

DETOUR NEED DETERMINATION REPORT

Date: December 29, 2022

In accordance with Standard Operations Procedure OPS-103 dated July 1, 1993, the detour need determination report on the following pages is being circulated for the consideration of the individual ODOT representatives listed below and for the determination by the District Deputy Director.

PROJECT: FAY-435/VAR-1.52/VAR, PID #117955

DETOUR LOCATION: SR-729 (western segment, south of SR-435 at the Bluegrass Blvd intersection)

PROJECT DESCRIPTION: Design Build project that widens SR-435 from US-35 to Bluegrass Blvd to 4 lanes and constructs a roundabout at SR-435/SR-729/Bluegrass Blvd

RECOMMENDATION:

- Detour as indicated
- Run-around _____
- Construct under traffic _____
- Other _____

SIGNATURES:

Approved: Yes No _____ Date: 5-9-2023
District Work Zone Traffic Manager: Sony K Fetherald
Remarks: _____

Approved: Yes No _____ Date: 5/19/23
District Construction Engineer: Andrew Opsitnik
Remarks: _____

Approved: Yes _____ No _____ Date: 6-14-23
District Capital Programs Administrator: [Signature]
Remarks: _____

Approved: Yes No _____ Date: 7/3/23
District Deputy Director: G C Z
Remarks: Coordinate w/ DB closure of SR 729 & Honda exhibits.

SUMMARY:

The following options were analyzed as part of this Detour Need Determination:

Detour, **Run-around**, **Construct under traffic**, **Other**.

A detour (full-closure of SR-729) and constructing under traffic were considered to complete the roundabout.

Traffic Data

2021 traffic data for SR-729 is given below:

ADT (two-way): 577

Number of B & C Trucks: 105 (18%)

Proposed Detour

In coordination with impacted Local Officials the proposed detour is shown in Appendix A and designated local detour route is shown in Appendix C. The detour will be 30 days from September 1st to October 1st so it is not to conflict with District 8's SR-729 bridge project.

Adjusted User Costs

Road user costs are calculated in accordance with guidelines established in the ODOT Innovative Contracting Manual and are given in Appendix B, Table 1. The adjusted user cost is 10% of the calculated user cost. This adjustment factor lowers the weight of user costs and accounts for alternate routes used during construction to allow for a more realistic comparison of total costs.

