

The National Bridge Inventory contains data submitted by state transportation departments to the Federal Highway Administration in coded format.
 Form Interface Design: www.historicbridges.org. Data Conversion Assistance By www.bridgehunter.com. None of the involved parties make any guarantee of accuracy.

Basic Information

Washington [53]	Whatcom County [073]	Whatcom [99073]	05.2 SE MT.BAKER HY	48-47-06.00 = 48.785000	122-06-46.00 = -122.112778
81574000000000	Highway agency district 1	Owner County Highway Agency [02]	Maintenance responsibility	County Highway Agency [02]	
Route 84190	MOSQUITO LK RD	Toll On free road [3]	Features intersected	MIDDLE FORK	
Design - main Steel [3]	Design - approach Prestressed concrete [5]	Kilometerpoint 1406 km = 871.7 mi	Year built 1915	Year reconstructed 2010	
1 Truss - Thru [10]	2 Slab [01]	Skew angle 0	Structure Flared		
		Historical significance	Historical significance is not determinable at this time. [4]		
Total length 128.9 m = 422.9 ft	Length of maximum span 103 m = 337.9 ft	Deck width, out-to-out 4.9 m = 16.1 ft	Bridge roadway width, curb-to-curb 4 m = 13.1 ft		
Inventory Route, Total Horizontal Clearance 4 m = 13.1 ft	Curb or sidewalk width - left 0 m = 0.0 ft	Curb or sidewalk width - right 0 m = 0.0 ft			
Deck structure type	Closed Grating [4]				
Type of wearing surface	Latex Concrete or similar additive [3]				
Deck protection					
Type of membrane/wearing surface					

Weight Limits

Bypass, detour length 3.4 km = 2.1 mi	Method to determine inventory rating	Load and Resistance Factor(LRFR) [3]	Inventory rating	26.1 metric ton = 28.7 tons
	Method to determine operating rating	Load and Resistance Factor(LRFR) [3]	Operating rating	34.2 metric ton = 37.6 tons
Bridge posting	Equal to or above legal loads [5]	Design Load	M 18 / H 20 [4]	

Functional Details

Average Daily Traffic	140	Average daily truck traffi	4	%	Year	2009	Future average daily traffic	250	Year	2030
Road classification	Minor Collector (Rural) [08]		Lanes on structure	1		Approach roadway width	4 m = 13.1 ft			
Type of service on bridge	Highway [1]		Direction of traffic	One lane bridge for 2 - way traffic [3]		Bridge median				
Parallel structure designation	No parallel structure exists. [N]									
Type of service under bridge	Waterway [5]		Lanes under structure	0		Navigation control				
Navigation vertical clearanc	0 = N/A		Navigation horizontal clearance	0 = N/A						
Minimum navigation vertical clearance, vertical lift bridge			Minimum vertical clearance over bridge roadway	5.49 m = 18.0 ft						
Minimum lateral underclearance reference feature	Feature not a highway or railroad [N]									
Minimum lateral underclearance on right	0 = N/A				Minimum lateral underclearance on left	0 = N/A				
Minimum Vertical Underclearance	0 = N/A		Minimum vertical underclearance reference feature	Feature not a highway or railroad [N]						
Appraisal ratings - underclearances	N/A [N]									

Repair and Replacement Plans

Type of work to be performed	Work done by	Work to be done by contract [1]								
Replacement of bridge or other structure because of substandard load carrying capacity or substantial bridge roadway geometry. [31]	Bridge improvement cost	4000000	Roadway improvement cost	7000						
	Length of structure improvement	126.8 m = 416.0 ft		Total project cost	4500000					
	Year of improvement cost estimate	2009								
	Border bridge - state				Border bridge - percent responsibility of other state					
	Border bridge - structure number									

