C               | 1.2             | 1.0          | 1.3       |
| C'              | 1.2             | 1.0          | 1.3       |
| D               | 1.3             | 1.0          | 1.6       |
| E               | 1.3             | 1.0          | 1.6       |
| E'              | 1.6             | 1.0          | 2.5       |

|   | $R_R$ | A         | Y | Years Remaining |       |
|---|-------|-----------|---|-----------------|-------|
| 1 | 1.6   | 390000000 | 2 | -50             | years |
| 2 | 1.6   | 390000000 | 3 | -49             | years |
| 3 | 1.6   | 390000000 | 2 | -50             | years |
| 4 | 1.6   | 390000000 |   |                 | years |
| 5 | 1.6   | 390000000 |   |                 | years |
| 6 | 1.6   | 390000000 |   |                 | years |

Controlling = -50 years



Bridge # **Br. No. 1432/5950**  
**I-95 over Souadabscook**

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Pier

### Fatigue Rating Input Values

#### Designations

= input value

= result

#### References

a = AASHTO Manual for Bridge Evaluation, 2011 2nd Edition  
 b = AASHTO LRFD Bridge Design Guide, 2012

#### Inputs

Partial load factor =  $R_{sa} = 1$

a 7.2.2.1.1-2 Use 0.95 if using refined method of analysis  
 a 7.2.2.1.1-3 Else, use 1

Truck-weight partial load factor =  $R_{st} = 1$

a 7.2.2.1.1-4 Use 0.95 if truck weight estimate through weight-in-motion study  
 a 7.2.2.1.1-5 Else, use 1

Detail Category =  $A = E'$

a 7.2.5.2 Number of stress-range cycles per truck =  $n = 2$   
 This is assumed for continuous, near support, span  $\leq 40'$

b 3.6.1.4.2 Average number of trucks per day in single lane  $(ADTT)_{SL} = 1877$

Year built = **1961**

#### Loading

Description of Point of Interest

|                |
|----------------|
| Span 1 - 37.5' |
| Span 2 - 2.5'  |
|                |
|                |
|                |
|                |

\*0.75 Factor

|     | Live Load Moment |        | *Factored |       |       |
|-----|------------------|--------|-----------|-------|-------|
|     | Max              | Min    | Max       | Min   |       |
| A = | 21.4             | -128.3 | 16.1      | -96.3 | k -ft |
| B = | 17.8             | -126.9 | 13.3      | -95.2 | k -ft |
| C = |                  |        | 0.0       | 0.0   | k -ft |
| D = |                  |        | 0.0       | 0.0   | k -ft |
| E = |                  |        | 0.0       | 0.0   | k -ft |
| F = |                  |        | 0.0       | 0.0   | k -ft |

#### Geometry

Welded or bolted cover plates? = (W/B) **W**

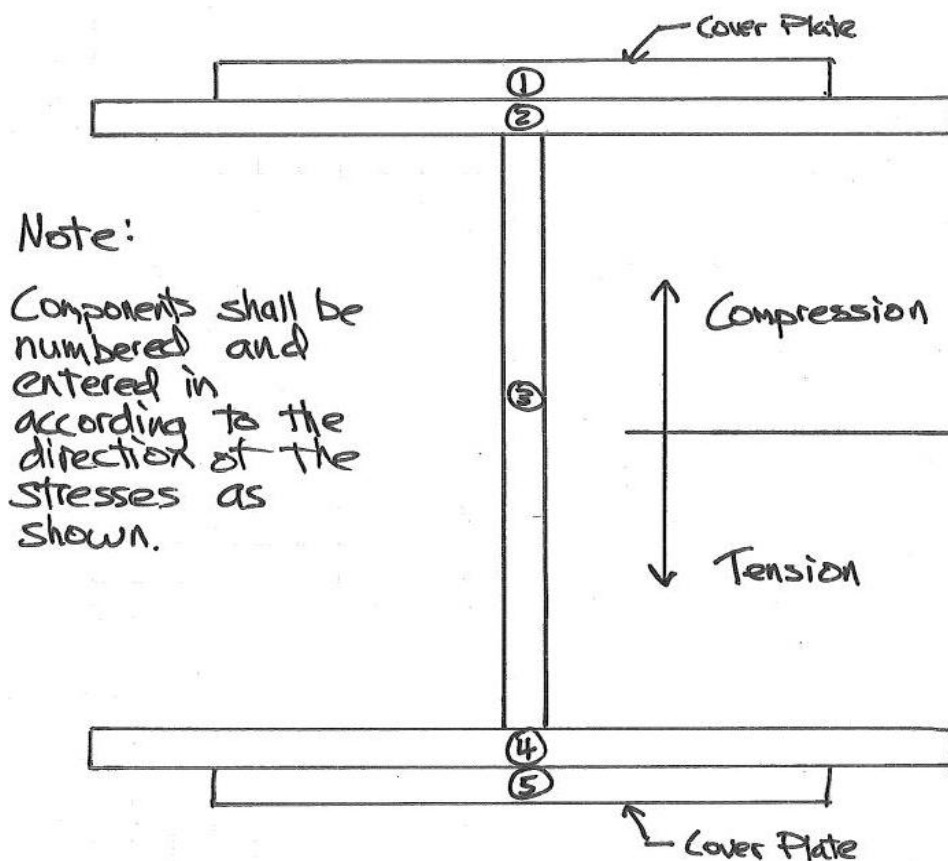
(For bolted cover plates only)

Diameter of rivets/bolts =  $\phi = 0.000$  in  
 Pitch =  $s = 0.000$  in  
 Gage =  $g = 0.000$  in

Bridge # **Br. No. 1432/5950**

|                |                                         |           |           |
|----------------|-----------------------------------------|-----------|-----------|
| Project:       | MaineDOT Ratings                        | Project # | 55005.00  |
| Location:      | Hampden, ME                             | Sheet:    |           |
| Calculated by: | KZS                                     | Date:     | 4/24/2013 |
| Checked by:    | AMG                                     | Date:     | 4/24/2013 |
| Title:         | Fatigue Calculations - Cover Plate Pier |           |           |

### Section Component Labeling



Note:

Spreadsheet is only valid if points of interest have same dimension properties in tension and compression. If not, a separate spreadsheet with the different properties must be created.

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings

Project # 55005.00

Location: Hampden, ME

Sheet:

Calculated by: KZS

Date: 4/24/2013

Checked by: AMG

Date: 4/24/2013

Title: Fatigue Calculations - Cover Plate Pier

### Gross Section Properties

| Component No.* | Dimensions & Centroid Distances |        |        |        | Gross Component Properties |                    |                    |
|----------------|---------------------------------|--------|--------|--------|----------------------------|--------------------|--------------------|
|                | w                               | h      | x      | y      | A                          | I <sub>x</sub>     | I <sub>y</sub>     |
|                | (in)                            | (in)   | (in)   | (in)   | (in <sup>2</sup> )         | (in <sup>4</sup> ) | (in <sup>4</sup> ) |
| C              | 1                               | 10.000 | 0.375  | 0.0000 | 3.750                      | 0.044              | 31.250             |
| ↑              | 2                               | 12.000 | 0.875  | 0.0000 | 10.500                     | 0.67               | 126.000            |
| ↓              | 3                               | 0.500  | 22.375 | 0.0000 | 11.188                     | 466.743            | 0.233              |
| ↓              | 4                               | 12.000 | 0.875  | 0.0000 | 10.500                     | 0.670              | 126.000            |
| T              | 5                               | 10.000 | 0.375  | 0.0000 | 3.750                      | 0.044              | 31.250             |
| d = 24.875     |                                 |        |        |        | 39.688                     |                    |                    |

| Component No.*            | A                  | (A)(y)                 | I <sub>x</sub>     | d      | Ad <sup>2</sup>    | I <sub>x</sub> + Ad <sup>2</sup> |
|---------------------------|--------------------|------------------------|--------------------|--------|--------------------|----------------------------------|
|                           | (in <sup>2</sup> ) | (in <sup>3</sup> )     | (in <sup>4</sup> ) | (in)   | (in <sup>4</sup> ) | (in <sup>4</sup> )               |
| 1                         | 3.750              | 92.578                 | 0.044              | 12.250 | 562.734            | 562.778                          |
| 2                         | 10.500             | 252.656                | 0.670              | 11.625 | 1418.977           | 1419.646                         |
| 3                         | 11.188             | 139.145                | 466.743            | 0.000  | 0.000              | 466.743                          |
| 4                         | 10.500             | 8.531                  | 0.670              | 11.625 | 1418.977           | 1419.646                         |
| 5                         | 3.750              | 0.703                  | 0.044              | 12.250 | 562.734            | 562.778                          |
| Y <sub>x-x</sub> = 12.438 |                    | I <sub>xx</sub> = 4432 |                    |        |                    |                                  |

\* See diagram for definition of components.

