

OHIO DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAY OPERATIONS  
OFFICE OF STRUCTURAL ENGINEERING

BRIDGE ANALYSIS AND LOAD RATING REPORT

STRUCTURE IDENTIFICATION DATA

Structure ID: 032694 I Year Built: 1967

Bridge Number: ASD 058SP 151 0243  
 County Route No. SLM SLK Special Designation

Structure Type: Thru Steel Truss

Feature Crossed: MOHICAN RV (MOHICAN PARK) District: 3

O/A Structure Length 145.00 Ft. 44.196 m No. of Spans: 1

Inspection Agency Ohio State Transportation Department Maintenance Agency: \_\_\_\_\_

Date of Analysis: 2/11/2010 Method of Analysis: LOAD FACTOR

Data Submitted by: OAH Analysis Program: BARS & SPREADSHEETS

SFN: 0326941  
BRIDGE NO: ASD - 058SP - 151

RATING SUMMARY for HS and STATE LEGAL LOADS

English

Metric

Inventory HS: 17.6 31.68 Tons  
 Operating HS: 25.0 45.00 Tons  
 Ohio Legal: 140% 56.00 Tons

Inventory HS: 15.9 28.69 Tons  
 Operating HS: 22.6 40.75 Tons  
 Ohio Legal: 140% 50.71 Tons

2F1: 34 Tons  
 3F1: 40 Tons

2F1: 31 Tons  
 3F1: 36 Tons

4F1: 43 Tons  
 5C1: 56 Tons

4F1: 39 Tons  
 5C1: 51 Tons

Ratings and recommendations shown on this form reflect the judgment of this office as to the proper safe load carrying capacities for this structure based on the results obtained by using the latest version of the computer program stated above. Since these ratings and recommendations are substantially dependent upon the data submitted by the originator of the analysis, this office accepts no responsibility for the accuracy thereof.

Dated: June 25, 2010

Rater's Initials: OAH, CO, ODOT

# Summary of All Rating Types Performed on Bridge

ODNR Mohican Park Truss (ASD-058SP-1.51)

SFN: 326941

Rated By: OAH

Date: 2/11/2010

Rating Type *	2F1 Truck)	Rated Tonnage (3F1 Truck)	Rated Tonnage (4F1 Truck)	Rated Tonnage (5C1 Truck)	Rated Tonnage (Operating Truck HS20-44)	Rated Tonnage (Inventory Truck HS20-44)
Floor System (BRS-PC)	2.34	1.93	1.97	1.87	1.47	0.88
Members	2.27	1.75	1.59	1.39	1.53	0.92
Gusset Plates	2.88	2.24	2.04	1.72	2.00	1.20
Minimum Rating Factor	2.27	1.75	1.59	1.39	1.47	0.88
Minimum rating Tonnage	34	40	43	56	53	N/A
Comment	No Legal Posting is Needed	HS20 Equivalent = HS17.6-44				

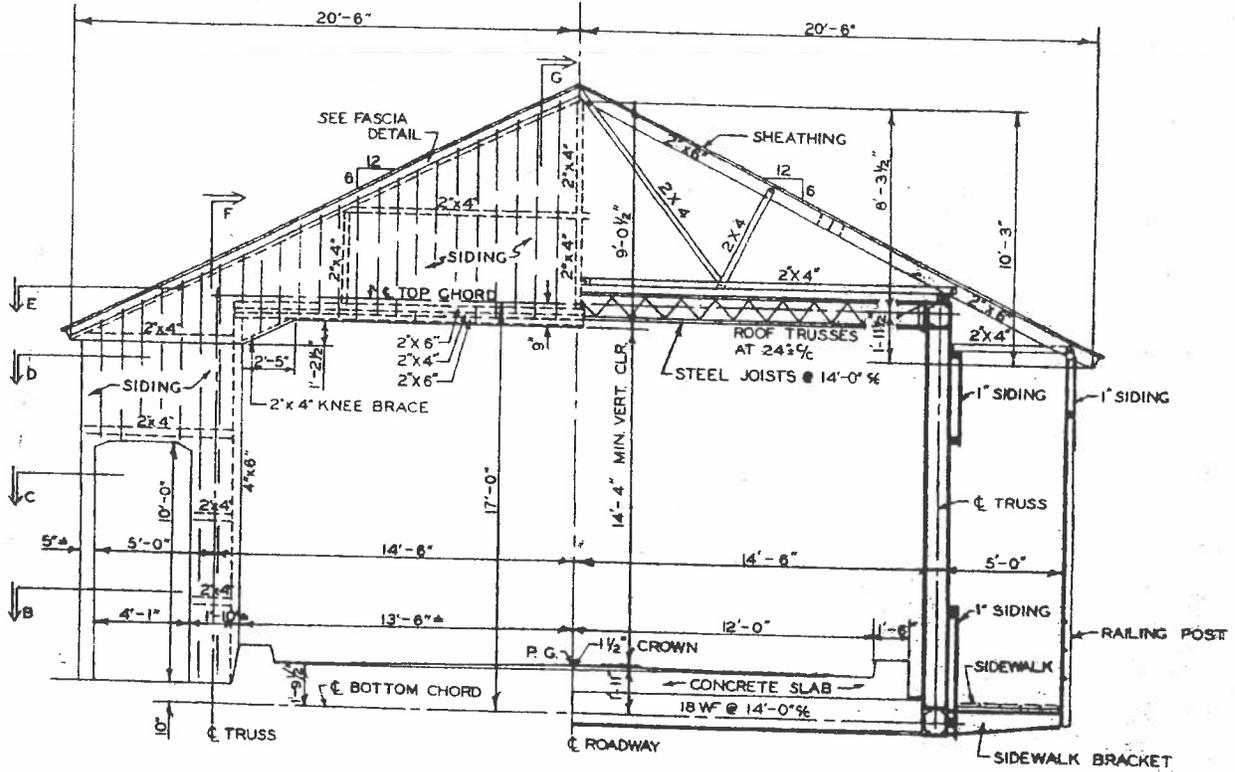
\* Using Load Factor Rating Method

ODNR Mohican Park Truss  
 ASD-0585 P-1.51  
 SFN 326941

OAH  
 2-10-2010

3100

Panels = 14.0'



Dead Load Summary

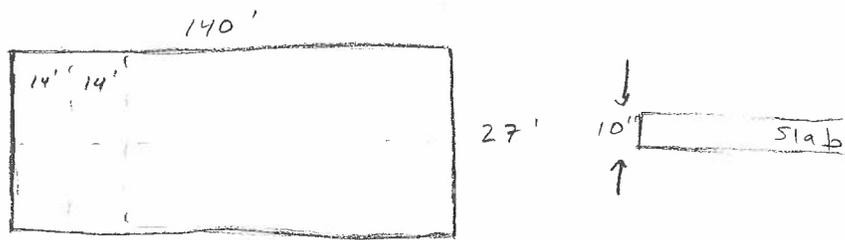
1. Concrete  $\rightarrow 47.25k + .08k + 4.7k = 52.03k / 2 \text{ sides}$   
 $= 26.02k / \text{Joint}$

2. Steel  $\rightarrow (.12k + 2.0k + .20k + .24k + 1.41 + .90) = 4.87 / 2 \text{ sides}$   
 $= 2.44k / \text{Joint}$

3. Timber from Existing Plans = 4.8k  
 Joint

$1 + 2 + 3 = 26.02k + 2.44k + 4.8k = \underline{\underline{33.26k}}$  Exclud. Truss members DL

① SLAB:



$$(14') (27') \left( \frac{10''}{12} \right) \left( \frac{.15K}{FT^3} \right) = \underline{47.25 K}$$

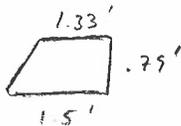
② HAUNCH:



Panel = 14.0-

$$\left( \frac{3''}{12} \right) \left( \frac{1}{12} \right) (27') \left( \frac{.15K}{FT^3} \right) = \underline{.084 K}$$

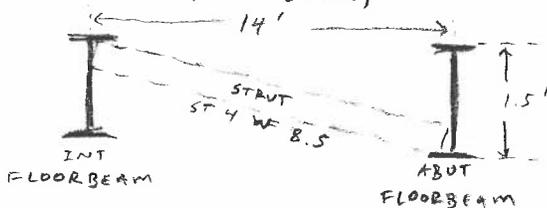
③ CURBS:



$$\left( \frac{1.33' + 1.5'}{2} \right) (.79') (14') \left( \frac{.15K}{FT^3} \right) (2 \text{ CURBS}) = \underline{4.7 K}$$

④ STRINGERS:

(1 STRUT AT EACH END CONNECTING ABUT. FLOOR BEAM TO FIRST INT. FLOOR BEAM)



$$\sqrt{14^2 + 1.5^2} = 14.08'$$

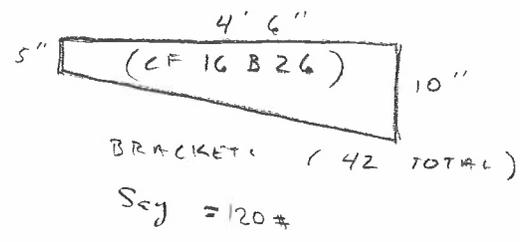
$$(14.08') \left( \frac{8.516}{FT} \right) = \underline{0.119 K}$$

⑤ FLOORBEAMS:

- INTERIOR: 18 WF 55 27.83' (9 TOTAL)  $(27.83') \left( \frac{5516}{FT} \right) = 1.53 K + .477$
- COVER PLATE: 9" x 5/8" x 25' (BOTTOM ONLY)  $\left( \frac{19.116}{FT} \right) \approx \underline{2 K}$
- ABUTMENT: 18 WF 45 27.83' (2 TOTAL)  $(27.83') \left( \frac{4515}{FT} \right) = \underline{1.252 K}$
- COVER PLATE: N/A

- ⑥ SIDEWALK: 3" x 8" x 14' PLANKS (6)
- 4" x 6" x 4' NAILERS (2)
- 4" x 4" x 2' OVER BRACKETS (2)
- 4" x 4" x 6.5' BETWEEN BRACKETS (2)

$$5' - 6\frac{1}{8}" - \frac{1}{2}" - \frac{3}{8}" = 4'6"$$



BOARDS:  $(17.17 \text{ FT}^3) \left( \frac{3015}{\text{FT}^3} \right) (2 \text{ SIDES}) = \underline{1.026 \text{ K}}$

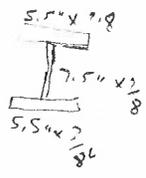
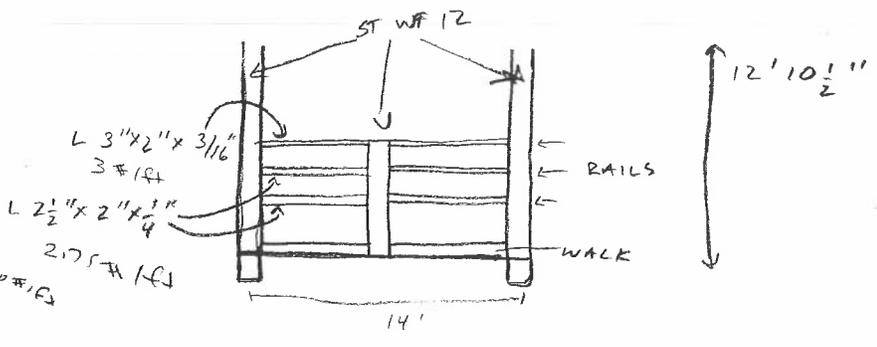
- ⑦ EXT. RAILING: 2 RAILS

$$\left( \frac{12.15}{\text{FT}} \right) (12.875') = 154 \#$$

$$\left( \frac{12.15}{\text{FT}} \right) (4.75') = 57 \#$$

$$LS = 2 \times 14.01' \times 2.75 \#/\text{FT} + 14' \times 3 \#/\text{FT} = 119 \#$$

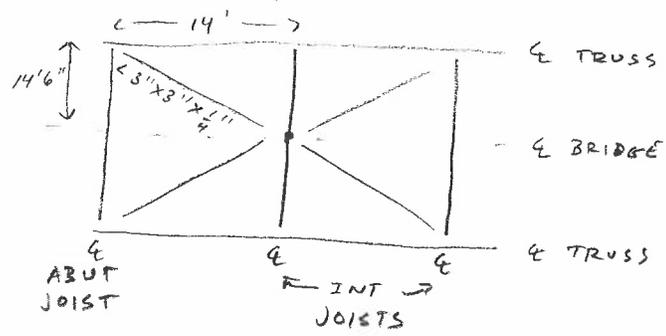
$$\Sigma = (154 + 57 + 119 + 120) \div 1000 = 0.45 \text{ k @ Each Joint} = 0.90 \text{ k (TOT)}$$



- ⑧ SWAY BRACING: (FIRST 2 PANELS AT EACH END)

$$\sqrt{14.5^2 + 14^2} = 20.16' \left( \frac{4.915}{\text{FT}} \right)$$

$$(20.16) \left( \frac{4.915}{\text{FT}} \right) (2) = \underline{0.198 \text{ K}}$$



