REHABILITATION REPORT

STRUCTURE P-60-0916

CTH O OVER THE BLACK RIVER

CITY OF ~~MARATHON~~ Medford

TAYLOR COUNTY

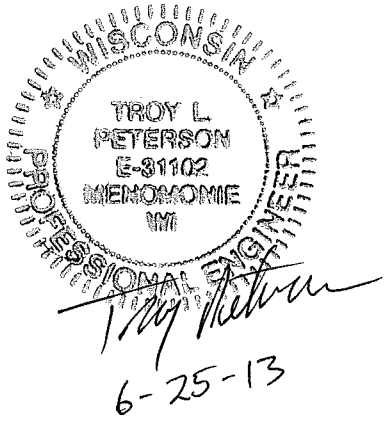
June 24, 2013

Prepared by:

Cedar Corporation

604 Wilson Ave.

Menomonie, WI 54751



Prepared for:

Taylor County Highway Department

208 N. 8th Street

Medford, WI 54451

Jess Sackmann, Highway Commissioner

Concur with Recommendations Subject to Comments on page 2/37
APL
WisDOT Bureau of Structures
08-07-2013

Comments 08-07-13

P-60-916

By APL

We concur with recommended **Alternative No. 3: Deck Replacement** subject to the following comments:

The report mentions abutment piling is exposed, but there is no indication of cause or proposed repair. However, there is riprap in the cost estimate so we assume this mitigates the problem.

During project development check the condition of the wing wall repaired after traffic impact. Also, the new traffic barrier will need to be attached to existing wing wall in accordance with Bridge Manual requirements at the time of plan development.

The report does not address meeting the requirements of Trans 75 for the accommodation of bicycles within bridge roadway width (or sidewalk). Given the rural area and ADT = 3500 the proposed bridge width should be able to meet requirements of Trans 75, but BOS will defer to the Region Contact for acceptability.

INTRODUCTION

The purpose of this report is to determine the feasibility and cost-effectiveness of rehabilitation alternatives for structure P-60-0916 in Taylor County. This report is written in accordance with the requirements of Wisconsin Trans 213.03(2)(b), which states that a proposed rehabilitation project must be cost effective, must extend the life of the bridge for at least ten years, and must correct all deficiencies.

The bridge is located on CTH O over the Black River approximately 1.1 miles east of the junction with CTH Q, Section 34, T31N, R01E in the City of Medford. The Black River is not classified as a trout stream by the WI DNR. The highway has an ADT of 3500 and is classified as a collector, 3RC3 design class. Plans are not available for this structure.

DESCRIPTION OF EXISTING FACILITY

Structure P-60-0916 was constructed in 1971 (according to the current bridge inspection report). No rehabilitation projects are listed on the bridge inspection report.

The existing structure is a single span 54-inch prestressed "I" girder bridge with a concrete deck and steel railings. The overall length is 90.5-feet. The clear width is 30-feet with an overall width of 33-feet. The skew is 0-degrees. The ratings listed on the bridge inspection report are; Inventory = HS15 and Operating = HS50.

The abutments are reinforced concrete founded on steel piling. HP Piling were visible during the time of the field visit. The wing walls are straight back and parallel with traffic. The railing extends onto the wing walls with beam guard attached to the railing at all four quadrants.

WisDOT performed bridge rating calculations for this structure dated June 6, 2010. The rating summary shows the Inventory Rating = HS24.5 and the Operating Rating = 50.7.

STRUCTURE CONDITION AND DEFICIENCIES

The bridge has a current Sufficiency Rating of 70.5, the current rate score is 94.5. The bridge deck has a NBI rating of 4, the superstructure NBI rating is 7 and the substructure NBI rating is 6. According to the WisDOT Bridge Manual Chapter 40.3, this structure is classified as Structurally Deficient (NBI = 4 Deck).

The deck of this structure is approximately 50% delaminated and / or patched. The bottom of the deck shows efflorescence and some cracking. The bottom edge of deck is also showing deterioration including cracking chipping and spalling of the concrete and rusting of the exposed reinforcement.

The abutments are in good condition with some minor cracking and spalling. Since there are no plans available for this structure, the number or spacing of the piling is unknown. Our site visit did show that there are steel HP piling supporting the structure. The abutments have been carrying current dead load and vehicular loading without noticeable distress.

ALTERNATIVES:

The following alternatives were considered for this structure:

1) **Concrete Overlay:** A concrete overlay was considered as a rehabilitation project. The WisDOT bridge manual chapter 40.5.2 states that for a concrete overlay to be considered, the combined deck distress should be less than 25%. The current deck has 50% combined distress making it unsuitable for a concrete overlay.

2) **Replace Structure:** The current sufficiency rating of this structure is 70.5. To be eligible for funding, the sufficiency rating must be less than 50. Based on the good condition of the existing beams and abutments, the sufficiency rating is not expected to get below 50 for many years. During that time, the concrete deck will continue to deteriorate and will require maintenance including deck patching.

3) **Deck Replacement:** Given that the existing deck has 50% distressed area, a deck replacement is a viable option. In addition, the existing 54-inch prestressed "I" girders are in good condition and no deficiencies are listed on the current bridge inspection report. The abutments are also in good condition and only a hairline crack on the west abutment and some chipping is noted on the inspection report. Also, based on the recent WisDOT rating calculations on file, the superstructure has adequate capacity to carry the new 7 1/2-inch deck (the existing deck is assumed to be 7 ½" thick).

DISCUSSION:

Bridge Width: The existing clear width of the bridge is 30-feet. The existing roadway traveled way is 22-feet (Two 11-foot lanes). The existing traffic count (according to the 2011 bridge inspection report) is 3500. According to WisDOT Trans 205 and WisDOT bridge manual table 40.3-1, the minimum bridge width for a structure under 100-feet in length to remain in place for a Design ADT between 2001 and 4000 is the traveled way plus 4-feet. The existing traveled way is 22-feet. The existing structure has a clear width of 30-feet which is the traveled way plus 8-feet; exceeding the minimum requirement by 4-feet.

The existing girder spacing is 8'-5 ½"; there are four girders. Given the current WisDOT guidelines limits the slab overhang of 3'-7" maximum. Utilizing the existing beam

spacing and the maximum overhang, the out to out dimension of a new deck would be 32'-9 ½". The new rail system used for the rehabilitation project would be a Tubular Steel Railing, Type "M" rail that occupies 1'-3" of deck width. This would provide a clear width of 30'-3 ½". This exceeds the current bridge width criteria mentioned above.

Superstructure: WisDOT has bridge rating calculations on file for this structure dated June 6, 2010. The rating summary shows the Inventory Rating = HS24.5 and the Operating Rating = 50.7. The new bridge deck thickness should be 7 1/2-inches; the same thickness as the existing deck. Given the existing ratings on file, they should remain virtually unchanged with a deck replacement.

Substructures: The existing abutments are founded on HP piling as observed during the inspection. There are no plans available for this structure so the number of piling is not known. A new bridge deck would be 7 1/2-inches thick which is the same as the existing deck. Since the existing abutments are not currently showing any signs of distress, it is our opinion that the abutments have adequate foundation capacity.

Replacing the existing deck and railing system would eliminate all current deficiencies of this structure.

COST COMPARISON:

Deck Replacement: A cost estimate has been prepared for a deck replacement for the current structure (see detailed estimate in the appendix). The estimate assumes that the current deck would be replaced with a 7 1/2-inch deck at an out to out dimension of 32'-9 ½". The rehabilitation cost is approximately $330,000. The life expectancy is of this rehabilitation is 40 to 60 years. The EAUC over a 60 year period, assuming a 4% yearly inflation value would be $14,600/year.

Structure Replacement: For comparison purposes, a cost estimate was prepared for a structure replacement. The estimate is as follows:

Bridge Removal	$30,000
Bridge, including new rail (100' x 36.5)x$115 sf	$420,000
Roadway: 200' x $190/lf	$38,000
Beam Guard: 480' x $25/sf	$12,000
Erosion Control / Misc.:	$20,000
Mobilization:	$40,000

Subtotal	$560,000
15% E&C	$84,000
TOTAL	**$644,000**

A new structure could be assumed to have a life expectancy of 80 years. We can also assume that the deck would require a deck overlay in approximately 30 years. The cost of an overlay can be estimated at 100' x 34' x $25/sf = $85,000. In addition at 60 years the salvaged value of the structure would be (20/80) x $ 644,000 = $161,000. Utilizing the values listed here, the EUAC over a 60 year period assuming a 4% annual inflation rate, overlay cost, and salvage value is $29,300.

RECOMMENDATION:

Given the existing condition of structure P-60-0916, it is an excellent candidate for a deck replacement and it is the recommended alternative. This alternative will remove all existing deficiencies, extend the life of the structure by at approximately 40 years and is the cost effective alternative.

