

# Montgomery County Engineer's Annual Review

# 2021



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**MONTGOMERY COUNTY ENGINEER**

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# ***A MESSAGE FROM PAUL W. GRUNER***



I must start the discussion of 2021 with the highlight of the year, which is the completion of the iconic Third St. Bridge. The Peace Bridge is the most expensive bridge ever built by the Montgomery County Engineer's Office and is featured as a Case Study in the Ohio Department of Transportation's Aesthetic Design Guidelines. On March 31, 2022, the project team received the 2021 Outstanding Short Span Roadway Bridge Award from the Association of Bridge Construction and Design. When the weather is nice, everyone should walk across the bridge to view the eight tablatures representing different facets of Dayton's history.

Additional bridge projects completed include the Lyons Rd. bridge replacement in Washington Township, the Sellars Rd. (Main St.) bridge repair in Moraine, the Chicken Bristle Rd. bridge reconstruction in Jackson Township, the Baltimore-Phillipsburg Rd. bridge reconstruction in Clay Township, and replacement of the Whipp Rd. bridge in Washington Township. Other projects completed include the replacement of two large culverts on Peters Pk. and Lower Miamisburg Rd. and a culvert/storm sewer lining project on Philadelphia Dr./Markey Rd.

Several other situations and efforts contributed to making 2021 a very busy year. The COVID-19 virus reared its ugly head again in 2021, and the office experienced more cases among employees in late 2021. Fortunately, there were no hospitalizations that we know of, and no or little transmission inside the office. A complete renovation of our 8<sup>th</sup> floor downtown office began in August 2021, and we have been working in one half of the office at a time beyond the end of the year. This necessitated approximately half of our staff continuing to work from home on any given day. We also undertook a complete revamping of our classification and compensation system with the help of a consultant, and negotiated a new contract with Teamsters Local 957. We continue to support the Transportation Improvement District, Butler Township, the City of Union, and the City of Vandalia in addressing the transportation needs of new developments around the Dayton International Airport.

Looking forward to 2022, we will be building our first modern roundabout at the Alex Bell Rd./Mad River Rd. intersection in Washington Township. We will also be doing a bridge reconstruction on Philadelphia Dr. and a bridge replacement on Little York Road, both in Butler Township, an Airway Rd. bridge replacement in the City of Riverside, and a bridge replacement on Lamme Rd. in Miami Township. In 2023, we will start a complete reconstruction of Shoup Mill Rd. between Riverside Dr. and North Main St. (SR 48). As usual, we place great value on our relationships with all our partners as we go into the new year.

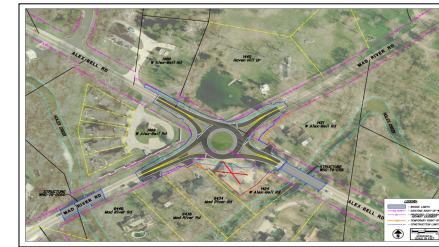
A handwritten signature in blue ink that reads "Paul W. Gruner".

**COVER PHOTO:** *Third Street Bridge and  
Lyons Rd Bridge*

## **LOOKING AHEAD**

### **ROUNDAABOUT TO BE CONSTRUCTED AT INTERSECTION OF MAD RIVER ROAD AND ALEX-BELL ROAD**

In April 2022, work will begin on a \$967,000 project to reconstruct the intersection of Mad River Road and Alex Bell Road, Washington Township, into a modern roundabout. The reconfigured intersection will improve traffic operations, reduce congestion, and enhance safety at this busy location.



Roundabouts reduce the number of conflict points motorists typically encounter at traditional intersections, while eliminating traffic signal maintenance and energy consumption.

To enhance the aesthetics of the roundabout, a landscaping plan was developed that includes over 800 perennials, 130 deciduous shrubs, 190 evergreen shrubs, and six sweetbay magnolia trees. Significant public involvement contributed to the selection and design of the roundabout solution.

The intersection will be closed to traffic to construct the new roundabout. The closure period is expected to begin on April 18, 2022, and extend through mid-August. The construction contract for the roundabout has been awarded to R.B. Jergens, Inc.

