Maryland Historical Trust

Maryland Inventory of Historic Properties number: F-7-13

Name: DIXON RD. OVER BENNETT CREEK.

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST

Eligibility Recommended X Eligibility Not Recommended _____

Criteria: ___A ___B ___C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G ___None

Comments: _____

Reviewer, OPS: Anne E. Bruder Date: 3 April 2001

Reviewer, NR Program: Peter E. Kurtze Date: 3 April 2001

MARYLAND INVENTORY OF HISTORIC BRIDGES **MHT No.** F 7-13
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

SHA Bridge No. F7-09 **Bridge name** Dixon Road over Bennett Creek

LOCATION:
Street/Road name and number [facility carried] Dixon Road

City/town Urbana **Vicinity** X

County Frederick

This bridge projects over: Road____ **Railway**_____ **Water** X **Land** ____

Ownership: State ___ **County** X **Municipal** _ **Other** _____

HISTORIC STATUS:
Is the bridge located within a designated historic district? Yes _____ **No** X
National Register-listed district ____ **National Register-determined-eligible district** __
Locally-designated district _____ **Other** _____

Name of district _____

BRIDGE TYPE:
Timber Bridge _____:
Beam Bridge _____ **Truss -Covered** ___ **Trestle** ___ **Timber-And-Concrete** ___

Stone Arch Bridge _____

Metal Truss Bridge X

Movable Bridge ____:
Swing _____ **Bascule Single Leaf** _ **Bascule Multiple Leaf** _____
Vertical Lift _____ **Retractile**_____ **Pontoon** _____

Metal Girder_____:
Rolled Girder _____ **Rolled Girder Concrete Encased** _____
Plate Girder _____ **Plate Girder Concrete Encased** _____

Metal Suspension _____

Metal Arch _____

Metal Cantilever _____

Concrete ___ :
Concrete Arch_____ **Concrete Slab** __ **Concrete Beam** ____ **Rigid Frame** _____
Other _____ **Type Name** _____

DESCRIPTION:

Setting: Urban _____ **Small town** _____ **Rural** X

Describe Setting:

Bridge F7-09 carries Dixon Road over Bennett Creek in the vicinity of Urbana, Frederick County. Dixon Road runs generally in a north-south direction in the area while Bennett Creek flows east-west. The bridge is situated in a small valley. The area is undeveloped with woods and farmland around the bridge.

Describe Superstructure and Substructure:

Bridge F7-09, constructed in 1904, is a single-span, Warren pony truss measuring 13.4 meters (44 feet) in total length. It has three panels with diagonal endposts. The top and bottom chords are built-up sections of two channels and a cover plate connected by rivets. The floor system has two steel stringers and steel floorbeams. All verticals and diagonals are steel angles with cross bars. All original connections are riveted. The width of the roadway is 3.81 meters (12.5 feet) and the distance between the centerline of the trusses is 4.6 meters (15.08 feet). There is no sidewalk on the bridge, and the truss members are protected by a steel angle railing. The bridge, which is aligned 90° to the streambed, is posted for 13.6 tonnes (15 tons) and has a sufficiency rating of 44.2. The abutments are stone and there are no wing walls. There are two plaques on the bridge; one each on the northwest and southeast diagonal endposts identifying that the bridge was constructed by the York Bridge Company in 1904.

Discuss Major Alterations:

According to the county engineer of Frederick County, the bridge was originally built with riveted connections. The county bridge files indicate that the bridge was rehabilitated in 1994. The wood deck and steel stringers were replaced, and the bridge received new bracing, connections, and some of the angles were replaced. The 1996 inspection report details that the bridge is in good condition. Repair recommendations include placing concrete on the abutments to support the endpost bearings and spot painting as required.

HISTORY:

WHEN was the bridge built 1904
This date is: Actual X **Estimated** _____
Source of date: Plaque X **Design plans** ___ **County bridge files/inspection form** X
Other (specify): ___

WHY was the bridge built?

The bridge was constructed in response to the need for more efficient transportation network and increased load capacity.

WHO was the designer?

York Bridge Company, York, Pennsylvania

WHO was the builder?

York Bridge Company, York, Pennsylvania

WHY was the bridge altered?

The bridge was altered to ensure its structural integrity.

Was this bridge built as part of an organized bridge-building campaign?