APPENDIX

1) Location Map

2) WisDOT Load Rating Calculations

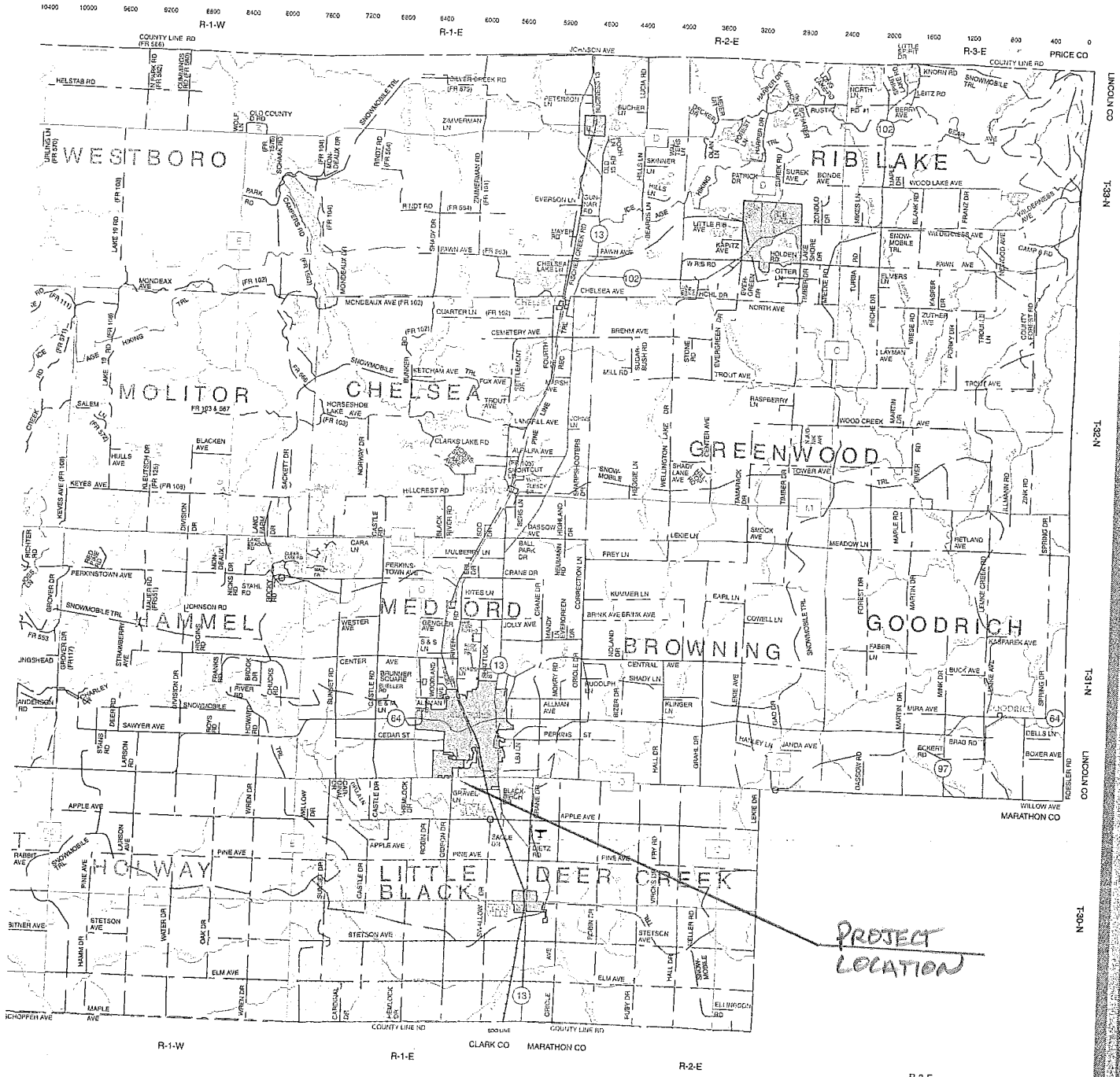
3) Current Bridge Inspection Report

4) Current Sufficiency Rating Calculation / Rate Score

5) Department of Transportation Trans 205

6) Overlay Cost Estimate

Location Map


WESTBORO
RIB LAKE
MOLITOR
CHELSEA
GREENWOOD
HAMMEL
MEDFORD
BROWNING
GOODRICH
HOLWAY
LITTLE BLACK
DEER CREEK
PROJECT LOCATION
R-1-W
R-1-E
R-2-E
R-3-E
T-32-N
T-31-N
T-30-N
LINCOLN CO
PRICE CO
MARATHON CO
CLARK CO

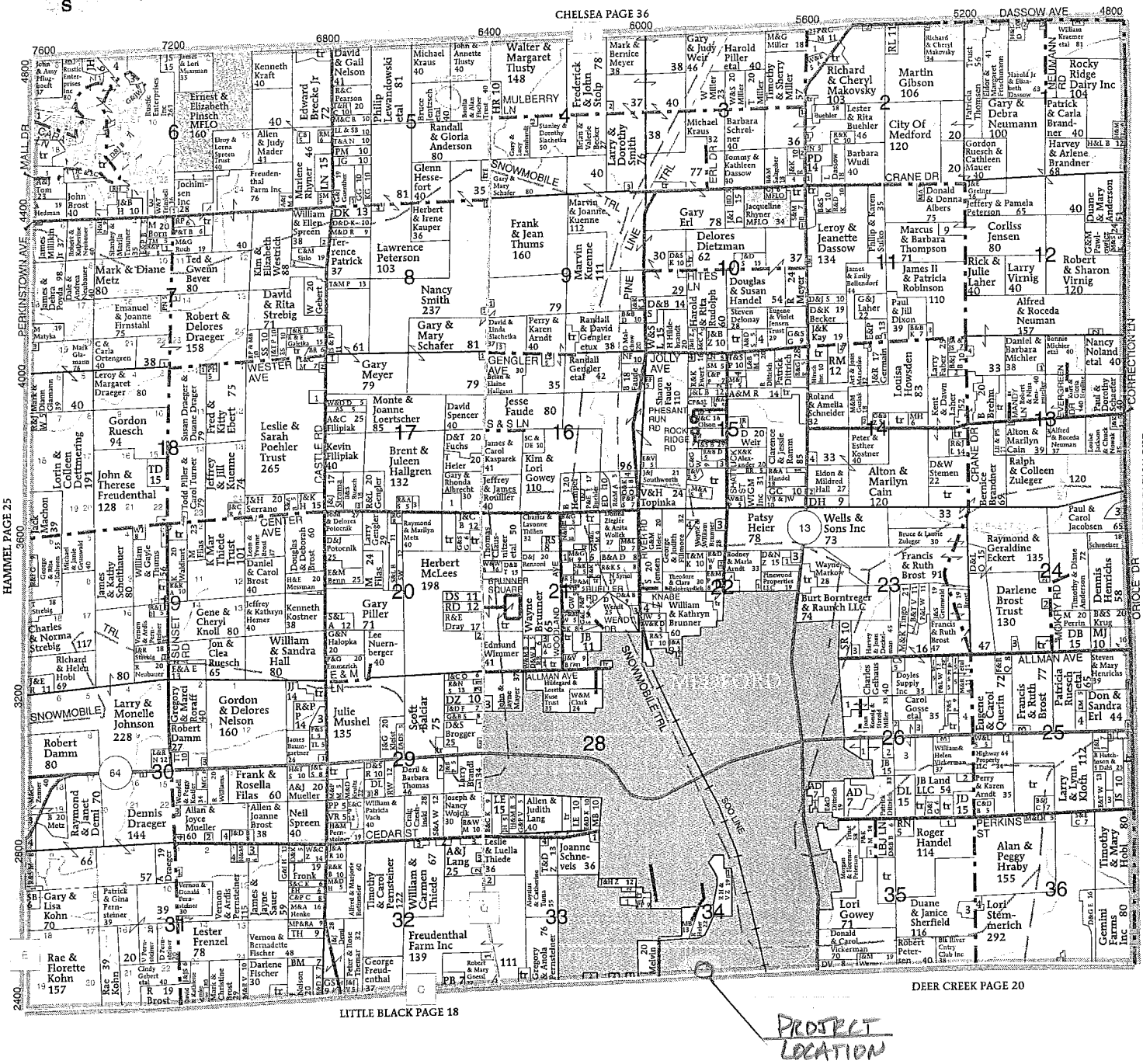
MEDFORD

TAYLOR COUNTY, WISCONSIN

(Landowners)

