



## **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	12
Project Name (County, Route, Section):	LAK-Vrooman Road
City, Township or Village Name(s):	Leroy and Perry Townships
PID	5669
Prepared By:	Michael Baker Jr., Inc.
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	<input type="text" value="25 mph"/>
<input checked="" type="checkbox"/>	Design Speed	<input type="text" value="45 mph"/>
<input checked="" type="checkbox"/>	Traffic Data:	
	Opening Year ADT:	<input type="text" value="15300 (projected)"/>
	Design Year ADT:	<input type="text" value="17380 (projected)"/>
	Design Hourly Volume:	<input type="text" value="1740 (projected)"/>
	Directional Distribution:	<input type="text" value="55%"/>
	Trucks (24 Hr. B&C):	<input type="text" value="869 (projected)"/>

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

Turning Movement Traffic Counts

Functional Classification:

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

Locale:

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

National Highway System (NHS):

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

(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	<input type="text" value="Concord Airport (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="text"/>
<input type="checkbox"/>	Existing Right-of-Way plans:	<input type="text"/>
<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	

- Traffic studies, Highway Safety Program (HSP) studies
- Previous Maintenance of Traffic concerns on roadway
- Accident history / Accident reports
- Past Project Construction Diaries
- Permitted Lane Closure Map
- Property owner contacts
- National Register of Historic Places
- Other:

**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:

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

Review of information from ODNR:

From the Division of Geological Survey

- Boring logs on file
- Measured geological sections
- Bedrock Geological Maps
- Bedrock Topography Maps
- Bedrock Structure Maps
- Geologic Map of Ohio
- Quaternary Geology of Ohio
- Known and Probable Carst in Ohio
- Bulletins
- Information Circulars
- Report of Investigations
- Locations and Information on underground mines
- Location and characteristics of karst features
- Landslide Maps
- Other:

From the Division of Mineral Resource Management

- Applications and permits files for surface mines ( coal & industrial mineral)
- Active, reclaimed or abandoned surface mines
- Abandoned Mine Land (AML) sites
- Emergency Projects
- Other:

From the Division of Soil & Water

- Water well Logs
- Soil Survey

- Ohio Wetland Inventory Maps
- National Wetland Inventory Maps
- Presence of lake bed sediments, organic soils or peat deposits
- Other

**Other Sources:**

- Aerial photography
- Satellite imagery
- USGS quadrangles
- USGS publications and files
- City and County Engineers
- Academia with engineering or geology programs
- USGS open File Map Series #78-1057 "Landslide and Related Features"
- Other

**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:

**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 style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Geometrics	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Hydraulics	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Pavements	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Geotechnical	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	General Roadway	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Structures	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Traffic Control	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Signals	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Maintenance of Traffic	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Right-of-Way / Real Estate	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Utilities	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Survey	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Environmental	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Highway Management	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	CO Program Manager	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	County Manager(s)**	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Production Administrator**	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" type="text"/>
<input type="checkbox"/>	Planning Administrator**	<input style="width: 300px;" type="text"/>	Phone: <input style="width: 150px;" 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 style="width: 200px;" type="text"/>	Phone: <input style="width: 100px;" 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 style="width: 200px;" type="text"/>	Phone: <input style="width: 100px;" type="text"/>

<input type="checkbox"/>	Other Local Public Agency		Phone:	
<input type="checkbox"/>	Federal Emergency Management Agency (FEMA)		Phone:	
<input type="checkbox"/>	US Army Corps of Engineers (USACE)		Phone:	
<input type="checkbox"/>	U.S. Coast Guard		Phone:	
<input type="checkbox"/>	Ohio Department of Natural Resources (ODNR)		Phone:	
<input type="checkbox"/>	Ohio Environmental Protection Agency (OEPA)		Phone:	
<input type="checkbox"/>	Railroad Railway Company		Phone:	
<input type="checkbox"/>	State Historical Preservation Office (SHPO)		Phone:	
<input type="checkbox"/>	Metropolitan Planning Organization (MPO)		Phone:	
<input type="checkbox"/>	Utilities Company list:			
<input type="checkbox"/>	Electric		Phone:	
<input type="checkbox"/>	Telephone		Phone:	
<input type="checkbox"/>	Water		Phone:	
<input type="checkbox"/>	Gas		Phone:	
<input type="checkbox"/>	Sanitary		Phone:	
<input type="checkbox"/>	Cable		Phone:	
<input type="checkbox"/>	Other		Phone:	
<input type="checkbox"/>	Other		Phone:	
<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 <input type="checkbox"/> Possible	Parkland, nature preserves and wildlife areas (Name)	The proposed project area 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 <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 <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 type="checkbox"/> Possible <input checked="" type="checkbox"/> No	Public Facilities (Name)	None Identified	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> No	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"/> Possible <input type="checkbox"/> No	Existing cat tails (Location)	Located within the wetlands identified below	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Possible <input type="checkbox"/> No	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"/> Possible <input type="checkbox"/> No	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"/> Possible <input type="checkbox"/> No	Historic Building(s) (Location)	During the field reconnaissance, two historic/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 type="checkbox"/> Possible <input checked="" type="checkbox"/> No	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"/> Possible <input type="checkbox"/> No	Farmland (Location)	A field reconnaissance determined that farmland is located between River Road and SR-84	
<input type="checkbox"/> Yes <input type="checkbox"/> Possible <input checked="" type="checkbox"/> No	Landfill(s) (Location)	None Identified	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> No	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"/> Possible <input type="checkbox"/> No	ODOT MS4 Phase 2 Regulated Areas	Located within a MS4 Phase 2 Regulated Area	
<input type="checkbox"/> Yes <input type="checkbox"/> Possible <input type="checkbox"/> No	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 type="checkbox"/> Possible <input checked="" type="checkbox"/> No	Sensitive environmental justice areas	None Identified	