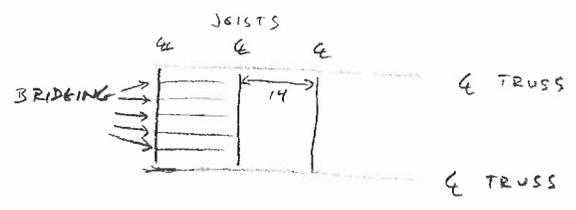
- ⑨ ROOF JOISTS:

- JOISTS: 27.83'
- ADD 30% FOR WEBBING

$$\bullet \text{ BRIDGING: } (L 3" \times 3" \times 3/16") \times 12'8" \left( \frac{3.7115}{\text{FT}} \right)$$

• 5 PER PANEL

$$(12.75) \left( \frac{3.7115}{\text{FT}} \right) (5) = \underline{0.237 \text{ K}}$$



$$(27.83) \left( \frac{12.15}{\text{FT}} \right) + (27.83) \left( \frac{3.7115}{\text{FT}} \right) (4 \text{ L's}) = 1.08 \text{ K} + 30\% = \underline{1.405 \text{ K EA}}$$

- ⑩ ROOF: Use Existing Plans to get wood quantity & DL

# ODNR Mohican Park Truss

Sidewalk Loading

AASHTO 3.14.1

$$P = \left( 30 + \frac{3000}{140} \right) \left( \frac{55-5}{50} \right)$$

width = 4'  
L = 140'

= 51.43 #/ft<sup>2</sup> @ 50% Reduction

Panel = 14.0'

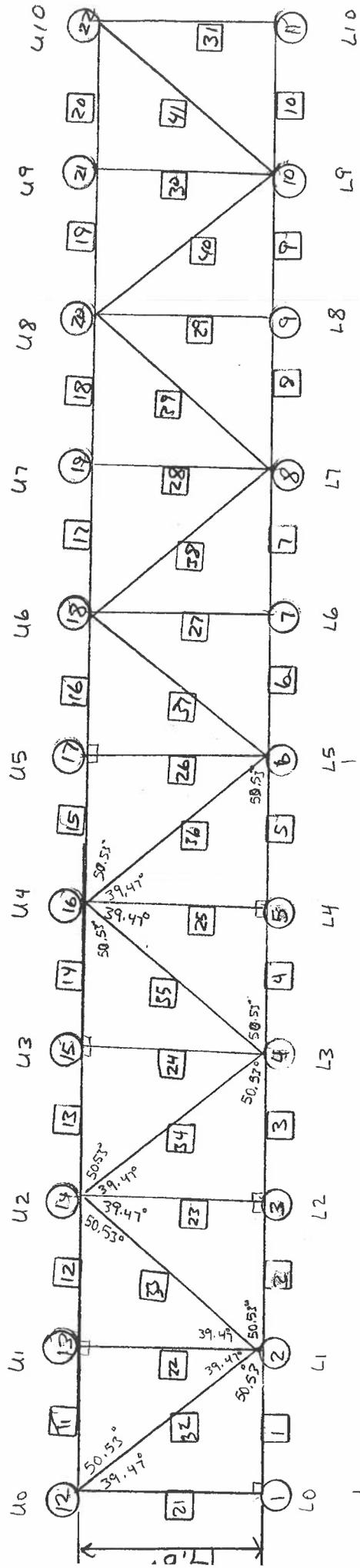
$$\text{Force} = 51.43 \frac{\#}{\text{ft}^2} \times 14.0' \times 4.0' \div 1000 = 2.88 \text{ k}$$

@ 50% = 1.44 k Combined  
Joint. With  
LL Trucks

ODNR Mehican Park ASD-0585P-1.51

SFN: 326941

5 mm



10 Panels @ 14.0' = 140.0'

Input Box	
Wheel Line Spacing =	6 ft
Truck Spacing =	4 ft
First Wheel Line =	2 ft From Barrier
Point Load =	1.00 kips Unit Load
Roadway Width =	24 ft
C/C Truss Spacing =	29 ft
Span Length =	140 ft

Point Load = 1.00 Kips Unit Load  
 Influence Slope = 0.034482759 kips/ft  
 Edge of Lane to Truss CL\* = -2.5 \* Negative value when falls between truss centerlines; otherwise positive  
 = 1.19  
 Impact (I) = 2  
 X0 = 0.913793103 at face of curb/rail/barrier  
 Influence at X0 =

Truck Loading	Truck 1		Truck 2		Truck 3		Truck 4		Truck 5		Truck 6	
Wheel Line X (ft)	2	8	12	18	36	42	50	56	62	68	74	80
Influence Factor	0.8448	0.6379	0.5000	0.2931	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Load (Kips)	0.8448	0.6379	0.5000	0.2931	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Truck Loading

No. of Trucks on Bridge	If Using Wheel Line Loading (Kips)	If Using Truck Axle Loading (Kips)	Multi-Lanes Reduction Factor	Reduced Axles	Impact	Final Axle Factor for One Truck**
1	1.48	0.74	1.00	0.74	1.19	0.88
2	2.28	1.14	1.00	1.14	1.19	1.35
3	N/A	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A	N/A

← Controls Per Truck loading

\*\* For input into LARSA which includes Impact.

Lane Loading	Lane 1		Lane 2		Lane 3		Lane 4		Lane 5		Lane 6	
Wheel Line X (ft)	2	12	12	22	36	46	48	58	62	72	74	84
Influence Factor	0.8448	0.5000	0.5000	0.1552	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Load (Kips)	0.8448	0.5000	0.5000	0.1552	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Load in Lane Center (Kips)	0.6724		0.3276		N/A		N/A		N/A		N/A	

Lane Loading

No. of Lanes on Bridge	For One Truck Lane Loading (Kips)	Multi-Lanes Reduction Factor	Reduced Axles	Impact	Final Axle Factor for One Truck**
1	0.67	1.00	0.67	1.00	0.67
2	1.00	1.00	1.00	1.00	1.00
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A

← Controls Per Lane Loading

\*\* For input into LARSA which does not include Impact for Lane Loading.

Truck Loading Controls



Bridge Inventory Information  
 Inventory Bridge Number: ASD 058SP 0151  
 ON MOHICAN RV (MOHICAN PARK)

Original Plans Information

(69) NBIS: Y  
 (142) Fabricator: BENTON BRIDGE  
 (143) Contractor: BENTON BRIDGE  
 (144) Ohio Original Construction Project No.: 081767  
 (---) Microfilm Reel:  
 (151) Standard Drawing:  
 Aperture Cards: Orig: Y Repair: N Fabr: N  
 (153) Repair Projects

Programming Info  
 PID Number: 1. / 044  
 PID Status: 2.  
 PID Date: 5. 8.

Proposed Improvements  
 (90) Year: 2027  
 (92) Year of Future ADT: 2027  
 (I-69) Survey Items  
 Railings: N NONE N/A  
 Transitions: N NONE N/A  
 Guardrail: N NONE N/A  
 Rail Ends: N NONE N/A  
 Pavement Mark: 1 MEETS CURRENT STANDARDS  
 Restrict Sign: N NONE N/A  
 Warning Sign: 1 MEETS CURRENT STANDARDS  
 End Markers: N NONE N/A  
 Insp. Update Date: 12/24/2008  
 (94) Desig Insp Freq: 12 Months

General Information (Continued)  
 Historical Significance: NOT DETERMINED  
 Hist Build: NONE N/A  
 Hist Type: NONE N/A  
 Special Features (see below):  
 (105) Border Bridge State: Resp % (106) SFN:  
 (90) Type Work: -  
 (90) Length: Ft  
 (90) Bridge Cost (\$1000s): 0  
 (90) Roadway Cost (\$1000s): 0  
 (90) Total Project Cost (\$1000s): 0  
 (91) Future ADT (On Bridge): 0

Utilities	Special Features
(46) Electric: U	(161) Lighting: N
Gas: U	Fencing: N
Sanitary Sewer: U	Glare-Screen: N
Telephone: U	Splash-Guard: N
TV Cable: U	Catwalks: N
Water: U	Other-Feat: U
Other: U	(184) Signs-on: N
	Signs-Under: N
	(162) Fence-Ht: 0.0 Ft
	(163) Noise Barr: N

INV Field Bridge Marker: ASD-058SP-0151 -  
 INT Field Bridge Marker: ...

SFNs Replacing this retired bridge:  
 SFNs That where replaced by this bridge:  
 This bridge was retired and copied to:  
 The bridge was copied from:

Elem No.	CoRe Element Description	Total Quantity	Unit Meas.	Condition State Percentages (%)				
				1	2	3	4	5
12	CONCRETE DECK - BARE	1	EA	0	0	0	0	0
120	UNPAINTED STEEL BOTTOM CHORD THRU TRUSS	290	LF	0	0	0	0	0
125	UNPAINTED STL THRU TRUSS(EXCL BOT CHORD)	290	LF	0	0	0	0	0
215	REINFORCED CONC ABUTMENT	58	LF	0	0	0	0	0
304	OPEN EXPANSION JOINT	58	LF	0	0	0	0	0
330	METAL BRIDGE RAILING	290	LF	0	0	0	0	0

(\*) Percentages Should add to 100%

OAH  
 Rated By: 2/10/2010  
 Uadted:

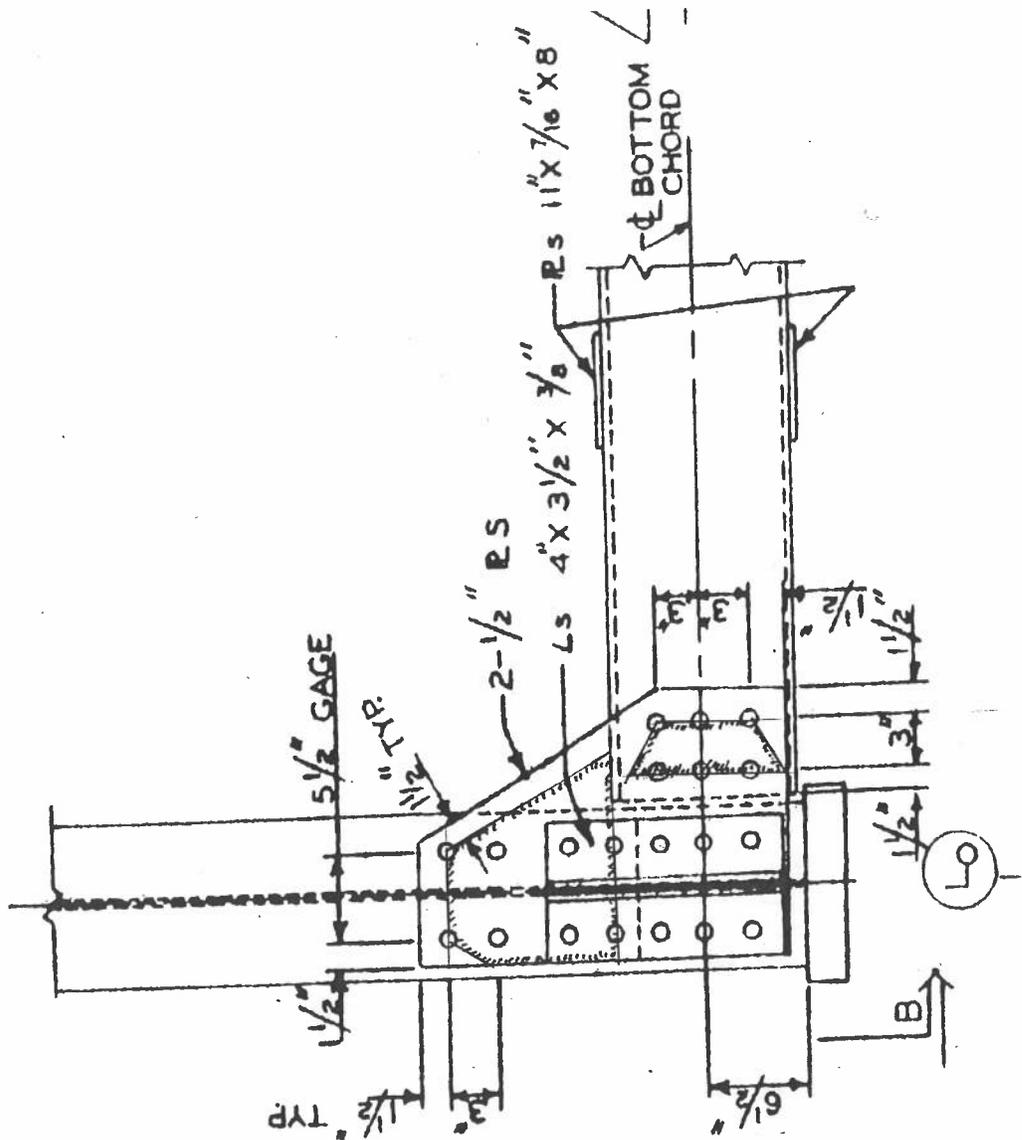
Mohican Park Covered Bridge (ASD-058SP-1.51)  
 SFN: 326941