T-31-N ◆ R-1-E

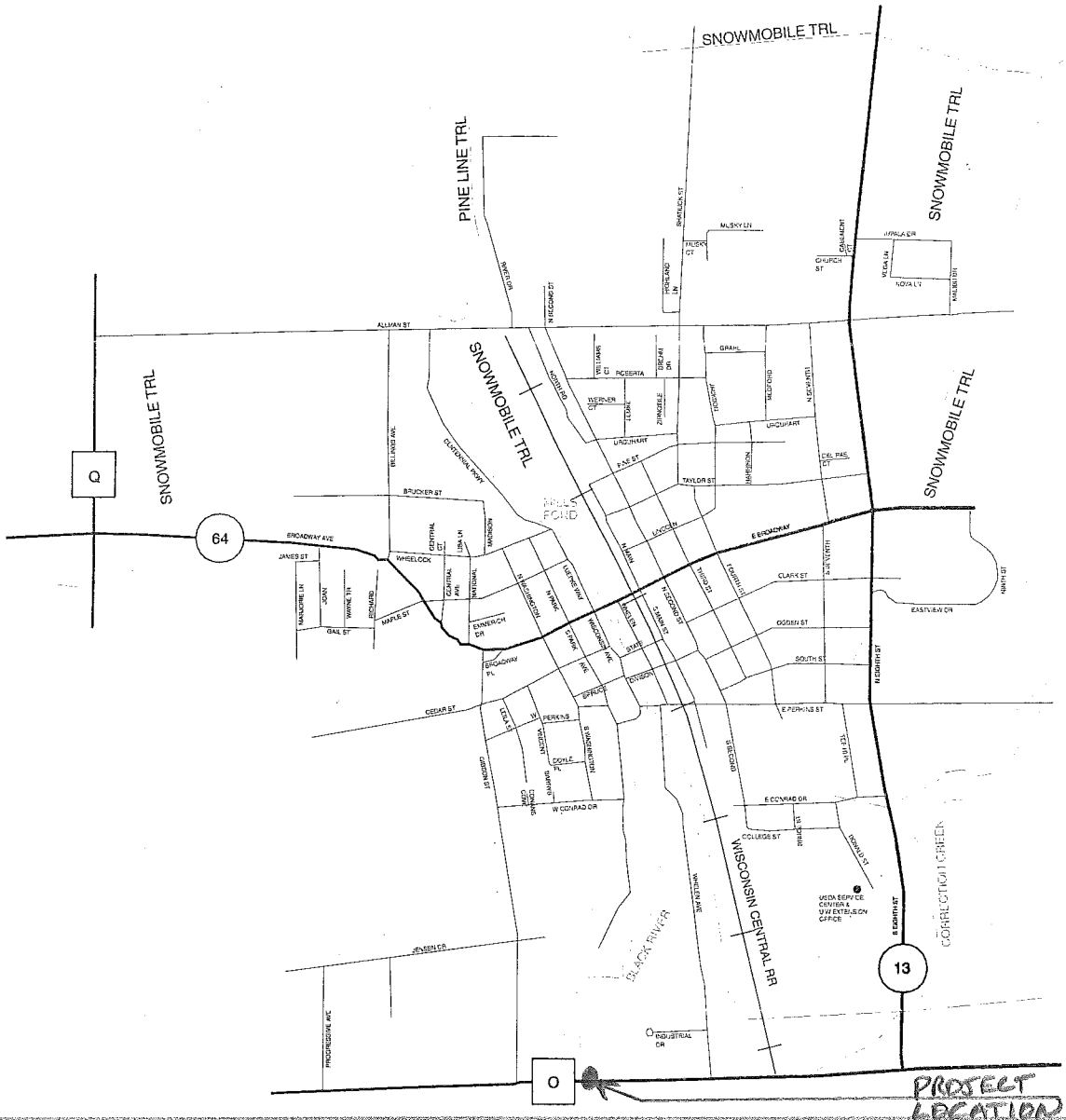
See Page 86 For Additional Names.



Taylor County, Wisconsin

City Map

Medford



WisDOT Load Rating Calculations

WISCONSIN DEPARTMENT OF TRANSPORTATION
BRIDGE LOAD RATING SUMMARY

Bridge Data (used in this rating)

Bridge Number: P60-916	**Section Loss(%):** *
Feature Carried: O	**SL Description:** *
Rating Date: 16-Jun-2010	**Overburden Depth(in):** 0.0
Span Type: DECK GIRDER	**Overburden Type:** CONCRETE
Span Material: PREST CONCRETE	**Last Inspection Date:** 13-Oct-2009*

* Inspection data reflects last inspection prior to rating. Latest inspection is on19-Apr-2011

Bridge Load Rating Summary

Rating Method: LFR	**Rating Vehicle:** HS20			
	Rating	**Controlling Element**	**Controlling Location (ft)**	**Live Load Distribution Factor**
Inventory:	HS24.5	DECK GIRDER Positive Moment	SPAN 1	1.55
Operating:	HS50.7	DECK GIRDER Positive Moment	SPAN 1	1.55

Wisconsin Standard Permit Vehicle (Wis-SPV)

	MVW (kips)	**Controlling Element**	**Controlling Location (ft)**	**Live Load Distribution Factor**
Single Trip:	460	DECK GIRDER Negative Moment	SPAN 1	1.22
Multi Trip:	362	DECK GIRDER Negative Moment	SPAN 1	1.55

Remarks/Recommendations:
controlling: interior girder

Load Rating Engineer

Name: Local
Date: 16-Jun-2010

PE Stamp Here

_plans_p60-916_Rating_2010_LFR_p-60-916_lfr_2010-06-16[1].out

***** CONTINUOUS PRESTRESSED CONCRETE GIRDER DESIGN, ANALYSIS, AND RATING *****

WISCONSIN DEPT. OF TRANSPORTATION
BRIDGE RESEARCH AND DEVELOPMENT SECTION
DESIGN AUTOMATION UNIT
P.O. BOX 7916
MADISON,WI. 53707

PROGRAM KWIKSPAN VERSION 2005-09 XP
16-Jun-10 16:35:33

FOR ASSISTANCE CONTACT: LEE SCHUCHARDT AT (608) 266-8494 OR DAVE NELSON AT (608) 264-9420

INPUT DATA
0301 p-60-0916 1 span 6/16/10 amk 06/16/2010
90.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 54.000 4.000 4800.000 1.000
Interior Girder 1. 40000. 0. 0.5
8.540 1.553 1.829 790.208 20.000 0.000 6000.000 0.000
7.000 92.000 0.500 0.000 1.000 2.000 1.220

INTERIOR GIRDER SPACING = 8.540 FT.
SLAB THICKNESS = 7.5 INCHES
SLAB WIDTH FOR COMPOSITE ACTION = 92.00 INCHES
HAUNCH HEIGHT USED TO COMPUTE COMPOSITE SECTION PROPERTIES = -0.50 INCHES
DISTRIBUTION FACTOR = 1.553
DISTRIBUTION FACTOR FOR END REACTIONS = 1.829
NON-COMPOSITE DEAD LOAD = 790. LBS./FT.
COMPOSITE DEAD LOAD = 20. LBS./FT.
CONCRETE DIAPHRAGMS
LIVE LOAD = HS20

