



## **APPENDIX D**

### **RED FLAG SUMMARY Red Flag Mapping**

# RED FLAG SUMMARY

Red Flag Summary Completed: April 2005

The purpose of this Red Flag summary is to identify concerns that could cause revisions to the anticipated design and construction scope of work, the proposed project development schedule, the estimated project budget, or the potential impacts of the project on the surrounding area.

Date Red Flag Summary Completed:

District

Project Name (County, Route, Section):

City, Township or Village Name(s):

PID

Prepared By:

ODOT Project Manager:

## GENERAL PROJECT PLANNING INFORMATION

Project Description:

Remove and replace functionally obsolete and structurally deficient Vrooman Road Bridge over the Grand River. Realign Vrooman Road between I-90 and SR-84. Construct a new, high-level crossing over the Grand River. Reconfigure deficient Vrooman Road / SR-84 intersection.

Project Limits / General Location:

State of Ohio, Lake County, Leroy and Perry Townships. Planning study area consists of Vrooman Road from I-90 to a point on the southern/western edge of the river valley, and a triangular area roughly bounded on the west by a line from this point on Vrooman Road to the SR-84/Madison Avenue intersection; roughly bounded on the east by a line from this point on Vrooman Road to the SR-84/Lane Road intersection; and on the north by SR-84 from the SR-84/Madison Avenue intersection to the SR-84/Lane Road intersection. Please refer to attached map.

List Structures:

Bridge No.: Vrooman Road over Grand River

Structure File #: 4337107

Bridge No.:

Structure File #:

Bridge No.:

Structure File #:

Bridge No.:

Structure File #:

Bridge No.:

Structure File #:

Bridge No.:

Structure File #:

Estimated Project Cost:

\$23,200,000 (2005 dollars)

Funding Source(s):

☒ Federal

☒ State

☒ Local

☐ Private

Are Funding Splits Required?

☒ Yes

☐ No

Specify Splits: SIB loan / STP funds / County funds / CEAO funds

Anticipated Quarter and Fiscal Year of Project Awarded: 3rd quarter SFY 2011

Project Sponsor, if any:

Lake County Engineers Office

Is Local Legislation Required?

☒ Yes

☐ No

Is FHWA Oversight Required?

☐ Yes

☐ No

Is the project located on the congestion / safety list?

☐ Yes

☐ No

Problem identified by (indicated document date):

|   |  |
|---|--|
| <input type="checkbox"/> District Work Plan |  |
| <input type="checkbox"/> Congestion Study   |  |
| <input type="checkbox"/> Safety Study       |  |
| <input type="checkbox"/> Major New          |  |
| <input type="checkbox"/> MPO TIP            |  |
| <input type="checkbox"/> MPO LRP            |  |
| <input type="checkbox"/> Access Ohio        |  |
| <input checked="" type="checkbox"/> Other   | County records, bridge inspections, flooding history, accident history |

Are there any projects in the area (ODOT, Local, Utility) that might conflict with the project (e.g. a local project on the proposed detour route, a resurfacing project a year after the pavement marking project)?

- ☐ Yes  
☒ No

Specify:

|  |
|--|
|  |
|--|

Are there growth or land use changes in the area surrounding the project that could have an impact on the project scope?

- ☐ Yes  
☐ No

Specify:

|  |
|--|
|  |
|--|

Are there known public involvement issues?

- ☒ Yes  
☐ No

Specify:

|                |
|----------------|
| NIMBY syndrome |
|----------------|

Purpose and Need Statement (Must be a separate document for Major Projects):

Provide a structurally sufficient crossing of the Grand River that meets the current design standards; Improve the existing geometrics that correct existing roadway deficiencies; Provides a safe, efficient evacuation route that meets the requirements of the Department of Homeland Security

Other Information / Notes:

|  |
|--|
|  |
|--|

#### EXISTING INFORMATION:

Check all information that was reviewed for the Red Flag Summary. Not all information is available or necessary for every project. The scope of the Red Flag Summary should be commensurate with the nature of the proposed project.

|                                     |                           |                   |
|-------------------------------------|---------------------------|-------------------|
| <input checked="" type="checkbox"/> | Legal Speed               | 25 mph            |
| <input checked="" type="checkbox"/> | Design Speed              | 45 mph            |
| <input checked="" type="checkbox"/> | Traffic Data:             |                   |
|                                     | Opening Year ADT:         | 15300 (projected) |
|                                     | Design Year ADT:          | 17380 (projected) |
|                                     | Design Hourly Volume:     | 1740 (projected)  |
|                                     | Directional Distribution: | 55%               |
|                                     | Trucks (24 Hr. B&C):      | 869 (projected)   |

(Traffic data does not need to be certified for the Red Flag Summary.)

|                                     |                                 |
|-------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> | Turning Movement Traffic Counts |
|-------------------------------------|---------------------------------|

|                                     |                            |
|-------------------------------------|----------------------------|
| <input checked="" type="checkbox"/> | Functional Classification: |
|-------------------------------------|----------------------------|

|                                     |                     |
|-------------------------------------|---------------------|
| <input type="checkbox"/>            | Interstate, Freeway |
| <input type="checkbox"/>            | Arterial            |
| <input checked="" type="checkbox"/> | Collector           |
| <input type="checkbox"/>            | Local               |

|                                     |         |
|-------------------------------------|---------|
| <input checked="" type="checkbox"/> | Locale: |
|-------------------------------------|---------|

|                                     |       |
|-------------------------------------|-------|
| <input type="checkbox"/>            | Rural |
| <input checked="" type="checkbox"/> | Urban |

|                          |                                |
|--------------------------|--------------------------------|
| <input type="checkbox"/> | National Highway System (NHS): |
|--------------------------|--------------------------------|

|                          |                 |  |
|--------------------------|-----------------|--|
| <input type="checkbox"/> | NHS Routes:     |  |
| <input type="checkbox"/> | Non-NHS Routes: |  |

|                          |               |
|--------------------------|---------------|
| <input type="checkbox"/> | (3R) Project? |
|--------------------------|---------------|

|                          |     |
|--------------------------|-----|
| <input type="checkbox"/> | Yes |
| <input type="checkbox"/> | No  |

|                          |                |
|--------------------------|----------------|
| <input type="checkbox"/> | Aerial Mapping |
|--------------------------|----------------|