Joint Number	Minimum R.F (2F1 Truck)	Minimum R.F (3F1 Truck)	Minimum R.F (4F1 Truck)	Minimum R.F (5C1 Truck)	Minimum R.F for (Operating Truck HS20-44)	Minimum R.F for (Inventory Truck HS20-44)
1 (L0)	N/A	N/A	N/A	N/A	N/A	N/A
2 (L1)	3.72	2.88	2.61	2.19	2.56	1.53
3 (L2)	6.62	4.77	4.58	5.02	5.90	3.54
4 (L3)	4.70	3.43	3.09	2.83	3.63	2.18
5 (L4)	6.63	4.78	4.59	5.02	5.91	3.54
6 (L5)	8.30	5.78	5.13	4.78	6.47	3.88
7 (L6)	6.63	4.78	4.59	5.02	5.91	3.54
8 (L7)	4.70	3.43	3.09	2.83	3.63	2.18
9 (L8)	6.62	4.77	4.58	5.02	5.90	3.54
10 (L9)	3.72	2.88	2.61	2.19	2.56	1.53
11 (L10)	N/A	N/A	N/A	N/A	N/A	N/A
12 (U0)	2.88	2.24	2.04	1.72	2.00	1.20
13 (U1)	103.03	103.03	103.03	103.03	103.03	61.72
14 (U2)	4.37	3.31	3.00	2.56	3.09	1.85
15 (U3)	107.00	107.00	107.00	107.00	107.00	64.10
16 (U4)	4.01	3.33	2.98	2.65	3.19	2.07
17 (U5)	131.95	131.95	131.95	131.95	131.95	79.05
18 (U6)	4.01	3.33	2.98	2.65	3.19	2.07
19 (U7)	107.00	107.00	107.00	107.00	107.00	64.10
20 (U8)	4.37	3.31	3.00	2.56	3.09	1.85
21 (U9)	103.03	103.03	103.03	103.03	103.03	61.72
22 (U10)	2.88	2.24	2.04	1.72	2.00	1.20
<b>Minimum RF</b>	<b>2.88</b>	<b>2.24</b>	<b>2.04</b>	<b>1.72</b>	<b>2.00</b>	<b>1.20</b>
<b>Minimum Tonnage</b>	<b>43.19</b>	<b>51.58</b>	<b>54.99</b>	<b>68.81</b>	<b>79.87</b>	<b>N/S</b>
HS(Inventory) =						

HS-23.9-44

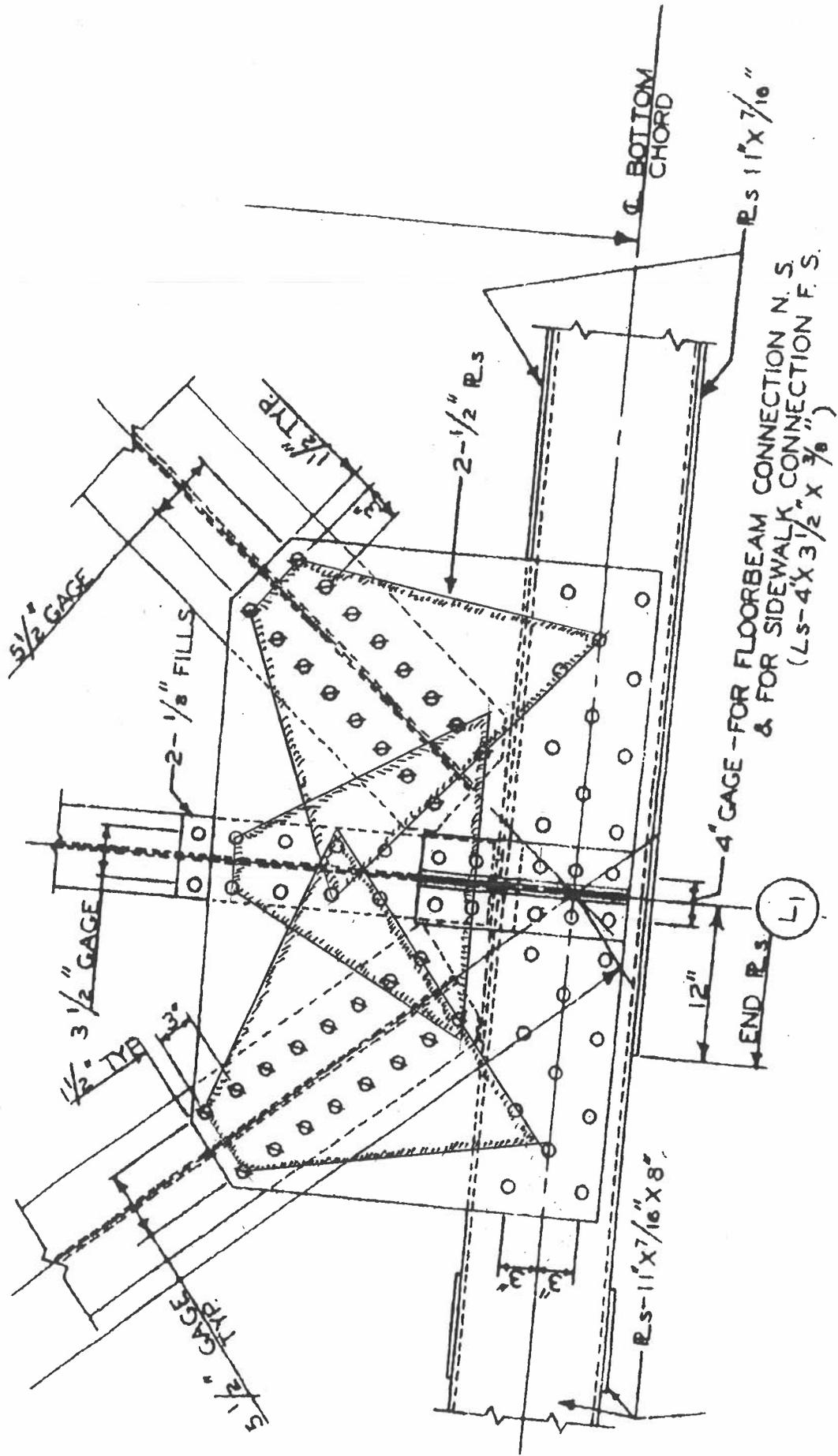
**Gusset Plates Analysis Results:**  
 Minimum edge stiffness passes based on minimum plate thickness for all truss joints

Mohican Park Truss

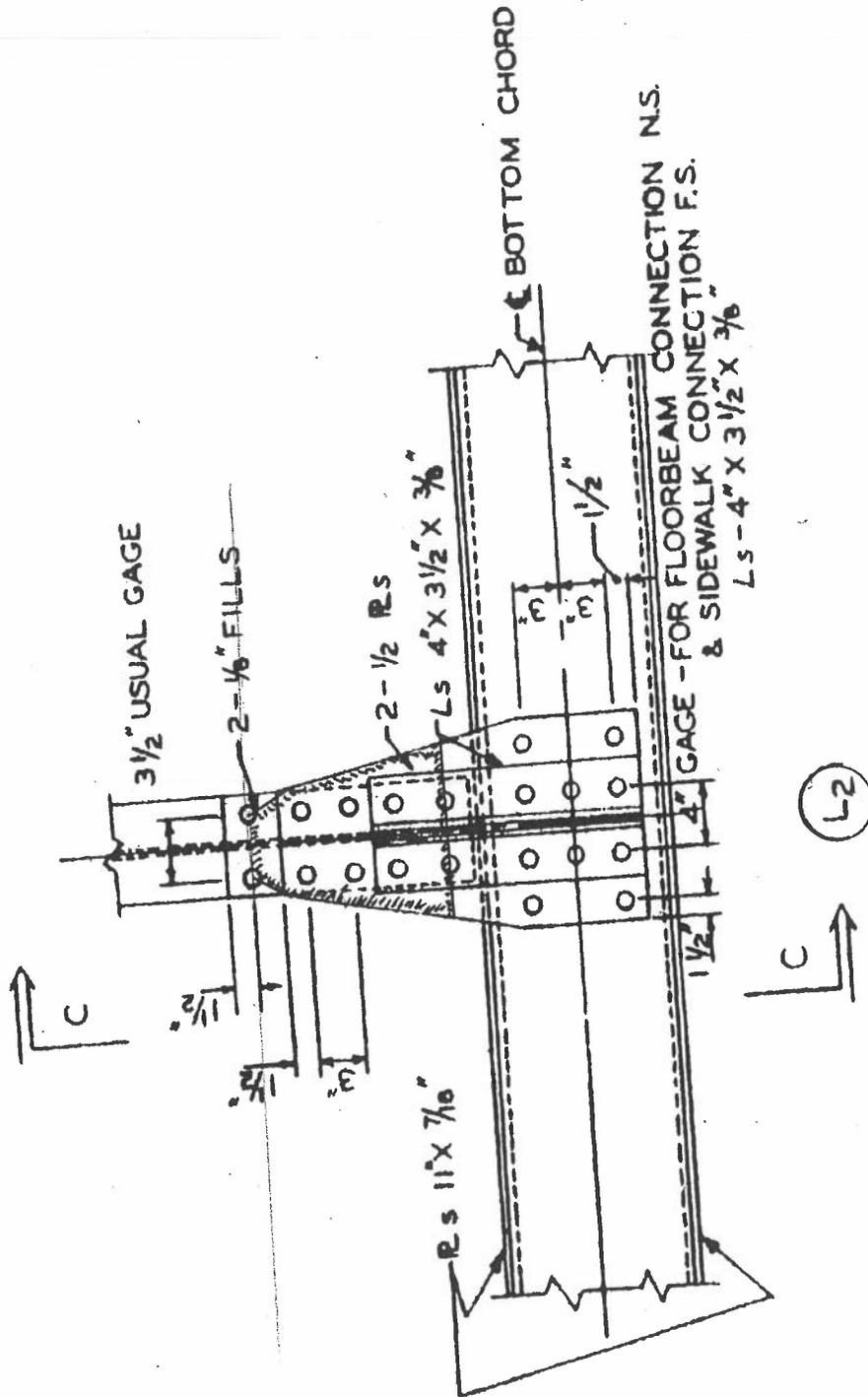


1" = 12"

Mohican Park Truss



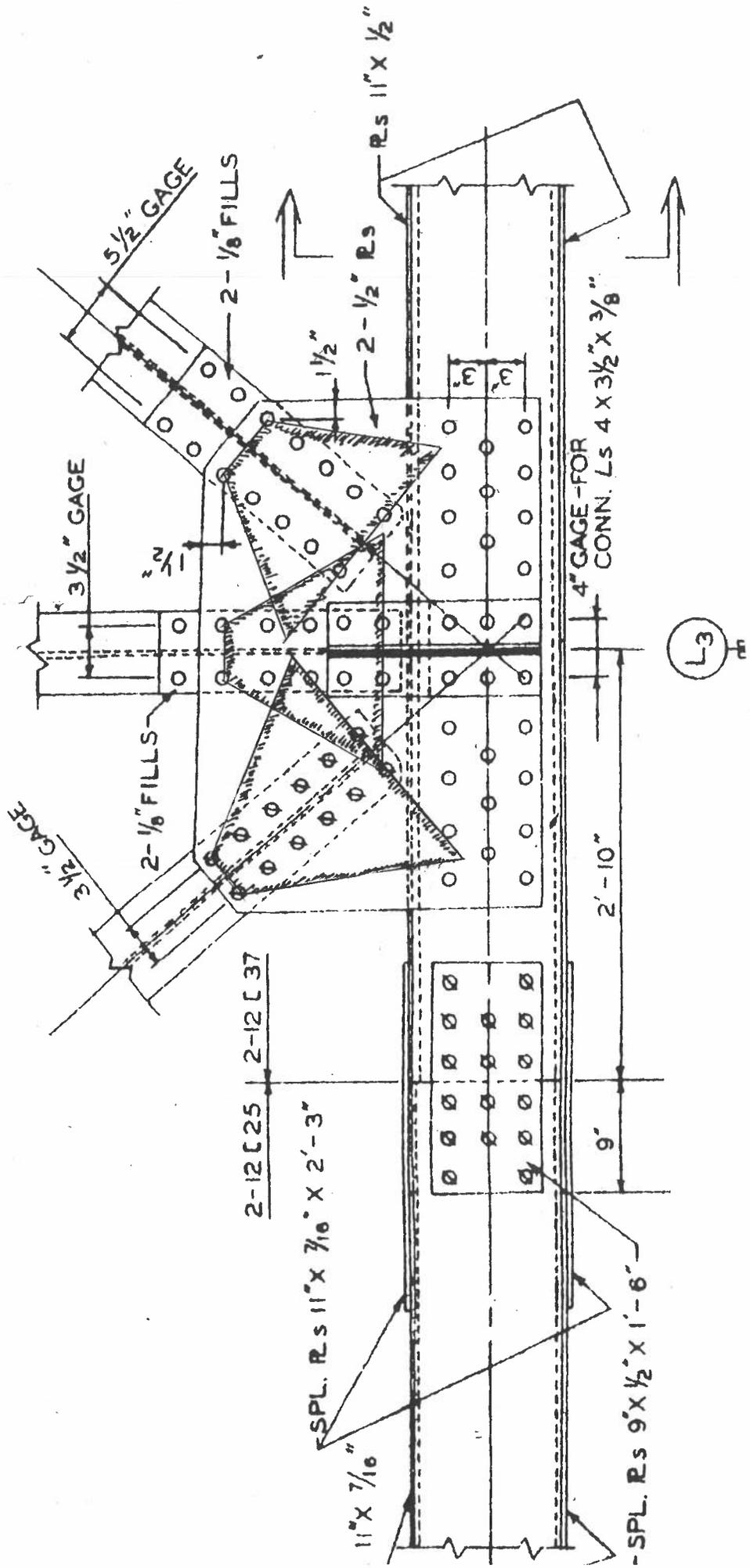
Mohican Park Truss



1" = 12"