MAXIMUM MOMENTS AT X/10 PTS.-IN FT. KIPS

GIRDER SPAN 1	X	COMPOSITE DL MOMENTS SLAB+DIA	+SDK.LL	-SDK.LL	+TRUCK	-TRUCK	+LANE	-LANE	NON-COMPOSITE DL
	1.0	7.3	0.0	0.0	493.9	0.0	362.8	0.0	299.6
	319.2								
	2.0	13.0	0.0	0.0	863.7	0.0	645.0	0.0	532.6
	574.3								
	3.0	17.0	0.0	0.0	1109.4	0.0	846.6	0.0	699.0
	765.5								
	4.0	19.4	0.0	0.0	1252.6	0.0	967.5	0.0	798.9
	871.8								
	5.0	20.3	0.0	0.0	1282.5	0.0	1007.8	0.0	832.1
	903.8								
	6.0	19.4	0.0	0.0	1252.6	0.0	967.5	0.0	798.9
	871.8								
	7.0	17.0	0.0	0.0	1109.4	0.0	846.6	0.0	699.0
	765.5								
	8.0	13.0	0.0	0.0	863.7	0.0	645.0	0.0	

```
 532.6      574.3
       9.0          7.3        0.0        0.0      493.9        0.0      362.8        0.0
 299.6      319.2
      10.0          0.0        0.0        0.0        0.0        0.0        0.0        0.0
   0.0          0.0


 LIVE LOAD SHEARS AND REACTIONS(KIPS)

       LEFT SUPPORT REACTIONS

 PIER-LANE  BRG-LANE  PIER-TRUCK  BRG-TRUCK
 SPAN  1
       54.8       57.7       64.5       68.2

 SHEARS AT X/10TH POINTS
       X       COMPOSITE  +SDK.LL   -SDK.LL  +TRUCK     -TRUCK     +LANE      -LANE
NON-COMPOSITE
                DEAD LOAD
 DEAD LOAD

       0.0        0.9        0.0        0.0       61.8        0.0       52.4        0.0
  76.0
       1.0        0.7        0.0        0.0       54.9       -3.1       44.7       -2.8
  61.5
       2.0        0.5        0.0        0.0       48.0       -7.5       37.5       -6.1
  47.0
       3.0        0.4        0.0        0.0       41.1      -13.6       30.9       -9.9
  32.5
       4.0        0.2        0.0        0.0       34.2      -20.4       24.9      -14.4
  14.5
       5.0        0.0        0.0        0.0       27.3      -27.3       19.3      -19.3
   0.0
       6.0       -0.2        0.0        0.0       20.4      -34.2       14.4      -24.9
  14.5
       7.0       -0.4        0.0        0.0       13.6      -41.1        9.9      -30.9
  32.5
       8.0       -0.5        0.0        0.0        7.5      -48.0        6.1      -37.5
  47.0
       9.0       -0.7        0.0        0.0        3.1      -54.9        2.8      -44.7
  61.5
      54.8       57.7       64.5       68.2

      10.0       -0.9        0.0        0.0       31.1      -61.8        0.0      -52.4
  76.0

********** 54 INCH PRESTRESSED GIRDER **********

 COMPOSITE SECTION MODULII - INCHES CUBED
    FACTOR USED TO DETERMINE EQUIVALENT AREA OF SLAB = 0.6495
    BOTTOM OF GIRDER=  15209.
    TOP OF GIRDER=  29822.

 COMPOSITE MOMENT OF INERTIA
    I= 543903.

 MOMENT OF AREA OF SLAB ABOUT COMPOSITE CENTROID
    Q= 8704.

 NON COMPOSITE SECTION PROPERTIES
     A=789.
     I= 260730.
     YB=24.73
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YT=29.27
SB=10543.
ST= 8908.

TOP FLANGE WIDTH= 20.

WEB THICKNESS= 8.00

INPUT DATA

1.000	42.000	1200.000	43.000	16.250	
1.710	1.710	1.710	1.710	1.710	1.710
1.710	1.710	1.710	1.710	1.710	

***** SPAN 1 ANALYSIS *****
DRAPED STRAND DESIGN

NUMBER OF STRANDS = 42. STRESS-RELIEVED STRAND
NUMBER OF DRAPED STRANDS = 10.
ECCENTRICITY OF STRANDS = 20.06
DIAMETER OF STRANDS = 0.5 INCHES
AREA OF STRAND = .1531 SQ. INCHES
GIRDER CONCRETE STRENGTH = 6000. PSI.
SLAB CONCRETE STRENGTH = 3000. PSI.

PRESTRESS LOSSES IN PSI BASED ON AASHTO 2002 AASHTO SPECIFICATIONS
ES BASED ON FCI=4800.
SH = 6000.
ES =15115.
CRC=21270.
CRS= 8500.

FORCE IN STRANDS WHEN CONCRETE TAKES ITS INITIAL SET SHALL BE 1200. KIPS
MAXIMUM ALLOWABLE TEMPORARY FORCE = 1325. KIPS
LOCATION OF DRAPED STRANDS
DIMENSION A = 43.
DIMENSION B = 16.25
DIMENSION C = 6.00

MAX. SLOPE OF STRANDS = 9.91 %

GIRDER CAMBER = 1.96 INCHES
SLAB+DIAPHRAGM DEFLECTION =-0.88 INCHES

INITIAL GIRD. STRESSES IN FOLLOWING TABLE ARE BASED ON A PRESTRESS FORCE OF 1103. KIPS.
FINAL GIRD. STRESSES ARE BASED ON FORCE OF 873. KIPS AND POSITIVE MOMENTS ONLY.
MIN. COMPRESSIVE STRENGTH OF CONCRETE AT TIME OF INITIAL PRESTRESS = 4800. PSI
COMPRESSION STRESSES HAVE NEGATIVE SIGNS, TENSION STRESSES ARE POSITIVE. INITIAL GIRDER STRESSES AT
POINT 0 ARE COMPUTED THREE FEET FROM END FOR DESIGN RUNS.

NOTE: NON-PRESTRESSED GIRDER STEEL IS GRADE 40

TENTH POINT	INITIAL GIRD.STRESSES TOP	BOTTOM	NON-PRE GIRD.STEEL	FINAL GIRD.STRESSES TOP	BOTTOM	STRENGTH SLAB.STEEL	FACTORED NEG.MOM.	FACTORED MOM. TOP GIRD.STRESS	FATIGUE SLAB STEEL

0	-0.001	-2.575	0.000	-0.001	-2.038	0.000	0.0
-0.001	0.000						
1	-0.090	-2.499	0.000	-0.787	-1.148	0.000	0.0
-0.598	0.000						
2	-0.090	-2.499	0.000	-1.348	-0.506	0.000	0.0
-1.017	0.000						
3	-0.001	-2.575	0.000	-1.681	-0.112	0.000	0.0
-1.257	0.000						
4	0.010	-2.587	0.000	-1.903	0.138	0.000	0.0
-1.425	0.000						
5	-0.035	-2.549	0.000	-2.004	0.237	0.000	0.0
-1.514	0.000						
6	0.010	-2.587	0.000	-1.903	0.138	0.000	0.0
-1.425	0.000						
7	-0.001	-2.575	0.000	-1.681	-0.112	0.000	0.0
-1.257	0.000						
8	-0.090	-2.499	0.000	-1.348	-0.506	0.000	0.0
-1.017	0.000						
9	-0.090	-2.499	0.000	-0.787	-1.148	0.000	0.0
-0.598	0.000						
10	-0.001	-2.575	0.000	-0.001	-2.038	0.000	0.0
-0.001	0.000						

MAXIMUM FINAL GIRDER STRESS AT TOP WITH NO LIVE LOAD = -1.487 KSI
MAXIMUM ALLOWABLE PER AASHTO = 0.40fc = -2.400 KSI

SHEAR DESIGN (AASHTO 9.20)

POINT	NO.4 STIR.SPAC.(IN) D	VU	MCR	MMAX	VI	VCI	FPC	VP	VCW	VS
	GR 60	GR 40								
0	45.60	225.3	3172.1	1.0	105.1	*****	0.689	20.5	194.8	
70.3	15.57	10.38								
1	46.09	199.8	2545.5	1079.5	104.9	326.0	0.909	20.5	221.0	
14.0	21.00	16.00								
2	48.63	165.7	2107.3	1888.1	104.7	181.9	1.063	20.5	250.1	
13.1	21.00	16.00								
3	51.17	131.7	1857.5	2425.9	89.5	120.0	1.151	20.5	272.9	
34.9	21.00	16.00								
4	52.33	93.2	1685.7	2739.3	74.3	79.7	1.214	0.0	265.9	
29.9	21.00	16.00								
5	52.33	59.2	1591.5	2805.1	59.2	55.1	1.247	0.0	270.1	
14.5	21.00	16.00								
6	52.33	93.2	1685.7	2739.3	74.3	79.7	1.214	0.0	265.9	
29.9	21.00	16.00								
7	51.17	131.7	1857.5	2425.9	89.5	120.0	1.151	20.5	272.9	
34.9	21.00	16.00								
8	48.63	165.7	2107.3	1888.1	104.7	181.9	1.063	20.5	250.1	
13.1	21.00	16.00								
9	46.09	199.8	2545.5	1079.5	104.9	326.0	0.909	20.5	221.0	
14.0	21.00	16.00								
10	45.60	225.3	3172.1	1.0	105.1	*****	0.689	20.5	194.8	
70.3	15.57	10.38								

POSITIVE MOMENT DESIGN FLEXURAL STRENGTH = 7148. FT-KIPS

RATIO OF PRESTRESSING STEEL (As/bd) (96 AASHTO 9.17.2) =0.00125190
MAXIMUM ALLOWABLE As/bd (96 AASHTO 9.18.1) = 0.00145392

1.2*CRACKING MOMENT (89 AASHTO 9.18.2.1) = 4244. FT-KIPS

MAXIMUM POSITIVE DESIGN MOMENT (FACTORED) 1.3(D+5/3(L+I))= 5062. FT-KIPS

POSITIVE OPERATING MOMENT CAPACITY BASED ON 90 PERCENT OF YIELD STRESS = 5008.

FT-KIPS

POSITIVE OPERATING MOMENT CAPACITY (BASED ON 75 OR 90 PERCENT CRITERIA) = 5008.
FT-KIPS

POSITIVE LIVE LOAD OPERATING MOMENT CAPACITY = 3251. FT-KIPS

NOTE: ALL RATINGS ARE BASED ON THE INPUT WHEEL DISTRIBUTION FACTOR FOR MOMENT.

OPERATING RATING BASED ON POSITIVE MOMENT (LF OR WS)
HS-RATING= 50.7

OPERATING RATING BASED ON NEGATIVE MOMENT - GRADE 40 STEEL (LF OR WS)
HS-RATING=*****

INVENTORY RATING BASED ON POSITIVE MOMENT (WS)
HS-RATING= 24.5

DATA FOR STANDARD WISCONSIN PERMIT VEHICLE WITH GVW OF 250,000 POUNDS
****

WHEEL LOADS AND SPACINGS

12.500	17.500	17.500	17.500	15.000	15.000	15.000	15.000	0.000
0.000								
13.000	4.000	4.000	30.000	4.000	4.000	4.000	0.000	0.000

MAX. LIVE LOAD MOMENTS AT X/10 PTS. IN FT. KIPS PER WHEEL LINE WITH IMPACT

SPAN 1

X	CURB & +LL	CURB & -LL	+TRUCK	-TRUCK
1.0	7.3	7.3	808.9	0.0
2.0	13.0	13.0	1386.6	0.0
3.0	17.0	17.0	1742.5	0.0
4.0	19.4	19.4	1904.3	0.0
5.0	20.3	20.3	1839.6	0.0
6.0	19.4	19.4	1904.3	0.0
7.0	17.0	17.0	1742.5	0.0
8.0	13.0	13.0	1386.6	0.0
9.0	7.3	7.3	808.9	0.0
10.0	0.0	0.0	0.0	0.0

THE FOLLOWING RATINGS ARE BASED ON A DISTRIBUTION FACTOR OF 1.220

***** RATINGS BASED ON NEGATIVE MOMENT *****

TENTH POINT	SLAB STEEL	LL CAPACITIES WS	LL CAPACITIES LF	RATINGS WS	RATINGS LF
0	0.000	0.0	0.0	0.0	0.0