Designated Local Detour Route

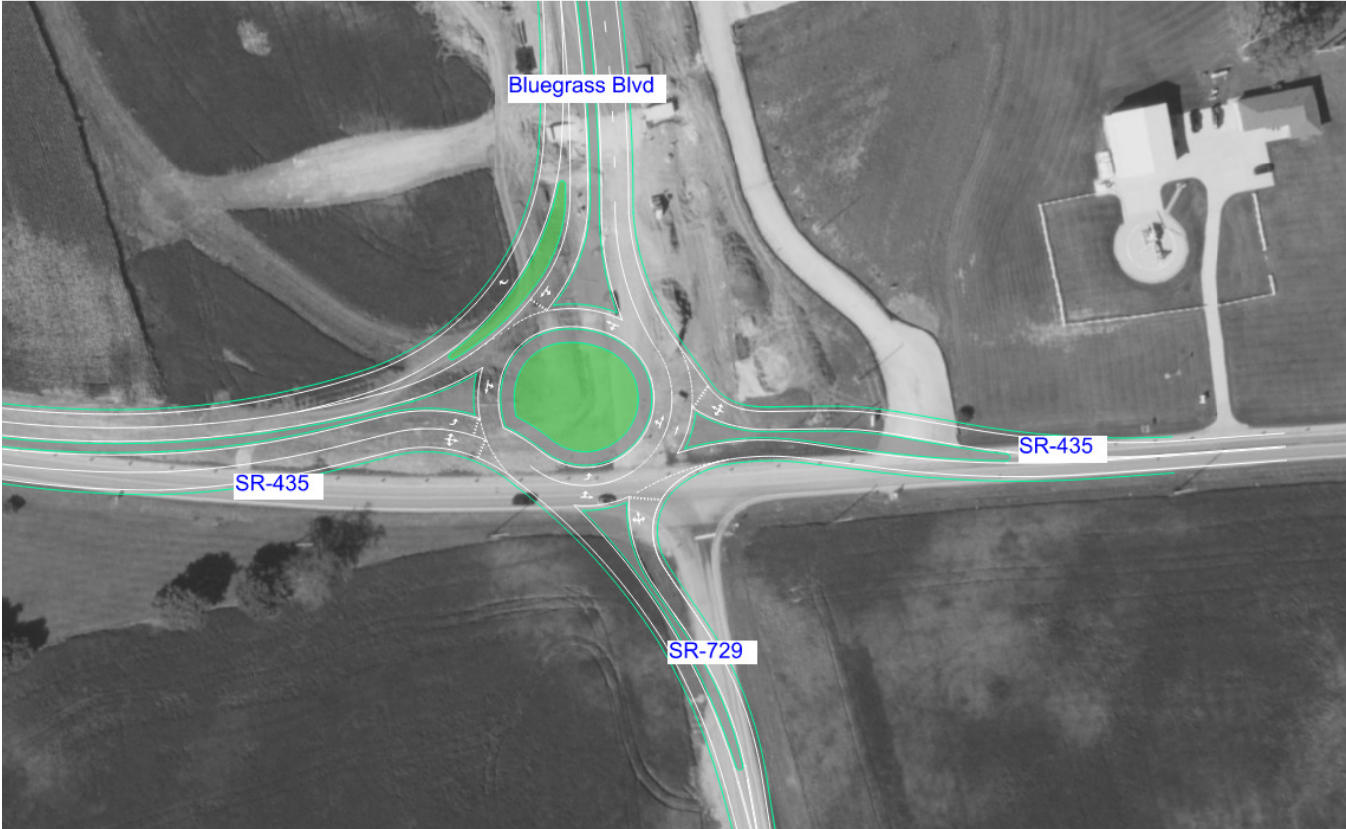
The designated local detour route is shown in Appendix C. Upon review and approval by ODOT personnel this document will be forwarded to the appropriate Local Officials for their approval.

Construction Costs

See Appendix B, Table 2 for the breakdown of estimated construction costs for the full closure condition.