No Cut

Mohican Park Truss

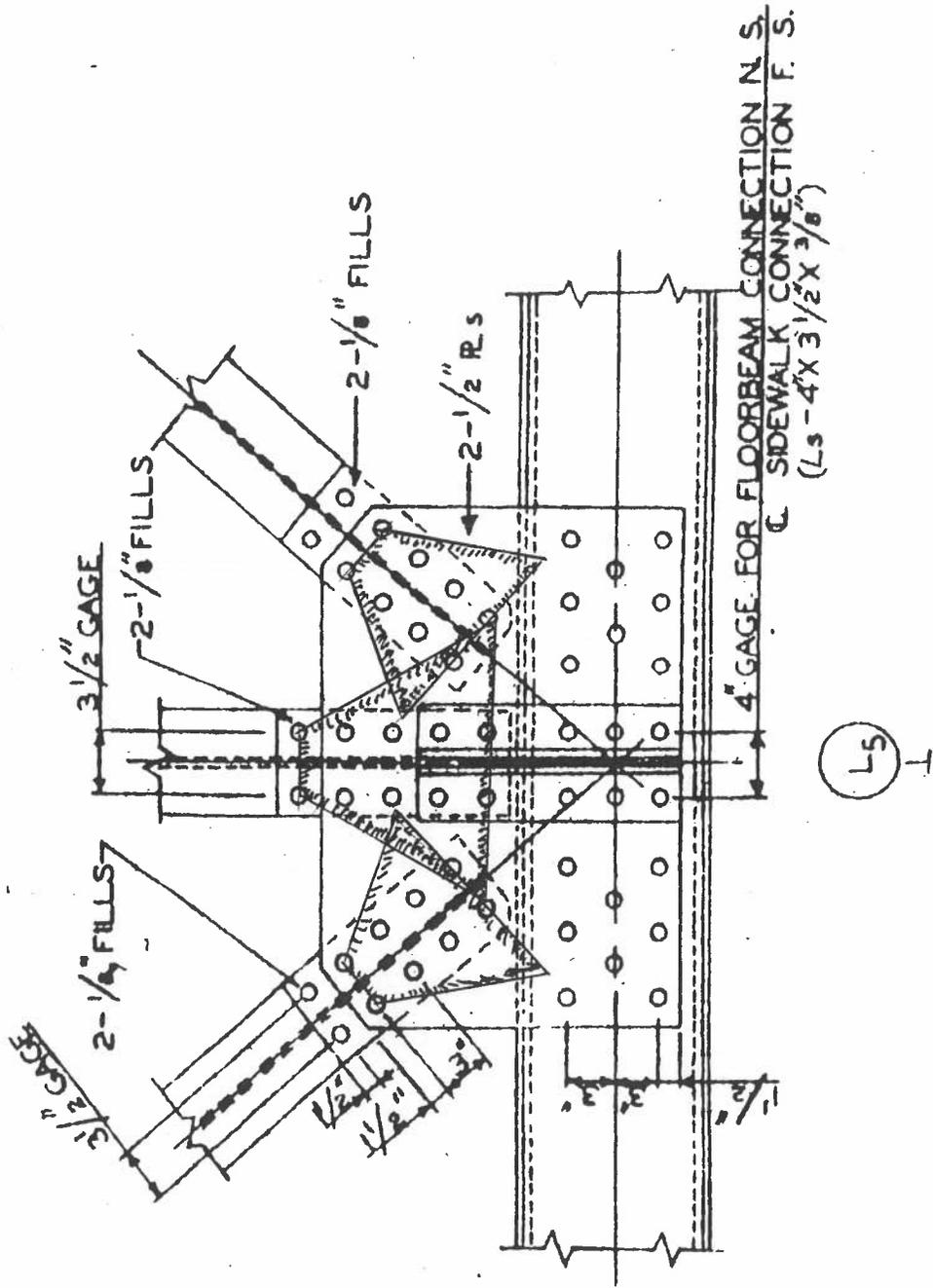


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1" = 12"



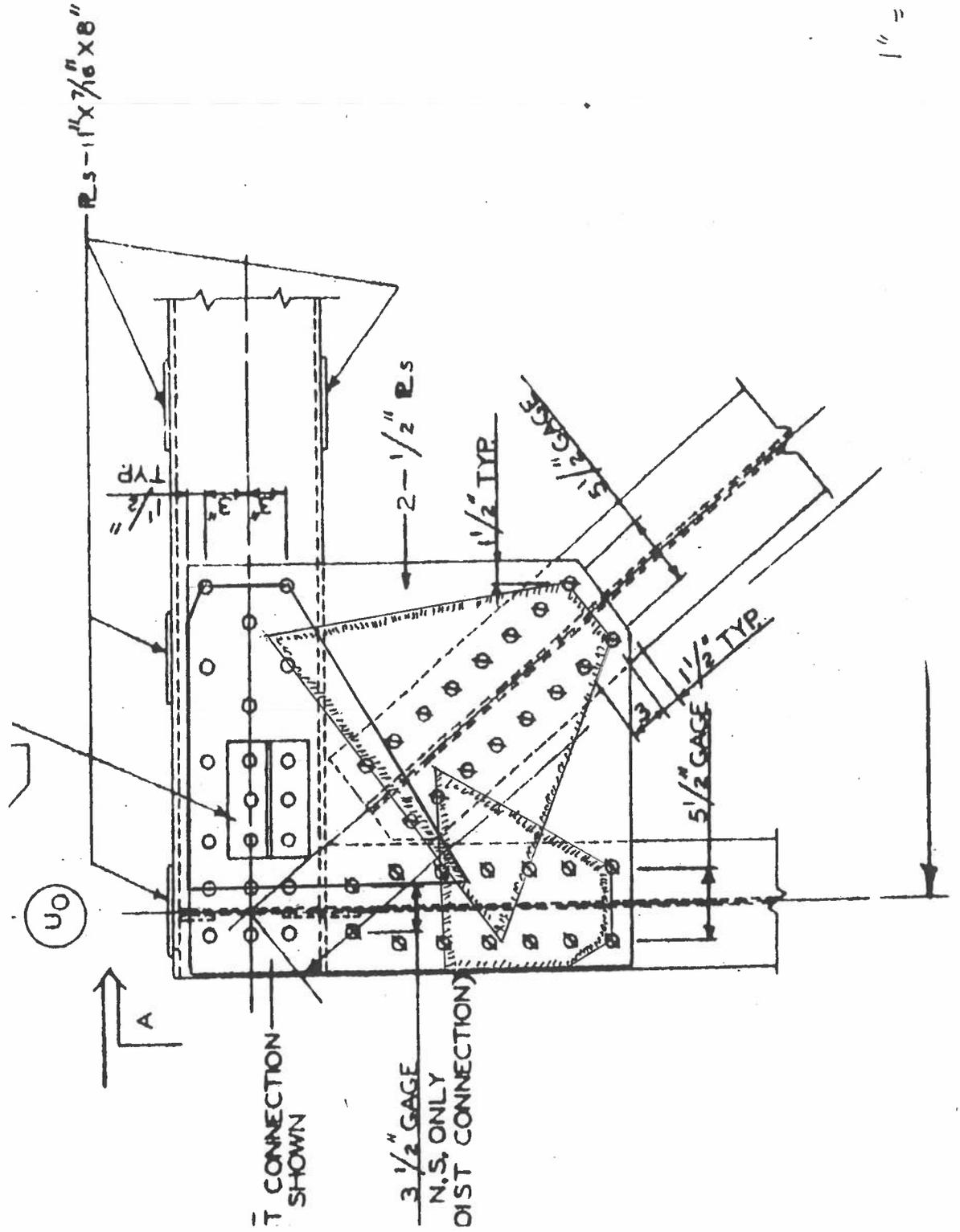
Mohican Park Truss



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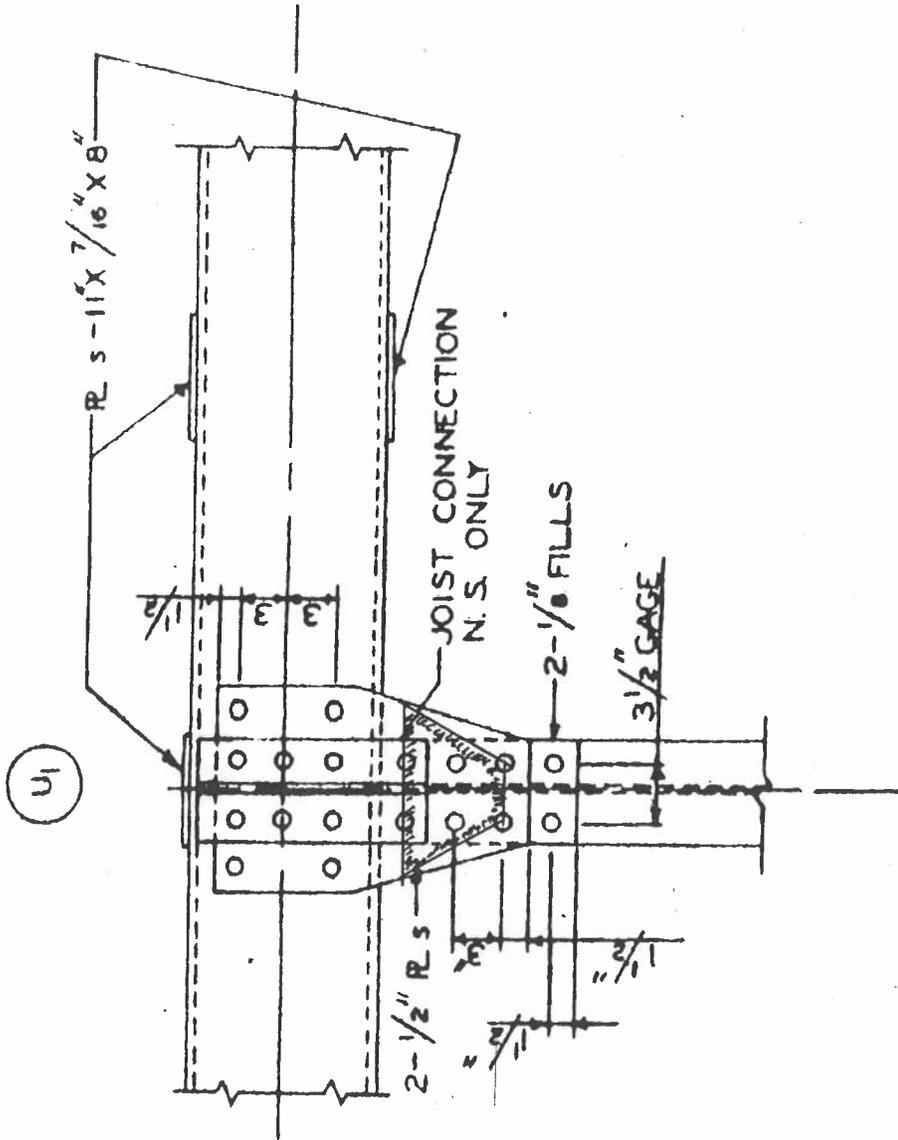
1" = 12"

Mohican Park Truss



1" = 12"