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | Ohio Utility Protection Service (OUPS) Markings |
|--------------------------|---|

|                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | United States Geologic Survey (USGS) topographic mapping |
|-------------------------------------|--|

|                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Federal Emergency Management Agency (FEMA) flood plain study mapping |
|-------------------------------------|--|

|                          |  |
|--------------------------|--|
| <input type="checkbox"/> | Natural Resources Conservation Services (NRCS) mapping |
|--------------------------|--|

|                                     |               |
|-------------------------------------|---------------|
| <input checked="" type="checkbox"/> | County Map(s) |
|-------------------------------------|---------------|

|                                     |   |   |
|-------------------------------------|---|---|
| <input checked="" type="checkbox"/> | Airport locations within 4 miles of project | Concord Airpark (4.0); Pheasant Run (3.3) |
|-------------------------------------|---|---|

|                                     |          |
|-------------------------------------|----------|
| <input checked="" type="checkbox"/> | Tax maps |
|-------------------------------------|----------|

|                          |                |
|--------------------------|----------------|
| <input type="checkbox"/> | Property deeds |
|--------------------------|----------------|

|                          |                      |
|--------------------------|----------------------|
| <input type="checkbox"/> | Pavement marking log |
|--------------------------|----------------------|

|                          |                              |  |
|--------------------------|------------------------------|--|
| <input type="checkbox"/> | Original construction plans: |  |
|--------------------------|------------------------------|--|

|                          |                              |  |
|--------------------------|------------------------------|--|
| <input type="checkbox"/> | Existing Right-of-Way plans: |  |
|--------------------------|------------------------------|--|

|                                     |                           |
|-------------------------------------|---------------------------|
| <input checked="" type="checkbox"/> | Bridge Inspection Reports |
|-------------------------------------|---------------------------|

|                                     |                     |
|-------------------------------------|---------------------|
| <input checked="" type="checkbox"/> | Bridge Load Ratings |
|-------------------------------------|---------------------|

|                          |                   |
|--------------------------|-------------------|
| <input type="checkbox"/> | Pile Driving Logs |
|--------------------------|-------------------|

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | Recorded vertical clearances for overpasses and underpasses |
|--------------------------|---|

|                                     |                  |
|-------------------------------------|------------------|
| <input checked="" type="checkbox"/> | Old soil borings |
|-------------------------------------|------------------|

|                                     |                      |
|-------------------------------------|----------------------|
| <input checked="" type="checkbox"/> | Old Geologic reports |
|-------------------------------------|----------------------|

|                          |                |
|--------------------------|----------------|
| <input type="checkbox"/> | Pavement Cores |
|--------------------------|----------------|

|                          |                  |
|--------------------------|------------------|
| <input type="checkbox"/> | Dynaflec Testing |
|--------------------------|------------------|

|                          |            |
|--------------------------|------------|
| <input type="checkbox"/> | Deck Cores |
|--------------------------|------------|

|                          |                                     |
|--------------------------|-------------------------------------|
| <input type="checkbox"/> | Ground Penetrating Radar (GPR Data) |
|--------------------------|-------------------------------------|

|                                     |                     |
|-------------------------------------|---------------------|
| <input checked="" type="checkbox"/> | Maintenance history |
|-------------------------------------|---------------------|

|                          |                                   |
|--------------------------|-----------------------------------|
| <input type="checkbox"/> | Pavement Condition Ratings (PCRs) |
|--------------------------|-----------------------------------|

|                          |                         |
|--------------------------|-------------------------|
| <input type="checkbox"/> | County manager concerns |
|--------------------------|-------------------------|

|                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | Traffic studies, Highway Safety Program (HSP) studies |
| <input type="checkbox"/>            | Previous Maintenance of Traffic concerns on roadway   |
| <input checked="" type="checkbox"/> | Accident history / Accident reports                   |
| <input type="checkbox"/>            | Past Project Construction Diaries                     |
| <input type="checkbox"/>            | Permitted Lane Closure Map                            |
| <input type="checkbox"/>            | Property owner contacts                               |
| <input type="checkbox"/>            | National Register of Historic Places                  |
| <input type="checkbox"/>            | Other: <input type="text"/>                           |

**EXISTING GEOTECHNICAL INFORMATION:**

Identify all geotechnical references found. It is assumed, based on the project type, that not all reference materials listed herein will be applicable for use during the Red Flag Study. This study should provide a comprehensive review of all existing information available for the project area and should be supplemented with a complete field reconnaissance

**Review of Information From ODOT:**

|                          |  |
|--------------------------|--|
| <input type="checkbox"/> | Original Construction Plans including plan views, profiles, and cross-sections                           |
| <input type="checkbox"/> | Construction diaries and inspection reports for original construction                                    |
| <input type="checkbox"/> | Compile information on changes to the plans during construction activities ( e.g., slope, spring drains) |
| <input type="checkbox"/> | Interview people knowledgeable with the previous projects  |
| <input type="checkbox"/> | Maintenance records  |
| <input type="checkbox"/> | Boring log on file with the Office of Geotechnical Engineering   |
| <input type="checkbox"/> | History and occurrence of landslides   |
| <input type="checkbox"/> | History and occurrence of rockfalls  |
| <input type="checkbox"/> | Other: <input type="text"/>  |

**Review of information from ODNR:**

**From the Division of Geological Survey**

|                          |  |
|--------------------------|--|
| <input type="checkbox"/> | Boring logs on file                            |
| <input type="checkbox"/> | Measured geological sections                   |
| <input type="checkbox"/> | Bedrock Geological Maps                        |
| <input type="checkbox"/> | Bedrock Topography Maps                        |
| <input type="checkbox"/> | Bedrock Structure Maps                         |
| <input type="checkbox"/> | Geologic Map of Ohio                           |
| <input type="checkbox"/> | Quaternary Geology of Ohio                     |
| <input type="checkbox"/> | Known and Probable Karst in Ohio               |
| <input type="checkbox"/> | Bulletins                                      |
| <input type="checkbox"/> | Information Circulars                          |
| <input type="checkbox"/> | Report of Investigations                       |
| <input type="checkbox"/> | Locations and Information on underground mines |
| <input type="checkbox"/> | Location and characteristics of karst features |
| <input type="checkbox"/> | Landslide Maps                                 |
| <input type="checkbox"/> | Other: <input type="text"/>                    |

**From the Division of Mineral Resource Management**

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | Applications and permits files for surface mines ( coal & industrial mineral) |
| <input type="checkbox"/> | Active, reclaimed or abandoned surface mines                                  |
| <input type="checkbox"/> | Abandoned Mine Land (AML) sites   |
| <input type="checkbox"/> | Emergency Projects  |
| <input type="checkbox"/> | Other: <input type="text"/>   |

**From the Division of Soil & Water**

|                          |                 |
|--------------------------|-----------------|
| <input type="checkbox"/> | Water well Logs |
| <input type="checkbox"/> | Soil Survey     |

|                          |  |
|--------------------------|--|
| <input type="checkbox"/> | Ohio Wetland Inventory Maps                                    |
| <input type="checkbox"/> | National Wetland Inventory Maps                                |
| <input type="checkbox"/> | Presence of lake bed sediments, organic soils or peat deposits |
| <input type="checkbox"/> | Other <input type="text"/>                                     |