There is no evidence that the bridge was built as part of an organized bridge building campaign.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ B- Person _____
C- Engineering/architectural character _____

The bridge was previously surveyed by the Frederick County Planning and Zoning Department in 1993; however, no determination of eligibility was made by the Maryland Historical Trust. The bridge is recommended as eligible under Criterion C, as a representative example of an early twentieth century truss bridge. Although the connections, some angles and the floor system have been replaced, the bridge retains the majority of its truss members and retains sufficient integrity. Character-defining elements, such as the truss elements, including the channels, coverplates, endposts and chords, and the stone abutments, are in good condition.

Was the bridge constructed in response to significant events in Maryland or local history?

This bridge was one of a large number of metal truss bridges built in Maryland in the late nineteenth and early twentieth centuries. Metal trusses built in the late nineteenth century were frequently of wrought iron construction and featured pinned connections. By the turn of the century, steel was the material of choice and connections were sometimes pinned and sometimes rivetted. By 1920, the truss type exhibited more heavily configured members and rivetted connections.

General Truss Bridge Trends

The first metal truss bridges in the United States were built to carry rail and canal traffic. A rapidly expanding railroad network, with needs for long spans, heavy load capacity and rapid construction, served as the impetus for advances in metal truss technology from the mid-nineteenth century to its close. The earliest metal truss forms of the United States were patented and introduced between 1830 and the Civil War, including the popular Pratt (1844) and Warren (1848) types.

From the Civil War through the end of the century metal truss technology improved in response to increasing loads and speeds, and new transportation needs; steel began to replace iron; numerous "bridge works" and "iron works" were established in the eastern U.S. for fabricating and shipping the truss components to the bridge site; and expanding road networks required a low cost, expedient bridge type.

General Trends in Maryland

In Maryland, the earliest metal truss bridges carried rail lines, including the Baltimore & Ohio (B&O) and the Baltimore and Susquehanna Railroads. As early as 1849, B&O Chief Engineer Benjamin H. Latrobe recommended the construction of metal truss bridges for "large crossings"; in 1850 he reported "much satisfaction" with the future of iron bridges after constructing the metal truss bridge at Savage.

Numerous metal truss bridges were manufactured in Baltimore, the early industrial hub of bridge building activity in the state, from the 1850s through the 1880s. Among the early bridge builders in the 1850s and 1860s were former B&O employees, B.H. Latrobe and Wendell Bollman, founders of competing Baltimore bridge building companies. Historical research identified more than twenty-five bridge companies in the region that built truss bridges in Maryland between 1850 and 1920. Among these were the Wrought Iron Bridge Company, King Iron Bridge Company, Patapsco Bridge and Iron Works, Baltimore Bridge Company, Pittsburg Bridge Company, Penn Bridge Company, Smith Bridge Company, Groton Bridge and Manufacturing Company, Roanoke Iron and Bridge Company, York Bridge Company, Vincennes Bridge Company, Bethlehem Steel Company, American Bridge Company.

The location of the Baltimore & Ohio Railroad, Baltimore bridge fabricators, and the urban needs of the city and its environs resulted in the erection of numerous early truss bridges in Baltimore and the surrounding area. Initially constructed for the railroads, their use quickly came to replace the earlier timber bridges on Baltimore roads.

From Baltimore, the use of the metal truss spread to other parts of the state, with County Commissioners in the Piedmont and Appalachian Plateau counties erecting numerous metal trusses from the 1870s to the early twentieth century. Frederick County erected numerous truss spans during that time. Records indicate that in the early twentieth century the York Bridge Company built a number of metal trusses there, primarily Pratt but also Warren and Parker trusses. In the same county, King Iron Bridge Manufacturing Company erected several bowstring pony truss bridges.

The Dixon Road Bridge is a Warren Truss. Patented in 1846 by British engineers James Warren and Willoughby Monzoni, the Warren truss and its variants constitute a commonly built metal truss bridge type of the nineteenth and early twentieth centuries. The original form of the Warren was purely a series of equilateral triangles in which the diagonals carried both compressive and tensile loads. Later, verticals were added but served only as bracing for the entire triangular web system between parallel top and bottom chords. Like the Pratt truss, the Warren truss was widely built throughout the United States from the middle of the nineteenth century well into the twentieth century, and spawned many variants, including a double intersection, or lattice, subtype in which two triangular truss systems are superimposed with or without verticals.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

There is no evidence that the construction of this bridge had a significant impact on the growth and development of this area.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

The bridge is located in an area which does not appear to be eligible for historic designation.