1	0.000	0.0	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0
6	0.000	0.0	0.0	0.0	0.0
7	0.000	0.0	0.0	0.0	0.0
8	0.000	0.0	0.0	0.0	0.0
9	0.000	0.0	0.0	0.0	0.0
10	0.000	0.0	0.0	0.0	0.0

***** RATING BASED ON POSITIVE MOMENT *****

CAUTION: POSITIVE MOMENT RATING WAS CALCULATED AT MIDDLE OF SPAN ONLY. OTHER LOCATIONS MAY CONTROL

POS/NEG MAXIMUM TOTAL VEHICLE LOAD = 362.2 KIPS, POS MAX. TOTAL VEHICLE LOAD = 362.2 KIPS

DATA FOR TYPE 3 TRUCK
****
WHEEL LOADS AND SPACINGS

8.000 8.500 8.500 0.000 0.000 0.000 0.000 0.000
0.000 0.000
15.000 4.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000

MAX. LIVE LOAD MOMENTS AT X/10 PTS. IN FT. KIPS PER WHEEL LINE WITH IMPACT

SPAN 1

X	CURB & +LL	CURB & -LL	+TRUCK	-TRUCK
1.0	7.3	7.3	219.3	0.0
2.0	13.0	13.0	393.6	0.0
3.0	17.0	17.0	512.4	0.0
4.0	19.4	19.4	575.7	0.0
5.0	20.3	20.3	590.1	0.0
6.0	19.4	19.4	575.7	0.0
7.0	17.0	17.0	512.4	0.0
8.0	13.0	13.0	393.6	0.0
9.0	7.3	7.3	219.3	0.0
10.0	0.0	0.0	0.0	0.0

THE FOLLOWING RATINGS ARE BASED ON A DISTRIBUTION FACTOR OF 1.220

***** RATINGS BASED ON NEGATIVE MOMENT *****

TENTH POINT	SLAB STEEL	LL CAPACITIES WS	LF	RATINGS WS	LF
0	0.000	0.0	0.0	0.0	0.0
1	0.000	0.0	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0
6	0.000	0.0	0.0	0.0	0.0
7	0.000	0.0	0.0	0.0	0.0
8	0.000	0.0	0.0	0.0	0.0
9	0.000	0.0	0.0	0.0	0.0
10	0.000	0.0	0.0	0.0	0.0

***** RATING BASED ON POSITIVE MOMENT *****

CAUTION: POSITIVE MOMENT RATING WAS CALCULATED AT MIDDLE OF SPAN ONLY. OTHER LOCATIONS MAY CONTROL

POS/NEG MAXIMUM TOTAL VEHICLE LOAD = 225.8 KIPS, POS MAX. TOTAL VEHICLE LOAD = 225.8 KIPS

DATA FOR TYPE 4 TRUCK
****
WHEEL LOADS AND SPACINGS

10.000 6.415 6.415 6.415 0.000 0.000 0.000 0.000
0.000 0.000
15.000 4.000 4.000 0.000 0.000 0.000 0.000 0.000
0.000

MAX. LIVE LOAD MOMENTS AT X/10 PTS. IN FT. KIPS PER WHEEL LINE WITH IMPACT

SPAN 1

X	CURB & +LL	CURB & -LL	+TRUCK	-TRUCK
1.0	7.3	7.3	252.0	0.0
2.0	13.0	13.0	443.0	0.0
3.0	17.0	17.0	574.4	0.0
4.0	19.4	19.4	651.9	0.0
5.0	20.3	20.3	664.5	0.0
6.0	19.4	19.4	651.9	0.0
7.0	17.0	17.0	574.4	0.0
8.0	13.0	13.0	443.0	0.0
9.0	7.3	7.3	252.0	0.0
10.0	0.0	0.0	0.0	0.0

THE FOLLOWING RATINGS ARE BASED ON A DISTRIBUTION FACTOR OF 1.220

***** RATINGS BASED ON NEGATIVE MOMENT *****

TENTH	SLAB	LL CAPACITIES		RATINGS	
POINT	STEEL	WS	LF	WS	LF
0	0.000	0.0	0.0	0.0	0.0
1	0.000	0.0	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0
6	0.000	0.0	0.0	0.0	0.0
7	0.000	0.0	0.0	0.0	0.0
8	0.000	0.0	0.0	0.0	0.0
9	0.000	0.0	0.0	0.0	0.0
10	0.000	0.0	0.0	0.0	0.0

***** RATING BASED ON POSITIVE MOMENT *****

CAUTION: POSITIVE MOMENT RATING WAS CALCULATED AT MIDDLE OF SPAN ONLY. OTHER LOCATIONS MAY CONTROL

POS/NEG MAXIMUM TOTAL VEHICLE LOAD = 234.6 KIPS, POS MAX. TOTAL VEHICLE LOAD = 234.6 KIPS

DATA FOR TYPE 5 TRUCK
****
WHEEL LOADS AND SPACINGS

10.000 6.625 6.625 6.625 6.625 0.000 0.000 0.000
0.000 0.000
15.000 4.000 4.000 4.000 0.000 0.000 0.000 0.000
0.000

MAX. LIVE LOAD MOMENTS AT X/10 PTS. IN FT. KIPS PER WHEEL LINE WITH IMPACT

SPAN 1

X	CURB & +LL	CURB & -LL	+TRUCK	-TRUCK

1.0	7.3	7.3	311.5	0.0
2.0	13.0	13.0	542.1	0.0
3.0	17.0	17.0	711.6	0.0
4.0	19.4	19.4	800.4	0.0
5.0	20.3	20.3	827.8	0.0
6.0	19.4	19.4	800.4	0.0
7.0	17.0	17.0	711.6	0.0
8.0	13.0	13.0	542.1	0.0
9.0	7.3	7.3	311.5	0.0
10.0	0.0	0.0	0.0	0.0

THE FOLLOWING RATINGS ARE BASED ON A DISTRIBUTION FACTOR OF 1.220

***** RATINGS BASED ON NEGATIVE MOMENT *****

TENTH	SLAB	LL CAPACITIES		RATINGS	
POINT	STEEL	WS	LF	WS	LF
0	0.000	0.0	0.0	0.0	0.0
1	0.000	0.0	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0
6	0.000	0.0	0.0	0.0	0.0
7	0.000	0.0	0.0	0.0	0.0
8	0.000	0.0	0.0	0.0	0.0
9	0.000	0.0	0.0	0.0	0.0
10	0.000	0.0	0.0	0.0	0.0

***** RATING BASED ON POSITIVE MOMENT *****

CAUTION: POSITIVE MOMENT RATING WAS CALCULATED AT MIDDLE OF SPAN ONLY. OTHER LOCATIONS MAY CONTROL

POS/NEG MAXIMUM TOTAL VEHICLE LOAD = 235.0 KIPS, POS MAX. TOTAL VEHICLE LOAD = 235.0 KIPS

DATA FOR TYPE 3S2 TRUCK
****
WHEEL LOADS AND SPACINGS

5.000 7.750 7.750 7.750 7.750 0.000 0.000 0.000 0.000 0.000
11.000 4.000 22.000 4.000 0.000 0.000 0.000 0.000 0.000

MAX. LIVE LOAD MOMENTS AT X/10 PTS. IN FT. KIPS PER WHEEL LINE WITH IMPACT

SPAN 1

X	CURB & +LL	CURB & -LL	+TRUCK	-TRUCK
1.0	7.3	7.3	274.3	0.0
2.0	13.0	13.0	473.5	0.0
3.0	17.0	17.0	613.2	0.0
4.0	19.4	19.4	693.6	0.0
5.0	20.3	20.3	694.5	0.0
6.0	19.4	19.4	693.6	0.0
7.0	17.0	17.0	613.2	0.0
8.0	13.0	13.0	473.5	0.0
9.0	7.3	7.3	274.3	0.0
10.0	0.0	0.0	0.0	0.0

THE FOLLOWING RATINGS ARE BASED ON A DISTRIBUTION FACTOR OF 1.220

***** RATINGS BASED ON NEGATIVE MOMENT *****

TENTH POINT	SLAB STEEL	LL CAPACITIES WS	LF	RATINGS WS	LF
0	0.000	0.0	0.0	0.0	0.0
1	0.000	0.0	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0
6	0.000	0.0	0.0	0.0	0.0
7	0.000	0.0	0.0	0.0	0.0
8	0.000	0.0	0.0	0.0	0.0
9	0.000	0.0	0.0	0.0	0.0
10	0.000	0.0	0.0	0.0	0.0

***** RATING BASED ON POSITIVE MOMENT *****

CAUTION: POSITIVE MOMENT RATING WAS CALCULATED AT MIDDLE OF SPAN ONLY. OTHER LOCATIONS MAY CONTROL

POS/NEG MAXIMUM TOTAL VEHICLE LOAD = 276.3 KIPS, POS MAX. TOTAL VEHICLE LOAD = 276.3 KIPS

DATA FOR TYPE 3S3 TRUCK
****

WHEEL LOADS AND SPACINGS

6.400 7.200 7.200 6.400 6.400 6.400 0.000 0.000 0.000 0.000
11.000 4.000 22.000 4.000 4.000 0.000 0.000 0.000 0.000

MAX. LIVE LOAD MOMENTS AT X/10 PTS. IN FT. KIPS PER WHEEL LINE WITH IMPACT

SPAN 1

X	CURB & +LL	CURB & -LL	+TRUCK	-TRUCK
1.0	7.3	7.3	297.6	0.0
2.0	13.0	13.0	511.4	0.0
3.0	17.0	17.0	653.7	0.0
4.0	19.4	19.4	722.1	0.0
5.0	20.3	20.3	721.8	0.0
6.0	19.4	19.4	722.1	0.0
7.0	17.0	17.0	653.7	0.0
8.0	13.0	13.0	511.4	0.0
9.0	7.3	7.3	297.6	0.0
10.0	0.0	0.0	0.0	0.0

THE FOLLOWING RATINGS ARE BASED ON A DISTRIBUTION FACTOR OF 1.220

***** RATINGS BASED ON NEGATIVE MOMENT *****

TENTH POINT	SLAB STEEL	LL CAPACITIES WS	LF	RATINGS WS	LF
0	0.000	0.0	0.0	0.0	0.0
1	0.000	0.0	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0

5	0.000	0.0	0.0	0.0	0.0
6	0.000	0.0	0.0	0.0	0.0
7	0.000	0.0	0.0	0.0	0.0
8	0.000	0.0	0.0	0.0	0.0
9	0.000	0.0	0.0	0.0	0.0
10	0.000	0.0	0.0	0.0	0.0

***** RATING BASED ON POSITIVE MOMENT *****

CAUTION: POSITIVE MOMENT RATING WAS CALCULATED AT MIDDLE OF SPAN ONLY. OTHER LOCATIONS MAY CONTROL

POS/NEG MAXIMUM TOTAL VEHICLE LOAD = 295.4 KIPS, POS MAX. TOTAL VEHICLE LOAD = 295.4 KIPS

Current Bridge Inspection Report

BRIDGE INSPECTION REPORT
Wisconsin Dept. of Transportion
DT2007 2003 s.84.17 Wis. Stats. Type = ROUTINE INSPECTION

Inventory Data

Feature On: O		**Maintainer:** COUNTY		**Structure No: P-60-0916**
Feature Under: BLACK RIVER		**Sect/Twn/Rng:** S34 T31N R01E		
Location: 1.1M E JCT CTH Q		**County:** TAYLOR(6	**Municipality:** CITY-MEDFORD(60251)	
Inv Rating: HS15	**Rdwy Width (ft):** 30.0	**Deck Width (ft):** 33.0	**Existing Posting:**	
Oper Rating: HS50	**Total Length (ft):** 91.0	**Deck Area(ft2):** 3003	**ADT On:** 3500 **Yr:** 2010	**ADT Under:** **Yr:**

Inspection Type (* = Supplemental Form Required)

	Routine Visual	Fracture Critical*	In-Depth*	UW-Dive*	UW-Surv*	UW-Probe/Visual*	Movable*
Last Insp.	10-05-11					10-05-11	
Frequency	24					24	
Recom. Freq.							
	Initial*	**Damage**	**Interim**	**Load Posted**	**SI & A Field Review***		
Last Insp.		12-28-10	04-19-11				
Frequency	N/A	00	00				
Recom. Freq.	N/A				Item No. Needing Change		

Load Rating Information

Overburden	**Measurement (in):** 0.0	**Date:**	**Deck Surface Type:** CONCRETE	
Section Loss	**File Meas. (%):**	**File Insp. Date:** 04-19-11	**Insp. Measurement (%):**	**Describe:**
Re-rate for load capacity?		**Reason:**		**Date Last Rated:** 06-16-10

Expansion Joints

Location	Type	Temp: File Insp. Date	File Insp. (in)	New Insp. (in)

Signing Condition

Type of Marker	File	Y/N	Comments
Bridge Markers	Y	Y	
Narrow Bridge			
One Lane Road			
Vertical Clearance			
Weight Limit Post			
Other(Addl. Sign)			

Clearances(Cardinal = N or E)	File Meas. (ft.)	File Date	New Meas. (ft.)
Min. Vertical Clearance Under (Cardinal)			