### **Lamme Road Bridge Replacement**

In 2023, work will begin on a \$2.5M project to replace the structurally deficient and functionally obsolete bridge on Lamme Road over Holes Creek just north of Alex Bell Road, originally constructed in 1957.

The new bridge will be widened to match the roadway width, and curbs and raised sidewalks will be added on both sides of the bridge to connect the existing sidewalks. The bridge will be constructed in two phases, allowing pedestrian traffic to be maintained while the bridge is closed to vehicular travel.

A new traffic signal with mast-arm poles will be installed at the Alex Bell-Lamme Road intersection, and deteriorated curb and sidewalk south of the bridge will be replaced. Lamme Road will be resurfaced from Alex-Bell Road to Bushwick Drive as part of the project.

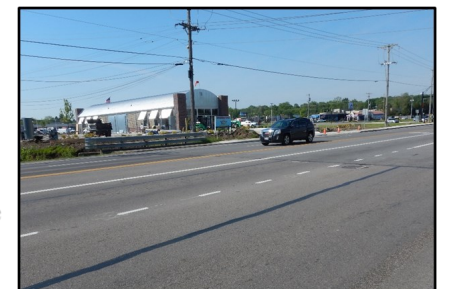


### **Airway Road Bridge Replacement**

In the spring of 2023, the Montgomery County Engineer's Office is moving forward with the Airway Road Bridge Rehabilitation Project. The existing superstructure's concrete slab has deteriorated with exposed/broken prestressed steel. In addition to the superstructure, the existing substructure walls are severely deteriorated with heavy delamination and exposed steel. These existing substructure walls and attached gabion wingwalls have scour and undermining issues. The existing structure was built in 1933 and has well exceeded its life expectancy. To alleviate all concerns, the entire structure



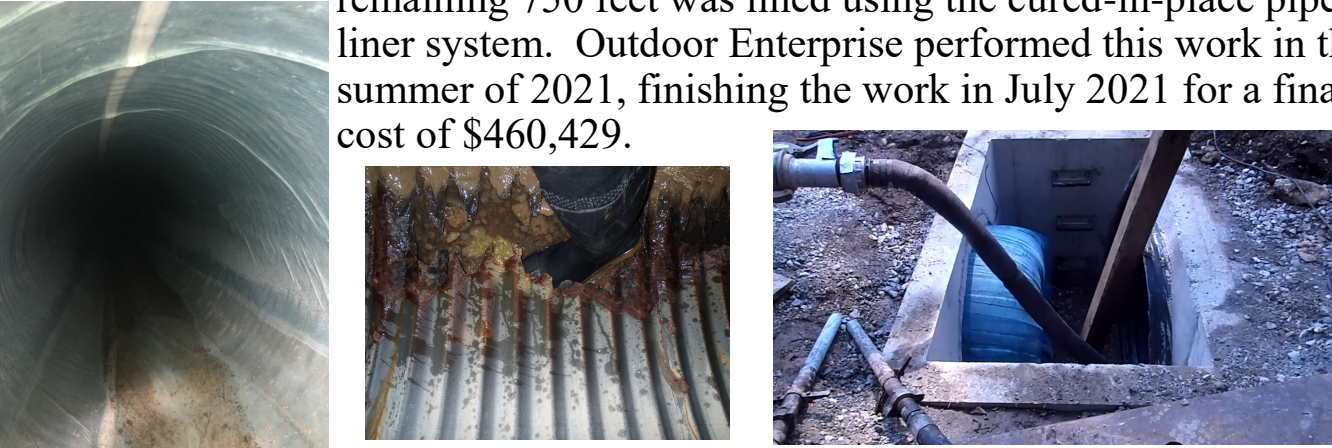
will be replaced with a new single span concrete slab structure. The existing guardrail will be upgraded to today's safety standards. The project is scheduled to be awarded in February 2023 with construction expected to start in April 2023. Because this location site is within an arm's length of the US Air Force Museum & Wright Patterson Air Force Base, (arguably one of Ohio's largest employers), the project will maintain traffic with phased construction. A substantial amount of work will be performed within the existing right of way with minor temporary and utility easements as needed.