**Other Sources:**

|                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/>            | Aerial photography   |
| <input type="checkbox"/>            | Satellite imagery  |
| <input checked="" type="checkbox"/> | USGS quadrangles   |
| <input type="checkbox"/>            | USGS publications and files  |
| <input checked="" type="checkbox"/> | City and County Engineers  |
| <input type="checkbox"/>            | Academia with engineering or geology programs  |
| <input type="checkbox"/>            | USGS open File Map Series #78-1057 "Landslide and Related Features"  |
| <input checked="" type="checkbox"/> | Other <input type="text" value="Boring logs and geotechnical reports from previous projects and studies"/> |

**SITE VISIT:**

A site visit is required for ALL projects. The site visit shall consist of visual inspection of the entire project area including the ditch lines, cut slopes, stream banks, bridge foundations, pavement, rock / soil slopes, etc.

|                        |                      |  |
|------------------------|----------------------|--|
| Date(s) of Site Visit: | <input type="text"/> | <input type="text" value="29-Sep-06"/> |
|                        | <input type="text"/> | <input type="text"/>                   |

**ODOT DISCIPLINE INVOLVEMENT:**

List name and phone number of individual(s) representing each discipline during the site visit and preparation of the Red Flag Summary. One individual may represent multiple disciplines. Check box if individual attended the site visit.

|                          |                            |                      |        |                      |
|--------------------------|----------------------------|----------------------|--------|----------------------|
| <input type="checkbox"/> | District Project Manager   | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Geometrics                 | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Hydraulics                 | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Pavements                  | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Geotechnical               | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | General Roadway            | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Structures                 | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Traffic Control            | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Signals                    | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Maintenance of Traffic     | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Right-of-Way / Real Estate | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Utilities                  | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Survey                     | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Environmental              | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Highway Management         | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | CO Program Manager         | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | County Manager(s)**        | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Production Administrator** | <input type="text"/> | Phone: | <input type="text"/> |
| <input type="checkbox"/> | Planning Administrator**   | <input type="text"/> | Phone: | <input type="text"/> |

\*\* The County Manager, District Production Administrator, and District Planning Administrator (or qualified representative) must attend the site visit.

**EXTERNAL AGENCY INVOLVEMENT:**

Indicate external agency involvement during identification of red flags. List the name and phone number of individual(s) representing each agency during the site visit. Check box if individual attended the field review.

|                                     |                                       |                            |        |                      |
|-------------------------------------|---------------------------------------|----------------------------|--------|----------------------|
| <input type="checkbox"/>            | Federal Highway Administration (FHWA) | <input type="text"/>       | Phone: | <input type="text"/> |
| <input checked="" type="checkbox"/> | County Engineer                       | James R. Gills, P.E., P.S. | Phone: | (440) 350-2770       |
| <input type="checkbox"/>            | City Engineer                         | <input type="text"/>       | Phone: | <input type="text"/> |

|                                     |   |                         |                             |
|-------------------------------------|---|-------------------------|-----------------------------|
| <input type="checkbox"/>            | Other Local Public Agency                   | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Federal Emergency Management Agency (FEMA)  | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | US Army Corps of Engineers (USACE)          | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | U.S. Coast Guard                            | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Ohio Department of Natural Resources (ODNR) | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Ohio Environmental Protection Agency (OEPA) | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Railroad Railway Company                    | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | State Historical Preservation Office (SHPO) | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Metropolitan Planning Organization (MPO)    | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Utilities Company list:                     |                         |                             |
| <input type="checkbox"/>            | Electric                                    | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Telephone                                   | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Water                                       | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Gas   | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Sanitary                                    | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Cable                                       | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Other                                       | <input type="text"/>    | Phone: <input type="text"/> |
| <input type="checkbox"/>            | Other                                       | <input type="text"/>    | Phone: <input type="text"/> |
| <input checked="" type="checkbox"/> | Other                                       | Michael Baker Jr., Inc. | Phone: (216) 776-6801       |

#### ODOT COUNTY MANAGER CONCERNS:

List any comments / requests from the ODOT County Manager

#### ACCIDENT DATA:

Summarize accident history. Indicate and design features that should be revised to increase safety

Intersection of Vrooman Road, Madison Avenue and SR-84 3.425 accidents per million vehicle entering intersection. State average 0.20 accidents per million vehicle entering intersection. Intersection of Lane Road, River Road and SR-84 2.854 accidents per million vehicle entering intersection. State average 0.20 accidents per million vehicle entering intersection. Intersection of Vrooman Road and Seeley Road 2.283 accidents per million vehicle entering intersection. State average 0.20 accidents per million vehicle entering intersection. Fixed object accidents at or near Vrooman Road Bridge 2.283 accidents per million vehicle miles. State average 2.188 accidents per million vehicle miles. Please refer to the Planning Study for a complete summary of accident data.

#### ENVIRONMENTAL ISSUES:

Make a preliminary determination on whether the following resources will be affected by the proposed project.

| Involvement:   | Resource   | Comments  | References*         |
|--|--|---|---------------------|
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Parkland, nature preserves and wildlife areas (Name) | The proposed project contains two parks - the Lake Metroparks' Indian Point Park and the Lake Metroparks' Mason's Landings Park             |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible | Cemetery (Name)                                      | There is a cemetery located on the northeast corner of the intersection of SR-84, Lane Road, and River Road                                 |                     |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Scenic River (Name)                                  | The Grand River is a state designated Wild and Scenic River. The portion of the Grand River designated as Wild, is within the project area. | EPM: 104.2, 104.2.4 |