#### Definition of Variables

w = component width ( x direction)

h = component height (y direction)

x = horizontal distance from center of web to component center

y = vertical distance from bottom of entire section to component center

A = component area  $A = wh$

I<sub>x</sub> = moment of inertia about component x-x axis

$$I_x = \frac{1}{12} w h^3$$

$$I_y = \frac{1}{12} h w^3$$

I<sub>y</sub> = moment of inertia about component y-y axis

#### Definition of Variables

$$Y_{x-x} = \text{x-x centroidal axis measured from bottom of section, in} \quad Y_{x-x} = \frac{\sum (Ay)}{\sum A}$$

$$d = \text{distance between member x-x centroidal axis and the center of the component} \quad d = |Y_{x-x} - y|$$

$$I_{xx} = \text{gross moment of inertia of the section about x-x axis, in}^4 \quad I_{xx} = \sum (I_x + Ad^2)$$

#### Gross Top Section Modulus

S<sub>top gross</sub> = gross section modulus for compression (top)

$$S_{top\_gross} = \frac{I_{xx}}{d_{tot} - Y_{x-x}}$$

$$S_{top\_gross} = 356 \text{ in}^3$$

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings

Project # 55005.00

Location: Hampden, ME

Sheet:

Calculated by: KZS

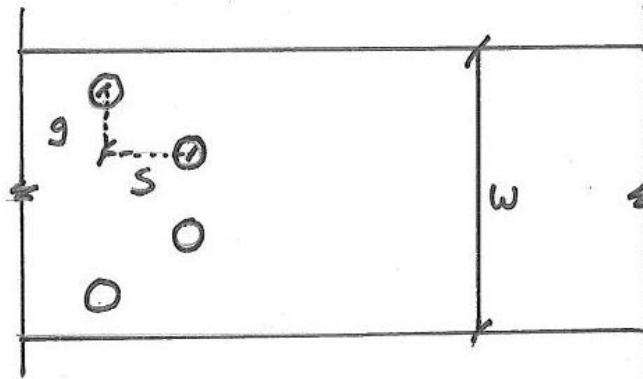
Date: 4/24/2013

Checked by: AMG

Date: 4/24/2013

Title: Fatigue Calculations - Cover Plate Pier

### Tension Net Width



#### Effective Hole Diameter

$$d = \frac{1}{16}'' + \phi_{\text{rivet or bolt}}$$

$$d = \boxed{\text{N/A}} \text{ in}$$

#### Consider Straight Line Through One Row of Bolts

$$w_n = w - 2d$$

|             |                                  |
|-------------|----------------------------------|
| Flange      | $w_{n1} = \boxed{\text{N/A}}$ in |
| Cover Plate | $w_{n1} = \boxed{\text{N/A}}$ in |

#### Consider line through staggered bolt holes

$$w_n = w - 4d + 2 \frac{s^2}{4g}$$

|             |                                  |
|-------------|----------------------------------|
| Flange      | $w_{n2} = \boxed{\text{N/A}}$ in |
| Cover Plate | $w_{n2} = \boxed{\text{N/A}}$ in |

#### Use minimum value for net width

|             |                           |
|-------------|---------------------------|
| Flange      | $w_n = \boxed{12.000}$ in |
| Cover Plate | $w_n = \boxed{10.000}$ in |

Note: This sheet valid only for bolted cover plates.

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Pier

### Gross Section Properties

#### Gross Section Properties About Y-Y Axis (for the area in compression only)

$y_c$  = depth of section in compression, measured from top of section:  $y_c = d_{tot} - Y_{x-x} = 12.438$  in

| Component No.*    | A<br>(in <sup>2</sup> ) | (A)(x)<br>(in <sup>3</sup> ) | $h_c$<br>(in)       | $A_c$<br>(in <sup>2</sup> ) | d<br>(in)             | $A_c d^2$<br>(in <sup>4</sup> ) | $I_{y_c}$<br>(in <sup>4</sup> ) | $I_{y_c} + A_c d^2$<br>(in <sup>4</sup> ) |
|-------------------|-------------------------|------------------------------|---------------------|-----------------------------|-----------------------|---------------------------------|---------------------------------|-------------------------------------------|
| 1                 | 3.750                   | 0.000                        | 0.3750              | 3.750                       | 0.000                 | 0.000                           | 31.250                          | 31.250                                    |
| 2                 | 10.500                  | 0.000                        | 0.8750              | 10.500                      | 0.000                 | 0.000                           | 126.000                         | 126.000                                   |
| 3                 | 11.188                  | 0.000                        | 11.1875             | 5.594                       | 0.000                 | 0.000                           | 0.117                           | 0.117                                     |
| 4                 | 10.500                  | 0.000                        | 0.0000              | 0.000                       | 0.000                 | 0.000                           | 0.000                           | 0.000                                     |
| 5                 | 3.750                   | 0.000                        | 0.0000              | 0.000                       | 0.000                 | 0.000                           | 0.000                           | 0.000                                     |
| $X_{y-y} = 0.000$ |                         |                              | $A_{c\_tot} = 19.8$ |                             | $I_{yy\_c} = 157.367$ |                                 |                                 |                                           |

| Component No.* | Dimensions & Centroid Distances |        |       |        |
|----------------|---------------------------------|--------|-------|--------|
|                | $w_n$                           | $h_n$  | x     | y      |
|                | (in)                            | (in)   | (in)  | (in)   |
| 1              | 10.000                          | 0.375  | 0.000 | 24.688 |
| 2              | 12.000                          | 0.875  | 0.000 | 24.063 |
| 3              | 0.500                           | 22.375 | 0.000 | 12.438 |
| 4              | 12.000                          | 0.875  | 0.000 | 0.813  |
| 5              | 10.000                          | 0.375  | 0.000 | 0.188  |

#### Definition of Variables

$w_n$  = net width  
 $h_n$  = net height  
 x = horizontal distance from center of web to component center  
 y = vertical distance from bottom of entire section to component center

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Pier

### Gross Section Properties

| Component<br>No.*          | Net Member Properties |                      |                         |                    |        |                               |                                                 |
|----------------------------|-----------------------|----------------------|-------------------------|--------------------|--------|-------------------------------|-------------------------------------------------|
|                            | A <sub>n</sub>        | (A <sub>n</sub> )(y) | I <sub>xn</sub>         | I <sub>yn</sub>    | d      | A <sub>n</sub> d <sup>2</sup> | I <sub>xn</sub> + A <sub>n</sub> d <sup>2</sup> |
|                            | (in <sup>2</sup> )    | (in <sup>3</sup> )   | (in <sup>4</sup> )      | (in <sup>4</sup> ) | (in)   | (in <sup>4</sup> )            | (in <sup>4</sup> )                              |
| 1                          | 3.750                 | 92.578               | 0.044                   | 31.250             | 12.250 | 562.734                       | 562.778                                         |
| 2                          | 10.500                | 252.656              | 0.670                   | 126.000            | 11.625 | 1418.977                      | 1419.646                                        |
| 3                          | 11.188                | 139.145              | 466.743                 | 0.233              | 0.000  | 0.000                         | 466.743                                         |
| 4                          | 10.500                | 8.531                | 0.670                   | 126.000            | 11.625 | 1418.977                      | 1419.646                                        |
| 5                          | 3.750                 | 0.703                | 0.044                   | 31.250             | 12.250 | 562.734                       | 562.778                                         |
| Y <sub>x-xn</sub> = 12.438 |                       |                      | I <sub>xxn</sub> = 4432 |                    |        |                               |                                                 |

#### Definition of Variables

$I_{xn}$  = net moment of inertia about component x-x axis

$$I_{xn} = \frac{1}{12} w_n h_n^3$$

$I_{yn}$  = net moment of inertia about component y-y axis

$$I_{yn} = \frac{1}{12} h_n w_n^3$$

$Y_{x-xn}$  = x-x centroidal axis measured from bottom of the net section, in

$$Y_{x-xn} = \frac{\sum (A_n y)}{\sum A_n}$$

$I_{xxn}$  = net moment of inertia of the section about x-x axis, in<sup>4</sup>

$$I_{xxn} = \sum (I_{xn} + A_n d^2)$$

#### Net bottom Section Modulus

$S_{bot\_net}$  = net section modulus for tension (bottom)

$$S_{bot\_net} = \frac{I_{xxn}}{Y_{x-xn}}$$

$$S_{bot\_net} = 356 \text{ in}^3$$

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Pier

### Fatigue Stresses

#### Moments

|       |    |     |      |
|-------|----|-----|------|
| POI 1 | 16 | -96 | ft-k |
| POI 2 | 13 | -95 | ft-k |
| POI 3 | 0  | 0   | ft-k |
| POI 4 | 0  | 0   | ft-k |
| POI 5 | 0  | 0   | ft-k |
| POI 6 | 0  | 0   | ft-k |

#### Section Properties

|                                              |     |                 |
|----------------------------------------------|-----|-----------------|
| Top Flange Section Modulus, gross section =  | 356 | in <sup>3</sup> |
| Bottom Flange Section Modulus, net section = | 356 | in <sup>3</sup> |

#### Actual Stresses

|       |       |        |     |
|-------|-------|--------|-----|
| POI 1 | 0.541 | -3.242 | ksi |
| POI 2 | 0.448 | -3.206 | ksi |
| POI 3 | 0.000 | 0.000  | ksi |
| POI 4 | 0.000 | 0.000  | ksi |
| POI 5 | 0.000 | 0.000  | ksi |
| POI 6 | 0.000 | 0.000  | ksi |

$$\Delta f = \frac{M}{S}$$

#### Effective Stress Range

$$(\Delta f)_{eff} = R_s \Delta f \quad R_s = 1$$

where:

$$R_s = R_{sa} R_{st}$$

|       |                                 |       |     |
|-------|---------------------------------|-------|-----|
| POI 1 | ( $\Delta f$ ) <sub>eff</sub> = | 3.783 | ksi |
| POI 2 | ( $\Delta f$ ) <sub>eff</sub> = | 3.654 | ksi |
| POI 3 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |
| POI 4 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |
| POI 5 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |
| POI 6 | ( $\Delta f$ ) <sub>eff</sub> = | 0.000 | ksi |

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate Pier

### Fatigue Life

#### Check Infinite-Life

If  $(\Delta f)_{\max} \leq (\Delta F)_{TH}$  where:  $(\Delta f)_{\max} = 2.0(\Delta f)_{\text{eff}}$   
 $(\Delta F)_{TH} = (\text{From Table 6.6.1.2.5-3, Ref b})$   
 Then  $Y = \infty$

|   | $(\Delta f)_{\max}$ |   | $(\Delta F)_{TH}$ |              | RF    |
|---|---------------------|---|-------------------|--------------|-------|
| 1 | 7.565               | > | 2.6               | NOT INFINITE | 0.344 |
| 2 | 7.308               | > | 2.6               | NOT INFINITE | 0.356 |
| 3 | 0.000               | < | 2.6               | N/A          |       |
| 4 | 0.000               | < | 2.6               | N/A          |       |
| 5 | 0.000               | < | 2.6               | N/A          |       |
| 6 | 0.000               | < | 2.6               | N/A          |       |