# Philadelphia Drive & Markey Road

This project, located in Harrison Township, involved rehabilitating an existing 54” corrugated metal pipe (CMP) which is approximately 1,000 feet long. The 54” CMP travels under and along Philadelphia Drive before it turns and crosses under Markey Road. To minimize disturbance to the multitude of residential properties located within the project limits, the County chose to utilize a trenchless technology called ‘Cured-In-Place’ pipe liner. Ultimately, about 250 feet of the existing 54” CMP was replaced on a new alignment, while the remaining 750 feet was lined using the cured-in-place pipe liner system. Outdoor Enterprise performed this work in the summer of 2021, finishing the work in July 2021 for a final cost of \$460,429.

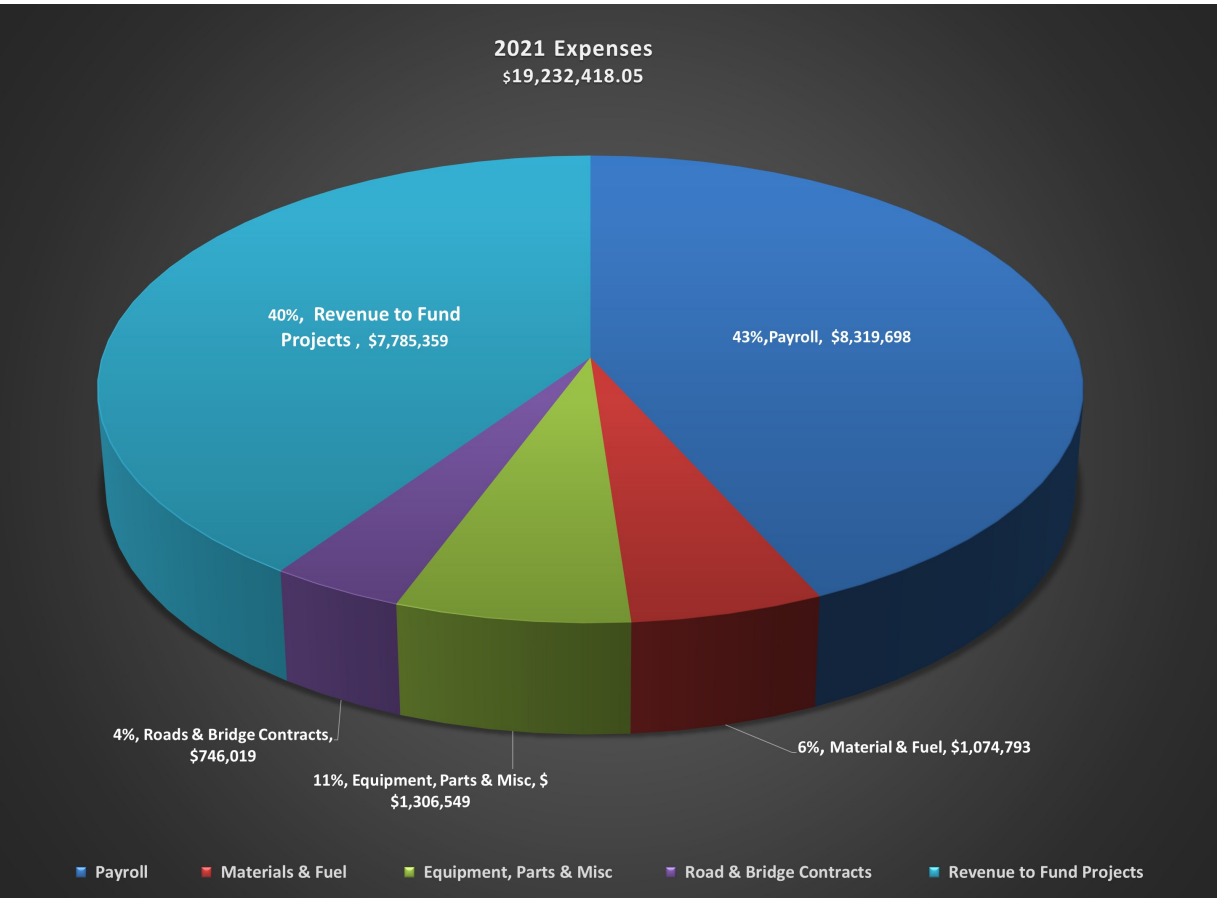
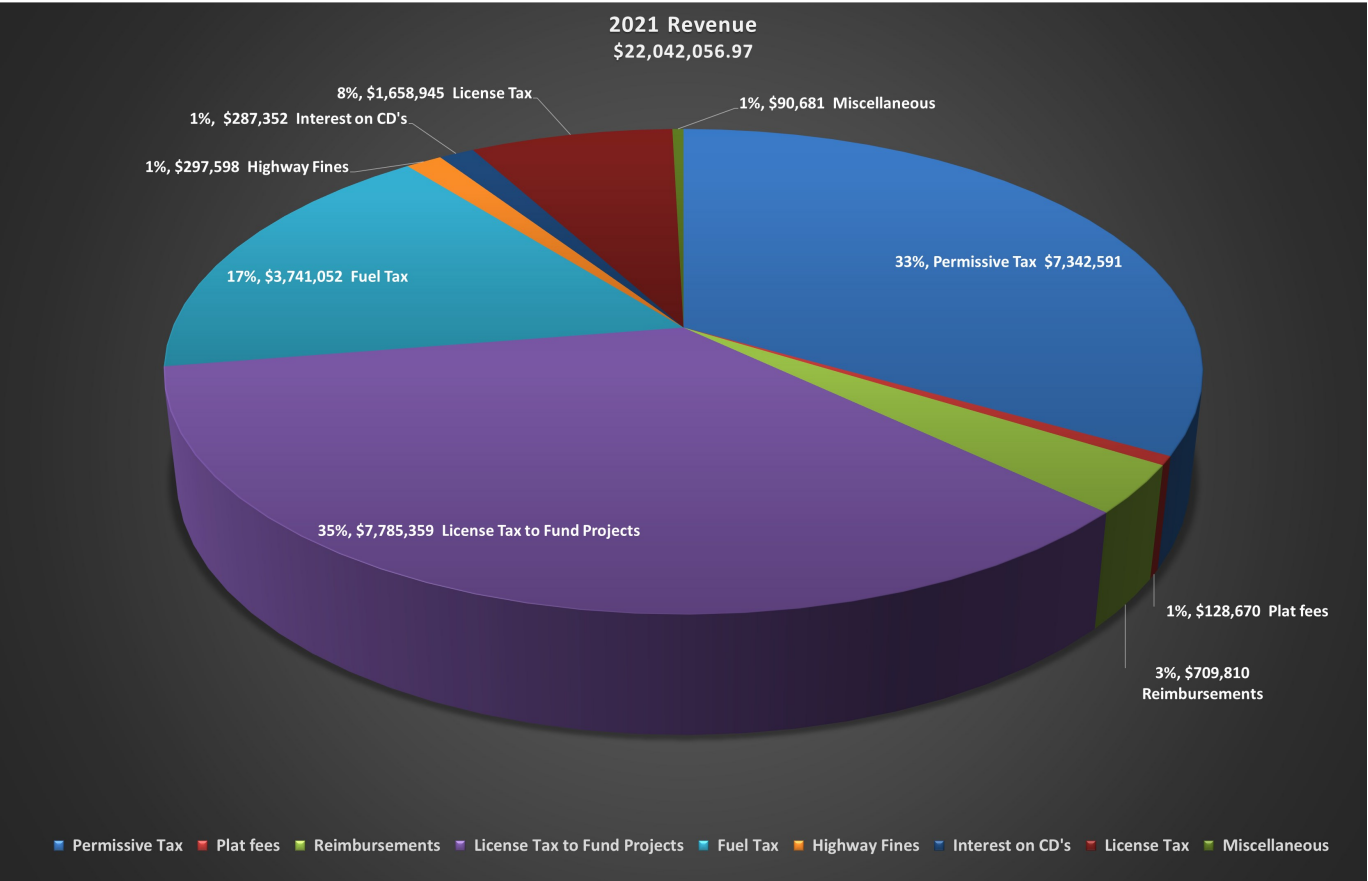