Min. Veritcal Clearance Under (non-Cardinal)			
Min. Vertical Clearance On			

Structure Type

Material	Configuration	# of Spans	Overall Length (ft)
PREST CONCRET	DECK GIRDER		90.0

Construction/Rehabilitation History

Year	Work Performed	Plan	Shop
1971	NEW STRUCTURE		

Inspection Information

Special Requirements	Y/N	Comments
Traffic Control		
Access Equipment		
Other	Y	chain drag

Inspector Information

Team Leader Name and No. Printed: Obenhoffer, Joseph C (6503)	**Team Member(s) Name(s) Printed:** Butch Clendenning	
Team Leader Signature:	**Inspection Date:** 10-05-11	**Inspection Agency:** COUNTY (2)
District/Local Manager and No. Printed:	**District/Local Manager Signature:**	**Review Date:** 10-19-11

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
X	12 / 4	Conc Deck No Ovl	SF	3003				3003	
	+/- 1500 repairs and delams. 12/2010 accident ripped railing posts out of deck causing +/- 66 sq feet of extensive damage. Damaged repaired 4/2011								
X	109 / 2	P/S Conc Open Girder	LF	360	360				
X	215 / 2	R/Conc Abutment	LF	66	56	10			
	W. abut has dia. hairline crack in N.W. corner, Also a chip under 1st. and 4th grid. W. Abut. now has full length crack top to bottom at center . East chipped under #2 from South								
X	250 / 2	Concrete Diaphragm	EA	3	3				
X	322 / 4	Bituminous Approach	EA	2	2				
X	334 / 4	Metal Rail Coated	LF	223	41		182		
X	342 / 2	RipRap Slope Protect	EA	2	1	1			
X	358 / 4	Deck Cracking SmFlag	EA	1		1			
X	359 / 4	Und Dk Surf Sm Flag	EA	1				1	
X	362 / 4	Traf Impact SmFlag	EA	1	1				
	Traffic impact tore 2 railing posts out of SE Wing causing extensive damage. Impact also tore 2 posts out of deck causing extensive damage, SE Damage repaired, 4/2011								
X	400 / 2	Concrete Wingwall	EA	4	4				

General Inspection/Maintenance Notes

Spray oil on exposed piles.

Repair North Tiger boards.

Paint railing.

480 feet of approach guard rail added 4/2011

NBI Ratings

NBI	File	New	NBI	File	New
Deck	5	4	Culvert	N	N
Superstructure	7	7	Channel	8	8
Substructure	6	6	Waterway	8	8

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item: Misc - Repair / Replace Utilities or Signs
Amount: **Date(YYYY-MM-DD):**
Maintenance item comment: Replace North Tiger Boards.

Maintenance Item: Misc - Paint Spot / Complete
Amount: **Date(MM-DD-YY):**
Maintenance item comment: Paint Railing.

Maintenance Item: Substructure - Other Work
Amount: **Date(MM-DD-YY):**
Maintenance item comment: Oil Pilies

STRUCTURE INVENTORY AND APPRAISAL FIELD REVIEW FORM

P-60-916
O over BLACK RIVER

LOCATION

(3) Municipality:	CITY-MEDFORD(60251)
(16) Latitiude(° ' "):	45°07'14.30"N
(17) Longitude(° ' "):	90°20'54.10"W

TRAFFIC SERVICE

(28A) Lanes On:	2
(28B) Lanes Under:	0
(102) Traffic Pattern On:	-NO TRAFFIC -ONE WAY TRAFFIC X-TWO WAY TRAFFIC
(102) Traffic Pattern Under:	X-NO TRAFFIC -ONE WAY TRAFFIC -TWO WAY TRAFFIC
(19) Detour Length(mi):	3

GEOMETRY

(49) Structure Length(ft):	91.0	
(50) Sidewalk Width(ft):	Left: 0.0	Right: 0.0
(50) Curb Width(ft):	0.0	
(52) Culvert Barrel Length(ft):		
(34) Skew:	Angle(°): 0	Direction: -RIGHT FORWARD -LEFT FORWARD
	Cardinal Width	Non-Cardinal Width
(51) Bridge Roadway(ft):	30.0	30.0
(52) Deck(ft):	33.0	33.0
(32) Approach Roadway(ft):	32	0
	Cardinal Under Clearance	Non-Cardinal Under Clearance
(47) Minimum Horizontal(ft):		
(55) Minimum Right Lateral(ft):		
(55) Minimum Left Lateral(ft):		

RAILING APPRAISAL

(36A) Bridge Rail Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE		
(36B) Transition Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE		
(36C) Approach Guardrail Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE		
(36D) Guardrail Termination Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE		
Outer Rail:	Left	Right	Type
	X	X	TYPE F (TWO SQUARE TUBES) - STEEL(8)
			TYPE F (3 SQUARE TUBES) - STEEL(65)
			TYPE F (4 SQUARE TUBES) - STEEL(72)
			TYPE M-STEEL 3 SQUARE TUBES(93)
			SLOPED FACE PARAPET LF(91)
			SLOPED FACE PARAPET HF(92)
			VERTICAL FACE PARAPET TYPE A(74)
			TYPE W-THRIE BEAM(79)
			TYPE H ON VERTICAL PARAPET(80)
			TIMBER(38)
			OTHER(99) (Please specify)
Transition Type:		CONT GUARD RAIL	
		NO APP GRDRL	
		NO ATTACHMENT	
	5	22 MM(7/8") BOLT (Please enter quantity)	
		25 MM(1") BOLT (Please enter quantity)	
		OTHER (Please specify)	
Guardrail Termination Type:	X	(01) ENERGY ABSORBING TERMINAL/EAT	
		(02) TURN DOWN	
		(99) OTHER (Please specify)	

ROADWAY ALIGNMENT APPRAISAL

(72) Approach Alignment Appraisal:	(3) INTOLERABLE- Horizontal or Vertical curvature requires a substantial reduction in vhicle operating speed
	(6) FAIR- Horizontal or Vertical curvature requires a very minor speed reduction
X	(8) GOOD- No speed reduction required

Current Sufficiency Rating Calculation / Rate Score

SUFFICIENCY RATING CALCULATION

Structure = P600916 Date is 2013-06-21

BUILDING S1

****

Inventory Rating = [24.30] SuperStructure Rating is = [7]

SubStructure Rating is = [6] Culvert Rating is = [N]

****

S1 = 55.0 - (A + B)
47.50 = 55.0 - (0.0 + 7.50)
-----> **S1 = 47.50**

BUILDING S2

****

Calculated Values ---> X = 1750.00 ---> Y = 4.60 ---> G = 5.0 ---> H = 15.0

Deck (58) Rating is =	[4]	Structural Eval.(67) Rating is =	[6]
Deck Geometry (68) Rating is =	[4]	UnderClearance (69) Rating is =	[N]
Water Adequacy (71) Rating is =	[8]	Approach Align. (72) Rating is =	[8]
ADT (29) =	[3500]	Road Way Width (51) m =	[9.14]
Approach Width (32) m =	[9.75]	Number of Lanes (28) =	[02]
Structure Type (43) =	[02]	Vertical Clearance (53) m =	[99.99]
STRAHNET (100) =	[0]	Traffic Pattern (102) =	[2]

****

S2 = 30 - [J + (G + H) + I]
10.00 = 30 - [5 + 15.00 + 0]
-----> **S2 = 10.00**

BUILDING S3

****

ADT (29) = [3500.0] Detour Length (19) km = [4]

****

A = 0.97
K = 0.68

****

STRAHNET (100) = [0]

****

S3 = 15.0-(A+B)
14.03 =15.0 - 0.97 + 0.0
-----> **S3 = 14.03**

BUILDING S4

****

Detour Length (19) km is = [4] Structure Type (43) is = [02]

Traffic Safety number digits(36) is = [2]

****

S4 = A + B + C
1.00 = 0.00 + 0 + 1
-----> **S4 = 1.00**

theRating is = S1 [47.50] + S2 [10.00] + S3 [14.03] - S4 [1.00]

FINAL RATING IS 70.5

RATE SCORE CALCULATION

Structure = P600916 Date is 2013-06-21

Off System, Type= CTH

Item 1 (Super) =	[3.50]	percent is [10]
Item 2 (Sub) =	[2.50]	percent is [10]
Item 4 (Alignment) =	[0.00]	percent is [0]
Item 5 (Rdwy Width) =	[0.00]	percent is [0]
Sum Reductions =	[6.00]	

FINAL RATE SCORE IS 100 - 6.00 = 94.00

Department of Transportation Trans 205

Chapter Trans 205

COUNTY TRUNK HIGHWAY STANDARDS

Note: Chapter Hy 34 as it existed on December 31, 1986 was repealed and a new chapter Trans 205 was created effective January 1, 1987.

Trans 205.01 Purpose. (1) Pursuant to s. 84.01 (9) (b), Stats., the department of transportation adopts these rules relating to projects for constructing or reconstructing and relating to processes incidental to building, fabricating or bettering a county trunk highway, but not relating to maintenance of a county trunk highway. Maintenance includes all those measures and activities necessary to preserve a highway, as nearly as possible, in the condition of its construction. Maintenance generally involves no change in horizontal alignment, roadway widths or grade.

(2) Any county trunk highway improvement project, on which construction is started after January 1, 1987, shall follow this chapter.

History: Cr. Register, December, 1986, No. 372, eff. 1–1–87.

Trans 205.02 Definitions. As used in this chapter:

(1) "Average daily traffic" or "ADT" means the average 24–hour traffic volume during a stated period divided by the number of days in that stated period; unless otherwise specified, the stated period is one year.

(2) "Bridge design load" means the maximum vehicle loading that a bridge is designed to accommodate without exceeding the allowable working capacity of any structural member or group or system of structural members.