Inspection and Sufficiency

Structure status	<input type="text" value="Open, no restriction [A]"/>	Appraisal ratings - structural	<input type="text" value="Equal to present minimum criteria [6]"/>
Condition ratings - superstructure	<input type="text" value="Satisfactory [6]"/>	Appraisal ratings - roadway alignment	<input type="text" value="Basically intolerable requiring high priority of corrective action [3]"/>
Condition ratings - substructure	<input type="text" value="Good [7]"/>	Appraisal ratings - deck geometry	<input type="text" value="Basically intolerable requiring high priority of replacement [2]"/>
Condition ratings - deck	<input type="text" value="Very Good [8]"/>		
Scour	<input type="text" value="Countermeasures have been installed to mitigate an existing problem with scour. [7]"/>		
Channel and channel protection	<input type="text" value="Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition. [8]"/>		
Appraisal ratings - water adequacy	<input type="text" value="Equal to present desirable criteria [8]"/>	Status evaluation	<input type="text"/>
Pier or abutment protection	<input type="text"/>	Sufficiency rating	<input type="text" value="66.5"/>
Culverts	<input type="text" value="Not applicable. Used if structure is not a culvert. [N]"/>		
Traffic safety features - railings	<input type="text" value="Inspected feature meets currently acceptable standards. [1]"/>		
Traffic safety features - transitions	<input type="text" value="Inspected feature meets currently acceptable standards. [1]"/>		
Traffic safety features - approach guardrail	<input type="text" value="Inspected feature meets currently acceptable standards. [1]"/>		
Traffic safety features - approach guardrail ends	<input type="text" value="Inspected feature meets currently acceptable standards. [1]"/>		
Inspection date	<input type="text" value="August 2012 [0812]"/>	Designated inspection frequency	<input type="text" value="24"/> Months
Underwater inspection	<input type="text" value="Not needed [N]"/>	Underwater inspection date	<input type="text"/>
Fracture critical inspection	<input type="text" value="Every two years [Y24]"/>	Fracture critical inspection date	<input type="text" value="August 2012 [0812]"/>
Other special inspection	<input type="text" value="Not needed [N]"/>	Other special inspection date	<input type="text"/>

BRIDGE INSPECTION REPORT

Ver Date: 08/18/2014

Agency: Whatcom County

Status: Work

Printed On: 10/03/20

Program Mgr: Roman G. Peralta

Bridge No. 140

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Structure Type

Bridge Name MIDDLE FORK

Route 84190

Location 05.2 SE MT.BAKER HY

Structure ID 08157400

MilePost 8.74

Intersecting MIDDLE FORK

Inspector's Signature CJH

IDent# G0313

Co-Inspector's Signature

										Inspections Performed					
6		Structural Adqcy (657)	N		Pier/Abut/Protect (679)	1915	Year Built (332)			IT	NT	HRS	Date	Rep	Type
2		Deck Geometry (658)	7		Scour (680)	2010	Year Rebuilt (336)			Y	24	2.0	08/18/2014	Routine	
9		Underclearance (659)	9		Retaining Walls (682)	38	Oper Rating (551)			Y	24	16.0	08/18/2014	Fract Crit	
5		Operating Level (660)	9		Pier Protection (683)	29	Inv Rating (554)								Underwater
3		Alignment Adqcy (661)	1		Bridge Rails (684)	A	Open Close (293)								Special
8		WaterwayAdqcy (662)	1		Transition (685)	1800	Vert Over Deck (360)								Interim
8		Deck Overall (663)	1		Guardrails (686)	0000	Vert Under (374)			Y	24	16.0	08/18/2014	Equipment	
9		Drains Condition (664)	1		Terminals (687)	N	Vert Und Code (378)								Damage
6		Superstructure (671)	N		Revise Rating (688)	0.00	Asphalt Depth								Safety
0		Number Utilities (675)			Photos Flag (691)	5	Speed Limit								Short Span
7		Substructure (676)	N		Soundings Flag (693)										
8		Chan/Protection (677)			Measure Clearance (694)										
9		Culvert (678)													
										Total: 34.0					
										Suff Rating: 66.51		66.51			

BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
13	Bridge Deck Surface	1284	SF	1284	0	0	0
29	Steel Deck-Concrete Filled Grid	4462	SF	4462	0	0	0
51	Prestressed Conc Slab w/Coated Bars	1284	SF	1284	0	0	0
113	Steel Stringer	2366	LF	2345	0	21	0
126	Steel Thru Truss	676	LF	655	0	21	0
152	Steel Floor Beam	340	LF	320	0	0	20
162	Steel Pin	60	EA	51	9	0	0
212	Concrete Submerged Pier Wall	52	LF	52	0	0	0
215	Concrete Abutment	60	LF	60	0	0	0
234	Concrete Pier Cap / Crossbeam	52	LF	52	0	0	0
311	Moveable Bearing (roller, sliding, etc)	4	EA	4	0	0	0
330	Metal Bridge Railing	832	LF	832	0	0	0

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Structure ID 08157400	MilePost 8.74	Intersecting MIDDLE FORK

361	Scour	2	EA	2	0	0	0
362	Impact Damage	1	EA	1	0	0	0
408	Steel Sliding Plate	32	LF	32	0	0	0
803	Modified Concrete Overlay	1284	SF	1284	0	0	0
904	Organic Zinc/Urethane Paint System	18600	SF	18600	0	0	0