Is the bridge a significant example of its type?

Although the integrity of the bridge has been compromised by the replacement of the original floor system, bracing, and some connections, the bridge is a significant example of its type.

Does the bridge retain integrity of important elements described in Context Addendum?

Despite a rehabilitation of the bridge in 1994, it retains character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including most of the truss elements, the end posts, top and bottom chords, and abutments.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

This bridge is not a significant example of the work of a manufacturer, designer, and/or engineer.

Should the bridge be given further study before an evaluation of its significance is made?

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

County inspection/bridge files X **SHA inspection/bridge files** ___
Other (list):

Frederick County Planning and Zoning Department, *Maryland Historical Trust Inventory Form for State Historic Sites Survey #F 7-13.* 1993.

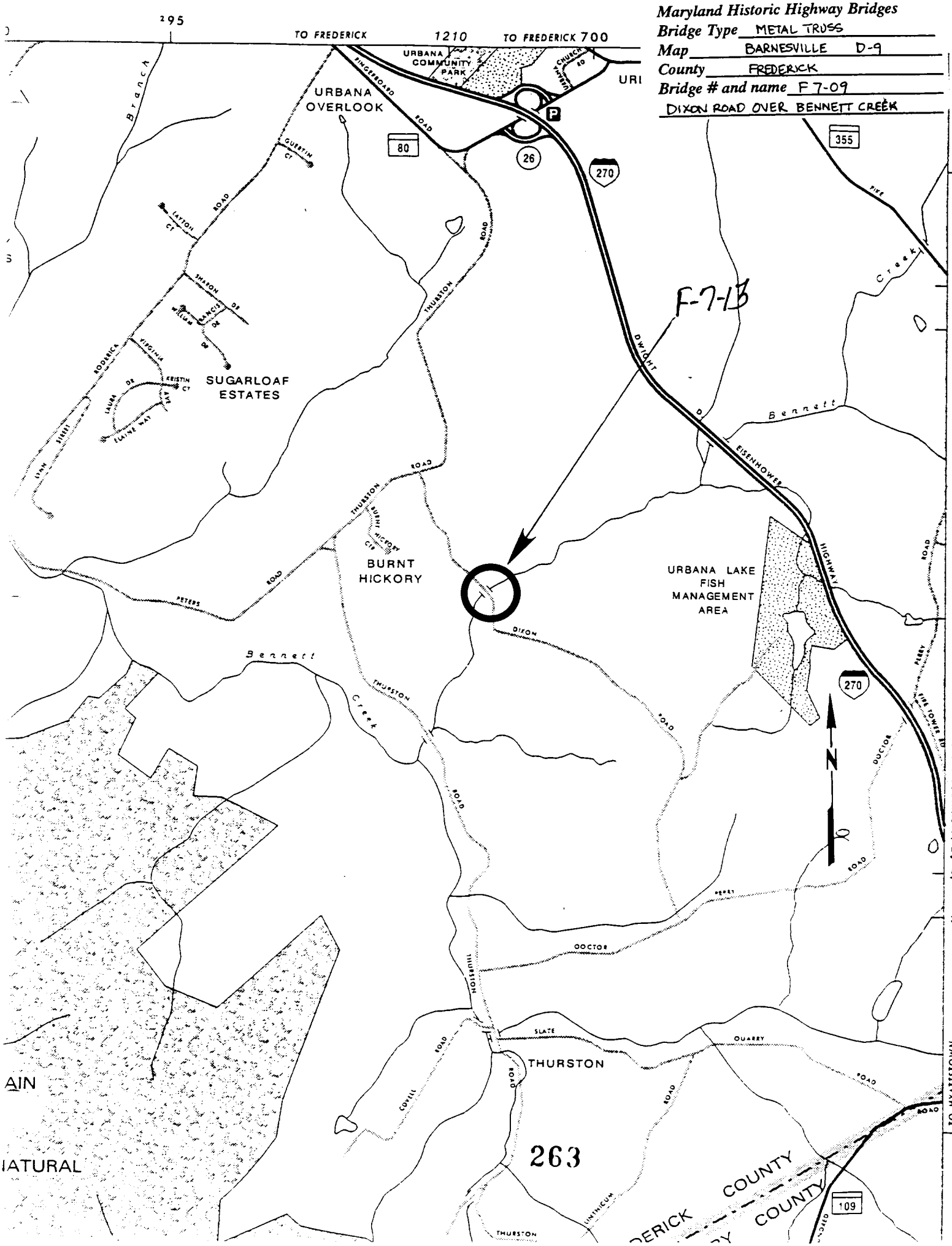
P.A.C. Spero & Company and Louis Berger & Associates, *Historic Highway Bridges in Maryland: Historic Context Report.* Prepared for the Maryland State Highway Administration.