|  |  |  |                     |
|--|--|--|---------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible | Public Facilities (Name)   | None Identified  |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible | Threatened and Endangered Species and/or habitat (e.g., Indiana bat trees, etc.) | One threatened species, the black sandshell ( <i>Ligumia recta</i> ) has a general location within the study area. A critical area designated as mole salamander habitat protection zone falls within the study area (Hildebrandt, 1995). Field investigations did not reveal the presence of any state listed endangered, threatened, potentially threatened, or other rare plant species as occurring within the study area. The U.S. Fish and Wildlife Service names several federally-listed threatened, endangered, proposed, and candidate species for Lake County (USFWS, 2005). Those species include the endangered Indiana bat ( <i>Myotis sodalis</i> ), the threatened bald eagle ( <i>Haliaeetus leucocephalus</i> ), the endangered piping plover ( <i>Charadrius melodus</i> ) and critical habitat designated for the piping plover. No live state or federally-listed endangered, threatened, species of concern, and special interest were identified within the study area. The Division of Natural Areas and Preserves has no records of any Indiana bat capture locations or hibernacula within a five-mile radius of the study area. | EPM: 104.2, 104.2.6 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Existing cat tails (Location)  | Located within the wetlands identified below   |                     |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Existing wet areas (Location)  | During the field reconnaissance, a total of fourteen wetlands comprising approximately 4.22 acres were identified along both sides of the Grand River within the study area.   | EPM: 104.2, 104.2.3 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Streams, rivers and watercourses (Use Designation)                               | Two streams comprising approximately 2,326 linear feet, the Grand River, and an unnamed tributary to the Grand River were identified within the limits of the study area. This segment of the Grand River is designated as a state resource water (SRW) and seasonal salmonid habitat (SSH), based on the 1978 water quality standards (Ohio EPA, 2003). Based on the results of a biological field assessment performed by the Ohio Environmental Protection Agency this segment of the Grand River is also designated as an exceptional warmwater habitat (EWH), agricultural water supply (AWS), industrial water supply (IWS), and a primary contact recreation stream (PCR) (Ohio EPA, 2003).   | EPM: 104.2, 104.2.4 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Historic Building(s) (Location)  | During the field reconnaissance, two history/architecture sites, previously recorded within or immediately adjacent to the project study area, were identified as extant. These two resources have not been evaluated according to the NRHP criteria. The Field reconnaissance further identified an additional 11 properties within or immediately adjacent to the project study area that are older than 50 years.   | EPM: 104.3          |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible | Historic Bridge(s) (Location)  | The proposed undertaking involves the replacement of the Vrooman Road Bridge (SFN 4337107) a single-span, concrete open-spandrel bridge that has been determined to be not eligible for inclusion on the National Register of Historic Places (NRHP).  | EPM: 104.3          |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Farmland (Location)  | A field reconnaissance determined that farmland is located between River Road and SR-84  |                     |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible | Landfill(s) (Location)   | None Identified  |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible | Total Maximum Daily Load (TMDL) Streams  | The Grand River Watershed is identified with a TMDL status of Development Phase. The Grand River (downstream Mill Creek to mouth), excluding Grand River mainstem, is identified on the 303(d) List of Prioritized Impaired Waters (Category 5).   |                     |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | ODOT MS4 Phase 2 Regulated Areas   | Located within a MS4 Phase 2 Regulated Area  |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible            | Evidence of hazardous materials (Location)                                       | Field reconnaissance and review of regulatory database and mapping information were undertaken during this ESA Screening. A Phase I Environmental Site Assessment was recommended for The Northeast Auto Service facility located at 2606 Madison Avenue on the northwest portion of the study area; the former Lane Auto Sales and Wickliffe Truss Manufacturing facility located at 5188-5194 Lane Road on the northeast portion of the study area; and The former service station located at 5848 Vrooman Road on the southwest portion of the study area   | EPM: 104.7          |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible | Sensitive environmental justice areas  | None Identified  |                     |



|  |   |   |                     |
|--|---|---|---------------------|
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Federal Emergency Management Agency (FEMA) floodplains                | The proposed project traverses FEMA identified floodplains located in the Grand River Valley.                     | EPM: 104.2, 104.2.5 |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible | Lake Erie Coastal Management Area                                     | Not located within a Lake Erie Coastal Management Area  | EMP: 104.2          |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible | Sole Source Aquifers (Location)                                       | No sole source aquifers were identified within the project area.  |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible            | Wellhead Protection Areas (Specify)                                   |   |                     |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible | Does it appear that noise abatement will be an issue for the project? | Project will involve a new bridge on a new alignment and possible the construction of a new road on new alignment |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible | Other Environmental Issues  |   |                     |

#### GEOMETRIC ISSUES:

Use the design speed, design functional classification and available traffic data to make a preliminary determination as to the geometric standards for the project. Compare these requirements to accident data and impacts if deviations are being considered

| Design Exception Required?  | Design Feature   | Preliminary Comments Regarding Justification                         | References*      |
|---|--|--|------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Lane Width (including curve widening)  | Not anticipated at this time.  | LDV1: 301.1.1    |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Graded Shoulder Width  | Not anticipated at this time.  | LDV1: 301.2.3    |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Bridge Width   | Possible. May reduce shoulder widths to reduce structure costs. TBD. | LDV1: 302.1      |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Structural Capacity  | Not anticipated at this time.  |                  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Horizontal Alignment (including Excessive Deflections, Degree of Curve, Lack of Spirals, Transition/Taper Rates and Intersection Angles) | Not anticipated at this time.  | LDV1: 202, 401.2 |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Vertical Alignment (including grade breaks)  | Not anticipated at this time.  | LDV1: 203        |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Grades   | Not anticipated at this time.  | LDV1: 203.2      |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Stopping Sight Distance  | Not anticipated at this time.  | LDV1: 201.2      |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Pavement Cross Slopes  | Not anticipated at this time.  | LDV1: 301.1.5    |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Superelevation (Maximum rate, transition, position)  | Not anticipated at this time.  | LDV1: 202.4      |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Horizontal Clearance   | Not anticipated at this time.  | LDV1: 301.2.5    |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Vertical Clearance   | Not anticipated at this time.  | LDV1: 302.1      |

Indicate if the following geometric issues are present or should be considered during project development. Consider work on the mainline as well as any side roads or service roads. Provide additional comments as needed.

|   | Design Issue  | Comments  | References* |
|---|---|---|-------------|
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the existing horizontal alignment need to be modified? | Substandard existing horizontal curves for roadway classification and design speed. | LDV1:202    |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the existing vertical alignment need to be modified?   | To improve existing clearance   | LDV1:203    |

|   |   |  |                     |
|---|---|--|---------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does stopping sight distance need to be increased?  | This will be based on proposed Final selection of alignment and incorporated into the final design | LDV:201.2           |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does intersection sight distance need to be increased?  | Poor existing intersection geometry at Vrooman Road / SR-84 intersection.                          | LDV1: 201.3         |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any hazards in the clear zone? Specify treatment.   | Trees may need to be cleared.  | LDV1: 800.2, 801    |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does existing guardrail need to be replaced (e.g., too low, poor condition)?  | LON calculations will be performed to locate the proposed guardrail.                               | LDV1: 802, 803      |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there sufficient area for guardrail anchor assemblies (E-98 or B-98)?  |  | LDV1: 802, 803      |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the number of turn lanes appear to be adequate?  |  | LDV1: 401.7, 402    |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the number of through lanes appear to be adequate?   |  | LDV1: 401.7         |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are changes to access control required?   |  | LDV1: 800, 801, 802 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any drive locations that will require special attention during design (e.g., very steep grades, high volume commercial drives, drives close to bridges or intersections)? |  | LDV1: 803, 804, 805 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are new mailbox turnouts required?  |  | LDV1: 803.1         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is there any evidence of accidents due to substandard vertical clearance on overpass structures?  |  |                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will an interchange be added or modified?   | Possible, dependent upon the selection of the Preferred Alternative                                | LDV1: 403, 404      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Do the existing intersection radius returns need to be modified to accommodate larger truck turning movements?  |  | LDV1: 401.5         |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does grading need to be upgraded? To what criteria (e.g., clear zone, safety, standard)?  | Clear Zone and Safety Grading  | LDV1: 307           |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other geometric issues? Describe  | TBD.   |                     |