(3) "Design speed" means the maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern.

(5) "Functional classification" has the meaning set forth in ch. Trans 76.

Note: Chapter Trans 76 was repealed.

(6) "HS20" has the meaning set forth in the American association of state highway and transportation officials (AASHTO) standard specifications for highway bridges, 13th edition 1983, as amended by interim specifications–bridges 1984 and 1985, published by AASHTO.

Note: The AASHTO standard specifications for highway bridges are available from AASHTO, 444 North Capitol Street, N.W., Washington, D.C. 20001. Copies of the relevant portion of the AASHTO standard are on file at the offices of the department of transportation, secretary of state, and legislative reference bureau.

(6m) "Region director" means a Wisconsin department of transportation, division of transportation system development, region office director.

Note: The department of transportation region offices and addresses are as follows:

Northwest Region	Superior	1701 N. Fourth Street	Superior 54880
	Eau Claire	718 W. Clairemont Avenue	Eau Claire 54701
North Central Region	Rhinelander	510 N. Hanson Lake Road	Rhinelander 54501
	Wisconsin Rapids	1681 Second Avenue S.	Wisconsin Rapids 54495
Northeast Region	Green Bay	944 Vanderperren Way	Green Bay 54304
Southwest Region	Madison	2101 Wright Street	Madison 53704
	LaCrosse	3550 Mormon Coulee Road	LaCrosse 54601
Southeast Region	Waukesha	141 NW Barstow Street	Waukesha 53188

(7) "Regional engineer" means a Wisconsin department of transportation division of highways central office design chief road design engineer.

(8) "Rehabilitation" means replacing a major structural element of an existing highway to extend its service life for a substantial period of years and to enhance safety.

(9) "Restoration" means returning an existing highway to an acceptable condition to extend its service life for a substantial period of years and to enhance safety.

(10) "Resurfacing" means installing new or additional layers of surfacing on existing highway pavement to extend its service life for a substantial period of years and to enhance safety.

(11) "Roadway" means the portion of a highway, including shoulders, for vehicular use.

Note: Under this definition, a divided highway has 2 or more roadways.

(12) "Shoulder" means that portion of a roadway that is contiguous to the traveled way and is used primarily for vehicle stopping in an emergency.

(13) "Traveled way" means the portion of the roadway designed for movement of vehicles, exclusive of the shoulders.

History: Cr. Register, December, 1986, No. 372, eff. 1–1–87; renum. (7) to (9) to be (11) to (13), cr. (7) to (10), Register, February, 1992, No. 434, eff. 3–1–92; **correction in (4) made under s. 13.92 (4) (b) 6., Stats., and renum. (4) to (6m) under s. 13.92 (4) (b) 1., Stats., Register February 2013 No. 686.**

Trans 205.03 County trunk highway standards. (1) The design standards for urban county trunk highway improvement projects shall conform with the applicable department of transportation criteria, and, if applicable, with the federal criteria for the class of highway involved. The minimum design standards for rural county trunk highway improvement projects shall be as set forth below for each of the rural county trunk highway functional classifications. The functional classification for a particular rural county trunk highway segment shall be that shown for the segment on the most current department of transportation rural functional system map prepared under ch. Trans 76 for local transportation aids purposes or, if applicable, on the most current federal aid system map.

Note: Chapter Trans 76 was repealed.

(2) The rural county trunk highway minimum design standards for each of the rural county trunk highway functional classifications are as shown in the following tables:

TABLE (a) – ARTERIALS*

TRAFFIC VOLUME		ROADWAY WIDTH DIMENSIONS IN FEET				BRIDGES***	
Design Class	Design ADT	Design Speed MPH	Traveled Way	Shoulder	Roadway	Design Load	Clear Roadway Width in Feet
A1	Under 3500	60**	24	6	36	HS20	36
A2	3500–7000	60	24	10	44	HS20	44
A3	Over 7000	65	24(2)	6 Left / 10 Right	40(2)	HS20	40

*Minimum design standards for sight distance, horizontal alignment and vertical alignment shall conform with applicable department of transportation criteria.

**For design class A1 the desirable design speed is 60 mph, but a minimum design speed of 55 mph is acceptable.

***The full width of bridge approach roadways shall continue across all new bridges, except when a bridge is a major structure on which design dimensions are subject to individual economic studies because of high unit cost.

TABLE (b) – COLLECTOR*

TRAFFIC VOLUME		ROADWAY WIDTH DIMENSIONS IN FEET**					BRIDGES	
Design Class	Current ADT	Design ADT	Design Speed MPH	Traveled Way	Shoulder	Roadway	Design Load	Clear Roadway Width in Feet
C1	0–400		40	22–24	2–4	26–32	HS20	26–30
C2	400–750	Under 1500	50	22–24	6	34–36	HS20	28–30
C3		1500–3500	55	24	6	36	HS20	32–34***
C4		Over 3500	60	24	8	40	HS20	40***

*Minimum design standards for sight distance, horizontal alignment, and vertical alignment shall conform to the applicable department of transportation criteria.

**Where a range of widths is shown, the smaller number is the minimum width and the larger number is the maximum width eligible for federal or state project participation.

***Bridges in design classes C3 or C4 having a total length over 100 feet may be designed with a clear roadway width of 30 feet.

TABLE (c) – LOCAL*

TRAFFIC VOLUME		ROADWAY WIDTH DIMENSIONS IN FEET**					BRIDGES	
Design Class	Current ADT	Design ADT	Design Speed MPH	Traveled Way	Shoulder	Roadway	Design Load	Clear Roadway Width in Feet
L1	0–250		40	20–22	2–4	24–30	HS20	24–28
L2	250–400		40	22	2–4	26–30	HS20	26–30
L3	400–750	Under 1500	50	22–24	6	34–36	HS20	28–30
L4		1500–3500	55	24	6	36	HS20	30–34***
L5		Over 3500	60	24	8	40	HS20	40***

**Minimum design standards for sight distance, horizontal alignment and vertical alignment shall conform with applicable department of transportation criteria.

**Where a range of widths is shown, the smaller number is the minimum width and the larger number is the maximum width eligible for federal or state project participation.

***Bridges in design class L4 or L5 having a total length over 100 feet may be designed with a clear width of 30 feet.

History: Cr. Register, December, 1986, No. 372, eff. 1–1–87.

Trans 205.035 Use of alternative "3R" standards. **(1)** The standards in s. Trans 205.03 shall be used for all county trunk highway improvement projects, unless a region director expressly authorizes, in writing, the use of the department's "Design Criteria for Resurfacing, Restoration, and Rehabilitation Projects," also known as "3R" standards, for a resurfacing, restoration, or rehabilitation project on an existing highway located in his or her region.

Note: Examples of improvement projects which may be appropriate for "3R" standards include resurfacing highway pavement; grinding and repairing pavement joints; replacing or recycling pavement; widening lanes and shoulders; replacing bridge elements to correct structural deficiencies; bridge deck overlays; and other related improvements such as minor incidental subgrade work and correction of minor drainage problems.

(2) A region director may not authorize or approve the use of the department's "3R" standards for the construction of a new highway or for the complete reconstruction of an existing highway.

(3) A request to use the department's "3R" standards in lieu of the standards in s. Trans 205.03 may be submitted to a region director only by a county highway commissioner, or by a county highway commissioner's designee.

