

**FREDERICK COUNTY
PUBLIC WORKS DIVISION
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
BRIDGE AND STRUCTURE SECTION**



2013 Bridge Inspection Report

BRIDGE NO. F05-22P

**HORNETS NEST ROAD
OVER
FRIENDS CREEK**

INSPECTION DATE: 04/26/2013

Prepared by:

Office of Transportation Engineering
Department of Highways and Transportation

FREDERICK COUNTY
DIVISION OF PUBLIC WORKS
2013 BRIDGE INSPECTION



Bridge No. F05-22P

HORNETS NEST ROAD over FRIENDS CREEK

Michael E. My

Quality Assurance

Date

Team Leader

Date

The condition data and recommendations presented herein are based on a visual inspection of accessible portions of the existing structure. No responsibility is accepted for the existence of latent defects that cannot be detected by a visual inspection.

Office of Transportation Engineering
Department of Highways and Transportation

**FREDERICK COUNTY
PUBLIC WORKS DIVISION**

BRIDGE NO. F05-22P

HORNETS NEST ROAD OVER FRIENDS CREEK

TABLE OF CONTENTS

	Page
INSPECTION REPORT SUMMARY	1
PHOTOGRAPHS	3
REVIEW OF PREVIOUS REPORT AND SCOUR POTENTIAL	5
REPAIR RECOMMENDATIONS	6
LOAD RATING SUMMARY AND POSTING RECOMMENDATIONS	7
STRUCTURE INVENTORY AND APPRAISAL FORMS	8
PONTIS FORM	8

**2013 Frederick County Bridge Inspection
Bridge No. F05-22P
HORNETS NEST ROAD over FRIENDS CREEK**

BRIDGE INSPECTION REPORT SUMMARY

Description:

This structure, built in 1981, is a five (5) cell bituminous coated corrugated metal pipe culvert with concrete headwalls and wingwalls. The bituminous roadway carries one lane of traffic with a clear roadway width of 12'-0". Each pipe is 3'-6" wide by 2'-4" high and are 21'+ long.

The bridge is not posted for a weight restriction or a speed limit.

Condition Summary:

This structure was inspected on April 26, 2013. The result of this inspection indicates that the steel pipes are in poor condition and concrete headwalls are in fair condition. The following is a summary of the findings during the inspection.

Approach Roadway

The approach roadway is in fair/good condition.

1. The bituminous roadway paving is in good condition with no visible cracks or settlement. Localized sections of missing pavement from overtopping
2. There are no traffic barriers on either side of the roadway or across the structure. Top of headwalls are level with roadway; Type 3 bridge object markers installed at headwall ends.

Culvert

The culvert is in fair/poor condition.

1. The bituminous covered corrugated metal pipes are in fair/poor condition. There is moderate/heavy invert corrosion with extensive perforations for the entire length of all five pipes. The shape of pipes are good with gradual flattening of the pipes at the middle. There are minor joint seam openings but there is no evidence of backfill infiltration. There is very little bituminous coating remaining on pipes below the waterline.
2. The concrete headwalls are in fair condition. There are minor joint/scour openings with no backfill. Headwalls have wide spread cracks and isolated hairline vertical cracks above the roof of the pipes around the pipes at upstream end. There are minor spalls in the concrete headwalls. Concrete is deteriorated around the lower edge of pipes at downstream end. Concrete is deteriorated at the edge of toewall at downstream end.
3. Wingwalls are in fair condition with map cracking occurring along the north headwall and the NW wingwall. There is minor/map cracking in SE wingwall.

Channel

2013 Frederick County Bridge Inspection
Bridge No. F05-22P
HORNETS NEST ROAD over FRIENDS CREEK

The channel is in fair condition.

1. The stream channel is in fair condition with moderate streambed scour and soil erosion occurring to the embankments.
2. Due to accumulated bed load at upstream headwall, main channel flow is directed through cells 1 & 2 from east.
3. There is localized vertical toewall exposure (1'-2') with undermining (up to 1') on both upstream and downstream ends.