#### HYDRAULIC ISSUES:

Indicate if the following drainage issues are present or should be considered during project development. Side road and service road work should be considered in this assessment. Provide additional comments as needed.

|   | Design Issue  | Comments   | References*      |
|---|---|--|------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Based on visual evidence (height of debris, erosion or other markings left from high water) and approximate drainage areas, does the existing drainage system (culverts, storm sewers and/or ditches) appear to be appropriately sized and functioning properly? Describe deficiencies. | The Existing structure over the Grand River is insufficient for the 100 year flood and the previous inspection rated the structure a 4, fair to poor condition | LDV2: 1003 +1006 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is there evidence of alignment or flow velocity problems (e.g., scour, bank erosions, silting) at culvert entrances or exits?   |  | LDV2: 1107       |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Are there sinkholes or other deterioration in the pavement that would indicate separations in the existing pipes?   |  |                  |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Should guardrail over culverts be eliminated with clear zone grading?   |  | LDV1: 307.2      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Should the existing culverts be replaced?   |  | LDV2: 1105       |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible   | Should the existing culverts be extended?   |  | LDV2: 1105       |

|   |   |  |                              |
|---|---|--|------------------------------|
| <input checked="" type="checkbox"/> Not Applicable  |   |  |                              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will a new alignment concentrate flow (in culverts) that is currently overland flow?                              | Possible, dependant upon thte selection of the preferred alternative | LDV2: 1105                   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will the maximum height of cover (100') be exceeded for any culvert?  |  | LDV2: 1008                   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will bankfull design be used for any culverts?  |  | LDV2: 1105.3.3               |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Could materials with long lead times (e.g., large boxes) have an impact on construction schedule?                 |  |                              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable            | Does the existing drainage system have an odor that might indicate that it includes septic connections?           |  | LDV2: LD-30 Form 1111.1      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is the exposed curb height in existing gutters adequate to contain flow (Include height of proposed resurfacing)? |  | LDV2: 1103                   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Do the existing inlets or catch basins need to be raised to meet proposed grade?                                  |  |                              |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the project in a FEMA flood zone?  |  | LDV2: 1005                   |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the project affect a wetland or waterway (e.g., stream, river, jurisdictional ditch)?                        | Grand River  | LDV2: 1001.2                 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the existing and/or proposed channel alignment compatible with the existing/proposed structure?                |  |                              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will channel relocation be required?  |  | LDV2: 1102.2.4               |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will Municipal Separate Storm Sewer System (MS4) requirements apply?  |  |                              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will post construction flow requirements be required?   | Possible, dependant upon thte selection of the preferred alternative | LDV2: 1115.1<br>LDV2: 1115.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable            | Is there evidence of existing field tiles?  |  | LDV2: 1002.3.6, 1108         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Are underdrain outlets functioning properly?  |  |                              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will a new storm sewer outfall be required?   | Possible, dependant upon thte selection of the preferred alternative | LDV2: 1104                   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is ditch cleanout required?   | Possible, dependant upon thte selection of the preferred alternative |                              |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the drainage work warrant any special maintenance of traffic considerations?                                 |  | TEM: PART 6                  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other hydraulic issues? Describe.   |  |                              |

#### GEOTECH ISSUES:

"Geotechnical Red Flag" features may include, but are not limited to, known or suspected geologic hazards (e.g., organic soils, karst, rockfalls, landslides, surface and underground mines, poor subgrade conditions, or difficulty in correcting existing surface or subsurface drainage problems).

#### GEOLOGY

Provide a brief geologic description of the project area

Not available.



Provide a description of the hydrogeologic setting

Not available.

Describe the characteristics of the soils

The south valley slopes consisted of predominantly overconsolidated silty clays. The north abutment area soils consisted of silt and sand with hard-pan like soils below elevation 729. Along the flood plain, below the valley floor, predominantly unconsolidated alluvial sediments of sands, silt and clay soils with variable gravel contents were evidenced. Applied Construction Technology Geotechnical Report dated August 10, 1990.

Describe the characteristics of the rock

Bedrock consists of a soft to medium hard gray shale per Applied Construction Technology Geotechnical Report dated August 10, 1990.

#### ORIGINAL CONSTRUCTION PLAN OBSERVATIONS

Provide a bulleted list of all pertinent features found during the plan and specification review

Not available.

Include findings from previous geotechnical reports or investigations

Indicated in appropriate sections from Applied Construction Technology Geotechnical Report dated August 10, 1990. The foundations were recommended as spread footings for the South Abutment, Pier 1 and Pier 10. For Piers 2 through 9, bedrock is located at a depth of ten to fifteen feet so either a deep footing or drilled shafts/driven piles are recommended. A rock bearing capacity of ten TSF is recommended. Since rock is deep at the North Abutment, a deep foundation system of drilled shafts or driven piles is required.

If general alignment or corridor is known, develop profiles to graphically present subsurface conditions (e.g., soil, rock, groundwater)

Profile from Applied Construction Technology Geotechnical Report dated August 10, 1990 is attached:



Describe soil classifications and problem conditions

Soils at the site classify primarily as A-4 and A-6 soils with some A-2-4 and A-2-6 in the valley bottom. Applied Construction Technology Geotechnical Report dated August 10, 1990.

Describe bedrock and problem conditions

Bedrock consists of a soft to medium hard gray shale per Applied Construction Technology Geotechnical Report dated August 10, 1990. Use of a lean concrete mud mat was recommended to reduce deterioration.

#### DISTRICT NOTATIONS

Provide synopsis of information compiled through the District and County Garages

Retaining wall requires extensive maintenance. Bridge is closed due to flooding several times a year;

#### Include construction issues and maintenance problems

The retaining wall south of SR 84 and adjacent to Vrooman road requires extensive maintenance.