# Sellers Road

Originally constructed in 1961, the bridge on Sellars Road/Main Street in Moraine underwent rehabilitation in 2021. This bridge spans the Great Miami River and shares a pier with a bridge owned by ODOT over I-75. Following ODOT’s repairs on the shared pier, the County’s project to replace deck joints and end cross frames commenced. Delays in steel fabrication caused the project to extend into the spring of 2022 to allow the temperature-sensitive painting of structural steel to be performed in the appropriate temperatures. Work will be completed in late April or early May. Traffic was maintained in both directions for the duration of the project. This project was awarded a grant of \$336,000 by the Ohio Public Works Commission.

Contractor: Eagle Bridge Company

Bid Price: \$769,469





# PLATS & SITE PLANS

## Completed Projects in 2021

Plats	
Aberdeen	Miami Township
Trails of Saddle Creek Section 12 & 13	Washington Township
Washington Glen Section 3 & 4	Washington Township
Washington Trace Section 14 & 15	Washington Township
Site Plans	
Behnken Storage	Butler Township
Popeyes Louisiana Kitchen	Butler Township
Woodspring Suites	Butler Township
Midway Trailer Sales	Harrison Township
Rush Expediting Fleet Parking Lot	Harrison Township
Wagner Ford Storage	Harrison Township
Renegade	Miami Township
ABC Supply	Miami Township
Exchange at Spring Valley 1C Arthritis Center	Miami Township
Exchange at Spring Velley 1C Striebal Dental Addition Parking	Miami Township
Exchange Senior Living	Miami Township
Popeyes Louisiana Kitchen	Miami Township
Tark Inc	Miami Township
Valvoline Instant Oil Change	Miami Township
Dare Automotive	Washington Township
Harbor Club Apartments-Trash Enclosure Improvements	Washington Township
Shelhouse Parking Expansion	Washington Township
Spring Valley Academy	Washington Township
Storage USA	Washington Township

# Chicken Bristle Road

## Bridge Reconstruction



The Montgomery County Engineer’s Office planned the reconstruction of the existing Chicken Bristle Road Bridge (JAC-60A-3.92) in Jackson Township over a tributary to Little Twin Creek. The existing single span bridge had poor deteriorated beams which placed the inspection rating of this bridge in fair condition. This bridge was built in 1968 and had well exceeded its life expectancy.

The proposed superstructure replacement aimed to extend the life of this bridge and improve the current ODOT Bridge Inspection Rating. This improvement consisted of installing new composite prestressed concrete box beams and new safety railing meeting today’s standards.

Brumbaugh Construction was the contractor and they started construction on November 10, 2020. The job was substantially complete and open to traffic on December 21, 2020. This project was funded by the Ohio Public Works Commission in the amount of \$200,000. and by the Montgomery County Road A and G funds in the remaining amount of \$90,333.60. The final contract cost amount was \$290,333.60.





# Lyons Road Bridge Replacement Project



This bridge in Washington Township was posted for a reduction to legal load limits and supported by jacks due to deterioration of the abutments. The edges of the existing concrete slab had also deteriorated severely. Following the posting for a load limit, the County applied for a grant from the County Engineer's Association of Ohio Local Bridge (LBR) program and was



awarded in the amount of \$1,780,000 for construction and inspection services. Prior to construction, an additional \$500,000 was awarded by the Ohio Public Works Commission. With the lowest and best bid of \$1,735,452, the project was fully funded by outside sources. Preliminary estimates used to apply for the LBR grant were developed around the concept of replacing the abutments and repairing the deck edges. This design would leave the majority of the existing slab and the intermediate piers intact. During project development, it was determined the cost of a full replacement was similar to the proposed repair. The initial concept was abandoned in favor of full replacement without impact to project cost or schedule. The new structure was constructed wider than the original to improve pedestrian accommodation with a raised sidewalk on both sides of the bridge.