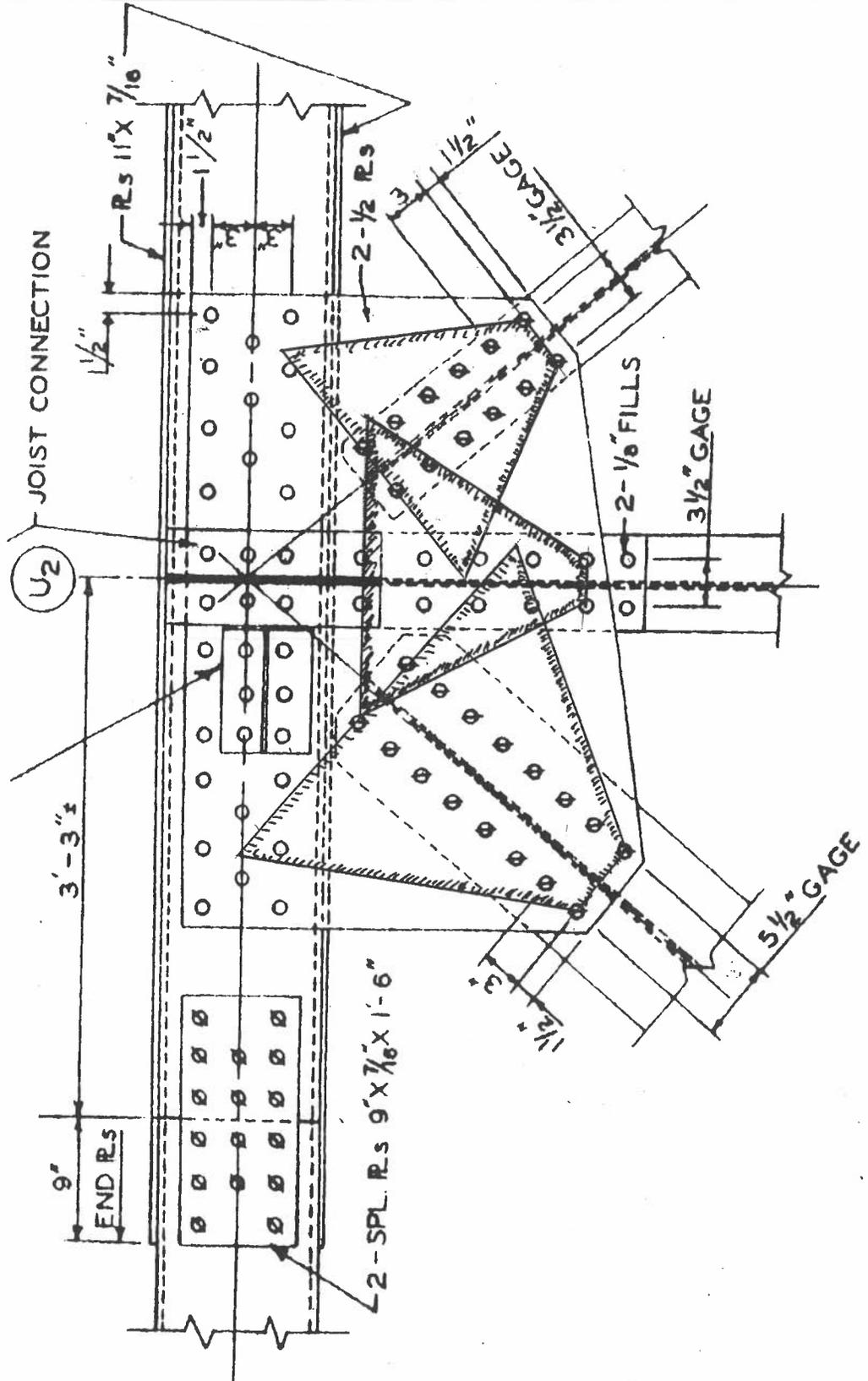
Mohican Park Truss



1" = 12"

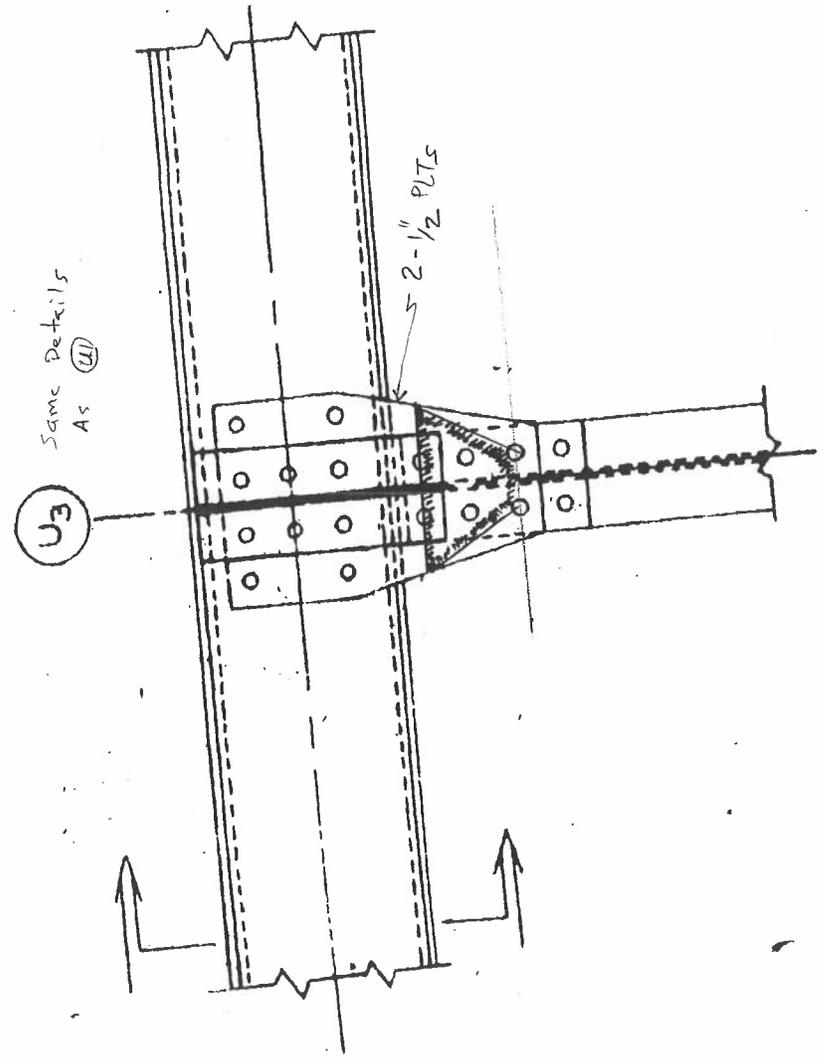
Mohican Park Truss

No Cut



1" = 12'

Mohican Park Truss

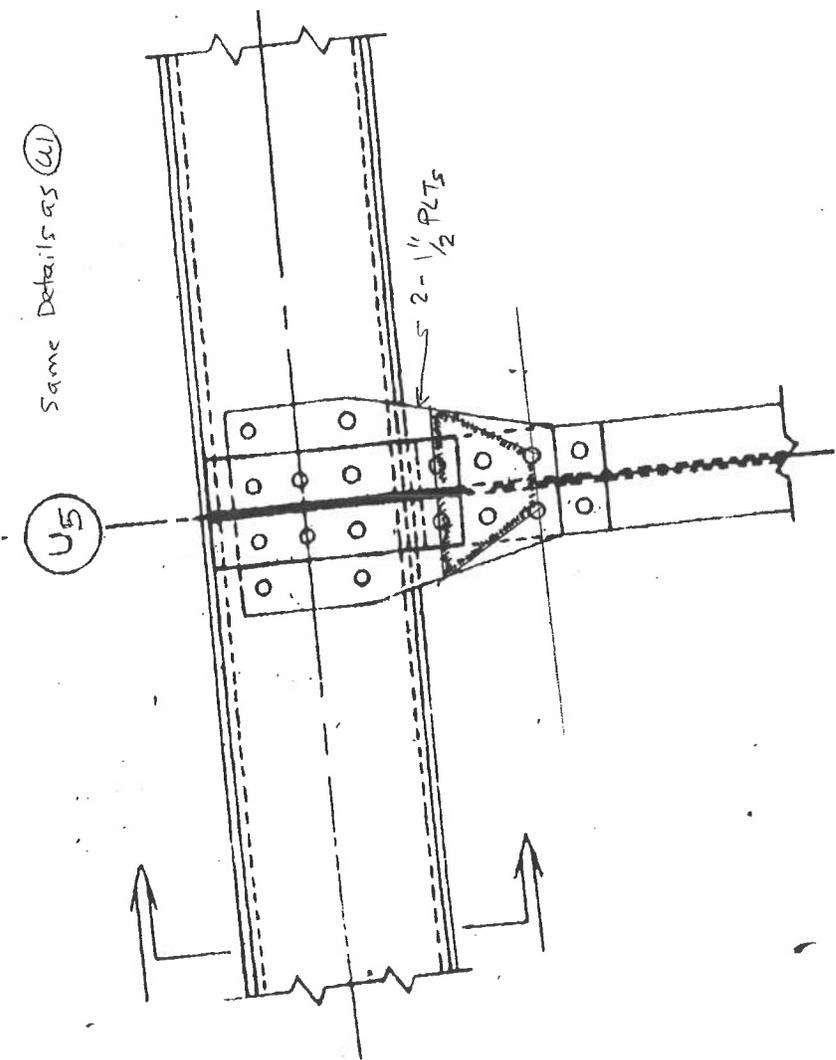


No Cut

1" = 12"



# Mohican Park Truss



No cut.

1" = 12"

# Mohican Park Covered Bridge (ASD-058SP-1.51)

SFN: 326941

OAH

2/11/2010

## BAR-PC Output Summary (Flexural Members Only)+

### Rating Factor:

Member ID	2F1 (Tons)	3F1 (Tons)	4F1 (Tons)	5C1 (Tons)	HS20-44 (Operating)	HS20-44 (Inventory)
Floor beam (W18X55)	4.25	2.98	2.86	3.24	3.04	1.82
Stringer (Concrete Slab)	2.34	1.93	1.97	1.87	1.47	0.88
<b>Minimum Rating</b>	<b>2.34</b>	<b>1.93</b>	<b>1.97</b>	<b>1.87</b>	<b>1.47</b>	<b>0.88</b>

### Rating Tonnage:

Member ID	2F1 (Tons)	3F1 (Tons)	4F1 (Tons)	5C1 (Tons)	*HS20-44 (OPR)	*HS20-44 (INV)
Floor beam (W18X55)	63.80	68.60	77.20	129.6	109.40	HS36.5-44
Stringer (Concrete Slab)	35.20	44.50	53.10	74.7	52.70	HS17.6-44
<b>Minimum Rating</b>	<b>35.20</b>	<b>44.50</b>	<b>53.10</b>	<b>74.70</b>	<b>52.70</b>	<b>N/A</b>

\* in terms of HS-20

+ Based on analysis made by Richard Irwin, using load factor method





DETAIL DATA AT MOMENT CHECK POINT FOR

DATE 2/10/10

-- STRUCTURAL STEEL PROPERTIES --  
 H TWBES H/TWEB D D/TWEB - B' (IN) - B'/T - LB ( FT ) RY ( IN ) - LB / RY HYBRID RATIO, R  
 (IN.) (IN.) TOP BOT TOP BOT TOP BOT TOP BOT TOP BOT +BEND -BEND  
 0.00

-- COMPOSITE CONCRETE PROPERTIES --  
 EFF WIDTH EFF THICK. VALUE (AS)C (DS)C VALUE ATF ABF AW  
 (IN.) (IN.) N (SQ.IN.) (IN.) A Y (SQ.IN.) (SQ.IN.) (SQ.IN.)  
 0.0 0.0 0 0.00 0.00 0.00 0.0 0.0 0.00 0.00 0.00 0.00

-- SECTION PROPERTIES --  
 GROSS NET AREA IX IX C TOP TOP BOT BOT RY ( IN ) RY ( IN )  
 AREA +BEND -BEND (BOT) -BEND +BEND -BEND +BEND -BEND  
 SQ.IN. SQ.IN. SQ.IN. IN.\*\*4 IN. IN.\*\*4 IN. IN.\*\*4 IN. IN.\*\*4 IN. IN.\*\*4 IN. IN.\*\*4  
 0.00 0.00 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

-- ULTIMATE STRENGTH --  
 FY (PSI) F'C (PSI) FY (PSI) 2055/(SQRT FY) 2200/(SQRT FY) -- YIELD STRESS, FY (PSI) --  
 STEEL CONC. REBAR TOP BOT TOP BOT TOP BOT TOP BOT  
 0. 0. 0. 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

SECTION QUALIFICATION \*\*\*\*\*  
 STIFFENED UNSTIFFENED COMPACT BRACED UNBRACED REDUCTION SYMMETRICAL UNSYMMETRICAL  
 LONG TRANV NON-COMPACT NON-COMPACT FACTOR  
 0.0000 0.0000

SECTION CAPACITY \*\*\*\*\*  
 +BEND ML = 0.00 FT-KIPS, MR = 0.00 FT-KIPS  
 -BEND ML = 0.00 FT-KIPS, MR = 0.00 FT-KIPS  
 --- NON-COMPOSITE MOMENT CAPACITY (FT-KIPS) --- COMPOSITE MOMENT CAPACITY (FT-KIPS) --- SHEAR CAPACITY (KIPS) ---

MOMENT (FT-KIPS) AND SHEAR (KIPS) \*\*\*\*\*  
 --- DEAD LOAD ---  
 M (DL) M (SDL) REDIS. REDIS. V (DL) V (SDL)  
 M-(DL)---M-(SDL)  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

TOP TOP BOT BOT MU MAX. CAP. MU MAX. CAP. MU  
 +BEND -BEND +BEND -BEND STEEL CONC. LEFT RIGHT VU  
 0.00

PLASTIC SECTION MODULUS ---  
 TOP TOP BOT BOT  
 +BEND -BEND +BEND -BEND  
 IN.\*\*3 IN.\*\*3 IN.\*\*3 IN.\*\*3  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

D/P STRUCTURE I.D. = 032-694  
 MEMBER I.D. -- S 1  
 C.P. LOCATION -- 1.40  
 PAGE 3

DETAIL DATA AT MOMENT CHECK POINT FOR

DATE 2/10/10

```

***** RATING FACTOR *****
-- RATING FACTOR FOR MOMENT --
AVAILABLE (LL+I) CAPACITY (FT-KIPS)    RATING FACTOR - MOMENT
TOP          BOTT          TOP          BOTT
+BEND        -BEND        +BEND        -BEND
-- RATING FACTOR FOR SERVICEABILITY --
AVAILABLE (LL+I) CAPACITY (FT-KIPS)    RATING FACTOR - SERVICEABILITY
TOP          BOTT          TOP          BOTT
+BEND        -BEND        +BEND        -BEND
-- RATING FACTOR FOR SHEAR --
AVAILABLE CAPACITY (KIPS)              RATING FACTOR - SHEAR
LEFT          RIGHT                    LEFT          RIGHT
  