<input checked="" type="checkbox"/> Yes <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 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 type="checkbox"/> Possible	Sole Source Aquifers (Location)	No sole source aquifers were identified within the project area.	
<input type="checkbox"/> Yes <input type="checkbox"/> Possible	Wellhead Protection Areas (Specify)		
<input checked="" type="checkbox"/> Yes <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 checked="" type="checkbox"/> Yes <input 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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Graded Shoulder Width	Not anticipated at this time.	LDV1: 301.2.3
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Structural Capacity	Not anticipated at this time.	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Grades	Not anticipated at this time.	LDV1: 203.2
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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"/> Possible <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"/> Possible <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 type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are changes to access control required?		LDV1: 800, 801, 802
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are new mailbox turnouts required?		LDV1: 803.1
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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, far to poor condition	LDV2: 1003 - 1006
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Should the existing culverts be replaced?		LDV2: 1105
<input type="checkbox"/> Yes <input type="checkbox"/> No <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is the project in a FEMA flood zone?		LDV2: 1005
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will channel relocation be required?		LDV2: 1102.2.4
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will Municipal Separate Storm Sewer System (MS4) requirements apply?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will post construction flow requirements be required?	Possible, dependant upon thte selection of the preferred alternative	LDV2: 1115.1 LDV2: 1115.2
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Are underdrain outlets functioning properly?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is there evidence of any landslides?		SSI: 2.1, 2.2
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is the existing pavement concrete or asphalt?	Asphalt	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are dynaflect tests available to assess existing pavement condition?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are joint repairs needed?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Not Applicable	Are pavement repairs needed?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Are new curb ramps needed?		LDV1: 306.3
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is there any work on side roads, service roads or ramps?	Depended on the selection of the preferred alternative	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Has the site received repeated resurfacings in recent years?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is a fatigue analysis required?		BDM: 402.2, 402.3
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Can the deck joint be eliminated? If not, specify what modifications are necessary.		BDM: 205.6, 205.9, 406
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are new approach slabs needed?		BDM: 209.5
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Can hinges be removed to make the members continuous?		BDM: 402.6
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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, 209.6
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will there be more than 25' of channel relocation?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is there any railroad involvement?		BDM: 209.6
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Will resurfacing affect signal height?		TEM: 450-7
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Does the controller need to be upgraded?		TEM: 460
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Do proprietary materials need to be specified?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are any TODS signs present?		TEM: 207-3
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Can traffic be detoured?		TEM: 602-6
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are there any load limits on the proposed detour route?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will temporary pavement be required?		TEM: 640-2, 640-11
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Does pedestrian traffic need to be maintained?		TEM: 64-25
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will a cross over be utilized?		TEM: 640-11
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Can trucks make turning movements during construction?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Have innovative contracting ideas been considered? Specify.		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Are there specific requirements for maintaining railroad traffic?		TEM: 606-19

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Does it appear that the maintenance of traffic will require additional right of way?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will there be any work beyond the existing right of way limits?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will relocation of businesses be involved?	Possible, dependent upon the selection of the Preferred Alternative	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Does access control need to be revised?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are there any obvious encroachments?	Possible, dependent upon the selection of the Preferred Alternative	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 lake?	Possible, dependent upon the selection of the Preferred Alternative	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are there any mineral rights considerations?		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will right of way acquisition from a railroad/railway be involved?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Can work agreements be used?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Does the centerline of construction match the centerline of right of way?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will a Coast Guard Permit be Required		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is Airway/Highway clearance analysis required?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is Federal Emergency Management Agency (FEMA) approval required?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Is railroad/railway coordination required?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <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*
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<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Will warranties be used?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are there any concerns relating to noise walls?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Are there specific concerns related to pedestrian access?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Any concerns related to landscaping?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Conceptual (draft) scope?		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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 <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Probable environmental document type?		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Major / minor / minimal classification?	Minor	LDV3: 1400
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <input type="checkbox"/> Not Applicable	Schedule?	Possible, dependent upon the selection of the Preferred Alternative	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible <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