2013 FREDERICK COUNTY BRIDGE INSPECTION
BRIDGE NO. F05-22P
HORNETS NEST ROAD OVER FRIENDS CREEK



Photograph No. 1. Approach from East - Looking West



Photograph No. 2. Approach from West - Looking East

2013 FREDERICK COUNTY BRIDGE INSPECTION
BRIDGE NO. F05-22P
HORNETS NEST ROAD OVER FRIENDS CREEK



Photograph No. 3. Upstream Elevation



Photograph No. 4. Downstream Elevation

**2013 Frederick County Bridge Inspection
Bridge No. F05-22P
HORNETS NEST ROAD over FRIENDS CREEK**

Review of Previous Report:

The 2011 Bridge Inspection Report was available and used for the comparison purposes. The overall condition of the structure appeared similar to that noted in the previous report except:

1. Type 3 bridge object markers installed at the headwall ends.

Scour Potential Rating (Review of Item 113):

Item 113 was originally rated an 8P. Based on the observed conditions, this rating is still valid and does not require re-evaluation. Continue to monitor for scour during future inspections and after high flow events.

**2013 Frederick County Bridge Inspection
Bridge No. F05-22P
HORNETS NEST ROAD over FRIENDS CREEK**

Repair Recommendations:

Critical (Perform immediately or closed the bridge until performed)

1. None

High (Perform within 12 months)

1. Schedule bituminous coated pipes for future replacement.

Medium (Preferred maintenance, place in current schedule)

1. None

Routine (Routine maintenance, place in current schedule)

1. None

2013 Frederick County Bridge Inspection
Bridge No. F05-22P
HORNETS NEST ROAD over FRIENDS CREEK

Load Rating Summary and Posting Recommendations:

The structure has not had a significant change of condition due to deterioration or rehabilitation since the 2011 inspection. The following Maryland Legal Load Limits were obtained from previously established SI&A information.

Vehicle	Gross Vehicle Weight (Tons)	Inventory Rating (Tons)	Operating Rating (Tons)
H-15	15	46	62
HS-20	36	82	99
MD Type 3	33	93	99
MD Type 3S2	40	60	99

Based on the above ratings, posting of the bridge is not required.

2013 BRIDGE INSPECTION REPORT

BRIDGE NUMBER: F05-22P

INSPECTION DATE: 04/26/2013

(58) DECK (59) SUPERSTRUCTURE (60) SUBSTRUCTURE
 (61) CHANNEL (62) CULVERT

ELEMENT	TQ	CS 1	CS 2	CS 3	CS 4	CS 5
240 Steel Culvert (LF) Bituminous Coated CMP's(5) in fair condition w/ moderate/heavy invert corrosion. There are extensive perforations for the entire length of all five pipes. The shape of pipes are good with gradual flattening of the arch. There are minor joint/seam openings with no backfill infiltration.	<input type="text" value="106"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="106"/>	<input type="text"/>	<input type="text"/>
246 Concrete Culvert Headwall (LF) Fair Condition w/ widespread hairline shrinkage cracking & localized hairline vertical cracking above roof of pipes. Localized minor surface spalling of upstream headwall due to debris removal.	<input type="text" value="76"/>	<input type="text" value="70"/>	<input type="text" value="6"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
251 Reinforced Concrete Wingwalls (LF) Fair Condition with map cracking and spalling of concrete along the NW wingwall.	<input type="text" value="6"/>	<input type="text" value="6"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
345 Stream Channel (ENTIRE BRIDGE) The stream channel is in fair condition with some streambed scour and soil erosion occurring to the embankments. Water is flowing through all five pipes. There are localized toewall vertical exposure (1' to 2') and localized undermining in both upstream and downstream ends (up to 1').	<input type="text" value="EB"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>