```

```

RATING VALUE      SAFE LOAD CAP. (TONS)
RATING VALUE      SAFE LOAD CAP. (TONS)
RATING VALUE      SAFE LOAD CAP. (TONS)
  
```

DATE 2/10/10

DETAIL DATA AT MOMENT CHECK POINT FOR

D/P STRUCTURE I.D. = 032-694  
MEMBER I.D. -- S 1  
C.P. LOCATION -- 1.40

PAGE 2

\*\*\*\*\* LIVE LOAD CALCULATIONS (IMPACT FACTOR = 0.300 FOR +BEND AND = 0.300 FOR -BEND)

LIVE LOAD	--- TRUCK MOMENT ---		--- LIVE LOAD ---		--- LANE MOMENT ---		--- FIXED ---		--- MAX ---								
	LL+IMP	LL	LOC.NO.	DIR	LL+IMP	LL	LOC.CONC.	LOAD #1	LOC.CONC.	LOAD #2	FT.	FT.	FT.	+V	-V	SHEAR	SHEAR
	LL+I	LL	1	WHEEL										+V	-V		
	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS	KIPS	KIPS	KIPS	KIPS

MASTER RECORDS READ IN 002346  
NEW RECORDS WRITTEN 002346

THE FOLLOWING STRUCTURES WERE SELECTED

032694



REC. NO.  
4700  
4800  
4900  
5000  
5100  
5200  
5300  
5400  
5500  
5600  
5700  
5800  
5900  
6000  
6100  
6200  
6300  
6400  
6500  
6600  
6700  
6800  
6900

RECORD

11032694S01	0802	0010	03	018.110107.53P000.6317.795
11032694S01	0803	0002	02	0200.39P016.8509.055
11032694S01	0901	0002	02	0307.53P000.6300.315
11032694S01	0902	0010	03	18.7350107.53P000.63018.42
11032694S01	0903	0002	02	0200.39P016.85002.16
11032694S01	1001	0002	02	0307.53P000.63000.94
11032694S01	1002	0012	01	040009.P00.6250.3125
12032694B01				02 01.11008.53
12032694B01				02 00.488.5625
12032694B01				02 00.968.5625
12032694B01				01 00.1802.375
12032694B01				01 01.260002.5
12032694B01				01 00.4802.375
13032694S01	01			0168.010.6.630.630084.010.0005.
13032694S01	02			
13032694S01	03			
13032694S01	01	0010.		
13032694S01	02	0010.		
13032694S01	03	0010.		
14032694B01	0101	002710	C 01	
16032694B01	01T01	002710	C	
16032694B01	01B01	002710	NSNS	



SECTION PROPERTIES (REINFORCED CONCRETE) - GIRDERS, STRINGERS, FLOOR BEAMS

MEMBER ID	SECT. NO.	SAME AS ADR	EFL	H	A	B	B*	T	I	R	AS	D	COMP CODE
6100--13	S 1	0	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00	1.11	8.53	
6400--13	S 1	0	10.00	0.00	0.00	12.00	0.00	0.00	1	0.18	0.48	2.38	
6200--13	S 1	0	0.00	0.00	0.00	0.00	0.00	0.00	2	0.48	1.26	8.56	
6500--13	S 1	0	10.00	0.00	0.00	12.00	0.00	0.00	1	0.96	0.96	2.50	
6300--13	S 1	0	0.00	0.00	0.00	0.00	0.00	0.00	2	0.48	0.48	8.56	
6600--13	S 1	0	10.00	0.00	0.00	12.00	0.00	0.00	1	0.48	0.48	2.38	

SECTION PROPERTIES (COMPOSITE) - GIRDERS, STRINGERS, FLOOR BEAMS

MEMBER ID	SPAN	RANGE	COMP N	SECT	A	WIDTH	THICK	FILLET	EFFECT.	EFFECT.	DIST TO	
ID SYMM	RANGE	LENGTH	CODE	SAME R	SPACES	-NESS	WIDTH	THICK.	WIDTH	THICK.	TOP SECT.	
6700--14	B 1	1 1	27.833FT.	C 0	1 0	168.00	10.00	6.63	0.63	84.00	10.00	5.00

BRACING LENGTH SPECIFICATIONS - LOAD FACTOR ANALYSIS

MEMBER ID	SPAN	RANGE	SUPPORT	COND.	SPACES	SPACING	STIFF
ID SYMM	T/B	LENGTH	LEFT	RIGHT	DISTANCE	SPACING	
6800--16	B 1	1 T 1	27.833FT.	C	0	0.000FT.	0.000IN.
6900--16	B 1	1 B 1	27.833FT.	NS	0	0.000FT.	0.000IN.



DETAIL DATA FOR FLEXURAL MEMBER

D/P STRUCTURE I.D. 032-694  
 MEMBER I.D.--S01  
 MATERIAL--RC

LL DIST. FACT. = 0.207  
 SUPERIMPOSED CONCENTRATED DL(S)  
 DIST. FROM LT SUPPORT\*\*\*\*\*

SUPERIMPOSED DISTRIBUTED DL(S)  
 LENGTH DISTRIBUTED\*\*\*\*\*

SPAN NO.	LENGTH FT.	RNG. NO.	VAR CODE	DL DUE TO MEM. WEIGHT	W(LT) LBS/FT	W(RT) LBS/FT	SPAN NO.	STIFF TRANS. LONG. NO.	P KIPS	SPAN FT.
7	14.000	1	S	125.0	125.0	37.5	7	84.000		14.000
		2	T	125.0	125.0	37.5	8	98.000		14.000
		3	P	125.0	125.0	37.5	9	112.000		14.000
8	14.000	1	B	125.0	125.0	37.5	10	126.000		14.000
		2		125.0	125.0					
		3		125.0	125.0					
9	14.000	1		125.0	125.0					
		2		125.0	125.0					
		3		125.0	125.0					
10	14.000	1		125.0	125.0					
		2		125.0	125.0					

CHECK POINTS RATED--  
 SPAN DIS FRM FUNC SPAN DIS FRM FUNC  
 NO. LT SPRT M VL VR NO. LT SPRT M VL VR  
 FT. FT.

7	0.000	X	X	X	X	X	X	X	X	X
7	7.000	X	X	X	X	X	X	X	X	X
7	14.000	X	X	X	X	X	X	X	X	X
8	0.000	X	X	X	X	X	X	X	X	X
8	7.000	X	X	X	X	X	X	X	X	X
8	14.000	X	X	X	X	X	X	X	X	X
9	0.000	X	X	X	X	X	X	X	X	X
9	7.000	X	X	X	X	X	X	X	X	X
9	14.000	X	X	X	X	X	X	X	X	X
10	0.000	X	X	X	X	X	X	X	X	X
10	8.400	X	X	X	X	X	X	X	X	X
10	14.000									

DATE 02/10/10

NO. SPANS = 10  
 NOT SYMMETRICAL



INPUT CODING--  
 INVENTORY OPERATING SPECIAL LOAD  
 DATE 2/10/10 LIVE LOAD RATING LIVE LOAD RATING TRUCK TYPE GROSS TONS  
 BY RCICO HS20 HS 17.58 HS20 HS 29.30 VEH.SPEC 74.7

STRUCTURE DESCRIPTION--  
 IDENTIFICATION 0326941  
 TYPE 344  
 YEAR OF CONSTR. 1967  
 LENGTH 145.00 FEET  
 ROADWAY WIDTH 24.00 FEET  
 NUMBER OF SPANS 1  
 LOCATION--  
 DISTRICT C  
 COUNTY ASD  
 CONSTR. RTE. ODNRP8  
 CONSTR. SEC. 1.43  
 CONSTR. STA. 14+02.50  
 KEY RTE. FEDERAL  
 MARKED RTE. ODNRP8  
 MICROFILM REEL NUMBERS--  
 DESIGN PLANS  
 COMPUTATIONS  
 CORRESPONDENCE 100210L

ANALYST REMARKS--  
 \*\*\*\*\* TRUSS ANALYSIS DONE ON LARSA \*\*\*\*\*  
 SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
 PROJ. 817(67) SUPER. 10" SLAB  
 INSP. & MAINT. RESP.: ODNRP  
 1" MWS(2008) SEC. AVALL.=100%

SPECIAL LOAD SUMMARY  
 TRUCK TYPE VEH.SPEC  
 MEMBER I.D. S 1  
 SPAN \*  
 CRITICAL C.P. DIST. 8.4 FEET  
 SHEAR  
 (KIPS)  
 MEMBER CAPACITY 26.6  
 DL EFFECT 2.5  
 CAPACITY FOR (LL+I) 18.0

\*\*\* FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. 032-694 BARS RELEASE 5.5  
 POSTING ANALYSIS D/P STR. ID-- 032-694  
 STRUCTURE 0326941

INPUT CODING--

INVENTORY OPERATING POSTING

DATE	2/10/10	LIVE LOAD	RATING	LIVE LOAD	RATING	TRUCK TYPE	GROSS TONS
BY	RCICO	HS20	HS 17.58	HS20	HS 29.30	VEH. 2F1	35.2
						VEH. 3F1	44.5
						VEH. 4F1	53.1

MICROFILM REEL NUMBERS--

STRUCTURE DESCRIPTION--

LOCATION--

DESIGN PLANS  
 COMPUTATIONS  
 CORRESPONDENCE 100210L

IDENTIFICATION 0326941  
 TYPE 344  
 YEAR OF CONSTR. 1967  
 LENGTH 145.00 FEET  
 ROADWAY WIDTH 24.00 FEET  
 NUMBER OF SPANS 1

DISTRICT C  
 COUNTY ASD  
 CONSTR. RTE. ODNRP8  
 CONST. SEC. 1.43  
 CONST. STA. 14+02.50  
 KEY RTE. FEDERAL  
 MARKED RTE. ODNRP8

ANALYST REMARKS--

\*\*\*\*\* TRUSS ANALYSIS DONE ON LAFSA \*\*\*\*\*  
 SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
 PROJ. 817(67) SUPER. 10" SLAB  
 INSP. & MAINT. RESP.: ODNRP  
 1" MWS(2008) SEC. AVAIL.=100%

POSTING RATING SUMMARY

TRUCK TYPE	VEH. 2F1	TRUCK TYPE	VEH. 3F1	TRUCK TYPE	VEH. 4F1
MEMBER I.D.	S 1	MEMBER I.D.	S 1	MEMBER I.D.	S 1
SPAN	1	SPAN	1	SPAN	*

CRITICAL C.P. DIST.	5.6 FEET	CRITICAL C.P. DIST.	5.6 FEET	CRITICAL C.P. DIST.	8.4 FEET
---------------------	----------	---------------------	----------	---------------------	----------

\*\*\* FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. 032-694  
INVENTORY AND/OR OPERATING ANALYSIS

D/P STR. ID-- 032-694

STRUCTURE 0326941

INPUT CODING--

INVENTORY

OPERATING

DATE	LIVE LOAD	RATING	LIVE LOAD	RATING
2/10/10	HS20	HS 17.6	HS20	HS 29.3

BY RCICO

MICROFILM REEL NUMBERS--

STRUCTURE DESCRIPTION--

IDENTIFICATION 0326941  
 TYPE 344  
 YEAR OF CONSTR. 1967  
 LENGTH 145.00 FEET  
 ROADWAY WIDTH 24.00 FEET  
 NUMBER OF SPANS 1

LOCATION--

DISTRICT C  
 COUNTY ASD  
 CONSTR. RTE. ODNRP8  
 CONSTR. SEC. 1.43  
 CONSTR. STA. 14+02.50  
 KEY RTE. FEDERAL  
 MARKED RTE. ODNRP8

DESIGN PLANS  
 COMPUTATIONS  
 CORRESPONDENCE 100210L

ANALYST REMARKS--

\*\*\*\*\* TRUSS ANALYSIS DONE ON LARSA \*\*\*\*\*  
 SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
 PROJ. 817(67) SUPER. 10" SLAB  
 INSP. & MAINT. RESP.: ODNRP  
 1" MWS(2008) SEC. AVAIL.=100%

INVENTORY RATING SUMMARY

MEMBER I.D. S 1  
 SPAN 1  
 CRITICAL C.P. DIST. 5.6 FEET  
 LIVE LOAD DESIGNATION HS20

OPERATING RATING SUMMARY

MEMBER I.D. S 1  
 SPAN 1  
 CRITICAL C.P. DIST. 5.6 FEET  
 LIVE LOAD DESIGNATION HS20

SHEAR  
(KIPS)

SHEAR

SUMMARY OF RATING CALCULATIONS-----  
SPECIAL LOAD ANALYSIS

D/P STR. I.D.-- 032-694

STRUCTURE 0326941

INPUT CODING ---

DATE 2/10/10

INVENTORY

OPERATING

SPECIAL LOAD

BY RCICO

LIVE LOAD RATING

RATING

TRUCK TYPE GROSS TONS

HS20

HS 17.58

HS20 HS 29.30

VEH. SPEC

74.70

MICROFILM REEL NUMBERS --

STRUCTURE DESCRIPTION --

IDENTIFICATION 0326941  
TYPE 344  
YEAR OF CONSTR. 1967  
LENGTH 145.00 FEET  
ROADWAY WIDTH 24.00 FEET  
NUMBER OF SPANS 1

LOCATION --

DISTRICT C  
COUNTY ASD  
CONSTR. RTE. ODNRP8  
CONSTR. SEC. 1.43  
CONSTR. STA. 14+02.50  
KEY RTE. FEDERAL  
MARKED RTE. ODNRP8

DESIGN PLANS  
COMPUTATIONS  
CORRESPONDENCE 100210L

ANALYST REMARKS --

\*\*\*\*\* TRUSS ANALYSIS DONE ON LARSA \*\*\*\*\*  
SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
PROJ. 817(67) SUPER. 10" SLAB  
INSP. & MAINT. RESP.: ODNR  
1" MWS(2008) SEC. AVAIL.=100%

TRUCK TYPE VEH. SPEC

S 1

MEMBER ID.