#### Calculate Remaining Fatigue Life for Non-Infinite Points

$$Y = \frac{R_R A}{365n(ADTT)_{SL} [(\Delta f)_{\text{eff}}]^B}$$

AASHTO MBE Table 7.2.5.2-1

| Detail Category | Evaluation Life | Minimum Life | Mean Life |
|-----------------|-----------------|--------------|-----------|
| A               | 1.7             | 1.0          | 2.8       |
| B               | 1.4             | 1.0          | 2.0       |
| B'              | 1.5             | 1.0          | 2.4       |
| C               | 1.2             | 1.0          | 1.3       |
| C'              | 1.2             | 1.0          | 1.3       |
| D               | 1.3             | 1.0          | 1.6       |
| E               | 1.3             | 1.0          | 1.6       |
| E'              | 1.6             | 1.0          | 2.5       |

|   | $R_R$ | A         | Y | Years Remaining |       |
|---|-------|-----------|---|-----------------|-------|
| 1 | 1.6   | 390000000 | 8 | -44             | years |
| 2 | 1.6   | 390000000 | 9 | -43             | years |
| 3 | 1.6   | 390000000 |   |                 | years |
| 4 | 1.6   | 390000000 |   |                 | years |
| 5 | 1.6   | 390000000 |   |                 | years |
| 6 | 1.6   | 390000000 |   |                 | years |

Controlling = -44 years



Bridge # **Br. No. 1432/5950**  
**I-95 over Souadabscook**

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Fatigue Rating Input Values

#### Designations

= input value

= result

#### References

a = AASHTO Manual for Bridge Evaluation, 2011 2nd Edition  
 b = AASHTO LRFD Bridge Design Guide, 2012

#### Inputs

Partial load factor =  $R_{sa} = 1$

a 7.2.2.1.1-2 Use 0.95 if using refined method of analysis  
 a 7.2.2.1.1-3 Else, use 1

Truck-weight partial load factor =  $R_{st} = 1$

a 7.2.2.1.1-4 Use 0.95 if truck weight estimate through weight-in-motion study  
 a 7.2.2.1.1-5 Else, use 1

Detail Category =  $A = E'$

a 7.2.5.2 Number of stress-range cycles per truck =  $n = 2$   
 This is assumed for continuous, near support, span  $\leq 40'$

b 3.6.1.4.2 Average number of trucks per day in single lane  $(ADTT)_{SL} = 1877$

Year built =  $1961$

#### Loading

Description of Point of Interest

|                |
|----------------|
| Span 1 - 35.5' |
| Span 2 - 4.5'  |
|                |
|                |
|                |
|                |

\*0.75 Factor

|     | Live Load Moment |       | *Factored |       |       |
|-----|------------------|-------|-----------|-------|-------|
|     | Max              | Min   | Max       | Min   |       |
| A = | 32.5             | -86.8 | 24.4      | -65.1 | k -ft |
| B = | 13.7             | -98.8 | 10.3      | -74.1 | k -ft |
| C = |                  |       | 0.0       | 0.0   | k -ft |
| D = |                  |       | 0.0       | 0.0   | k -ft |
| E = |                  |       | 0.0       | 0.0   | k -ft |
| F = |                  |       | 0.0       | 0.0   | k -ft |

Geometry

Welded or bolted cover plates? = (W/B) **W**

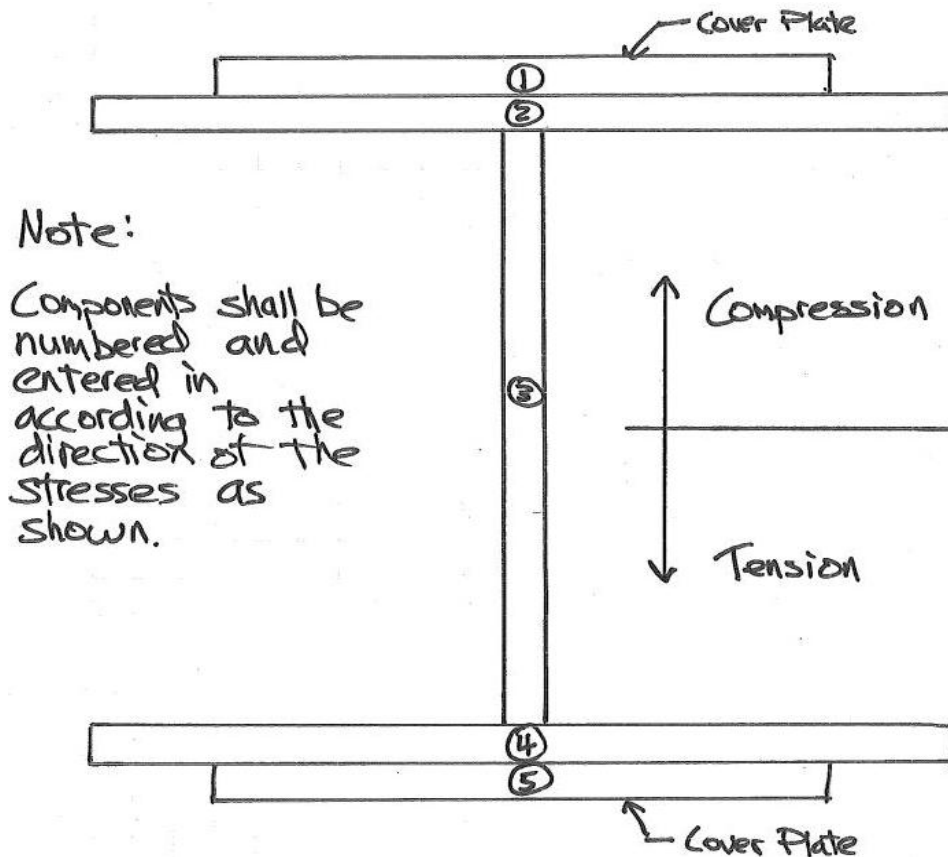
(For bolted cover plates only)

Diameter of rivets/bolts =  $\phi = 0.000$  in  
 Pitch =  $s = 0.000$  in  
 Gage =  $g = 0.000$  in

Bridge # **Br. No. 1432/5950**

|                |                                                        |           |           |
|----------------|--------------------------------------------------------|-----------|-----------|
| Project:       | MaineDOT Ratings                                       | Project # | 55005.00  |
| Location:      | Hampden, ME                                            | Sheet:    |           |
| Calculated by: | KZS                                                    | Date:     | 4/24/2013 |
| Checked by:    | AMG                                                    | Date:     | 4/24/2013 |
| Title:         | Fatigue Calculations - Cover Plate @ Pier end of taper |           |           |

### Section Component Labeling



Note:

Spreadsheet is only valid if points of interest have same dimension properties in tension and compression. If not, a separate spreadsheet with the different properties must be created.

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Gross Section Properties

| Component No.* | Dimensions & Centroid Distances |        |        |         | Gross Component Properties |                    |                    |
|----------------|---------------------------------|--------|--------|---------|----------------------------|--------------------|--------------------|
|                | w                               | h      | x      | y       | A                          | I <sub>x</sub>     | I <sub>y</sub>     |
|                | (in)                            | (in)   | (in)   | (in)    | (in <sup>2</sup> )         | (in <sup>4</sup> ) | (in <sup>4</sup> ) |
| 1              | 4.000                           | 0.375  | 0.0000 | 24.6875 | 1.500                      | 0.018              | 2.000              |
| 2              | 12.000                          | 0.875  | 0.0000 | 24.0625 | 10.500                     | 0.67               | 126.000            |
| 3              | 0.500                           | 22.375 | 0.0000 | 12.4375 | 11.188                     | 466.743            | 0.233              |
| 4              | 12.000                          | 0.875  | 0.0000 | 0.8125  | 10.500                     | 0.670              | 126.000            |
| 5              | 4.000                           | 0.375  | 0.0000 | 0.1875  | 1.500                      | 0.018              | 2.000              |

d = 24.875 35.188

| Component No.* | A                  | (A)(y)             | I <sub>x</sub>     | d      | Ad <sup>2</sup>    | I <sub>x</sub> + Ad <sup>2</sup> |
|----------------|--------------------|--------------------|--------------------|--------|--------------------|----------------------------------|
|                | (in <sup>2</sup> ) | (in <sup>3</sup> ) | (in <sup>4</sup> ) | (in)   | (in <sup>4</sup> ) | (in <sup>4</sup> )               |
| 1              | 1.500              | 37.031             | 0.018              | 12.250 | 225.094            | 225.111                          |
| 2              | 10.500             | 252.656            | 0.670              | 11.625 | 1418.977           | 1419.646                         |
| 3              | 11.188             | 139.145            | 466.743            | 0.000  | 0.000              | 466.743                          |
| 4              | 10.500             | 8.531              | 0.670              | 11.625 | 1418.977           | 1419.646                         |
| 5              | 1.500              | 0.281              | 0.018              | 12.250 | 225.094            | 225.111                          |

Y<sub>x-x</sub> = 12.438 I<sub>xx</sub> = 3756

\* See diagram for definition of components.

