

# BSDMS Summary Report

67 Sugar Creek at U.S. 250 at Strasburg, OH

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## Site Location:

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**Site ID:** 67

**Site Name:** Sugar Creek at U.S. 250 at Strasburg, OH

**County:** Tuscarawas

**Nearest City:** Strasburg

**State:** OH

**Latitude:** 403515

**Longitude:** 813124

**USGS Station ID:**

**Route Number:** 250

**Route Class:** US

**Service Level:** Mainline

**Route Direction:** South

**Highway Mile Point:** 5.11

**Stream Name:** Sugar Creek

**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 the US 250 bridge crossing Sugar Creek at Strasburg, Tuscarawas County, Ohio. Site is located at USGS streamgage Sugar Creek at Strasburg (03124500), data available from 1961 to current year. Also, streamgage data available from 1931-1933 and 1935-1939. Note : of the 300 sq. miles of drainage area for this site, 96% is regulated by Beach City Dam. The Ohio Department of Transportation (ODOT) bridge identification is "TUS-250-0511".

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

**MSL (ft):** 0

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## Description of Reference Elevation:

RM5 - Chiseled cross on anchor bolt for guard rail at base of ground, 50 feet downstream of USGS streamgage shelter located on left (east) bank.  
MSL elevation = 912.66 ft

## Stream Data

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Drainage Area (sq mi):	311	Floodplain Width:	Little
Slope in Vicinity(ft/ft):	0.00087	Natural Levees:	Little
Flow Impact:	Straight	Apparent Incision:	None
Channel Evolution	Constructed	Channel Boundary:	Non-alluvial
Armoring:	Partial	Banks Tree Cover:	Medium
Debris Frequency:	Occasional	Sinuosity:	Sinuuous
Debris Effect:	Local	Braiding:	None
Stream Size:	Small	Anabranching:	None
Flow Habit:	Perennial	Bars:	Narrow
Bed Material:	Gravel	Stream Width Variability:	Equiwidth
Valley Setting:	Low		

## Roughness Data

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### Manning's n Values

	Left Overbank	Channel	Right Overbank
High:	0.07	0.042	0.075
Typical	0.06	0.04	0.065
Low:	0.05	0.038	0.06

## Bed Material

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Measurement Number	Yr	Mo	Dy	Sampler	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)	SP	Shape	Cohesion
AP-1	1991	8	14		62	46	25.9	1.65	2.65		Unknown

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AP-2	1993	7	26	45	34	12	1.6	2.65	Unknown
AP-3	1994	6	30	37	24	7.2	1.42	2.65	Unknown
BR-1	1990	10	30	18	14	6.4	0.46	2.65	Unknown
BR-2	1991	8	14	69	66	31.5	4.4	2.65	Unknown
BR-3	1992	6	18	40	31	13.5	1.1	2.65	Unknown
BR-4	1993	7	26	38	28	13	1.2	2.65	Unknown
BR-5	1994	6	30	56	40	18.5	0.64	2.65	Unknown
P1-1	1990	10	30	44	33	14	2	2.65	Unknown
P1-2	1991	8	14	73	60	17	0.68	2.65	Unknown
P1-3	1992	6	18	82	66	21.5	0.74	2.65	Unknown
P1-4	1993	7	26	63	45	19	6.1	2.65	Unknown
P1-5	1994	6	30	72	64	47	20	2.65	Unknown
P2-1	1990	10	30	9.4	5.2	0.63	0.04	2.65	Unknown
P2-2	1991	8	14	74	70	24	2.8	2.65	Unknown
P2-3	1992	6	18	4.8	2.7	0.47	0.03	2.65	Unknown

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P2-4	1993	7	26	40	25	5.3	0.2	2.65	Unknown
P2-5	1994	6	30	5.7	2.8	0.58	0.03	2.65	Unknown

### Bed Material Comments

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**Measurement No:** AP-1

Approach-section composite sample

**Measurement No:** AP-2

Approach-section composite sample

**Measurement No:** AP-3

Approach-section composite sample

**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:** BR-3

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

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**Measurement No:** BR-4

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

**Measurement No:** BR-5

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:** P1-3

Sample collected at the upstream face of pier 1

**Measurement No:** P1-4

Sample collected at the upstream face of pier 1

**Measurement No:** P1-5

Sample collected at the upstream face of pier 1

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**Measurement No:** P2-1

Sample collected at the upstream face of pier 2

**Measurement No:** P2-2

Sample collected at the upstream face of pier 2

**Measurement No:** P2-3

Sample collected at the upstream face of pier 2

**Measurement No:** P2-4

Sample collected at the upstream face of pier 2

**Measurement No:** P2-5

Sample collected at the upstream face of pier 2

### Bridge Data

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**Structure No:** TUS-250-0511  
**Length(ft):** 190  
**Width(ft):** 56  
**Number of Spans:** 3  
**Vertical Configuration:** Horizontal  
**Low Chord Elev (ft):** 911.7  
**Upper Chord Elev (ft):** 915.91  
**Overtopping Elev (ft):** 915.91  
**Skew (degrees):** 26

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Guide Banks: None  
Waterway Classification: Main  
Year Built: 1932  
Avg Daily Traffic: 12810  
Plans on File: Yes  
Parallel Bridges No  
Upstream/Downstream: Unknown  
Continuous Abutment: No  
Distance Between Centerlines:  
Distance Between Pier Faces:

## Bridge Description:

The bridge is constructed of concrete and steel I-beams, and it has solid-wall round-nose piers. The site plans are dated 1978. The piers are referenced from the left to right abutments when looking downstream.

## Abutment Data

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Left Station: 83.3039  
Right Station: 90.29635  
Left Skew (deg): 0  
Right Skew (deg) 0  
Left Abutment Length (ft): 99  
Right Abutment Length (ft) 99  
Left Abutment to Channel Bank (ft): 40  
Right Abutment to Channel Bank (ft): 82  
Left Abutment Protection:  
Right Abutment Protection  
Contracted Opening Type: I  
Embankment Skew (deg): 0  
Embankment Slope (ft/ft): 2

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Abutment Slope (ft/ft) 2  
Wingwalls: Yes  
Wingwall Angle (deg): 65

## Pier Data

Pier ID	Bridge Station(ft)	Alignment	Highway Station	PierType	# Of Piles	Pile Spacing(ft)
1	58	-26	88.9039	Single	14	6.25
2	133	-26	89.6539	Single	14	6.25

  

Pier ID	Pier Width(ft)	Pier Shape	Shape Factor	Length(ft)	Protection	Foundation
1	3	Round		61.83	None	Piles
2	3	Round		61.83	None	Piles

  

Pier ID	Top Elevation(ft)	Bottom Elevation(ft)	Foot or Pile Cap Width(ft)	Cap Shape	Pile Tip Elevation(ft)
1	893.28	890.28	7	Square	850
2	893.28	890.28	7	Square	850

## Pier Description

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

Pier ID	Date	Time	USOrDS
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## Stage and Discharge Data

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Peak Discharge					Flow (cfs)	Qacc	Peak Stage					Stage (ft)	Water Temp (C)	Return Period(yr)
year	mo	dy	hr	mi			year	mo	dy	hr	mi			
1993	12	6	8:20		1830							4	1	
1993	1	14	11:15		1810							2	1	

## Hydrograph

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## Supporting Files

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