#### FIELD REVIEW

Summarize the findings from a complete field reconnaissance

The Grand River Valley at the proposed bridge crossing is approximately 1900 feet wide and ranges in depth between 80 and 130 feet at the south approach and the north approach area, respectively. The area is primarily wooded and contains normal soil and vegetation cover. The north side slopes of the valley are too steep to retain soil cover for vegetation or tree growth and therefore the rock is exposed. Applied Construction Technology Geotechnical Report dated August 10, 1990.

#### Provide bulleted items with references to locations

Not available

#### Include conditions of embankments, soil & rock cut slopes, surface water erosion, ground water seeps or springs, settlements, surface deformation, abnormal pavement cracking, etc.

Not available.

#### SUMMARY OF GEOTECHNICAL ISSUES

Based on the information compiled during this study indicate whether or not the following geotechnical issues are present or should be further considered during project development. Provide additional comments as needed.

|   | Design Issue  | Comments   | References*   |
|---|---|--|---------------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there evidence of soil drainage problems (e.g., wet or pumping subgrade, standing water, the presence of seeps, wetlands, swamps, bogs)?                                   |  | SSI: 2.1, 2.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there evidence of any embankment or foundation problems (e.g., differential settlement, sag, foundation failures, slope failures, scours, evidence of channel migrations)? | Applied Construction Technology Geotechnical Report dated August 10, 1990 indicated the potential for weathering of the exposed shale bedrock.     | SSI: 2.1, 2.2 |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there evidence of any landslides?  |  | SSI: 2.1, 2.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there evidence of unsuitable materials (e.g., presence of debris or man-made fills or waste pits containing these materials, indications from old soil borings)?           | Applied Construction Technology Geotechnical Report dated August 10, 1990 indicated that the excavated shale bedrock is not suitable for backfill. | SSI: 2.1, 2.2 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there evidence of rock strata (e.g., presence of exposed bedrock, rock on the old borings)?  | See profile from Applied Construction Technology Geotechnical Report dated August 10, 1990 above.  | SSI: 2.1      |

|   |  |   |                    |
|---|--|---|--------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there evidence of active, reclaimed or abandoned surface mines?   |   | SSI: 2.1, 2.2, AUM |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there information pertaining to the existence of underground mines?   |   | SSI: 2.1, 2.2, AUM |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are soil borings needed for pavement design, foundations (bridge, headwall, retaining wall, noise wall) or slopes? | Yes for retaining wall, bridge, and slopes  | SSI: 2.1, 2.2      |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does an undercut appear to be needed?  | Applied Construction Technology Geotechnical Report dated August 10, 1990 indicated that the shale should be undercut when exposed at subgrade. | SSI: 5.3.2.1       |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Should the Office of Geotechnical Engineering be contacted to evaluate the project site?                           |   | SSI: 1.3           |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are There any other geotechnical issues? Describe.   | Possible concern over fractures in bedrock in vicinity of north bridge abutment.  |                    |

Provide a list of bulleted items referencing additional areas of concern or special notation.

Not available.

#### PAVEMENT ISSUES:

Indicate if the following pavement issues are present or should be considered during project development. Side road and service road work should be considered in this assessment. Provide additional comments as needed.

|   | Design Issue  | Comments  | References* |
|---|---|---|-------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are pavement cores needed to determine the existing pavement buildup and/or condition?  |   |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the proposed pavement buildup known? (For pavement preservation projects, pavement treatment, including pavement type & thickness should be specified in the design scope of services) |   |             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the existing pavement concrete or asphalt?   | Asphalt   |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are dynaflect tests available to assess existing pavement condition?  |   |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the proposed pavement buildup need to be approved by the Pavement Selection Committee?   |   |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are joint repairs needed?   |   |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are pressure relief joints needed?  | Possible, dependent upon the selection of the pavement buildup. |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |   |   |             |



|   |   |   |               |
|---|---|---|---------------|
| <input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable  | Are pavement repairs needed?  |   |               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the maintenance of traffic scheme require additional permanent or temporary pavement?                        |   |               |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Does curb need to be replaced due to deteriorated condition or lack of curb reveal?                               |   |               |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Does sidewalk need to be replaced or installed?   |   | LDV1: 306.2   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Are new curb ramps needed?  |   | LDV1: 306.3   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Do truncated domes need to be installed?  |   | LDV1: 306.3.5 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there any work on side roads, service roads or ramps?  | Dependedent on the selection of the preferred alternative |               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any special drive treatments or preferences (e.g., concrete for all drive aprons, curved aprons, etc.)? |   |               |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Has the site received repeated resurfacings in recent years?  |   |               |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does pavement deterioration appear to be caused by drainage or geotechnical problems?                             |   |               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other pavement issues? Specify.   |   |               |

#### STRUCTURAL ISSUES:

Indicate if the following structure issues are present or should be considered during project development. Provide additional comments as needed. Provide a separate table for each structure.

| Structure:  | Design Issue   | Comments                            | References*                  |
|---|--|-------------------------------------|------------------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can the structure be replaced with a prefabricated box culvert or 3-sided box?   |                                     | BDM: 201                     |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the bridge (including foundation) meet current design live loading?         | Refer to Physical Condition Report. | BDM: 301.4, 301.4.1, 301.4.2 |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Was the existing structure built according to plan?                              |                                     | BDM: 206, 401.1, 610.1       |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is deck coring needed?   | Wood deck with asphalt overlay.     | BDM: 412                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is the deck delaminated? Specify.  | Wood deck with asphalt overlay.     | BDM: 412                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is non-destructive testing needed to determine the amount of delamination?       | Wood deck with asphalt overlay.     | BDM: 412                     |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the bridge deck in good condition?  | Refer to Physical Condition Report. | BDM: 412                     |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Has a deck condition survey (Bridge Design Manual, Section 412) been performed?  | Wood deck with asphalt overlay.     |                              |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there areas to be patched or repaired on the deck?                           | Refer to Physical Condition Report. | BDM: 403.1, 404.3            |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the bridge a good candidate for an overlay? Specify type of overlay if known. |                                     | BDM: 404.1, 404.2            |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the bridge rail meet current standards?                                     | Refer to Physical Condition Report. | BDM: 209.2, 304, 410         |