#### Definition of Variables

w = component width ( x direction)  
 h = component height (y direction)  
 x = horizontal distance from center of web to component center  
 y = vertical distance from bottom of entire section to component center  
 A = component area  $A = wh$   
 I<sub>x</sub> = moment of inertia about component x-x axis  
 I<sub>y</sub> = moment of inertia about component y-y axis

$$I_x = \frac{1}{12} w h^3 \quad I_y = \frac{1}{12} h w^3$$

#### Definition of Variables

Y<sub>x-x</sub> = x-x centroidal axis measured from bottom of section, in  $Y_{x-x} = \frac{\sum (Ay)}{\sum A}$

d = distance between member x-x centroidal axis and the center of the component  $d = |Y_{x-x} - y|$

I<sub>xx</sub> = gross moment of inertia of the section about x-x axis, in<sup>4</sup>  $I_{xx} = \sum (I_x + Ad^2)$

#### Gross Top Section Modulus

S<sub>top gross</sub> = gross section modulus for compression (top)

$$S_{top\_gross} = \frac{I_{xx}}{d_{tot} - Y_{x-x}}$$

S<sub>top-gross</sub> = 302 in<sup>3</sup>

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings

Project # 55005.00

Location: Hampden, ME

Sheet:

Calculated by: KZS

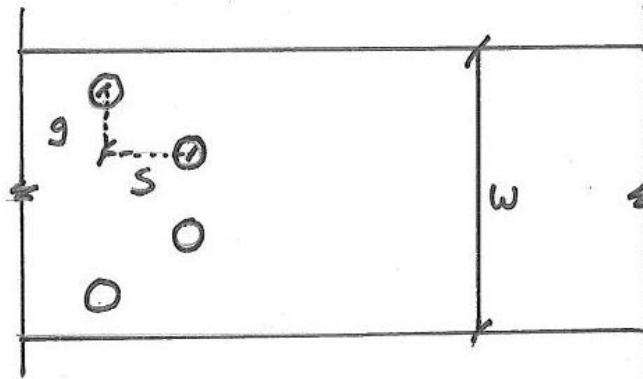
Date: 4/24/2013

Checked by: AMG

Date: 4/24/2013

Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Tension Net Width



#### Effective Hole Diameter

$$d = \frac{1}{16}'' + \phi_{\text{rivet or bolt}}$$

$$d = \boxed{\text{N/A}} \text{ in}$$

#### Consider Straight Line Through One Row of Bolts

$$w_n = w - 2d$$

|             |                                  |
|-------------|----------------------------------|
| Flange      | $w_{n1} = \boxed{\text{N/A}}$ in |
| Cover Plate | $w_{n1} = \boxed{\text{N/A}}$ in |

#### Consider line through staggered bolt holes

$$w_n = w - 4d + 2 \frac{s^2}{4g}$$

|             |                                  |
|-------------|----------------------------------|
| Flange      | $w_{n2} = \boxed{\text{N/A}}$ in |
| Cover Plate | $w_{n2} = \boxed{\text{N/A}}$ in |

#### Use minimum value for net width

|             |                           |
|-------------|---------------------------|
| Flange      | $w_n = \boxed{12.000}$ in |
| Cover Plate | $w_n = \boxed{4.000}$ in  |

Note: This sheet valid only for bolted cover plates.

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Gross Section Properties

#### Gross Section Properties About Y-Y Axis (for the area in compression only)

$y_c$  = depth of section in compression, measured from top of section:  $y_c = d_{tot} - Y_{x-x} = 12.438$  in

| Component No.*    | A<br>(in <sup>2</sup> ) | (A)(x)<br>(in <sup>3</sup> ) | $h_c$<br>(in)       | $A_c$<br>(in <sup>2</sup> ) | d<br>(in)             | $A_c d^2$<br>(in <sup>4</sup> ) | $I_{y_c}$<br>(in <sup>4</sup> ) | $I_{y_c} + A_c d^2$<br>(in <sup>4</sup> ) |
|-------------------|-------------------------|------------------------------|---------------------|-----------------------------|-----------------------|---------------------------------|---------------------------------|-------------------------------------------|
| 1                 | 1.500                   | 0.000                        | 0.3750              | 1.500                       | 0.000                 | 0.000                           | 2.000                           | 2.000                                     |
| 2                 | 10.500                  | 0.000                        | 0.8750              | 10.500                      | 0.000                 | 0.000                           | 126.000                         | 126.000                                   |
| 3                 | 11.188                  | 0.000                        | 11.1875             | 5.594                       | 0.000                 | 0.000                           | 0.117                           | 0.117                                     |
| 4                 | 10.500                  | 0.000                        | 0.0000              | 0.000                       | 0.000                 | 0.000                           | 0.000                           | 0.000                                     |
| 5                 | 1.500                   | 0.000                        | 0.0000              | 0.000                       | 0.000                 | 0.000                           | 0.000                           | 0.000                                     |
| $X_{y-y} = 0.000$ |                         |                              | $A_{c\_tot} = 17.6$ |                             | $I_{yy\_c} = 128.117$ |                                 |                                 |                                           |

| Component No.* | Dimensions & Centroid Distances |        |       |        |
|----------------|---------------------------------|--------|-------|--------|
|                | $w_n$                           | $h_n$  | x     | y      |
|                | (in)                            | (in)   | (in)  | (in)   |
| 1              | 4.000                           | 0.375  | 0.000 | 24.688 |
| 2              | 12.000                          | 0.875  | 0.000 | 24.063 |
| 3              | 0.500                           | 22.375 | 0.000 | 12.438 |
| 4              | 12.000                          | 0.875  | 0.000 | 0.813  |
| 5              | 4.000                           | 0.375  | 0.000 | 0.188  |

#### Definition of Variables

$w_n$  = net width  
 $h_n$  = net height  
 x = horizontal distance from center of web to component center  
 y = vertical distance from bottom of entire section to component center

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Gross Section Properties

| Component No. * | Net Member Properties |                    |                    |                    |        |                    |                    |
|-----------------|-----------------------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|
|                 | $A_n$                 | $(A_n)(y)$         | $I_{xn}$           | $I_{yn}$           | $d$    | $A_n d^2$          | $I_{xn} + A_n d^2$ |
|                 | (in <sup>2</sup> )    | (in <sup>3</sup> ) | (in <sup>4</sup> ) | (in <sup>4</sup> ) | (in)   | (in <sup>4</sup> ) | (in <sup>4</sup> ) |
| 1               | 1.500                 | 37.031             | 0.018              | 2.000              | 12.250 | 225.094            | 225.111            |
| 2               | 10.500                | 252.656            | 0.670              | 126.000            | 11.625 | 1418.977           | 1419.646           |
| 3               | 11.188                | 139.145            | 466.743            | 0.233              | 0.000  | 0.000              | 466.743            |
| 4               | 10.500                | 8.531              | 0.670              | 126.000            | 11.625 | 1418.977           | 1419.646           |
| 5               | 1.500                 | 0.281              | 0.018              | 2.000              | 12.250 | 225.094            | 225.111            |
| $Y_{x-xn} =$    |                       | 12.438             |                    |                    |        |                    |                    |
|                 |                       |                    | $I_{xxn} =$        |                    |        |                    |                    |
|                 |                       |                    | 3756               |                    |        |                    |                    |

#### Definition of Variables

$I_{xn}$  = net moment of inertia about component x-x axis

$$I_{xn} = \frac{1}{12} w_n h_n^3$$

$I_{yn}$  = net moment of inertia about component y-y axis

$$I_{yn} = \frac{1}{12} h_n w_n^3$$

$Y_{x-xn}$  = x-x centroidal axis measured from bottom of the net section, in

$$Y_{x-xn} = \frac{\sum (A_n y)}{\sum A_n}$$

$I_{xxn}$  = net moment of inertia of the section about x-x axis, in<sup>4</sup>

$$I_{xxn} = \sum (I_{xn} + A_n d^2)$$

#### Net bottom Section Modulus

$S_{bot\_net}$  = net section modulus for tension (bottom)

$$S_{bot\_net} = \frac{I_{xxn}}{Y_{x-xn}}$$

$$S_{bot\_net} = 302 \text{ in}^3$$

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Fatigue Stresses

#### Moments

|       |    |     |      |
|-------|----|-----|------|
| POI 1 | 24 | -65 | ft-k |
| POI 2 | 10 | -74 | ft-k |
| POI 3 | 0  | 0   | ft-k |
| POI 4 | 0  | 0   | ft-k |
| POI 5 | 0  | 0   | ft-k |
| POI 6 | 0  | 0   | ft-k |

#### Section Properties

|                                              |     |                 |
|----------------------------------------------|-----|-----------------|
| Top Flange Section Modulus, gross section =  | 302 | in <sup>3</sup> |
| Bottom Flange Section Modulus, net section = | 302 | in <sup>3</sup> |

#### Actual Stresses

|       |       |        |     |
|-------|-------|--------|-----|
| POI 1 | 0.969 | -2.588 | ksi |
| POI 2 | 0.407 | -2.944 | ksi |
| POI 3 | 0.000 | 0.000  | ksi |
| POI 4 | 0.000 | 0.000  | ksi |
| POI 5 | 0.000 | 0.000  | ksi |
| POI 6 | 0.000 | 0.000  | ksi |

$$\Delta f = \frac{M}{S}$$

#### Effective Stress Range

$$(\Delta f)_{eff} = R_s \Delta f \quad R_s = 1$$

where:

$$R_s = R_{sa} R_{st}$$

|       |                      |       |     |
|-------|----------------------|-------|-----|
| POI 1 | $(\Delta f)_{eff} =$ | 3.556 | ksi |
| POI 2 | $(\Delta f)_{eff} =$ | 3.352 | ksi |
| POI 3 | $(\Delta f)_{eff} =$ | 0.000 | ksi |
| POI 4 | $(\Delta f)_{eff} =$ | 0.000 | ksi |
| POI 5 | $(\Delta f)_{eff} =$ | 0.000 | ksi |
| POI 6 | $(\Delta f)_{eff} =$ | 0.000 | ksi |

Bridge # Br. No. 1432/5950

Project: MaineDOT Ratings Project # 55005.00  
 Location: Hampden, ME Sheet:  
 Calculated by: KZS Date: 4/24/2013  
 Checked by: AMG Date: 4/24/2013  
 Title: Fatigue Calculations - Cover Plate @ Pier end of taper

### Fatigue Life

#### Check Infinite-Life

If  $(\Delta f)_{\max} \leq (\Delta F)_{TH}$  where:  $(\Delta f)_{\max} = 2.0(\Delta f)_{\text{eff}}$   
 $(\Delta F)_{TH} = (\text{From Table 6.6.1.2.5-3, Ref b})$