Notes

0	Bridge oriented south to north with water flow from east to west.
1	Two truss system has no load path redundancy. The truss tension members are fracture critical. See the Fracture Critical Report in the Files tab.
13	The deck surface is covered with a 5" concrete overlay on the approach spans only. see element note 803
29	Steel grid deck with concrete running lanes in traveled wheel path. BMS quantity accounts for the concrete filled runners along the wheel lines and the open grid deck.
51	The concrete slabs at the approaches are all in good shape, no defects noted.
113	The steel stringers have been strengthened with 4-1/2" x 7" HSS sections welded to the bottom flange. The floor system is also laterally braced at the midspan with 5" x 5" HSS sections welded to the bottom flange HSS sections. Some of the welds are undercut. Rust on the steel stringers has been cleaned and painted. All of the stringers have top flange pitting, scalloping, and general section loss, New T steel beam have been added along the top to support bridge deck.
126	<p>Panel points are numbered from L0 at Pier 2 through L16 at Pier 3. See Fracture Critical Report in the Files tab for details on truss tension members.</p> <p>The rust in the truss members has been cleaned and new paint applied throughout. Many of the truss members have pitting and scalloping from previous rust.</p> <p>Some of the truss members have minor warps and bends. Approximately 2% of the lattice plates have minor bends.</p> <p>Many of the truss eye bars have 3/4" round construction indentations up to 1/2" deep near the pins, see photo #SI-43</p> <p>The diagonal bar eyes appear to be welded to form the eye.</p> <p>Bottom gusset plate at L12 west truss is bent upward approximately 1", see photo #MI-21</p> <p>The east channel of L12-U12 east truss at L12 is bent from previous pack rust, see photo SubS-02-12</p> <p>BOTTOM LATERALS;</p> <p>Many of the bottom lateral gusset plates have some deformation from previous pack rust. L5 west truss is the worst case with up to 3/4" deformation, see photo #MI-26</p> <p>A few of the bottom laterals have minor section loss at the end loops.</p> <p>Panel 6 bottom laterals have new cotter pin installed.</p> <p>Bottom laterals in panels 7 and 8 have been replaced with steel rods and new ends.</p> <p>L15 west to L16 east is bent out of plane and down, see photo #MI-25</p> <p>L14 has some pitting at the gusset plate east side along vertical cord. This is typical in many locations.</p> <p>L12 bottom gusset plate is deformed.</p>
152	<p>Floorbeams in Span 2 are numbered from Floorbeam 0 at L0 (Pier 2) to floorbeam 16 at L16 (Pier 3). The floorbeams have been strengthened with 6-1/2" x 10" HSS sections welded to the bottom flange. Rust on the floorbeams has been cleaned and painted. Some of the floorbeams have pitting, scalloping, and minor section loss in the webs and flanges, typically near the ends. Floorbeam 2 has a torn web stiffener. Floorbeams 0 and 16 have been replaced with a steel welded section that has a depth of 31" and flange width of 9".</p> <p>Cross Bracing:</p> <p>At L6 the west side is bent.</p> <p>At L8 near center the bars are bent.</p>