Contractor: Brumbaugh Construction

Bid Price: \$1,735,452

Final Cost: \$1,739,060.19



## MONTGOMERY COUNTY ENGINEER

### Force Account 2021

ROADWAY NAME	CULVERT/ BRIDGE #	DATE COMPLETED	ESTIMATED COST	ACTUAL COST
Johnsville Brookville Pk.	Per. 9-0.48	3/30/2021	\$ 27,428.17	\$ 26,825.80
Johnsville Brookville Pk.	Per. 9-0.70	3/31/2021	8,019.55	7,668.04
Johnsville Brookville Pk.	Per. 9-0.69	4/7/2021	16,883.40	17,994.99
Air Hill Rd.	Per. 26-0.89	4/14/2021	5,794.15	5,876.72
Liberty Ellerton Rd.	Jef. 115-1.00	5/26/2021	9,646.30	9,629.29
Liberty Ellerton Rd.	Jef. 115-0.72	6/15/21	6,285.61	5,279.58
Liberty Ellerton Rd.	Jef. 115-0.22	6/17/21	6,598.41	5,788.48
Dayton Farmersville Rd.	Jac. 44-2.25	6/28/21	20,229.82	19,025.02
Fredrick Pk.	But. 165-7.20	7/15/21	7,484.59	6,606.60
Anthony Rd.	Ger. 95-4.30	7/21/21	10,343.73	10,116.39
Anthony Rd.	Ger. 95-4.05	7/27/21	5,707.91	5,588.13
Union Rd.	Jef. 125-0.01	8/2/21	3,698.51	3,405.52
Union Rd.	Mia. 125-2.80	8/11/21	10,269.25	11,348.38
Union Rd.	Mia. 125-2.82	8/16/21	12,028.56	11,754.96
Cedarlawn Dr.	Har.2885-0.25	8/25/21	8,741.14	8,260.74
Number Nine Rd.	Cly. 3-2.75 + 2.76	9/9/21	10,089.45	9,981.77
Number Nine Rd.	Cly. 3-3.46	9/14/21	8,715.30	8,049.34
Arlington Rd.	Cly. 9-5.74 + 5.75	9/28/21	9,395.54	9,187.39
Arlington Rd	Cly. 9-6.17	9/30/21	7,134.69	6,540.51
Union Rd.	Jef. 125-1.90	10/5/21	5,628.41	5,206.06
Union Rd.	Jef. 125-3.25	10/13/21	7,959.84	7,507.38
Little York Rd.	But. 228-3.20	10/22/21	21,111.43	20,032.87
Union Rd.	Jef. 125-3.35	10/22/21	14,852.43	14,685.45
Number Nine Rd.	Cly. 3-5.25	10/27/21	5,502.37	4,698.90
Little York Rd.	But. 228-2.30	10/28/21	17,336.49	17,902.16

Total Bridges/  
Culverts = \$ 266,885.05 \$ 258,960.47

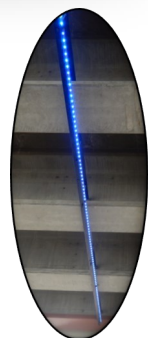
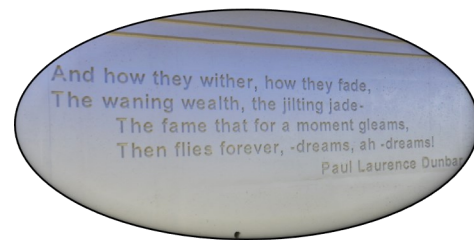
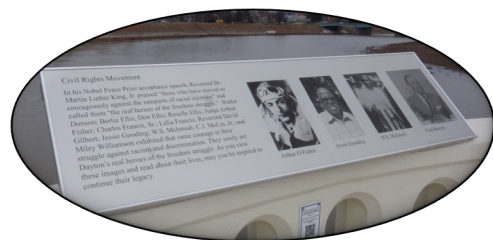


## THIRD STREET BRIDGE REPLACEMENT PROJECT



The construction contract for this project was awarded to Eagle Bridge Company on July 30, 2019, for their low bid price of \$16,995,137.11. Eagle closed the bridge on January 5, 2020 with a contract completion date of October 15, 2021.