Then  $Y = \infty$

|   | $(\Delta f)_{\max}$ |   | $(\Delta F)_{TH}$ |              | RF    |
|---|---------------------|---|-------------------|--------------|-------|
| 1 | 7.113               | > | 2.6               | NOT INFINITE | 0.366 |
| 2 | 6.703               | > | 2.6               | NOT INFINITE | 0.388 |
| 3 | 0.000               | < | 2.6               | N/A          |       |
| 4 | 0.000               | < | 2.6               | N/A          |       |
| 5 | 0.000               | < | 2.6               | N/A          |       |
| 6 | 0.000               | < | 2.6               | N/A          |       |

#### Calculate Remaining Fatigue Life for Non-Infinite Points

$$Y = \frac{R_R A}{365n(ADTT)_{SL} [(\Delta f)_{\text{eff}}]^B}$$

AASHTO MBE Table 7.2.5.2-1

| Detail Category | Evaluation Life | Minimum Life | Mean Life |
|-----------------|-----------------|--------------|-----------|
| A               | 1.7             | 1.0          | 2.8       |
| B               | 1.4             | 1.0          | 2.0       |
| B'              | 1.5             | 1.0          | 2.4       |
| C               | 1.2             | 1.0          | 1.3       |
| C'              | 1.2             | 1.0          | 1.3       |
| D               | 1.3             | 1.0          | 1.6       |
| E               | 1.3             | 1.0          | 1.6       |
| E'              | 1.6             | 1.0          | 2.5       |

|   | $R_R$ | A         | Y  | Years Remaining |       |
|---|-------|-----------|----|-----------------|-------|
| 1 | 1.6   | 390000000 | 10 | -42             | years |
| 2 | 1.6   | 390000000 | 12 | -40             | years |
| 3 | 1.6   | 390000000 |    |                 | years |
| 4 | 1.6   | 390000000 |    |                 | years |
| 5 | 1.6   | 390000000 |    |                 | years |
| 6 | 1.6   | 390000000 |    |                 | years |

Controlling = -42 years



# Live Load Actions Report

Name: I95 over Souadabscook Stream ...  
Struct-Def: 1432+5950

Bridge ID: Br. No. 1432+5950  
Member: G1

NBI: 1432+5950  
Member Alt: G1

## Stage: Composite (short term) (Stag...

## Live Load: LRFD Fatigue Truck (US)

## Live Load Type: Axle Load

| Span | Location (ft) | % Span | Positive Moment (kip-ft) | Negative Moment (kip-ft) | Positive Shear (kip) | Negative Shear (kip) | Positive Axial (kip) | Negative Axial (kip) | Positive Reaction (kip) | Negative Reaction (kip) | Positive X Deflection (in) | Negative X Deflection (in) | Positive Y Deflection (in) | Negative Y Deflection (in) | % Impact Pos Reaction | % Impact Neg Reaction |
|------|---------------|--------|--------------------------|--------------------------|----------------------|----------------------|----------------------|----------------------|-------------------------|-------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------|-----------------------|
| 1    | 0.00          | 0.0    | -0.00                    | -0.00                    | 21.50                | -2.45                | -0.00                | -0.00                | 21.50                   | -2.45                   | 0.0000                     | 0.0000                     | 0.0000                     | 0.0000                     | 15.000                | 15.000                |
| 1    | 4.00          | 10.0   | 72.90                    | -9.78                    | 18.23                | -2.45                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0147                     | -0.0381                    |                       |                       |
| 1    | 8.00          | 20.0   | 123.73                   | -19.57                   | 15.47                | -4.56                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0284                     | -0.0717                    |                       |                       |
| 1    | 11.00         | 27.5   | 148.07                   | -26.91                   | 13.46                | -6.96                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0375                     | -0.0914                    |                       |                       |
| 1    | 12.00         | 30.0   | 153.67                   | -29.35                   | 12.81                | -7.73                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0403                     | -0.0965                    |                       |                       |
| 1    | 14.00         | 35.0   | 161.31                   | -34.24                   | 11.52                | -9.21                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0452                     | -0.1046                    |                       |                       |
| 1    | 16.00         | 40.0   | 164.47                   | -39.14                   | 10.28                | -10.60               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0493                     | -0.1099                    |                       |                       |
| 1    | 20.00         | 50.0   | 158.26                   | -48.92                   | 7.91                 | -13.47               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0550                     | -0.1104                    |                       |                       |
| 1    | 22.00         | 55.0   | 149.45                   | -53.81                   | 6.79                 | -14.84               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0563                     | -0.1062                    |                       |                       |
| 1    | 24.00         | 60.0   | 137.53                   | -58.71                   | 5.73                 | -16.18               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0565                     | -0.0996                    |                       |                       |
| 1    | 26.00         | 65.0   | 122.65                   | -63.60                   | 4.72                 | -17.42               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0554                     | -0.0912                    |                       |                       |
| 1    | 28.00         | 70.0   | 108.56                   | -68.49                   | 3.88                 | -18.56               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0528                     | -0.0809                    |                       |                       |
| 1    | 31.00         | 77.5   | 84.74                    | -75.83                   | 2.14                 | -20.08               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0458                     | -0.0622                    |                       |                       |
| 1    | 32.00         | 80.0   | 75.38                    | -78.27                   | 1.21                 | -20.54               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0426                     | -0.0554                    |                       |                       |
| 1    | 35.50         | 88.8   | 32.50                    | -86.84                   | 0.57                 | -21.99               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0276                     | -0.0305                    |                       |                       |
| 1    | 36.00         | 90.0   | 25.21                    | -105.44                  | 0.57                 | -22.17               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0250                     | -0.0270                    |                       |                       |
| 1    | 37.50         | 93.8   | 21.41                    | -128.34                  | 0.57                 | -22.67               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0164                     | -0.0165                    |                       |                       |
| 1    | 40.00         | 00.0   | 22.84                    | -167.56                  | 0.57                 | -24.56               | 0.00                 | 0.00                 | 32.94                   | -2.61                   | 0.0000                     | 0.0000                     | 0.0000                     | 0.0000                     | 15.000                | 15.000                |
| 2    | 0.00          | 0.0    | 22.84                    | -167.56                  | 25.84                | -2.04                | -0.00                | -0.00                | 32.94                   | -2.61                   | 0.0000                     | 0.0000                     | 0.0000                     | 0.0000                     | 15.000                | 15.000                |
| 2    | 2.50          | 5.0    | 17.75                    | -126.91                  | 24.13                | -2.04                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0145                     | -0.0189                    |                       |                       |
| 2    | 4.50          | 9.0    | 13.67                    | -98.80                   | 22.70                | -2.04                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0245                     | -0.0353                    |                       |                       |
| 2    | 5.00          | 10.0   | 19.16                    | -91.88                   | 22.34                | -2.04                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0267                     | -0.0395                    |                       |                       |
| 2    | 7.50          | 15.0   | 55.26                    | -63.75                   | 20.65                | -2.04                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0366                     | -0.0607                    |                       |                       |
| 2    | 10.00         | 20.0   | 84.77                    | -58.66                   | 19.62                | -2.04                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0441                     | -0.0813                    |                       |                       |
| 2    | 15.00         | 30.0   | 128.20                   | -48.47                   | 17.17                | -3.94                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0527                     | -0.1146                    |                       |                       |
| 2    | 19.00         | 38.0   | 149.75                   | -40.32                   | 14.89                | -6.75                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0543                     | -0.1314                    |                       |                       |
| 2    | 20.00         | 40.0   | 152.55                   | -38.28                   | 14.27                | -7.44                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0540                     | -0.1337                    |                       |                       |
| 2    | 25.00         | 50.0   | 151.91                   | -28.09                   | 10.99                | -10.99               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0500                     | -0.1329                    |                       |                       |
| 2    | 30.00         | 60.0   | 152.55                   | -38.28                   | 7.44                 | -14.27               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0540                     | -0.1337                    |                       |                       |
| 2    | 31.00         | 62.0   | 149.75                   | -40.32                   | 6.75                 | -14.89               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0543                     | -0.1314                    |                       |                       |
| 2    | 35.00         | 70.0   | 128.20                   | -48.47                   | 3.94                 | -17.17               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0527                     | -0.1146                    |                       |                       |
| 2    | 40.00         | 80.0   | 84.77                    | -58.66                   | 2.04                 | -19.62               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0441                     | -0.0813                    |                       |                       |
| 2    | 42.50         | 85.0   | 55.26                    | -63.75                   | 2.04                 | -20.65               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0366                     | -0.0607                    |                       |                       |
| 2    | 45.00         | 90.0   | 19.16                    | -91.88                   | 2.04                 | -22.34               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0267                     | -0.0395                    |                       |                       |
| 2    | 45.50         | 91.0   | 13.67                    | -98.80                   | 2.04                 | -22.70               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0245                     | -0.0353                    |                       |                       |
| 2    | 47.50         | 95.0   | 17.75                    | -126.91                  | 2.04                 | -24.13               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0145                     | -0.0189                    |                       |                       |