|   |   |   |                          |
|---|---|---|--------------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is a fatigue analysis required?   |   | BDM: 402.2, 402.3        |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Should all fatigue prone details be retrofitted or replaced? Specify.   |   | BDM: 402.2, 402.3        |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the abutment (including backwall, beam seats, breastwall, wingwall, etc.) in good condition? Specify location and level of deterioration.                      | Masonry abutments exhibit loss of mortar. Refer to Physical Condition Report. | BDM: 403.1               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there any evidence of substructure movement (e.g., settlement, rotation)?  | Refer to Physical Condition Report.   |                          |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Should the piers be replaced or reused? Specify.  | Replaced  | BDM: 303.3               |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there any evidence of existing beam deterioration/section loss, strands exposed, shear joints leaking or longitudinal cracks?                                  | Refer to Physical Condition Report.   | BDM: 402.1               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are the bearings in good condition?   | Refer to Physical Condition Report.   | BDM: 411                 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can the deck joint be eliminated? If not, specify what modifications are necessary.   |   | BDM: 205.8, 206.9, 406   |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are new approach slabs needed?  |   | BDM: 209.5               |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can hinges be removed to make the members continuous?   |   | BDM: 402.8               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does existing vertical and horizontal clearance meet design standards?  | Insufficient lateral clearance on existing bridge.                            | BDM: 207.1, 207.3, 209.8 |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the bridge on a curve, skew or superelevation transition?  | Located on tangent across river between reverse curves on approach roadway.   | BDM: 207.5, 209.1        |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there any evidence that the bridge does not meet hydraulic capacity?   | Closed due to flooding on a regular basis.                                    | BDM: 202.5, 203          |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there existing sidewalks on or adjacent to the bridge?  |   | BDM: 209.11              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will the structure work require any special maintenance of traffic (e.g., closing of roadway for erection of beams, special location of cut line, etc.)? Specify. |   | BDM: 208, 409, 304.3.5   |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the structure in a Federal Emergency Management Agency (FEMA) flood plain?   |   | BDM: 203                 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there any erosion in the existing channel?   |   | BDM: 203.3               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the foundation exposed due to scour?   |   | BDM: 203.3, 409.3        |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will there be more than 25' of channel relocation?  |   |                          |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any opportunities to construct the bridge faster (e.g., precast walls, segmental construction)?   |   |                          |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is there any railroad involvement?  |   | BDM: 209.8               |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the bridge need to accommodate future additional roadway lanes or railroad tracks?   |   |                          |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will temporary shoring be required next to the roadway?   |   | BDM: 208.3               |

|   |  |            |
|---|--|------------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Could materials with long lead times for delivery (e.g., steel beams) have an impact on the construction schedule? |            |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any problems with existing retaining walls?  | BDM: 204.9 |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other structures issues? Specify   |            |

#### TRAFFIC CONTROL ISSUES:

Indicate if the following traffic control (signals, signing, pavement markings, etc.) issues are present or should be considered during project development. Provide additional comments as needed.

|   | Design Issue   | Comments  | References*          |
|---|--|---|----------------------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Do the existing signs need to be replaced due to poor condition?   | Possible, dependent upon the selection of the Preferred Alternative | TEM: 280             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any obvious deviations from requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD)?   |   |                      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is a particular type of pavement marking desired (e.g., paint, epoxy, thermoplastic)?  |   | TEM: 320             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will pavement planing affect loop detectors?   |   | TEM: 450-10.7, 420-5 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will pavement widening affect pole locations?  | Possible, dependent upon the selection of the Preferred Alternative | TEM: 450-6           |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will resurfacing effect signal height?   |   | TEM: 450-7           |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does it appear that any traffic control items will fall outside the existing right of way limits (e.g., large signs, strain poles)?  | Possible, dependent upon the selection of the Preferred Alternative |                      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any special pedestrian considerations?   | Possible, dependent upon the selection of the Preferred Alternative | TEM: 404             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any accidents that can be related to existing signal deficiencies (e.g., timing, lack of turn lanes)?  |   | TEM: 402-3.5         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Do turn lane lengths appear to have sufficient storage capacity?   |   | LDV1: 401.7          |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Does the controller need to be upgraded?   |   | TEM: 460             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Do proprietary materials need to be specified?   |   |                      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Should signs or signal installations be supplemented with lighting?  | Possible, dependent upon the selection of the Preferred Alternative | TEM: 408             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are any TODS signs present?  |   | TEM: 207-3           |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Could material with long lead times for delivery have an impact on the construction schedule (e.g., strain poles)?   | Possible, dependent upon the selection of the Preferred Alternative |                      |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | If traffic control at an intersection is being changed from stop control to signalization, does the stop condition road need to be upgraded to accommodate faster traffic? | Possible, dependent upon the selection of the Preferred Alternative |                      |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other traffic control issues? Specify.   |   |                      |

#### MAINTENANCE OF TRAFFIC ISSUES:

Indicate if the following maintenance of traffic issues are present or should be considered during project development. Provide additional comments as needed.



|   | Design Issue  | Comments  | References*        |
|---|---|---|--------------------|
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can traffic be detoured?  |   | TEM: 602-6         |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is the local alternate detour route in good condition? Are there any load limits or bridge width restrictions?  |   |                    |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will the detour route have a detrimental impact on emergency vehicles, school buses or other sensitive traffic? | Current use of Blair Road (2 mi east) and SR 86 (4 mile west) during floods and other closures. Allows some level of familiarity with detour. |                    |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any load limits on the proposed detour route?   |   |                    |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the project fall within the permitted lane closure map?  |   | TEM: 630-4         |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is existing bridge width sufficient to maintain traffic? Number of beam lines sufficient?                       |   | TEM: 640-2         |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will temporary pavement be required?  |   | TEM: 640-2, 640-11 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Should temporary pavement be retained after project completion?   |   | TEM: 640-11        |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will the speed limit be lowered by more than 10 mph during construction?  |   | TEM: 640-18        |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Is the existing shoulder in good enough condition to support traffic during construction?                       |   | TEM: 640-5         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Does pedestrian traffic need to be maintained?  |   | TEM: 64-25         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will additional width be required on culverts or bridges to maintain traffic?                                   |   | TEM: 640-2         |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will a temporary structure / run-around be required?  |   | TEM: 640-11        |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will a cross over be utilized?  |   | TEM: 640-11        |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will the road need to be closed for short durations (e.g., 15 minutes for beam erection)?                       |   | TEM: 640-8         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can drive access be maintained at all times?  | Possible, dependent upon the selection of the Preferred Alternative   | TEM: 640-10        |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Can trucks make turning movements during construction?  |   |                    |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will portable concrete barrier wall obstruct stopping sight distance?   |   | LDV1-201.2         |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Will additional signal heads be needed for drives and/or side roads?  |   | TEM: 606-13        |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any issues regarding access to the work site?   |   | TEM: 640-9         |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any issues regarding construction timeframes (e.g., time of day, time limits)?                        | Time of day because of proximity to residential areas. Possible seasonal restrictions due to migratory fish and mammals.                      | TEM: 606-3, 640-14 |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Have innovative contracting ideas been considered? Specify.   |   |                    |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Are there specific requirements for maintaining railroad traffic?   |   | TEM: 606-19        |

|   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does it appear that the maintenance of traffic will require additional right of way? |  |  |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other maintenance of traffic issues? Specify.                          |  |  |

