

# BSDMS Summary Report

68 Tuscarawas River at Walnut Rd at Massillon, OH

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## Site Location:

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**Site ID:** 68

**Site Name:** Tuscarawas River at Walnut Rd at Massillon, OH

**County:** Stark

**Nearest City:** Massillon

**State:** OH

**Latitude:** 404715

**Longitude:** 813122

**USGS Station ID:**

**Route Number:** Walnut Road

**Route Class:** City

**Service Level:** Other

**Route Direction:** East

**Highway Mile Point:**

**Stream Name:** Tuscarawas River

**River Mile:**

**Contact:**  
Scott Jackson  
U.S. Geological Survey  
614-469-5553  
75 West Third Ave.  
Columbus, Ohio 43212  
or  
William Krouse  
Ohio Department of Transportation  
614-466-2398  
25 South Front St.  
Columbus, Ohio 43216

**Publication:**  
Jackson, K.S., 1996, Evaluation of  
bridge-scour data at selected  
sites in Ohio: U.S. Geological  
Survey Water-Resources  
Investigations Report 97-4182.

## Site Description:

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This site is located at Walnut Rd bridge over the Tuscarawas R. in Massillon, Stark County, Ohio. Bridge is maintained by Stark County Engineers Office. USGS streamgage Tucarawas River at Massillon (03117000) is located approximately 1 mile downstream of scour site. Steamgage data available from 1937 to current year, (prior to April 1938 monthly discharge only). No highflow scour measurements were obtained at this site and the bridge was renovated (new deck and riprap placed around piers) during 1992 rendering the site unusable for scour measurement. Bed-material samples were collected during an annual low-flow survey. Notes: All piers are referenced numerically, increasing from left to right, when viewing the upstream face of the bridge while facing in the downstream direction. Slope in Vicinity (reported in Stream Site Data) is estimated from USGS 7.5-minute quadrangle topographic maps. Water-surface slope (if reported in Pier Scour Data comments section) is the measured slope between water surfaces at the approach and bridge sections during the scour measurement.

## Elevation Reference

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**Datum:** MSL

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MSL (ft): 0

## Description of Reference Elevation:

RM1 = Chiseled square on the left upstream wingwall (northeast wingwall).  
MSL elevation = 944.76

## Stream Data

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Drainage Area (sq mi):	513	Floodplain Width:	Narrow
Slope in Vicinity(ft/ft):	0.00008	Natural Levees:	Little
Flow Impact:	Straight	Apparent Incision:	None
Channel Evolution	Constructed	Channel Boundary:	Non-alluvial
Armoring:	Unknown	Banks Tree Cover:	Low
Debris Frequency:	Occasional	Sinuosity:	Straight
Debris Effect:	Local	Braiding:	None
Stream Size:	Medium	Anabranching:	None
Flow Habit:	Perennial	Bars:	Unknown
Bed Material:	Gravel	Stream Width Variability:	Equiwidth
Valley Setting:	Moderate		

## Roughness Data

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### Manning's n Values

	Left Overbank	Channel	Right Overbank
High:	0.04	0.038	0.04
Typical	0.038	0.036	0.038
Low:	0.032	0.03	0.032

## Bed Material

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Measurement Number	Yr	Mo	Dy	Sampler	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)	SP	Shape	Cohesion
BR-1	1990	11	27		35	29	17.5	2	2.65		Unknown

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BR-2	1991	8	22	15	8.2	4.19	0.68	2.65	Unknown
P1-1	1990	10	16	2.5	1.1	0.48	0.19	2.65	Unknown
P1-2	1991	8	22	5.3	2.5	0.75	0.17	2.65	Unknown
P2-1	1990	10	16	9.4	7.6	3.95	0.29	2.65	Unknown
P2-2	1991	8	22	12.7	6.8	1.65	0.17	2.65	Unknown

## Bed Material Comments

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**Measurement No:** BR-1

Bridge-section composite sample, collected along the upstream bridge face.

**Measurement No:** BR-2

Bridge-section composite sample, collected along the upstream bridge face.

**Measurement No:** P1-1

Sample collected at the upstream face of pier 1

**Measurement No:** P1-2

Sample collected at the upstream face of pier 1

**Measurement No:** P2-1

Sample collected at the upstream face of pier 2

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Measurement No: P2-2

Sample collected at the upstream face of pier 2

## Bridge Data

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Structure No: PE-17-24

Length(ft): 214

Width(ft):

Number of Spans: 3

Vertical Configuration: Horizontal

Low Chord Elev (ft): 939

Upper Chord Elev (ft): 943.85

Overtopping Elev (ft): 943.85

Skew (degrees): 0

Guide Banks: None

Waterway Classification: Main

Year Built: 1941

Avg Daily Traffic:

Plans on File: Yes

Parallel Bridges No

Upstream/Downstream: Unknown

Continuous Abutment: No

Distance Between Centerlines:

Distance Between Pier Faces:

### Bridge Description:

This bridge is constructed of concrete and steel I-beams, and it has solid-wall roundnose piers. The site plans are dated 1941. The piers are referenced numerically from the left to right abutments when looking downstream.

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## Abutment Data

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Left Station: 6.5793  
Right Station: 8.855305  
Left Skew (deg): 0  
Right Skew (deg) 0  
Left Abutment Length (ft): 48.9  
Right Abutment Length (ft) 48.9  
Left Abutment to Channel Bank (ft): 10  
Right Abutment to Channel Bank (ft): 50  
Left Abutment Protection:  
Right Abutment Protection  
Contracted Opening Type: I  
Embankment Skew (deg): 0  
Embankment Slope (ft/ft): 1.5  
Abutment Slope (ft/ft) 2  
Wingwalls: Yes  
Wingwall Angle (deg): 18

## Pier Data

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Pier ID	Bridge Station(ft)	Alignment	Highway Station	PierType	# Of Piles	Pile Spacing(ft)
1	67	0	7.3173	Single	0	
2	147	0	8.117303	Single	0	

  

Pier ID	Pier Width(ft)	Pier Shape	Shape Factor	Length(ft)	Protection	Foundation
1	2.5	Round		47.7	Riprap	Piles
2	2.5	Round		47.7	Riprap	Piles

  

Pier ID	Top Elevation(ft)	Bottom Elevation(ft)	Foot or Pile Cap Width(ft)	Cap Shape	Pile Tip Elevation(ft)
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1	915	912	8.3	Square
2	915	912	8.3	Square

## Pier Description

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Pier ID 1

The concrete pier is a solid wall with round nose.

Pier ID 2

The concrete pier is a solid wall with round nose.

## Pier Scour Data

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## Abutment Scour

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## Contraction Scour

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## Stage and Discharge Data

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## Hydrograph

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## Supporting Files

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