# Live Load Actions Report

Name: I95 over Souadabscook Stream ...  
Struct-Def: 1432+5950

Bridge ID: Br. No. 1432+5950  
Member: G1

NBl: 1432+5950  
Member Alt: G1

## Stage: Composite (short term) (Stag...

## Live Load: LRFD Fatigue Truck (US)

## Live Load Type: Axle Load

| Span | Location (ft) | % Span | Positive Moment (kip-ft) | Negative Moment (kip-ft) | Positive Shear (kip) | Negative Shear (kip) | Positive Axial (kip) | Negative Axial (kip) | Positive Reaction (kip) | Negative Reaction (kip) | Positive X Deflection (in) | Negative X Deflection (in) | Positive Y Deflection (in) | Negative Y Deflection (in) | % Impact Pos Reaction | % Impact Neg Reaction |
|------|---------------|--------|--------------------------|--------------------------|----------------------|----------------------|----------------------|----------------------|-------------------------|-------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------|-----------------------|
| 2    | 50.00         | 00.0   | 22.84                    | -167.56                  | 2.04                 | -25.84               | 0.00                 | 0.00                 | 32.94                   | -2.61                   | 0.0000                     | 0.0000                     | 0.0000                     | 0.0000                     | 15.000                | 15.000                |
| 3    | 0.00          | 0.0    | 22.84                    | -167.56                  | 24.56                | -0.57                | -0.00                | -0.00                | 32.94                   | -2.61                   | 0.0000                     | 0.0000                     | 0.0000                     | 0.0000                     | 15.000                | 15.000                |
| 3    | 2.50          | 6.3    | 21.41                    | -128.34                  | 22.67                | -0.57                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0164                     | -0.0165                    |                       |                       |
| 3    | 4.00          | 10.0   | 25.21                    | -105.44                  | 22.17                | -0.57                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0250                     | -0.0270                    |                       |                       |
| 3    | 4.50          | 11.3   | 32.50                    | -86.84                   | 21.99                | -0.57                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0276                     | -0.0305                    |                       |                       |
| 3    | 8.00          | 20.0   | 75.38                    | -78.27                   | 20.54                | 1.21                 | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0426                     | -0.0554                    |                       |                       |
| 3    | 9.00          | 22.5   | 84.74                    | -75.83                   | 20.08                | -2.14                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0458                     | -0.0622                    |                       |                       |
| 3    | 12.00         | 30.0   | 108.56                   | -68.49                   | 18.56                | -3.88                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0528                     | -0.0809                    |                       |                       |
| 3    | 14.00         | 35.0   | 122.65                   | -63.60                   | 17.42                | -4.72                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0554                     | -0.0912                    |                       |                       |
| 3    | 16.00         | 40.0   | 137.53                   | -58.71                   | 16.18                | -5.73                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0565                     | -0.0996                    |                       |                       |
| 3    | 18.00         | 45.0   | 149.45                   | -53.81                   | 14.84                | -6.79                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0563                     | -0.1062                    |                       |                       |
| 3    | 20.00         | 50.0   | 158.26                   | -48.92                   | 13.47                | -7.91                | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0550                     | -0.1104                    |                       |                       |
| 3    | 24.00         | 60.0   | 164.47                   | -39.14                   | 10.60                | -10.28               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0493                     | -0.1099                    |                       |                       |
| 3    | 26.00         | 65.0   | 161.31                   | -34.24                   | 9.21                 | -11.52               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0452                     | -0.1046                    |                       |                       |
| 3    | 28.00         | 70.0   | 153.67                   | -29.35                   | 7.73                 | -12.81               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0403                     | -0.0965                    |                       |                       |
| 3    | 29.00         | 72.5   | 148.07                   | -26.91                   | 6.96                 | -13.46               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0375                     | -0.0914                    |                       |                       |
| 3    | 32.00         | 80.0   | 123.73                   | -19.57                   | 4.56                 | -15.47               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0284                     | -0.0717                    |                       |                       |
| 3    | 36.00         | 90.0   | 72.90                    | -9.78                    | 2.45                 | -18.23               | 0.00                 | 0.00                 |                         |                         | 0.0000                     | 0.0000                     | 0.0147                     | -0.0381                    |                       |                       |
| 3    | 40.00         | 00.0   | 0.00                     | 0.00                     | 2.45                 | -21.50               | 0.00                 | 0.00                 | 21.50                   | -2.45                   | 0.0000                     | 0.0000                     | 0.0000                     | 0.0000                     | 15.000                | 15.000                |

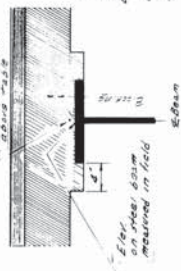




[illegible]

| ELEV  | SOUTH BOUND STR. CTURE |        | BOTTOM OF BERMWAY SURB |        | POINT-DISTANCE FROM BEGINNING HAVEN |        |
|-------|------------------------|--------|------------------------|--------|-------------------------------------|--------|
|       | LINE 0                 | LINE 1 | LINE 0                 | LINE 1 | LINE 0                              | LINE 1 |
| 100.0 | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 99.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 98.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 97.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 96.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 95.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 94.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 93.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 92.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 91.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 90.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 89.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 88.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 87.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 86.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 85.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 84.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 83.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 82.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 81.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 80.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 79.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 78.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 77.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 76.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 75.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 74.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 73.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 72.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 71.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 70.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 69.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 68.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 67.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 66.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 65.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 64.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 63.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 62.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 61.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 60.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 59.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 58.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 57.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 56.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 55.0  | 34.57                  | 34.73  | 34.57                  | 34.73  | 134.69                              | 135.04 |
| 54.0  | 34.57                  | 34.73  | 3                      |        |                                     |        |

Notes: In order to compensate for the cloud band collection and covering of the clouds, the elevations will be taken at the above points, after the collection of the first, but before any more has been collected. These elevations will be subtracted from elevations given in the table and the result will be the final, or "corrected" elevations.

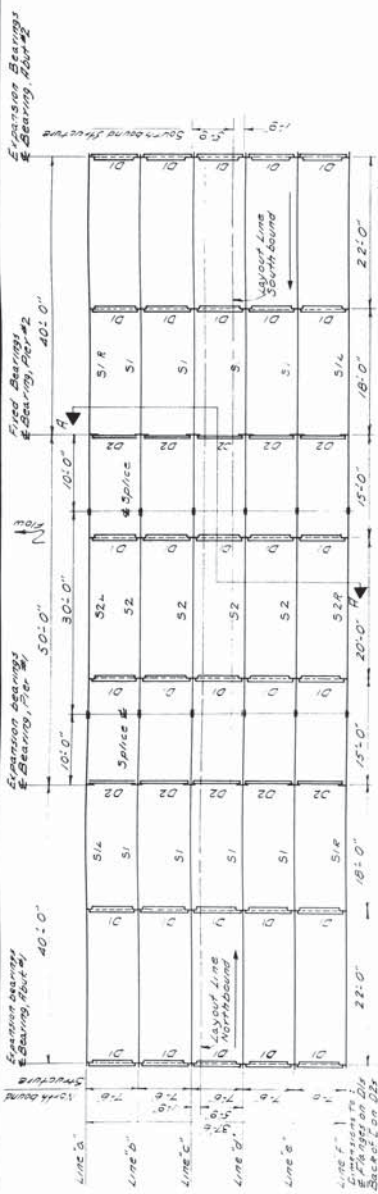


Note: Steel br. beams and cover plates shall conform to ASTM Designation A373. When steel members shall conform to A572-50.

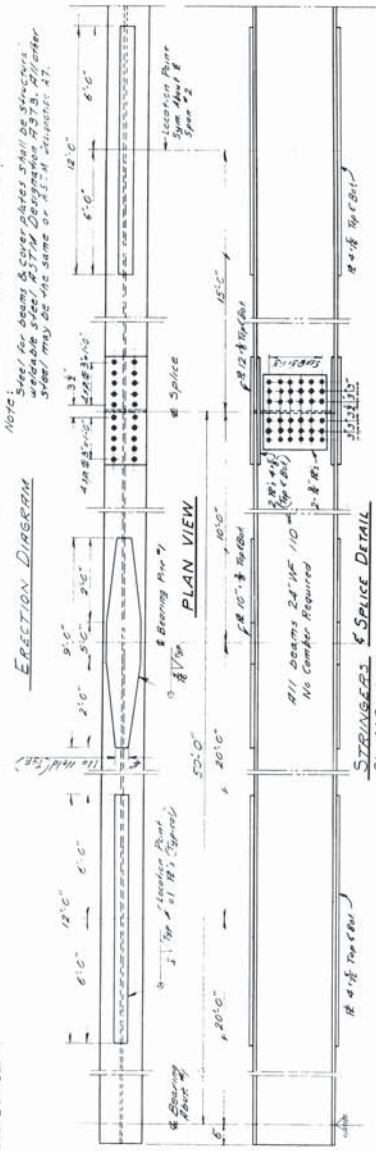
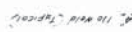
COOK STREAM BRIDGE  
CENTER

CENTER  
IN THE TOWN OF  
HAMPDEN  
BSCOT COUNTY  
STRUCTURAL STEEL  
AUGUSTA, MAINE JULY 1961

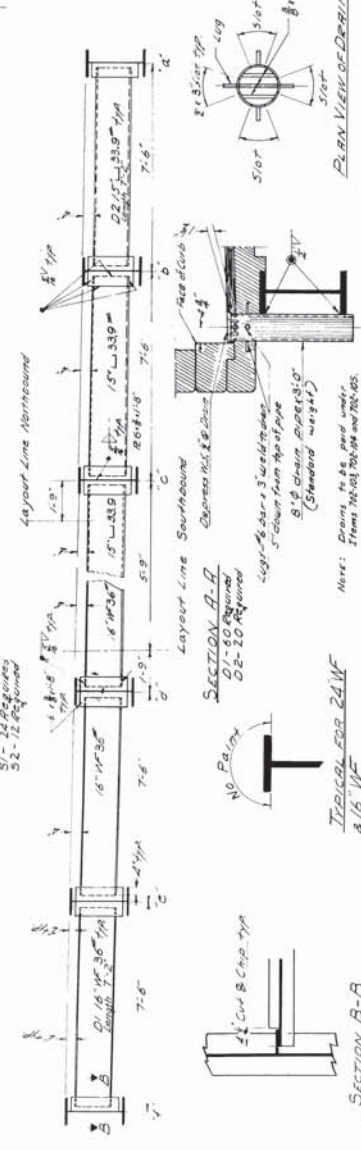
SHEET 10 OF 13  
M-1523



*Note: Steel for beams & cover plates shall be structural weldable steel ASTM Designation A36. All other steel may be the same or A.S.N. designation 27.*