**RIGHT OF WAY / SURVEY ISSUES:**

Indicate if right of way or survey issues are present or should be considered during project development. Provide additional comments as needed.

|   | Design Issue  | Comments  | References* |
|---|---|---|-------------|
| <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will there be any work beyond the existing right of way limits?   |   |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will major real estate relocation acquisition be involved?  | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will relocation of residences be involved?  | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will relocation of businesses be involved?  | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does access control need to be revised?   |   |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any obvious encroachments?  | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can the number of involved property owners be determined? If so, how many?  | Approximately six property owners.                                  |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will temporary parcels be needed (e.g., for drive work)?  | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will right of way need to be acquired for an agency other than ODOT (e.g., county, city)? Specify.  | County  |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will additional right of way be needed for utility relocations?   | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will right of way need to be acquired for storm sewer outfalls?   | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Do property owners need to be contacted for the locations of underground items such as leach fields, septic systems or field tiles that might be effected by the proposed take? | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any mineral rights considerations?  |   |             |
| <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any specific property owner concerns?   | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will right of way acquisition from a railroad/railway be involved?  |   |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can work agreements be used?  |   |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does the centerline of construction match the centerline of right of way?   |   |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will right of way be acquired for wetland or stream mitigation?   | Possible, dependent upon the selection of the Preferred Alternative |             |
| <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other right of way or survey issues? Specify.   |   |             |

**UTILITY ISSUES:**

Indicate if the following utility issues are present or should be considered during project development. Provide additional comments as needed.

|   | Design Issue  | Comments   | References* |
|---|---|--|-------------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Do existing utilities need to be relocated?   | Possible, dependent upon the selection of the Preferred Alternative  |             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Can utility conflicts be minimized (e.g., by careful placement of storm sewer and underdrains)? |  |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Would the project benefit from subsurface utility engineering (SUE)?                            | Possible, dependent upon the selection of the Preferred Alternative  |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there existing utilities on an existing structure that need to be relocated?                |  |             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any specific utility requirements or concerns? Specify.                               | Vertical clearance between potential proposed roadway / structure and existing overhead electric transmission lines. |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there facilities that require a large lead time to relocate?                                | Possible, dependent upon the selection of the Preferred Alternative  |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is additional right of way needed to accommodate utility relocations?                           | Possible, dependent upon the selection of the Preferred Alternative  |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there water or sanitary lines that will be relocated as part of the ODOT contract?          |  |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other utility issues? Specify   |  |             |

**PERMIT ISSUES:**

Indicate if the following permit issues are present or should be considered during project development. Provide additional comments as needed.

|   | Design Issue  | Comments                     | References* |
|---|---|------------------------------|-------------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will an individual Corps of Engineers/Environmental Protection Agency 404/401 permit be required?   |                              |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Does it appear that the project can be constructed under a nationwide 404/401 permit? If so, which permit and what specific requirements apply? |                              |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will a Coast Guard Permit be Required   |                              |             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is review by a local public agency or project sponsor required? Specify.  | Lake County Engineers Office |             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is Airway/Highway clearance analysis required?  |                              |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is Federal Emergency Management Agency (FEMA) approval required?  |                              |             |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is railroad/railway coordination required?  |                              |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is State Historic Preservation Office (SHPO) coordination for work involving historic bridges or historic properties required?                  |                              |             |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is coordination with ODNR for work involving State Scenic Rivers, State Wildlife Areas or State Recreational Areas required?                    |                              |             |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Is coordination with any other agency required? (See Location and Design Manual, Figures 1402-2 through Figure 1402-7.)                         |                              |             |

**MISCELLANEOUS ISSUES:**

Indicate if the following issues are present or should be considered during project development. Provide additional comments as needed

|  | Design Issue | Comments | References* |
|--|--------------|----------|-------------|
|--|--------------|----------|-------------|



|   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will a value engineering study be required due to project cost (total cost greater than \$20 million) or project complexity? |   |  |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Will warranties be used?   |   |  |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there aesthetic concerns? Specify.   | Possible, dependent upon the selection of the Preferred Alternative |  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any concerns relating to noise walls?  |   |  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there areas available within the existing right of way for portable plans or waste and borrow sites?                     |   |  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there specific concerns related to pedestrian access?  |   |  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Any concerns related to landscaping?   |   |  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any concerns related to existing or proposed lighting (e.g., light trespass, river navigation, airway clearance)?  |   |  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Are there any other concerns? Specify.   |   |  |

#### RED FLAG MAPPING:

Is a map showing locations of red flag areas attached?

☒ Yes ☐ No (A map showing locations of red flag areas is mandatory for Major Projects.)

#### GEOTECHNICAL DELIVERABLES:

Include copies of plan views, geologic cross-sections, existing boring logs, and soil and rock testing data. This information should be augmented with data from ODOT's archived files of previous projects in the area. Additional information on soil survey data, glacial deposits, bedrock topography, bedrock structure, and aquifer mapping, etc. should be compiled as a GIS workspace. Both digital ortho-quarter quadrangles and U.S.G.S. quadrangles should be available for base mapping. Copies of the reference maps and ArcView files should be provided.

#### SCOPE, SCHEDULE AND BUDGET CONSIDERATIONS:

Based on the responses to the red flag questions, do any of the following need to be modified?

|   | Design Issue                            | Comments  | References*  |
|---|---|---|--------------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input checked="" type="checkbox"/> Not Applicable | Conceptual (draft) scope?               |   |              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Work limits?                            | Possible, dependent upon the selection of the Preferred Alternative | LDV3: 1307.7 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable            | Probable environmental document type?   |   |              |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Major / minor / minimal classification? | Minor   | LDV3: 1400   |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Schedule?                               | Possible, dependent upon the selection of the Preferred Alternative |              |
| <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Possible<br><input type="checkbox"/> Not Applicable | Budget?                                 | Possible, dependent upon the selection of the Preferred Alternative |              |

#### Abbreviations:

AUM = Manual for Abandoned Underground Mine Inventory and Risk Assessment  
 BDM = Bridge Design Manual  
 LDV1 = Location and Design Manual, Volume 1  
 LDV2 = Location and Design Manual, Volume 2  
 LDV3 = Location and Design Manual, Volume 3  
 SSI = Specifications for Subsurface Investigations  
 TEM = Traffic Engineering Manual  
 EPM = Environmental Process Manual



# Vrooman Road Red Flag Mapping

Former Wickliffe/Lane  
Auto Sales

South Ridge  
Cemetery

Northeast Auto  
Service

Former Service  
Station

## Historic Architecture Sites Requiring Evaluation

- Wetlands
- Streams
- Lakes
- HazMat Parcels
- Lake Metroparks Property
- Historic Property

0 250 500 750 Feet