In 2020, Eagle Bridge demolished the old bridge, installed substructure units, and set all of the new beams. Remaining work for 2021 was to finish the deck, install bridge railing and lighting, and complete approach roadway work. Once the bridge was complete, the Great Miami River Trail bikeway, which runs along both sides of the river at this point, was restored under the bridge and re-opened to cyclists and pedestrians.



## Whipp Road Bridge Replacement Project

This project on Whipp Road was located within the intersection of Whipp Road and Seton Hill Street in Washington Township. The project involved the replacement of a structurally deficient bridge with a 103"x71" corrugated metal pipe arch. Minor water main improvements and the extension of sidewalk from John Hole Elementary School to Seton Hill Street were included within the project. Construction began in early April 2021 and was completed at the end of June 2021 by Outdoor Enterprise at the final cost of \$380,699.20.



## Alex-Bell Road & Munger Intersection Improvement Project

A construction project to install a permanent traffic signal at the intersection of Alex-Bell Road & Munger Road in Miami Township started in the second half of 2021 and became operational in January 2022. The construction contract was awarded to the Security Fence Group, Inc. in February 2021 at a cost of \$221,210.71.





## Baltimore-Phillipsburg Road Bridge Reconstruction



The Montgomery County Engineer's Office planned the reconstruction of the existing Baltimore-Phillipsburg Road Bridge CLY-8-1.95 in Clay Township over Swamp Creek. The existing bridge had poor deteriorated beams which placed the inspection rating of this bridge in fair condition, rated 5. This bridge was built in 1984 and had exceeded its anticipated life.

The proposed superstructure replacement consisted of removing the old 17" non-composite box beams and installing new 17" composite box beams. This project also included replacement of the safety rail to meet the current State standards and new rock channel protection. All of the necessary improvements enhanced the inspection rating of this structure.

The project was contracted to Brumbaugh Construction. Project construction began on September 20, 2021 with substantial completion of the project on October 19, 2021. The final contract amount was \$247,124.25, and the project was 100% funded by Montgomery County Road A & G sources.



## Alex-Bell Road & Paragon Road Intersection Improvement Project



On August 24, 2021, Performance Site Development was awarded the Alex-Bell & Paragon Road Intersection Improvement project at their lowest and best bid of \$273,727.83. This project, located in Washington Township, added a westbound left turn lane which required minor widening of Alex-Bell Road. In addition, pedestrian improvements in the form of ADA Ramps, pedestrian signals and pushbuttons, were added at all four corners of the intersection. These new pedestrian facilities required improvements to the existing storm sewer system at the intersection, which resulted in the much

needed enlargement of the southeast radius of the intersection that accommodated the heavy northbound right-turn movement. Major work at the intersection, with all new facilities open and available to the traveling public, was completed in December 2021.



## Peters Pike & Lower Miamisburg Road Culvert Replacement Projects



Two culverts, one on Peters Pike just north of Little York Road in Butler Township, and the other on Lower Miamisburg Road at Union Road in Miami Township, were replaced by W.G. Stang in the summer of 2021. Both culverts were in a state of severe deterioration and may have soon posed hazards to the traveling public. Each culvert was completely replaced and safety grading was added to the sides of the roadway to improve safety. W. G. Stang completed the work in November 2021 for a total cost of \$224,884.98.