SPAN

CRITICAL C.P. DIST. 8.4 FEET

SHEAR

(KIPS)

MEMBER CAPACITY 26.6

INPUT CODING --

DATE 2/10/10

INVENTORY

OPERATING

POSTING

STRUCTURE 0326941

BY RCICO

LIVE LOAD RATING

LIVE LOAD RATING

TRUCK TYPE GROSS TONS

HS20 HS 17.58

HS20 HS 29.30

VEH. 2F1 35.16

VEH. 3F1 44.46

VEH. 4F1 53.06

MICROFILM REEL NUMBERS --

STRUCTURE DESCRIPTION --

IDENTIFICATION 0326941  
TYPE 344  
YEAR OF CONSTR. 1967  
LENGTH 145.00 FEET  
ROADWAY WIDTH 24.00 FEET  
NUMBER OF SPANS 1

LOCATION --

DISTRICT C  
COUNTY ASD  
CONSTR. RTE. ODNRP8  
CONSTR. SEC. 1.43  
CONSTR. STA. 14+02.50  
KEY RTE. FEDERAL  
MARKED RTE. ODNRP8

DESIGN PLANS  
COMPUTATIONS  
CORRESPONDENCE 1002101

ANALYST REMARKS --

\*\*\*\*\* TRUSS ANALYSIS DONE ON LARGA \*\*\*\*\*  
SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
PROJ. 817(67) SUPER. 10" SLAB  
INSP. & MAINT. RESP.: ODNR  
1" MWS(2008) SEC. AVAIL.=100%

TRUCK TYPE VEH. 2F1

TRUCK TYPE VEH. 3F1

TRUCK TYPE VEH. 4F1

MEMBER ID. S 1

MEMBER ID. S 1

MEMBER ID. S 1

SPAN 1

SPAN 1

SPAN \*

CRITICAL C.P. DIST. 5.6 FEET

CRITICAL C.P. DIST. 5.6 FEET

CRITICAL C.P. DIST. 8.4 FEET

SUMMARY OF RATING CALCULATIONS-----STRUCTURE MEMBER S 1 BARS RELEASE 5.5  
 INVENTORY AND/OR OPERATING ANALYSIS

D/P STR. I.D.-- 032-694

STRUCTURE 0326941

INPUT CODING --

DATE 2/10/10

INVENTORY

OPERATING

BY RCICO

LIVE LOAD RATING

HS20 HS 17.58 HS20 HS 29.30

STRUCTURE DESCRIPTION -- LOCATION -- MICROFILM REEL NUMBERS --  
 IDENTIFICATION 0326941 DISTRICT C DESIGN PLANS  
 TYPE 344 COUNTY ASD COMPUTATIONS  
 YEAR OF CONSTR. 1967 CONSTR. RTE. ODNRP8 CORRESPONDENCE 100210L  
 LENGTH 145.00 FEET CONSTR. SEC. 1.43  
 ROADWAY WIDTH 24.00 FEET CONSTR. STA. 14+02.50 FEDERAL  
 NUMBER OF SPANS 1 KEY RTE. ODNRP8  
 MARKED RTE.

ANALYST REMARKS --

\*\*\*\*\* TRUSS ANALYSIS DONE ON LARSA \*\*\*\*\*  
 SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
 PROJ. 817(67) SUPER. 10" SLAB  
 INSP. & MAINT. RESP.: ODNR  
 1" MWS(2008) SEC. AVAIL.=100%

OPERATING RATING SUMMARY --

INVENTORY RATING SUMMARY --

MEMBER ID.	S 1	MEMBER ID.	S 1
SPAN	1	SPAN	1
CRITICAL C.P. DIST.	5.6 FEET	CRITICAL C.P. DIST.	5.6 FEET
LIVE LOAD DESIGNATION	HS20	LIVE LOAD DESIGNATION	HS20

SHEAR

SHEAR

(KIPS)

STRUCTURE 0326941

INPUT CODING --

DATE 2/10/10

INVENTORY

OPERATING

SPECIAL LOAD

BY RCICO

LIVE LOAD	RATING	LIVE LOAD	RATING	TRUCK TYPE	GROSS TONS
HS20	HS 36.45	HS20	HS 60.75		
				VEH.SPEC	129.60

HS20

HS 36.45

HS20

HS 60.75

VEH.SPEC

129.60

STRUCTURE DESCRIPTION --

IDENTIFICATION 0326941  
 TYPE 344  
 YEAR OF CONSTR. 1967  
 LENGTH 145.00 FEET  
 ROADWAY WIDTH 24.00 FEET  
 NUMBER OF SPANS 1

LOCATION --

DISTRICT C  
 COUNTY ASD  
 CONSTR. RTE. ODNRP8  
 CONSTR. SEC. 1.43  
 CONSTR. STA. 14+02.50  
 KEY RTE. FEDERAL  
 MARKED RTE. ODNRP8

MICROFILM REEL NUMBERS --

DESIGN PLANS  
 COMPUTATIONS 100210L  
 CORRESPONDENCE

ANALYST REMARKS --

\*\*\*\*\* TRUSS ANALYSIS DONE ON LARSA \*\*\*\*\*  
 SEN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
 PROJ. 817(67) SUPER. 10" SLAB  
 INSP. & MAINT. RESP.: ODNRP  
 1" MWS(2008) SEC. AVAIL.=100%

TRUCK TYPE VEH. SPEC

MEMBER ID. B 1

SPAN 1

CRITICAL C.P. DIST. 13.2 FEET

SHEAR

(KIPS)

MEMBER CAPACITY 1361.3

SUMMARY OF RATING CALCULATIONS-----STRUCTURE MEMBER B 1 BARS RELEASE 5.5  
 POSTING ANALYSIS

STRUCTURE 0326941 D/P STR. I.D.-- 032-694

INPUT CODING --

DATE 2/10/10

INVENTORY OPERATING POSTING

BY	RCICO	LIVE LOAD	RATING	LIVE LOAD	RATING	TRUCK TYPE	GROSS TONS
		HS20	HS 36.45	HS20	HS 60.75	VEH. 2F1	63.79
						VEH. 3F1	68.64
						VEH. 4F1	77.19

MICROFILM REEL NUMBERS --

STRUCTURE DESCRIPTION --	LOCATION --	DESIGN PLANS COMPUTATIONS CORRESPONDENCE
IDENTIFICATION 0326941	DISTRICT C	100210L
TYPE 344	COUNTY ASD	
YEAR OF CONSTR. 1967	CONSTR. RTE. ODNRP8	
LENGTH 145.00 FEET	CONSTR. SEC. 1.43	
ROADWAY WIDTH 24.00 FEET	CONSTR. STA. 14+02.50	
NUMBER OF SPANS 1	KEY RTE. FEDERAL	
	MARKED RTE. ODNRP8	

ANALYST REMARKS --

\*\*\*\*\* TRUSS ANALYSIS DONE ON LARSA \*\*\*\*\*  
 SFN 0326941 ASD-58SP-0151 OVER MOHICAN RIVER LOADING HS20-44  
 PROJ. 817(67) SUPER. 10" SLAB  
 INSP. & MAINT. RESP.: ODNRP  
 1" MWS(2008) SEC. AVAIL.=100%

TRUCK TYPE VEH.	TRUCK TYPE VEH.	TRUCK TYPE VEH.
2F1	3F1	4F1
MEMBER ID. B 1	MEMBER ID. B 1	MEMBER ID. B 1
SPAN 1	SPAN 1	SPAN 1
CRITICAL C.P. DIST. 13.2 FEET	CRITICAL C.P. DIST. 13.2 FEET	CRITICAL C.P. DIST. 13.2 FEET





BARS RELEASE 5.5  
 D/P STRUCTURE I.D. 032-694  
 MEMBER I.D.--S01  
 C.P. LOCATION 4.00

DETAIL DATA AT MOMENT CHECK POINT FOR  
 REINFORCED CONCRETE FLEXURAL MEMBER

DATE 02/10/10

\*\*\*\*\* SECTION PROPERTIES IN RANGE 1 OF SPAN 4  
 H IN. 10.00 B IN. 12.00 T IN. 0.00 BP IN. 12.00  
 IN. 12.00 +BEND 120.0 AREA SQ.IN. 1000.0 IX IN\*\*4 1000.0 AS SQ.IN. 8.56 D IN. 7.50 ASP SQ.IN. 0.00  
 -BEND 120.0 SQ.IN. 0.48 IN. 8.56 IN. 1.00 0.000 0.000  
 1.44 1.00 0.000 0.000

\*\*\*\*\* INFLUENCE LINE (SIMPLE SPAN)  
 X-DIST (FT.)  
 Y-ORDINATE

\*\*\*\*\* ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)  
 T 0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000  
 E 1 -0.027 0.061 -0.216 -0.584 0.156 -0.042 0.000 0.000 0.000 0.000  
 N 2 -0.052 0.129 -0.465 -0.956 -0.256 -0.069 0.000 0.000 0.000 0.000  
 T 3 -0.074 0.198 -0.718 -1.147 0.307 -0.082 0.000 0.000 0.000 0.000  
 H 4 -0.090 0.259 -0.944 -1.188 0.318 -0.085 0.000 0.000 0.000 0.000  
 5 -0.101 0.303 -1.111 -1.109 0.297 -0.080 0.000 0.000 0.000 0.000  
 P 6 -0.103 0.323 -1.189 -0.942 0.252 -0.068 0.000 0.000 0.000 0.000  
 O 7 -0.096 0.311 -1.148 -0.716 0.192 -0.051 0.000 0.000 0.000 0.000  
 I 8 -0.078 0.259 -0.957 -0.464 0.124 -0.033 0.000 0.000 0.000 0.000  
 N 9 -0.046 0.158 -0.584 -0.215 0.058 -0.015 0.000 0.000 0.000 0.000  
 T 0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

\*\*\*\*\* TOTAL DL  
 MOMENT EFFECT  
 FT-KIPS  
 -2.7  
 AREA  
 TOTALS  
 5.5  
 22.2

\*\*\*\*\* LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = 0.300 FOR +BEND AND = 0.300 FOR -BEND)  
 LL+IMP LL LOC.NO. DIR AXLE LL+IMP LL LOC.CONC LOC.CONC  
 LOAD 1 WHEEL 1 SPACE FT. FT. FT. FT.  
 INV HS20 +BEND 1.0 0.8 89.600 R 0.0 0.0 1.3 1.0 22.400  
 -BEND 9.2 7.1 63.000 R 0.0 0.0 7.7 5.9 36.400  
 OPER HS20 +BEND 1.0 0.8 89.600 R 0.0 0.0 1.3 1.0 22.400  
 -BEND 9.2 7.1 63.000 R 0.0 0.0 7.7 5.9 36.400

POST 2F1 +BEND 0.8 0.6 13.797 L  
 -BEND 4.7 3.6 46.400 R  
 POST 3F1 +BEND 1.2 0.9 10.998 L  
 -BEND 6.7 5.2 47.800 R  
 POST 4F1 +BEND 1.2 0.9 76.800 R  
 -BEND 6.7 5.1 49.002 R

POST SPEC +BEND 1.3 1.0 -23.195 L  
 -BEND 6.6 5.1 50.601 R

\*\*\*\*\* AVALL.CAPAC.FOR LL+IMPACT  
 TOP BOT  
 +BEND -BEND +BEND -BEND  
 F-KIPS F-KIPS F-KIPS F-KIPS  
 INVENTORY 7.2 10.4 7.2 10.4  
 OPERATING 11.9 17.3 11.9 17.3  
 VEH. 1 11.9 17.3 11.9 17.3  
 VEH. 2 11.9 17.3 11.9 17.3  
 VEH. 3 11.9 17.3 11.9 17.3  
 SPECIAL 11.9 17.3 11.9 17.3

RATING SAFE LOAD RATING  
 FACT. CAPACITY VALUE  
 TONS  
 1.126 40.5 HS 22.5  
 1.877 67.6 HS 37.5  
 3.649 54.7  
 2.573 59.2  
 2.595 70.1  
 2.608 104.3

BAR RELEASE 5.5  
 D/P STRUCTURE I.D. 032-694  
 MEMBER I.D.---S01  
 C.P. LOCATION 5.00

DETAIL DATA AT MOMENT CHECK POINT FOR  
 REINFORCED CONCRETE FLEXURAL MEMBER

DATE 02/10/10

\*\*\*\*\* SECTION PROPERTIES IN RANGE 1 OF SPAN 5

H	B	T	BP	IX	AS	D	ASP	DP	A	K	J
IN.	IN.	IN.	IN.	IN**4	SQ.IN.	IN.	SQ.IN.	IN.	IN.	IN.	IN.
10.00	12.00	0.00	12.00	1000.0	0.48	8.56	0.00	2.50	1.00	0.000	0.000
			+BEND	1000.0	1.26	7.50	0.00	1.44	1.00	0.000	0.000
			-BEND								