STRINGERS & SPLICE DETAIL



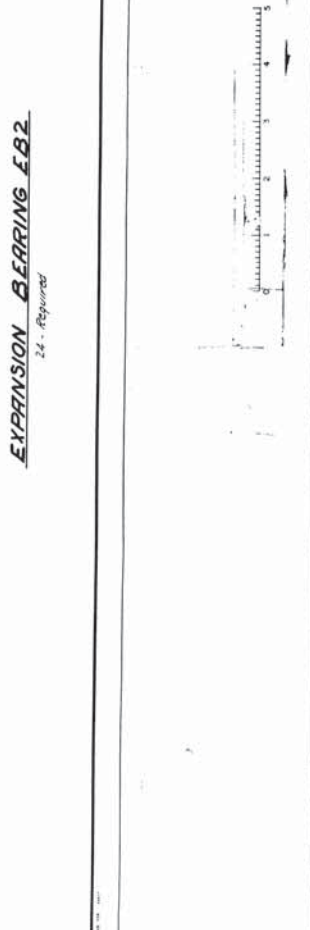
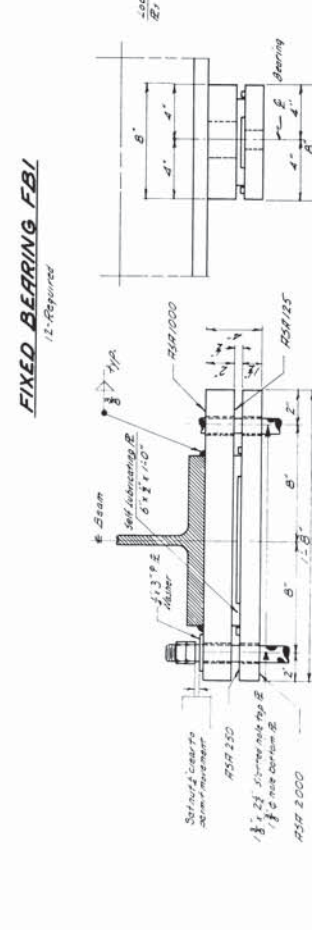
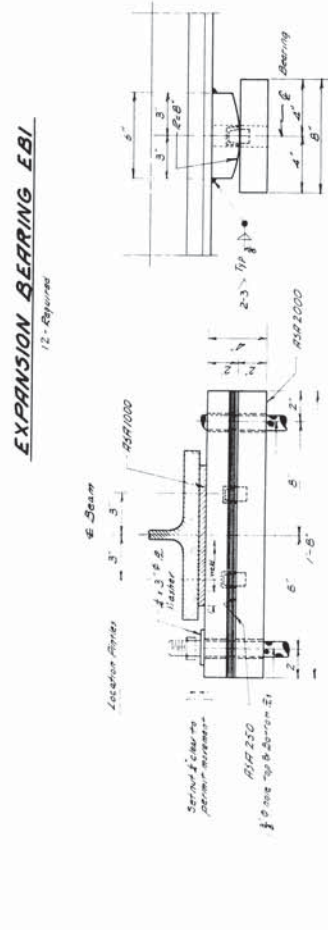
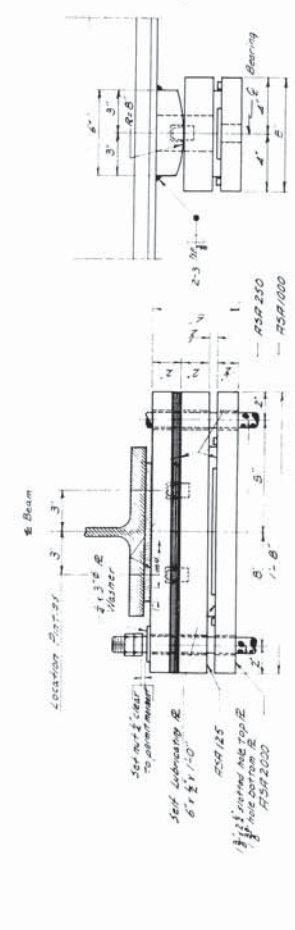
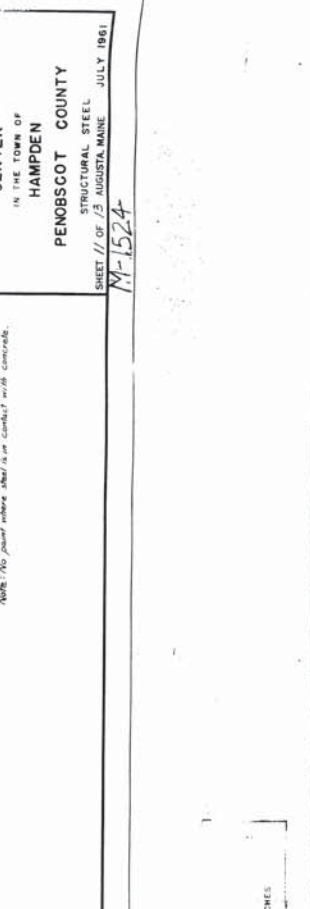
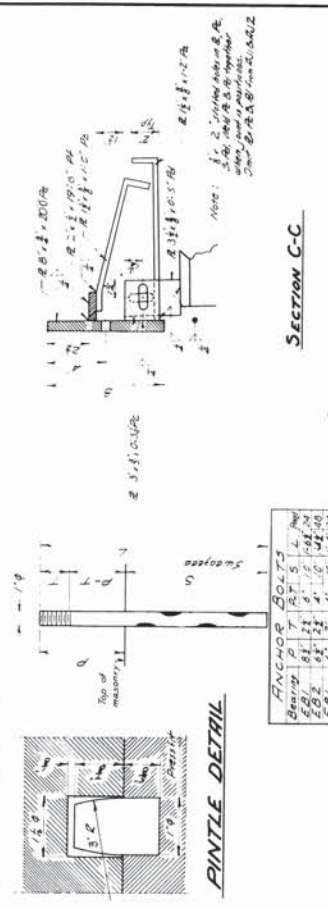
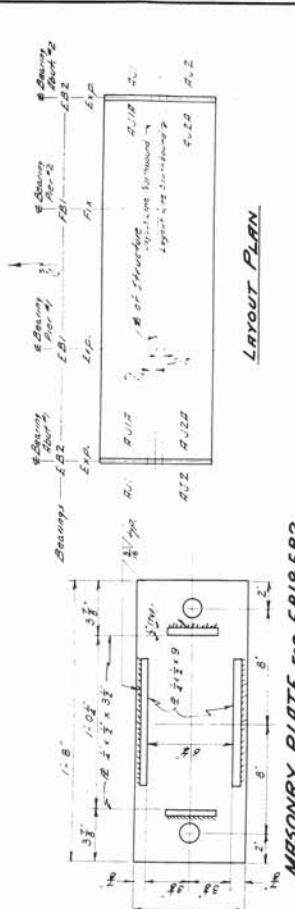
PLAN VIEW OF DRAIN

NOTE: Drains to be paid under  
Items 702-103, 702-104 and 702-105.

TYPICAL FOR 24 WF  
316" WF

Section A-A  
[4]

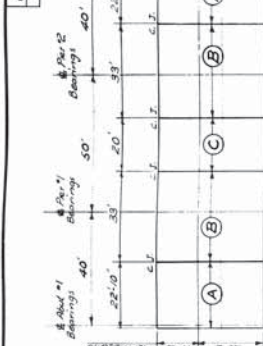
1



SQUADABCOOK STREAM BRIDGE  
 CENTER  
 IN THE TOWN OF  
 HAMPTON  
 PENOBSCOT COUNTY  
 STRUCTURAL STEEL  
 SHEET 11 OF 13 AUGUSTA, MAINE JULY 1961  
 M-1524



| DATE    | PROJECT NUMBER | SHEET NUMBER | TOTAL SHEETS |
|---------|----------------|--------------|--------------|
| 12/1/57 | 102-103        | 33           | 45           |

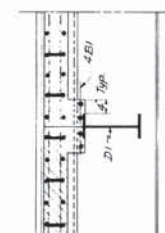


### CONCRETE PLACING SEQUENCE IN SUPERSTRUCTURE SLAB

In each structure, pour in A, C to one place, then B.

Final B.

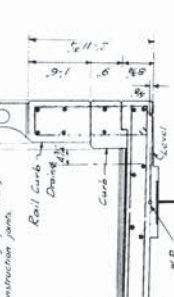
Spaced butt. The one to be started with - abutted joint seen.



SECTION B-B  
At Center Abutment

### 1" V' GROOVE DETAIL

Note: 1. Reinforce V' groove along exposed edges of vertical construction with one edge bar along top of curb and one bar at construction joint.



SECTION A-A  
At Abutment

### SECTIONS C-C

NOTE: Concrete for curbs shall not be placed until concrete in superstructure slab has been in place for minimum period of seven days. During time for curing, curbs shall be protected from frost. All curb and rail curb steel to be in place before any concrete is placed. Break sand at vertical construction joints in curb and rail curb only within suitable grade of adjacent point.