(4) A region director shall grant or deny a request to use the department's "3R" standards within 90 days after receiving a request.

(5) In determining whether to grant or deny a request to use the department's "3R" standards in lieu of the standards in s. Trans 205.03, a region director shall consider all of the following:

(a) Adequacy of design.

(b) Cost effectiveness.

(c) Safety improvement.

(d) Environmental impact.

(e) Social and economic impact, including dislocation or relocation of property owners.

(6) The rural county trunk highway minimum "3R" standards for roadway dimensions, by functional classification, and usable bridge widths are as shown in the following tables:

TABLE (A) – ARTERIALS*

TRAFFIC VOLUME			ROADWAY WIDTH DIMENSIONS IN FEET		
Design Class	Design ADT	Design Speed MPH	Traveled Way	Shoulder	Roadway
3RA1	Under 750	55	22**	3	28
3RA2	750–2000	55	24	4	32
3RA3	Over 2000	55	24	6	36

*Minimum design standards for sight distance, horizontal alignment and vertical alignment shall conform with applicable department of transportation criteria.

**A traveled way width of 24 feet is required on federally designated long truck routes and is desirable on state designated truck routes and non–designated routes where the current heavy vehicle (six or more tires) traffic volume is more than 10 percent of design ADT.

TABLE (B) – COLLECTORS AND LOCALS*

TRAFFIC VOLUME			ROADWAY WIDTH DIMENSIONS IN FEET		
Design Class	Design ADT	Design Speed MPH	Traveled Way**	Shoulder	Roadway
3RC1	Under 750	55	20	3	26
3RC2	750–2000	55	22	4	30
3RC3	Over 2000	55	22	6	34

*Minimum design standards for sight distance, horizontal alignment and vertical alignment shall conform with applicable department of transportation criteria.

**A traveled way width of 24 feet is required on federally designated long truck routes and is desirable on state designated truck routes and non–designated routes where the current heavy vehicle (six or more tires) traffic volume is more than 10 percent of design ADT.

TABLE (C) – BRIDGE WIDTH*

DESIGN ADT	USABLE BRIDGE WIDTH IN FEET**
0–750	Traveled way
751–2000	Traveled way plus 2 feet
2001 – 4000	Traveled way plus 4 feet
Over 4000	Traveled way plus 6 feet

*Bridge replacement or widening should be evaluated if the bridge is less than 100 feet long and the usable width is less than the values in the table.

**If lane widening is planned as part of the "3R" project, the usable bridge width should be compared with the planned width of the approaches after they are widened.

History: Cr. Register, February, 1992, No. 434, eff. 3–1–92.; **corrections in (1) to (5) made under s. 13.92 (4) (b) 6., Stats., Register February 2013 No. 686.**

Trans 205.04 Exceptions to design standards. **(1)** After a region director has decided whether to use either the design standards in s. Trans 205.03 or the alternative "3R" standards in s. Trans 205.035, he or she may expressly authorize, in writing, exceptions to either of these standards, if federal or state funds are not used for the improvement project.

(2) Exceptions to either the design standards in ss. Trans 205.03 or 205.035 for improvement projects using federal or state funds must be approved in writing by a regional engineer and, when federal funds are used, by the division administrator of the federal highway administration.

(3) In determining whether to authorize exceptions to the construction standards in s. Trans 205.03 or the alternative "3R" standards in s. Trans 205.035, a region director shall consider all of the following:

(a) Adequacy of design.

(b) Cost effectiveness.

(c) Safety improvement.

(d) Environmental impact.

(e) Social and economic impact, including dislocation or relocation of property owners.

Note: "Exceptions to Standards" is located at the department's offices, in the Facilities Development Manual, procedure number 11–1–2.

History: Cr. Register, December, 1986, No. 372, eff. 1–1–87; r. and recr. Register, February, 1992, No. 434, eff. 3–1–92; **correction in (1), (3) (intro.) made under s. 13.92 (4) (b) 6., Stats., Register February 2013 No. 686.**

Trans 205.05 Project review. **(1)** On or before December 1 of each year, each county highway commissioner shall file with the appropriate region director a report for the county certifying that any and all county trunk highway improvement projects for which funds were expended or obligated during that year conformed to the minimum standards established under s. 84.01 (9) (b), Stats. The certification shall be on forms prescribed by the department of transportation. All county trunk highway improvement projects shall be reviewed by the region director for compliance with the standards stated in s. Trans 205.03.

(2) If any county has not complied with the standards, the region director shall notify the county in writing stating the items which are noncomplying. When the noncomplying projects have subsequently been made to comply with the standards, the region director shall certify compliance on forms designated for this purpose by the department of transportation. If on July 1 of any year there are in a county any remaining non–complying projects that have not been made to comply as certified by the region director, those projects shall be reported by the department of transportation to the appropriate legislative committees.

History: Cr. Register, December, 1986, No. 372, eff. 1–1–87; **corrections in (1), (2) made under s. 13.92 (4) (b) 6., Stats., Register February 2013 No. 686.**

Overlay Cost Estimate

2013 REHABILITATION REPORT
TAYLOR COUNTY
P-60-0916 CTH O (90.5' x 30') (Deck replacement, New Type "M" Railing, Minimum Approach Work)

June 24, 2013

Item	Quantity	Unit Price	Units	Price	Description
204.0100	270	3.00	SY	810.00	REMOVING PAVEMENT
204.0165	200	2.00	LF	400.00	REMOVING GUARDRAIL
204.0120	270	2.00	SY	540.00	REMOVING ASPHALTIC SURFACE MILLING
210.0100	90	18.00	CY	1,620.00	BACKFILL STRUCTURE
213.0100	1	1000.00	LS	1,000.00	FINISHING ROADWAY PROJECT 01. xxxx-xx-xx
305.0115	75	25.00	CY	1,875.00	BASE AGGREGATE DENSE 3/4-INCH
455.0605	20	4.00	GAL	80.00	TACK COAT
465.0105	75	120.00	TON	9,000.00	ASPHALTIC SURFACE
465.0315	16	50.00	SY	800.00	ASPHALTIC FLUMES
614.2300	100	15.00	LF	1,500.00	MGS GUARDRAIL 3
614.2500	158	55.00	LF	8,668.00	MGS THRIE BEAM TRANSITION
614.2610	4	2500.00	EACH	10,000.00	MGS GUARDRAIL TERMINAL EAT
619.1000	1	30000.00	EACH	30,000.00	MOBILIZATION
628.1504	200	1.00	LF	200.00	SILT FENCE
628.1520	400	0.25	LF	100.00	SILT FENCE MAINTENANCE
628.1905	1	300.00	EACH	300.00	MOBILIZATIONS EROSION CONTROL
628.1910	1	300.00	EACH	300.00	MOBILIZATIONS EMERGENCY EROSION CONTROL
643.0100	1	3000.00	EACH	3,000.00	TRAFFIC CONTROL PROJECT 01. xxxx-xx-xx
646.0106	760	0.50	LF	380.00	PAVEMENT MARKING EPOXY 4-INCH
690.0150	48	2.00	LF	96.00	SAWING ASPHALT
SUBTOTAL ROADWAY				$70,669.00	
203.0700.S	1.0	25000.00	LS	25,000.00	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM S
206.1000	1.0	10000.00	LS	10,000.00	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) P-60-0916
502.0100	80.0	550.00	CY	44,000.00	CONCRETE MASONRY BRIDGES
502.3200	325.0	3.50	SY	1,137.50	PROTECTIVE SURFACE TREATMENT
505.0605	25000.0	1.50	LB	37,500.00	BAR STEEL REINFORCEMENT HS COATED BRIDGES
509.1500	0.0	75.00	SF	0.00	CONCRETE SURFACE REPAIR
509.2000	0.0	300.00	SY	0.00	FULL-DEPTH DECK REPAIR
509.2500	0	500.00	CY	0.00	CONCRETE MASONRY OVERLAY DECKS
513.4060	1	97500.00	LS	97,500.00	RAILING SEEL TUBULAR TYPE M (P-60-0916)
606.0300	20	75.00	CY	1,500.00	RIPRAP HEAVY
645.0120	0	3.00	SY	0.00	GEOTEXTILE FABRIC TYPE HR
SUBTOTAL STRUCTURE				$216,637.50	
CONSTRUCTION TOTAL				$287,306.50	
15% ENGINEERING & CONTINGENCY				43,095.98	
PROJECT TOTAL				$330,402.48	