SURVEYOR:

Date bridge recorded July 1997

Name of surveyor Caroline Hall/Ryan McKay
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Suite 412, Baltimore, Maryland 21204
Phone number 410-296-1635 **FAX number** 410-296-1670

Maryland Historic Highway Bridges
Bridge Type METAL TRUSS
Map BARNESVILLE D-9
County FREDERICK
Bridge # and name F 7-09
DIXON ROAD OVER BENNETT CREEK



1. F7-13
2. F7-09, Dixon Road over Bennett Creek
3. Frederick County, MD
4. Ryan Mercer
5. July 1994
6. MD SHPO
7. North approach
8. 1 of 6

1. F 7-13
2. F 109, Dixon Road over Bennett Creek
3. Frederick County Md
4. Ryan Mosley
5. July 1997
6. Md 9-10
7. Downstream Elevation
8. 2 of 6

1. F 7-13

2. F 109, Dixon Ford [illegible], Bennett Creek

3. Frederick County, MD

4. R [illegible]

5. July 1997

6. MD [illegible]

7. South approach

8. 3 of 6

1. F 7-13

2. F 7.09, Pikes Road over Bennett Creek

3. Frederick County, MD

4. Ryan McKay

5 July 997

6 MD [illegible]

7 Upstream elevation

8 4 of 6

1. F7-13

2. F109, Dixon Road over Bennett Creek

3. Frederick County, MD

4. Ryan McKay

5. July 2007

6. MD [illegible]

7. Detail of upstream truss

8. 5 of 6

1. F7-13
2. F709. Dixon Road over Beaver Creek
3. Frederick County, MD
4. Ryan McKay
5. July 1997
6. NO 5-B
7. Photo
8. 6 of 6

F-7-13
Dixon Road Steel Truss Bridge; Bridge No. 07-09 1904
Urbana vicinity
Public

The Dixon Road Steel Truss Bridge was built in 1904 by the York Bridge Company of York, Pa. It is a single span pony truss structure 45 feet in length and about 14 feet wide at the wood deck. The connections are riveted. Plates identifying the manufacturer and date are on the inclined end posts on both ends of the bridge. Bridges of this type were common in Frederick County in the late 19th and early 20th century, as at least five manufacturers are known to have built bridges for the County during this period. As the iron and steel bridges are continuing to be replaced with modern concrete or metal bridges, the Dixon Road Bridge is becoming more significant.

F-7-13
Dixon Road Steel Truss Bridge
Urbana
Frederick County

HISTORIC CONTEXT:

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA

Geographic Organization: Piedmont
(Harford, Baltimore, Carroll, Frederick, Howard, Montgomery Counties, and Baltimore City)

Chronological/Development Period:
Industrial/Urban Dominance, A.D. 1870-1930

Prehistoric/Historic Period Themes:
Transportation

Resource Type:

Category: Structure

Historic Environment: Rural

Historic Function & Use:
Transportation/road related (vehicular)/bridge

Known Design Source: York Bridge Company
York, Pa., active in period circa 1890-1930

Survey No. F-7-13

Magi No.

DOE ___yes x no

Maryland Historical Trust State Historic Sites Inventory Form

MARYLAND INVENTORY OF HISTORIC PROPERTIES

1. Name (indicate preferred name)

historic Dixon Road Steel Truss Bridge #07-09

and/or common

2. Location

street & number Dixon Road at Bennett Creek ___ not for publication

city, town Urbana x vicinity of congressional district 6th

state Maryland county Frederick

3. Classification

Category	Ownership	Status	Present Use	
___ district	x public	x occupied	___ agriculture	___ museum
___ building(s)	___ private	___ unoccupied	___ commercial	___ park
x structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	___ yes: restricted	___ government	___ scientific
	___ being considered	x yes: unrestricted	___ industrial	x transportation
	x not applicable	___ no	___ military	___ other:

4. Owner of Property (give names and mailing addresses of all owners)

name Board of County Commissioners of Frederick County

street & number Winchester Hall, 12 E. Church Street telephone no.:

city, town Frederick state and zip code MD 21701

5. Location of Legal Description

courthouse, registry of deeds, etc. liber

street & number folio

city, town state

6. Representation in Existing Historical Surveys

title

date ___ federal ___ state ___ county ___ local

depository for survey records

city, town state

7. Description

Survey No. F-7-13

Condition		Check one	Check one
___ excellent	___ deteriorated	___ unaltered	_x_ original site
_x_ good	___ ruins	_x_ altered	___ moved date of move _____
___ fair	___ unexposed		

Prepare both a summary paragraph and a general description of the resource and its various elements as it exists today.

CONTRIBUTING RESOURCE COUNT: 1

The Dixon Road Steel Truss Bridge is a single span pony truss bridge of Pratt design with riveted connections and a wood deck, built by the York Bridge Company of York, Pennsylvania in 1904 on Dixon Road at the crossing of Bennett Creek near Urbana, Frederick County, Maryland. The date and manufacturer's names are on plates attached to both the northwest and southeast inclined end posts. The bridge's condition is good and weight restrictions are posted. The length of the span is 45 feet and the width of the deck is 14 feet. A metal grid screen is attached to the inner side of the truss on both sides of the structure. The abutments are stone. Bridge No. 07-09 in the Frederick County Transportation Engineering Department's inventory, the Dixon Road Bridge was repaired in the early 1980's (deck replacement), 1988, and 1993 (structural repairs to steel understructure).

8. Significance

Survey No. F-7-13

Period	Areas of Significance—Check and justify below			
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian
___ 1700–1799	___ art	___ engineering	___ music	___ theater
___ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	x transportation
x 1900–	___ communications	___ industry	___ politics/government	___ other (specify)
		___ invention		

Specific dates 1904 **Builder/Architect**

check: Applicable Criteria: x A ___B ___C ___D
and/or
Applicable Exception: ___A ___B ___C ___D ___E ___F ___G

Level of Significance: ___national ___state x local

Prepare both a summary paragraph of significance and a general statement of history and support.

The Dixon Road Steel Truss Bridge is significant as a good example of the small pony truss steel bridge of the early 20th century. The type was commonly used in rural locations in Frederick County and the York Bridge Company is believed by local historians to have been the manufacturer of many of them. Plates are not always found on the bridges to verify the manufacturer and date, but the York Bridge Company is known to have been active in the late 19th and early 20th century and was one of five known metal bridge manufacturers to have built bridges in Frederick County in this period. As of 1991, 17 known York bridges were in the County Transportation Engineering Department's historical bridge inventory. With the continuing County bridge replacement schedule, this number is dwindling. The Dixon Road Bridge is therefore becoming more significant as others of its type are replaced. It is scheduled for cyclical maintenance in 1999.

9. Major Bibliographical References

Survey No. F-7-13

Bridge Maintenance Records of Frederick County Engineering Department

10. Geographical Data

Acreage of nominated property 1 acre

Quadrangle name Urbana, Md. **Quadrangle scale** 1:24000

UTM **References** do NOT complete UTM references

	Zone	Easting	Northing		Zone	Easting	Northing
A				B			
C				D			
E				F			
G				H			

Verbal boundary description and justification

Approximately 1 acre centered on the bridge, on Tax Map 105

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title Janet L. Davis, Historic Sites Surveyor