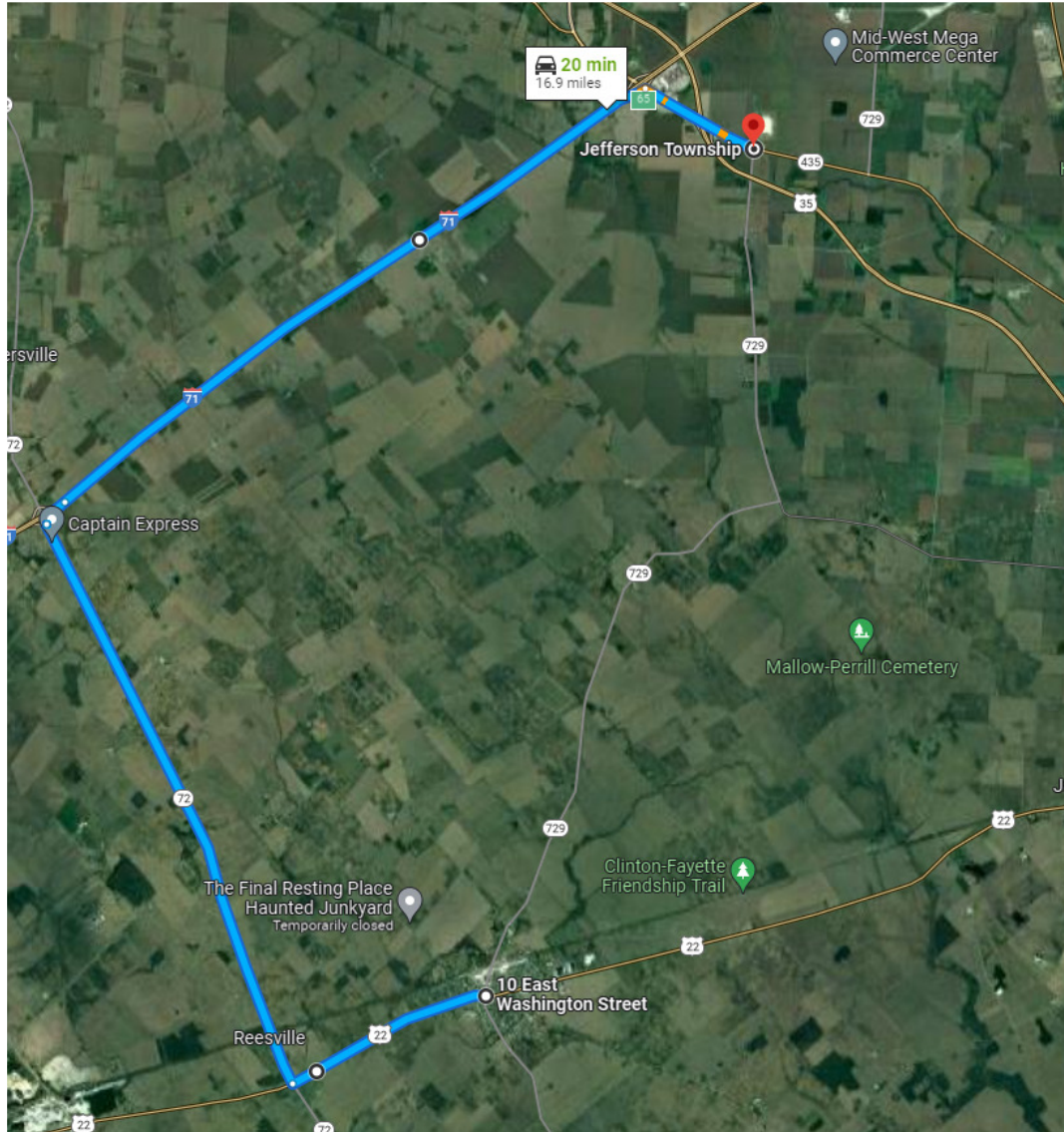
See Appendix B, Table 3 for the breakdown of estimated construction costs for the part-width condition. To complete the roundabout while maintaining traffic on SR-729, additional temporary pavement would be required. Additionally, the contractor's production rate on pavement and other roundabout items would be significantly slowed when constructing under traffic – therefore a \$25,000 “contingency” for an overall increase of cost in various work items was included in the estimate.

Work Location



Appendix A

State Detour



State Detour Information

Description: US-22 WB to SR-72, SR-72 NB to I-71, I-71 NB to SR-435, SR-435 EB

Length of Detour Route: 16.9 miles

Added Length: 7.1 miles

Period of Detour Use: 30 days (September 1st – October 1st)

Appendix B

Table 1 – User Costs

| Work Zone User Cost Calculations | | |
|---|-----------------------------|------------|
| Detour (Using Actual Drive Time) | | |
| Project ID: | 117955 | |
| County-Route-Section: | FAY-435/VAR-1.52-VAR | |
| User Input: | | |
| Construction Calendar Year: | 2024 | |
| | Car | B/C Truck |
| ADT of Detoured Section: | 472 | 105 |
| Time to Drive Normal Route (Min): | 13 | 13 |
| Time to Drive Detour Route (Min): | 20 | 20 |
| Duration of Closure (Days): | 30 | |
| Calculated Values: | | |
| User Cost per Vehicle per Hour: | \$25.17 | \$67.93 |
| Delay (Min): | 7 | 7 |
| Delay (Hours): | 0.117 | 0.117 |
| Delay Cost per Vehicle: | \$2.94 | \$7.93 |
| Delay Cost per Day: | \$1,385.84 | \$832.16 |
| Delay Cost for Closure Duration: | \$41,575 | \$24,965 |
| Total Delay Cost for Closure Duration: | \$66,540 | |
| Average Delay Cost per Day: | \$2,218 | |