2021 DEFICIENT BRIDGES

1.	5736080	<a href="#">MOT-SHOUP-0000</a> <a href="#">(5736080)</a>	HAR	Shoup Mill Rd.	Storm sewer	2	A
2.	5766494	<a href="#">MOT-C0009-0075</a> <a href="#">(5766494)</a>	BKV	Arlington M0009	Trib to Wolf Creek	4	A
3.	5740193	<a href="#">MOT-C0019-0383</a> <a href="#">(5740193)</a>	JEF	Lutheran Chrch C19	Trib to Little Bear Crk.	4	A
4.	5765714	<a href="#">MOT-C0032-0142</a> <a href="#">(5765714)</a>	TRT	Free Pike M0032	Dry Run	4	A
5.	5740096	<a href="#">MOT-C0042-0439</a> <a href="#">(5740096)</a>	JEF	Dayton Liberty C42	Opossum Creek	4	A
6.	5734401	<a href="#">MOT-C0062-00.29</a> <a href="#">(5734401)</a>	GER	Astoria Road C0062	Trib to Brown's Run	4	A
7.	5736013	<a href="#">MOT-C0074-0083</a> <a href="#">(5736013)</a>	HAR	Shoup Mill C0074	Ditch	4	A
8.	5770653	<a href="#">MOT-C0074-0159</a> <a href="#">(5770653)</a>	RVS	Woodman M0074	Lilly Creek	4	A
9.	5746477	<a href="#">MOT-C0078-0117</a> <a href="#">(5746477)</a>	MIA	Alex Bell C0078	Drainage Ditch	4	A
10.	5770807	<a href="#">MOT-C0122-0096</a> <a href="#">(5770807)</a>	RVS	Burkhardt Rd M0122	Creek	4	A
11.	5746450	<a href="#">MOT-C0175-0137</a> <a href="#">(5746450)</a>	MIA	Lamme Road C0175	Holes Creek	4	A
12.	5770602	<a href="#">MOT-C0194-0088</a> <a href="#">(5770602)</a>	RVS	Airway Road M0194	Lilly Creek	4	A
13.	5740088	<a href="#">MOT-C0217-0566</a> <a href="#">(5740088)</a>	JEF	Diamond Mill C217	Bear Creek	4	A
14.	5770114	<a href="#">MOT-C0218-0351</a> <a href="#">(5770114)</a>	HUB	Taylorville Road	Wildcat Run	4	A
15.	5734363	<a href="#">MOT-C0526-0211</a> <a href="#">(5734363)</a>	GER	Grmntwn-Mdletown	Shawnee Creek	4	A
16.	5740509	<a href="#">MOT-C46HS-0259</a> <a href="#">(5740509)</a>	JEF	Hemple Historic TR	Bear Creek	4	K
17.	5760577	<a href="#">MOT-RIPRP-0013</a> <a href="#">(5760577)</a>	DAY	Spur of Grt Miami	Great Miami River	4	K
18.	5765439	<a href="#">MOT-T0019-0437</a> <a href="#">(5765439)</a>	TRT	Seybold Rd M0019	Poplar Run	4	A
19.	5748143	<a href="#">MOT-T0026-0189</a> <a href="#">(5748143)</a>	PER	Airhill Rd T0026	Wolf Creek	4	A
20.	5740398	<a href="#">MOT-T0042-0043</a> <a href="#">(5740398)</a>	JEF	Huffman Road T0042	Bear Creek	4	K
21.	5740460	<a href="#">MOT-T0042-0182</a> <a href="#">(5740460)</a>	JEF	Huffman Road T0042	Trib to Bear Creek	4	A
22.	5766737	<a href="#">MOT-T0044-0480</a> <a href="#">(5766737)</a>	MOR	Shank Road T0044	Opossum Creek	4	A
23.	5769167	<a href="#">MOT-T020B-0206</a> <a href="#">(5769167)</a>	CLT	Wenger Road M020B	Moss Creek	4	A

2021 DEFICIENT BRIDGES (CONT.)



Routine Preservation Contracts 2021

Striping	255 Miles Center line 440 Miles Edge Line	\$220,883.65
Crack Seal	18.2 Miles County 6.7 Miles Township	\$114,602.02
Asphalt	15.5 Miles County 1.5 Miles Township	\$1,735,452.00