AS Side

US Side

AS Side

US Side

AS Side

US Side

AS Side

US Side

### SECTION D-D

Not part of this Contract

Not part of this Contract

Not part of this Contract

Not part of this Contract

Not part of this Contract

PROJECT NUMBER 102-103  
SHEET NUMBER 33  
TOTAL SHEETS 45

DATE 12/1/57

PROJECT NAME  
SHEET NUMBER  
TOTAL SHEETS

DATE 12/1/57

PROJECT NAME  
SHEET NUMBER  
TOTAL SHEETS

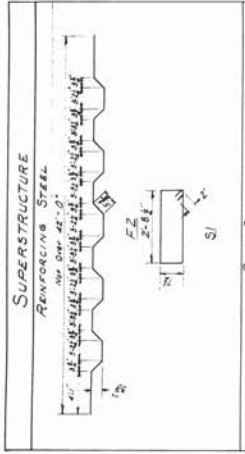
DATE 12/1/57

PROJECT NAME  
SHEET NUMBER  
TOTAL SHEETS

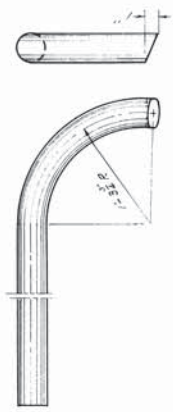
DATE 12/1/57



| Mark                  | Size | No  | Length | Location                 |
|-----------------------|------|-----|--------|--------------------------|
| A1B                   | 25   | 100 | 13.1"  | Bridge seat, Redfish Bay |
| <b>Straight Bars</b>  |      |     |        |                          |
| A1                    | 46   | 328 | 5.6"   | Footings, Alameda        |
| A2                    |      | 22  | 4.7"   |                          |
| A3                    |      | 32  | 5.7"   |                          |
| A4                    | 1    | 32  | 2.7"   |                          |
| A5                    | 45   | 48  | 3.4"   |                          |
| A6                    |      | 104 | 5.4"   | Footings - Backwall      |
| A7                    |      | 80  | 5.2"   | Backwall 5 Wings         |
| A8                    |      | 80  | 5.2"   | Backwall                 |
| A9                    |      | 80  | 5.8"   | Backwall & Wings         |
| A10                   |      | 80  | 5.6"   | Backwall                 |
| A11                   | 1    | 32  | 4.3"   | Backwall & Wings         |
| A12                   | 42   | 58  | 2.5 9" | Backwall                 |
| A13                   |      | 12  | 3.6"   | Wings                    |
| A14                   |      | 12  | 7.0"   |                          |
| A15                   | 1    | 12  | 6.0"   |                          |
| A16                   | 46   | 168 | 4.6"   | Footings - Bridge seat   |
| <b>Approach Slabs</b> |      |     |        |                          |
| B-152                 | 46   | 80  | 39.8"  |                          |
| B-151                 | 46   | 80  | 39.8"  |                          |
| <b>Piers</b>          |      |     |        |                          |
| P1                    | 46   | 176 | 51.0"  |                          |
| P2                    | 46   | 176 | 16.4"  |                          |
| P3                    | 46   | 176 | 16.4"  |                          |
| P4                    | 46   | 80  | 2.7"   |                          |

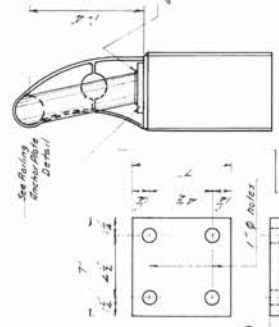


| Mark | Size | No  | Length | Best Bank |
|------|------|-----|--------|-----------|
| F1   | "    | 300 | 43.4   |           |
| F2   | "    | 300 | 43.4   |           |
| F3   | "    | 300 | 43.4   |           |
| F4   | "    | 300 | 43.4   |           |
| F5   | "    | 300 | 43.4   |           |
| F6   | "    | 300 | 43.4   |           |
| F7   | "    | 300 | 43.4   |           |
| F8   | "    | 300 | 43.4   |           |
| F9   | "    | 300 | 43.4   |           |
| F10  | "    | 300 | 43.4   |           |
| F11  | "    | 300 | 43.4   |           |
| F12  | "    | 300 | 43.4   |           |
| F13  | "    | 300 | 43.4   |           |
| F14  | "    | 300 | 43.4   |           |
| F15  | "    | 300 | 43.4   |           |
| F16  | "    | 300 | 43.4   |           |
| F17  | "    | 300 | 43.4   |           |
| F18  | "    | 300 | 43.4   |           |
| F19  | "    | 300 | 43.4   |           |
| F20  | "    | 300 | 43.4   |           |
| F21  | "    | 300 | 43.4   |           |
| F22  | "    | 300 | 43.4   |           |
| F23  | "    | 300 | 43.4   |           |
| F24  | "    | 300 | 43.4   |           |
| F25  | "    | 300 | 43.4   |           |
| F26  | "    | 300 | 43.4   |           |
| F27  | "    | 300 | 43.4   |           |
| F28  | "    | 300 | 43.4   |           |
| F29  | "    | 300 | 43.4   |           |
| F30  | "    | 300 | 43.4   |           |
| F31  | "    | 300 | 43.4   |           |
| F32  | "    | 300 | 43.4   |           |
| F33  | "    | 300 | 43.4   |           |
| F34  | "    | 300 | 43.4   |           |
| F35  | "    | 300 | 43.4   |           |
| F36  | "    | 300 | 43.4   |           |
| F37  | "    | 300 | 43.4   |           |
| F38  | "    | 300 | 43.4   |           |
| F39  | "    | 300 | 43.4   |           |
| F40  | "    | 300 | 43.4   |           |
| F41  | "    | 300 | 43.4   |           |
| F42  | "    | 300 | 43.4   |           |
| F43  | "    | 300 | 43.4   |           |
| F44  | "    | 300 | 43.4   |           |
| F45  | "    | 300 | 43.4   |           |
| F46  | "    | 300 | 43.4   |           |
| F47  | "    | 300 | 43.4   |           |
| F48  | "    | 300 | 43.4   |           |
| F49  | "    | 300 | 43.4   |           |
| F50  | "    | 300 | 43.4   |           |
| F51  | "    | 300 | 43.4   |           |
| F52  | "    | 300 | 43.4   |           |
| F53  | "    | 300 | 43.4   |           |
| F54  | "    | 300 | 43.4   |           |
| F55  | "    | 300 | 43.4   |           |
| F56  | "    | 300 | 43.4   |           |
| F57  | "    | 300 | 43.4   |           |
| F58  | "    | 300 | 43.4   |           |
| F59  | "    | 300 | 43.4   |           |
| F60  | "    | 300 | 43.4   |           |
| F61  | "    | 300 | 43.4   |           |
| F62  | "    | 300 | 43.4   |           |
| F63  | "    | 300 | 43.4   |           |
| F64  | "    | 300 | 43.4   |           |
| F65  | "    | 300 | 43.4   |           |
| F66  | "    | 300 | 43.4   |           |
| F67  | "    | 300 | 43.4   |           |
| F68  | "    | 300 | 43.4   |           |
| F69  | "    | 300 | 43.4   |           |
| F70  | "    | 300 | 43.4   |           |
| F71  | "    | 300 | 43.4   |           |
| F72  | "    | 300 | 43.4   |           |
| F73  | "    | 300 | 43.4   |           |
| F74  | "    | 300 | 43.4   |           |
| F75  | "    | 300 | 43.4   |           |
| F76  | "    | 300 | 43.4   |           |
| F77  | "    | 300 | 43.4   |           |
| F78  | "    | 300 | 43.4   |           |
| F79  | "    | 300 | 43.4   |           |
| F80  | "    | 300 | 43.4   |           |
| F81  | "    | 300 | 43.4   |           |
| F82  | "    | 300 | 43.4   |           |
| F83  | "    | 300 | 43.4   |           |
| F84  | "    | 300 | 43.4   |           |
| F85  | "    | 300 | 43.4   |           |
| F86  | "    | 300 | 43.4   |           |
| F87  | "    | 300 | 43.4   |           |
| F88  | "    | 300 | 43.4   |           |
| F89  | "    | 300 | 43.4   |           |
| F90  | "    | 300 | 43.4   |           |



DETAIL END TUBE

Note: Gen<sup>l</sup> portion of Aluminum  
Tube to be paid as item  
806-7 "Aluminum Rail"

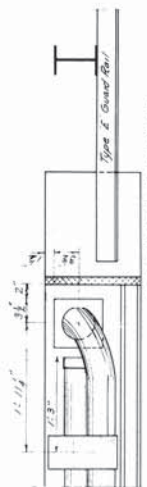


END VIEW RAIL END

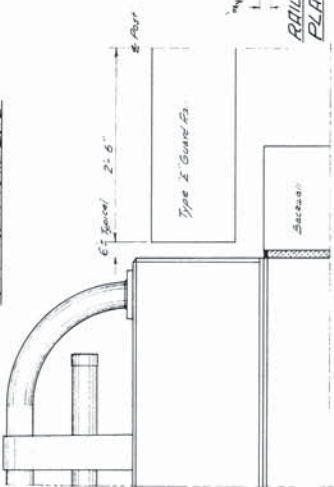
RAILING ANCHOR  
PLATE (ALUMINUM)



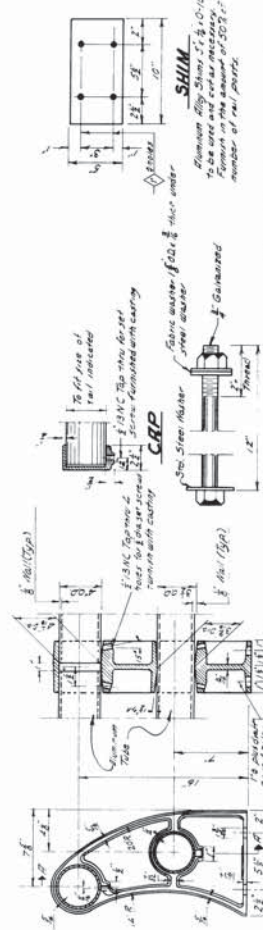
SIDE VIEW



TOP VIEW RAIL END



SIDE VIEW OF RAIL END



**SECTION A.A**

*Note: To the extent possible, a minimum pipe to be continuous for two panels with joints staggered. One end screw to be tight, all others to bear, for each length of pipe.*

**ANCHOR BOLTS**  
Structural Steel Galvanized  
Set bolts with 2" projecting end of concrete

SQUADABSCOOK STREAM BRIDGE  
CENTER  
IN THE TOWN OF  
HAMPDEN  
PENOBSCOT COUNTY  
REINFORCED STEEL & RAIL DETAIL  
SHEET 13 OF 13 AUGUSTA, MAINE JULY 1961  
M-1526

**APPROACH SLAB PLAN** (Not part of this Contract.)  
 About 1' Shown (North bound to Sluiceway)  
 About 2' Similar ( " " " " )

SHEET 13 OF 13 A

M-1526