Table 2 – Full Closure Construction Costs

| Item | Description | Unit | Total Quantity | Estimated Unit Price | Total Cost | Additional Remarks |
|-------------------|---|------|----------------|----------------------|---------------------|---|
| 251 | PARTIAL DEPTH PAVEMENT REPAIR (ASPHALT CONCRETE BASE), 4.5" | SY | 75 | \$ 62.00 | \$ 4,650.00 | Contingency for maintaining local roads |
| 254 | PAVEMENT PLANING, ASPHALT CONCRETE, 1.5" | SY | 500 | \$ 6.50 | \$ 3,250.00 | |
| 441 | ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22 | CY | 21 | \$ 300.00 | \$ 6,300.00 | |
| 614 | DETOUR SIGNING | LS | | | \$ 20,000.00 | |
| TOTAL COST | | | | | \$ 34,200.00 | |

Table 3 – Part-Width Construction Costs

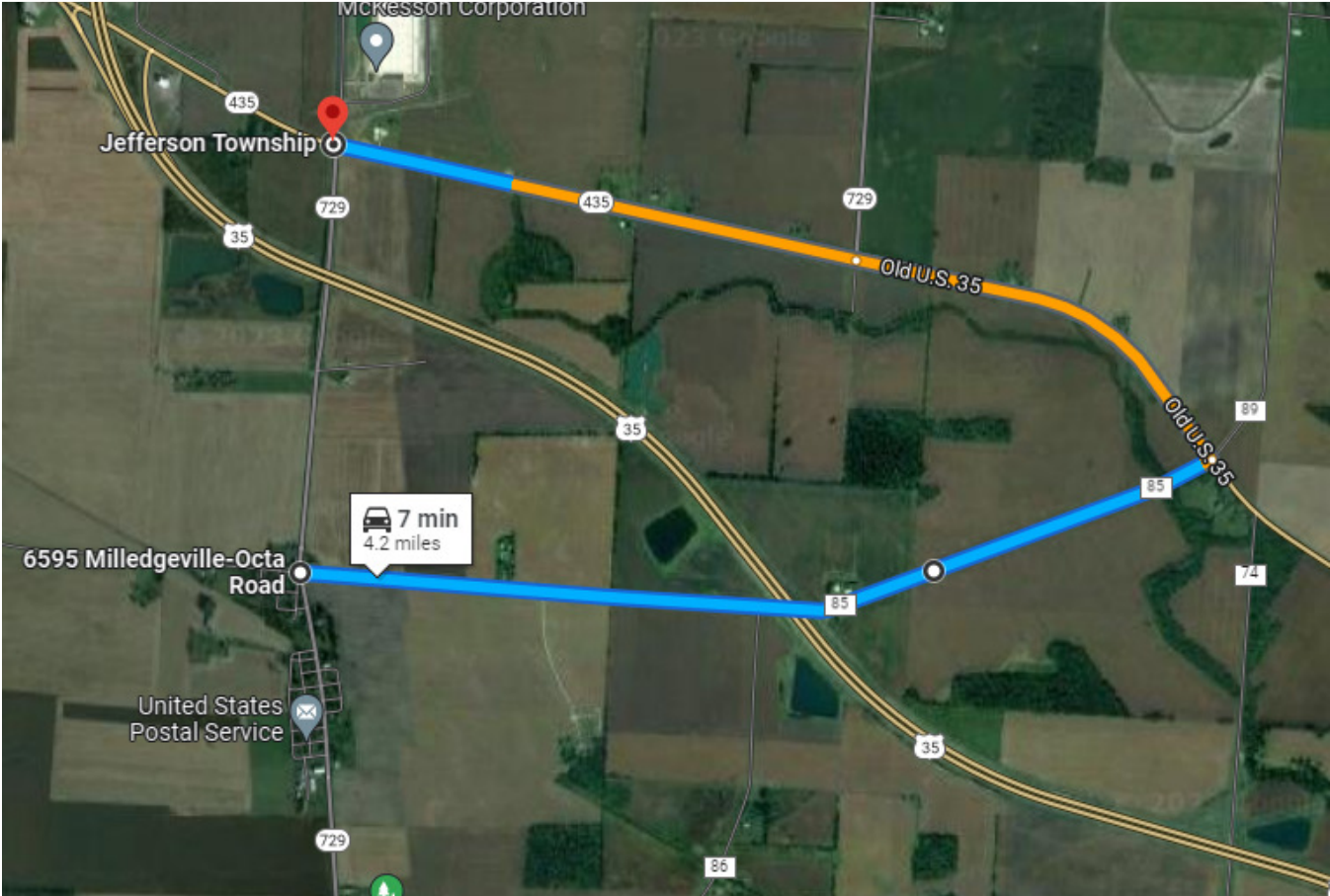
| Item | Description | Unit | Total Quantity | Estimated Unit Price | Total Cost | Additional Remarks |
|--------------------|--|------|----------------|----------------------|---------------------|--------------------|
| 614 | WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL) | EACH | 2 | \$ 2,200.00 | \$ 4,400.00 | |
| 615 | PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A | SY | 625 | \$ 64.00 | \$ 40,000.00 | |
| 615 | ROADS FOR MAINTAINING TRAFFIC | LS | | | \$ 16,000.00 | |
| 622 | PORTABLE BARRIER, ANCHORED | FT | 100 | \$ 25.00 | \$ 2,500.00 | |
| | SIGNANGE | | | | \$ 6,500.00 | |
| | CONTINGENCY FOR SLOWED PRODUCTION RATES ON PAVEMENT INSTALLATION | | | \$ 25,000.00 | \$ 25,000.00 | |
| TOTAL COST: | | | | | \$ 94,400.00 | |