organization Frederick County Planning & Zoning Dept. **date** September 1993

street & number 12 E. Church Street **telephone** 696-2958

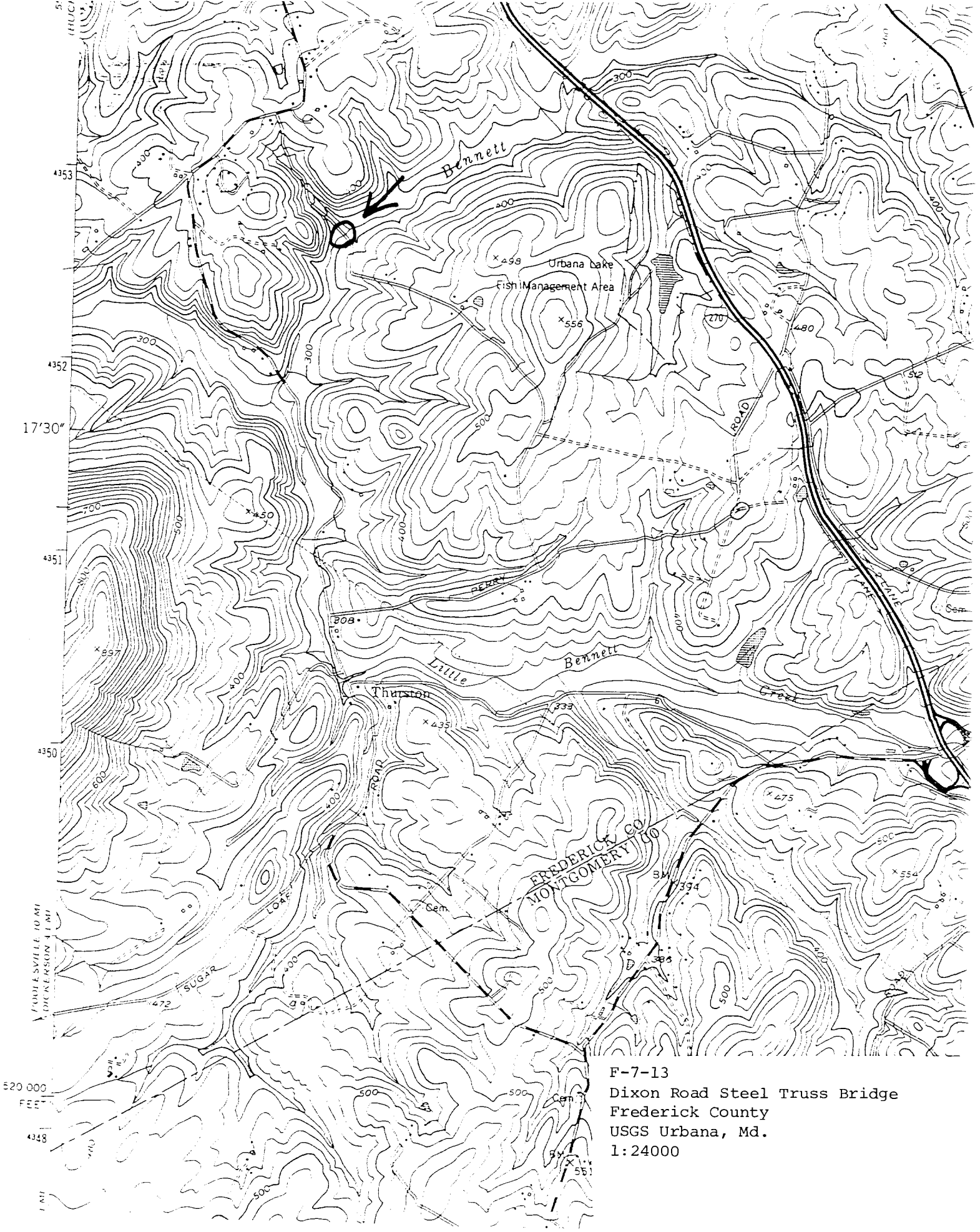
city or town Frederick **state** MD 21701

The Maryland Historic Sites Inventory was officially created by an Act of the Maryland Legislature to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 supplement.

The survey and inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

return to: Maryland Historical Trust
Shaw House
21 State Circle
Annapolis, Maryland 21401
(301) 269-2438

MARYLAND HISTORICAL TRUST
DHCP/DHCD
100 COMMUNITY PLACE
CROWNSVILLE, MD 21032-2023



F-7-13
Dixon Road Steel Truss Bridge
Frederick County
USGS Urbana, Md.
1:24000

WARNING
WEIGHT NOT TO EXCEED
6000 POUNDS
SPEED NOT TO EXCEED
HOUR

F-7-13
Dixon Road Steel Truss Bridge
Frederick County
Photo: Janet Davis
September 1993
Neg. loc.: Md. SHPO, Crownsville, Md.
View from north
1/2

WARNING
WEIGHT NOT TO EXCEED
6000 POUNDS
SPEED NOT TO EXCEED

F-7-13
Dixon Road Steel Truss Bridge
Frederick County
Photo: Janet Davis
September 1993
Neg. loc.: Md. SHPO, Crownsville, Md.
View from south
2/2