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162	Ultrasonic inspection shows several of the pins having non-coincident indications that are less than 10% of the far shoulder reflection. Eight have non-coincident indications that are more than 10% but less than 20% of the far shoulder reflection. One has non-coincident indications that are more than 20% of the far shoulder reflection. Visual inspection reveals no distress. See the Pin Summary, and UT reports in the Files tab for more detail. County Note: Phased array testing in 2008 showed no pins in condition state 3. Condition of the pins remain the same, no issues could be note during this past 2014 inspection of pins. WSDOT did the pin inspection in 2014 per the 2014 list of pins that needed to be done.																														
212	Concrete pier wall in goo condition, South wall has had additional scour protection done on the up stream side of the bridge. Both pier walls have had some holes and bars placed in the side near the top. This work was to install the new bearings.																														
215	Concrete abatements at both approach spans in good shape. No issues can be seen at this time.																														
234	Horizontal leaching cracks on the ends of the concrete pier caps.																														
311	Friction Pendulum Bearings, see photo #B-01-12. This bearing was install at all four corner of the bridge.																														
330	The bridge rails are steel tubs, 6x6 mounted of post that are attached to the bridge deck. Rail has been damaged at the northwest end of the bridge, trail from a truck hit the rail. Rail doesn't need to be fix at this time. See photo # G-01-12																														
361	Middle Fork Nooksack River flows east to west. Rip-rap is in place at the abutments and in the approach spans. North side of Pier 3 is armored with heavy rip. Pier #3 had a scour project to deepen the rip-rap up stream and in front of pier. This work was done during the rehab of the bridge.																														
362	The lower strut of the sway frames 2 through 12 have traffic impact bends, see element note 126 for details.																														
408	<p>The steel armored strip seals have been replaced with steel sliding plates. A 1" thick plate covers the joint.</p> <p>The joint gaps are measured at the east curb.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Temperature</th> <th>Pier 2</th> <th>Pier 3</th> </tr> </thead> <tbody> <tr> <td>8/11/2010</td> <td>10:00</td> <td>65 degrees F</td> <td>5-3/16"</td> <td>5-1/4"</td> </tr> <tr> <th>Date</th> <th>Time</th> <th>Temperature</th> <th>Pier #2</th> <th>Pier #3</th> </tr> <tr> <td>8-22-2012</td> <td>12:00pm</td> <td>75degrees F</td> <td>5-1/16"</td> <td>5-3/8"</td> </tr> <tr> <th>Date</th> <th>Time</th> <th>Temperature</th> <th>Pier #2</th> <th>Pier #3</th> </tr> <tr> <td>8-22-2012</td> <td>8:00am</td> <td>65degrees F</td> <td>7"</td> <td>8-1/4"</td> </tr> </tbody> </table>	Date	Time	Temperature	Pier 2	Pier 3	8/11/2010	10:00	65 degrees F	5-3/16"	5-1/4"	Date	Time	Temperature	Pier #2	Pier #3	8-22-2012	12:00pm	75degrees F	5-1/16"	5-3/8"	Date	Time	Temperature	Pier #2	Pier #3	8-22-2012	8:00am	65degrees F	7"	8-1/4"
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8-22-2012	8:00am	65degrees F	7"	8-1/4"																											
661	There is a downgrade and a sharp righthand horizontal curve approaching the bridge from the north. The bridge is posted for 5 MPH and has stop signs at both ends.																														
663	Deck coded is raised to "8" after rehabilitation of the structure with a steel grid in the main span and concrete slabs at the approaches.																														
671	Superstructure code is raised to "6" based on the rehabilitation of the structure with remaining section loss in a few of the secondary truss members and large large number of reflectors in the truss pins.																														
677	Middle Fork Nooksack river has a gravel lined bed with well vegetated banks. The river overtops the main channel banks and flows over the flood plain under the north half of Span 2 and around Pier 3. The steep high bank at the north abutment contains the overflow. The north bank of the main channel has some small undermined and fallen trees.																														
680	Scour Mitigation work completed in July 2009, no signs of any scour exist at this time. will continue to watch for scour.																														
681	South approach - Transition Plate is 7/8" taller than the bridge deck. Bolts in the transition plates should be check, they appear to be loose.																														
685	New transitions are to current standards.																														
687	New terminals are to current standards.																														
693	Soundings taken 8/11/2010																														
803	The approach spans have 5" concrete over the slab units. The overlay has a few longitudinal hairline cracks.																														
904	Paint system is showing sign of issues at this point. Areas of blistering and thin paint is showing. Their are a few areas that vegetation is starting to growing some locations. Some deformations, pitting, scalloping, and section loss remain, see element notes 113, 126, and 152																														

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Structure Type

Bridge Name MIDDLE FORK

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Intersecting MIDDLE FORK

Repairs

Repair No	Pr	R	Repair Description	Noted	Maint	Verified
12951	2	B		08/19/14		
12949	3	B		08/22/12		
12950	3	B		08/19/14		

Inspections Performed and Resources Required

Report Type	Date	IT	Frq	Hrs	Insp	CertNo	Coinsp	Note
Routine	08/18/14		24	2.0	CJH	G0313		Updating routine inspection dates with information supplied by BPO. (GDG)
Resources			Use	Hour	Min	Req	Max	Notes
Fracture Critical	08/18/14		24	16.0	CJH	G0313	BP	Updating routine inspection dates with information supplied by BPO. (GDG)
Resources			Use	Hour	Min	Req	Max	Notes
UBIT			50	10.00	30	50	50	UB50 and manlift for upper truss used in 2012.
Bucket		BK	8.00			BK		Rented 65 manlift, rented from Pape Rents 888-901-7273. MK/Modle JS/SJ63J works the best. Ask for a small bucket if possible for easier access.
Flagging		LA	18.00		LA	LA	LA	Bridge is one lane with stop signs at both ends. Contact Steve Dillon or Carl Hendricks, Whatcom Co. at 360-715-7450.
Special Equipment		UT	18.00		UT	UT	UT	Using 0.75" x 2.25" MhzTransducer.2014 inspection included all pins that were indicated on the list to be inspected.
Scheduling Restrictions		TRF C			TRFC	TRFC	TRFC	Total closure work hours in 2014 were 11 PM to 5PM Monday, 8 AM to 5 PM Tuesday, with traffic allowed to use the bridge from 12PM to 12:30PM.
Equipment	08/18/14		24	16.0	CJH	G0313	BP	
Resources			Use	Hour	Min	Req	Max	Notes
UBIT			50	8.00	50	50	50	State UBIT
Bucket		BK	8.00		BK	BK	BK	Whatcom County rents a 65' manleft, must have the additional jib on the end of boom.