Table 4 – Full Closure vs. Part-Width Total Cost Comparison

| | FULL CLOSURE (DETOUR) | PART-WIDTH (TEMP. ROAD) |
|---------------------------------|--------------------------|----------------------------|
| CONSTRUCTION COSTS | \$ 34,200.00 | \$ 94,400.00 |
| SUM OF ADJUSTED* USER COSTS FOR | \$ 6,654.00 | |
| TOTAL COSTS | \$ 40,854.00 | \$ 94,400.00 |
| | | *Adjustment = 10% |

Appendix C

Local Detour



Local Detour Information

Description: CR-85 EB to Old US 35, Old US 35 WB

Length of Detour Route: 4.2 miles

Added Length: 3.2 miles

Period of Detour Use: 30 days

DESIGNATED LOCAL DETOUR ROUTE MAINTENANCE

In addition to the official, signed detour route, a local route has been determined to be the secondary, unsigned detour route or "designated local detour route". This route provides an alternative travel way for the closure and can be seen above. Once the detour is removed and traffic is returned to its normal pattern, the designated local detour route shall be restored to a condition that is equivalent to that which existed prior to its use for this purpose. All work will be as agreed to by involved parties.

Appendix C
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

**AGREEMENT COVERING MAINTENANCE OF LOCAL
ROADS FOR LOCAL DETOUR PURPOSES**

Whereas, the State of Ohio contemplates the improvement of State Route 435 in Fayette County.

And whereas, the Director of Transportation has determined that it is necessary to detour traffic during construction of this improvement and --

Whereas, the Director of Transportation wishes to obtain concurrence of affected authorities prior to establishment of detour --

Now therefore, the Director of Transportation agrees to maintain this local detour in passable condition and return it to as good condition as it was prior to its use as a local detour as indicated on attached detour need determination report.

Signed Jack Marchbanks/ACT Date 7/13/23
Director

I, The Fayette County Engineer have reviewed the above agreement, detour report and map and concur in detour use and proposed work.

Signed [Signature] Date 7/18/23
Fayette County Engineer

I, The Mayor of Octa have reviewed the above agreement, detour report and map and concur in detour use and proposed work.

Signed [Signature] Date 7/27/2023
Mayor of Octa

I, The Mayor of Milledgeville have reviewed the above agreement, detour report and map and concur in detour use and proposed work.

Signed _____ Date _____
Mayor of Milledgeville