\*\*\*\*\* INFLUENCE LINE (SIMPLE SPAN)

X-DIST (FT.)  
 Y-ORDINATE

POS AREA =

\*\*\*\*\* ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

T	0	1	2	3	4	5	6	7	8	9	0
0.000	0.000	0.058	0.125	0.192	0.253	0.298	0.319	0.308	0.256	0.157	0.000
-0.016	-0.215	-0.464	-0.717	-1.147	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000
-0.035	0.125	-0.464	-0.717	-1.147	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000
-0.053	0.192	-0.717	-1.147	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000	0.000
-0.069	0.253	-0.942	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000	0.000	0.000
-0.081	0.298	-1.110	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000	0.000	0.000
-0.087	0.319	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000	0.000	0.000	0.000
-0.083	0.308	-1.147	-0.942	-1.188	-1.109	-0.942	-1.147	-0.956	-0.584	0.000	0.000
-0.069	0.256	-0.956	-0.464	-0.215	-0.584	0.000	0.000	0.000	0.000	0.000	0.000
-0.042	0.157	-0.584	-0.215	-0.584	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.0	2.8	0.0	10.3	10.3	0.0	2.7	0.0	0.0	5.5	22.0	0.0
0.8	0.0	10.3	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

\*\*\*\*\* LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = 0.300 FOR +BEND AND = 0.300 FOR -BEND)

LIVE LOAD	LL+IMP	LL	TRUCK LOAD	LOC.NO.	DIR	AXLE SPACE	LL+IMP	LL	LOC.CONC	LOC.CONC	LOC.CONC	RATING	SAFE LOAD	RATING
				1	WHEEL	FT.			LOAD	LOAD	LOAD	FACT.	CAPACITY	VALUE
INV HS20 +BEND	1.0	0.8	103.600	R	0.0	0.0	1.2	1.0	36.400	61.600	61.600	1.130	40.7	HS 22.6
INV HS20 -BEND	9.2	7.1	77.000	R	0.0	0.0	7.7	5.9	50.400	61.600	61.600	1.884	67.8	HS 37.7
OPER HS20 +BEND	1.0	0.8	103.600	R	0.0	0.0	1.2	1.0	36.400	61.600	61.600	3.663	54.9	
OPER HS20 -BEND	9.2	7.1	77.000	R	0.0	0.0	7.7	5.9	50.400	61.600	61.600	2.583	59.4	
POST 2F1 +BEND	0.8	0.6	27.797	L								2.605	70.3	
POST 2F1 -BEND	4.7	3.6	60.400	R								2.653	106.1	
POST 3F1 +BEND	1.2	0.9	24.998	L										
POST 3F1 -BEND	6.7	5.2	61.800	R										
POST 4F1 +BEND	1.2	0.9	90.800	R										
POST 4F1 -BEND	6.7	5.1	63.002	R										
POST SPEC +BEND	1.3	1.0	-9.195	L										
POST SPEC -BEND	6.5	5.0	64.601	R										

\*\*\*\*\* ALLOWABLE STRESS  
 STEEL PSI  
 INVENTORY 20000.0  
 OPERATING 30000.0  
 POST VEH1 30000.0  
 POST VEH2 30000.0  
 POST VEH3 30000.0  
 POST SPEC 30000.0

\*\*\*\*\* MOMENT CAPACITY  
 REINF. CONC  
 + BEND FT-KIPS  
 - BEND FT-KIPS  
 FT-KIPS FT-KIPS FT-KIPS FT-KIPS

\*\*\*\*\* TOTAL DL  
 MOMENT EFFECT  
 FT-KIPS  
 -2.7

\*\*\*\*\* AVAIL.CAPAC.FOR LL+IMPACT  
 TOP BOT  
 +BEND +BEND  
 -BEND -BEND  
 F-KIPS F-KIPS F-KIPS F-KIPS

INVENTORY 7.1 10.4 7.1 10.4  
 OPERATING 11.9 17.4 11.9 17.4  
 VEH. 1 11.9 17.4 11.9 17.4  
 VEH. 2 11.9 17.4 11.9 17.4  
 VEH. 3 11.9 17.4 11.9 17.4  
 SPECIAL 11.9 17.4 11.9 17.4







BARS RELEASE 5.5  
 D/P STRUCTURE I.D. 032-694  
 MEMBER I.D.--S01  
 C.P. LOCATION 9.00

DETAIL DATA AT MOMENT CHECK POINT FOR  
 REINFORCED CONCRETE FLEXURAL MEMBER

DATE 02/10/10

\*\*\*\*\* SECTION PROPERTIES IN RANGE 1 OF SPAN 9

H	B	T	BP	IX	AS	D	ASP	DP	A	K	J
IN.	IN.	IN.	IN.	IN**4	SQ.IN.	IN.	SQ.IN.	IN.	IN.	IN.	IN.
10.00	12.00	0.00	12.00	1000.0	0.48	8.56	0.00	2.50	1.00	0.000	0.000
				1000.0	1.26	7.50	0.00	1.44	1.00	0.000	0.000
			+BEND								
			-BEND								

\*\*\*\*\* INFLUENCE LINE (SIMPLE SPAN)

X-DIST (FT.)  
 Y-ORDINATE

\*\*\*\*\* ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

T	SPAN 5	SPAN 6	SPAN 7	SPAN 8	SPAN 9	SPAN 10
0	0.000	0.000	0.000	0.000	0.000	0.000
E 1	0.004	0.015	0.057	-0.214	-0.588	0.172
N 2	0.009	-0.033	0.124	-0.462	-0.965	0.289
T 3	0.014	-0.051	0.191	-0.713	-1.161	0.359
H 4	0.018	-0.067	0.251	-0.937	-1.206	0.386
5	0.021	-0.079	0.296	-1.104	-1.131	0.377
P 6	0.023	-0.085	0.317	-1.182	-0.965	0.338
O 7	0.022	-0.082	0.306	-1.141	-0.739	0.274
I 8	0.018	-0.068	0.255	-0.951	-0.482	0.193
N 9	0.011	-0.042	0.156	-0.581	-0.226	0.099
T 0	0.000	0.000	0.000	0.000	0.000	0.000

\*\*\*\*\* TOTAL DL  
 MOMENT EFFECT

\*\*\*\*\* AVAIL. CAPAC. FOR LL+IMPACT

POS AREA	0.2	0.0	2.7	0.0	0.0	6.4
NEG AREA	0.0	0.7	0.0	10.2	10.4	21.4

\*\*\*\*\* LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = 0.300 FOR +BEND AND = 0.300 FOR -BEND)

LIVE LOAD	LL+IMP		TRUCK LOAD		WHEEL		DIR		AXLE SPACE		LL+IMP		LL		LOC.CONC LOAD		RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
	FT-KIPS	FT.	FT-KIPS	FT.	LOC.NO.	1	LOC.NO.	1	FT.	FT.	FT.	FT.	LOC.CONC LOAD 1	LOC.CONC LOAD 2	LOC.CONC LOAD 1	LOC.CONC LOAD 2			
INV HS20 +BEND	1.7	1.3	159.600	R	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.1	131.600	106.400	1.134	40.8	HS 22.7		
INV HS20 -BEND	9.3	7.1	91.000	L	0.0	0.0	0.0	0.0	0.0	0.0	7.6	5.9	117.600	106.400	1.134	40.8	HS 22.7		
OPER HS20 +BEND	1.7	1.3	159.600	R	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.1	131.600	106.400	1.890	68.1	HS 37.8		
OPER HS20 -BEND	9.3	7.1	91.000	L	0.0	0.0	0.0	0.0	0.0	0.0	7.6	5.9	117.600	106.400	1.890	68.1	HS 37.8		
POST 2F1 +BEND	1.0	0.8	141.600	R	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.1	131.600	106.400	3.672	55.1			
POST 2F1 -BEND	4.8	3.7	107.600	L	0.0	0.0	0.0	0.0	0.0	0.0	7.6	5.9	117.600	106.400	3.672	55.1			
POST 3F1 +BEND	1.6	1.2	144.199	R	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.1	131.600	106.400	2.584	59.4			
POST 3F1 -BEND	6.8	5.2	106.202	L	0.0	0.0	0.0	0.0	0.0	0.0	7.6	5.9	117.600	106.400	2.584	59.4			
POST 4F1 +BEND	1.7	1.3	146.799	R	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.1	131.600	106.400	2.601	70.2			
POST 4F1 -BEND	6.7	5.2	104.999	L	0.0	0.0	0.0	0.0	0.0	0.0	7.6	5.9	117.600	106.400	2.601	70.2			
POST SPEC +BEND	1.6	1.2	177.203	R	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.1	131.600	106.400	2.681	107.2			
POST SPEC -BEND	6.5	5.0	120.601	R	0.0	0.0	0.0	0.0	0.0	0.0	7.6	5.9	117.600	106.400	2.681	107.2			



DATE 02/10/10

SUMMARY OF SHEAR ANALYSIS

D/P STRUCTURE I.D. 032-694

MEMB. ID	MATERIAL	SPAN NO.	DIS. FROM LT. SPRT. FT.	DL SHEAR KIPS	SDL SHEAR KIPS	---INVENTORY---			---OPERATING---			--VEH. 1--			--VEH. 2--			--VEH. 3--			--SPECIAL--		
						LL+I	LL-I	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T	LL+I T
B01	CSC	1	0.000 R	25.4	0.0	50.6 T	0.0 T	50.6 T	0.0 T	36.1	0.0	51.5	0.0	53.7	0.0	47.4	0.0	47.4	0.0	47.4	0.0	47.4	0.0
		1	27.833 L	-25.4	0.0	0.0 T	-50.6 T	0.0 T	-50.6 T	0.0	-36.1	0.0	-51.5	0.0	-53.7	0.0	-47.4	0.0	-47.4	0.0	-47.4	0.0	-47.4
S01	RC	1	0.000 L	0.7	0.2	4.3 T	0.3 L	4.3 T	0.3 L	2.9	0.2	3.8	0.3	3.7	0.3	3.8	0.3	3.7	0.3	3.8	0.3	3.8	0.3
		1	5.600 L	0.0	0.0	2.2 T	2.4 T	2.2 T	2.4 T	1.4	1.4	1.7	1.5	1.3	1.3	1.7	1.4	1.3	1.3	1.7	1.4	1.7	1.4
		2	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.5
		2	7.000 L	0.0	0.0	2.7 T	2.6 T	2.7 T	2.6 T	1.5	1.5	1.7	1.7	1.4	1.4	1.6	1.6	1.4	1.4	1.6	1.6	1.6	1.7
		2	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.5
		3	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		3	0.000 L	0.0	0.0	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		4	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		4	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		4	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		5	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		5	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		5	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		6	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		6	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		7	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		7	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		7	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		8	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		8	0.000 L	0.9	0.3	4.3 T	0.5 L	4.3 T	0.5 L	3.0	0.3	4.1	0.4	4.2	0.4	4.1	0.4	4.2	0.4	4.1	0.4	4.1	0.4
		8	7.000 L	0.0	0.0	2.6 T	3.1 T	2.6 T	3.1 T	1.5	1.8	1.7	1.7	1.3	1.4	1.6	1.6	1.3	1.4	1.6	1.6	1.6	1.8
		9	0.000 L	0.8	0.2	4.3 T	0.6 L	4.3 T	0.6 L	3.0	0.4	4.1	0.5	4.2	0.5	4.1	0.5	4.2	0.5	4.0	0.6	4.0	0.5
		9	7.000 L	0.0	0.0	2.8 T	3.0 T	2.8 T	3.0 T	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		9	0.000 L	0.0	0.0	4.3 L	0.1 L	4.3 L	0.1 L	3.2	0.1	4.2	0.1	4.5	0.1	4.1	0.1	4.5	0.1	4.1	0.1	4.1	0.1
		10	7.000 L	1.1	0.3	2.5 T	2.7 T	2.5 T	2.7 T	1.4	1.4	1.5	1.7	1.3	1.3	1.6	1.6	1.3	1.3	1.6	1.6	1.6	1.7
		10	8.400 L	0.0	0.0	0.3 L	4.3 T	0.3 L	4.3 T	0.2	0.2	0.3	3.8	0.3	3.6	0.3	3.6	0.3	3.6	0.3	3.6	0.3	3.8
		10	14.000 L	0.7	0.2	0.3 L	4.3 T	0.3 L	4.3 T	0.2	0.2	0.3	3.8	0.3	3.6	0.3	3.6	0.3	3.6	0.3	3.6	0.3	3.8

**ODNR Mohican Park Truss (ASD-058SP-1.51)**

Rated By: OAH

Date: 2/10/2010

**Truss Members Rating Summary Using LFR Method**

Truck Type	2F1	3F1	4F1	5C1	HS20-44 (Operating)	HS20-44 (Inventory)
Truss Members Rating Ratio	2.27	1.75	1.59	1.39	1.53	0.92
Truss Members Tonnage	34.0	40.00	43.00	55.00	55.00	HS18.4-44











