ODOT

DESIGN BUILD

SCOPE OF SERVICES

PID: 110245 State Project Number: 450046

County: Guernsey Route: 209 Section: 8.56

Table of Contents

1 PROJECT IDENTIFICATION

PID: 110245 State Project Number: 450046
County: Guernsey Route: 209 Section: 8.56
Local Route Name: Southgate Parkway
Highway Functional Classification & Federal Aid System: Urban Principal Arterial
Structure Identification: Bridge Number: GUE SR 209 0856
Over: Wills Creek and Columbus & Ohio River Rail Road (CUOH) (Operated by G&W)
Structure File Number: 3004058 (Proposed SFN 3004059)

1.1 Design Designation

Location:	GUE-209-08.56
Current ADT:	9100
Design Year ADT:	9600
Design Hourly Volume:	950
Directional Distribution:	0.54
Trucks:	1730
Design Speed:	35
Legal Speed:	35
Design Functional Classification:	03 Principal Arterial
NHS Project:	Yes ☐ No ☒

Design designation information located in Appendix A (Design Designation).

1.2 Existing plans

Existing plans are available for review at the District Office and can be found on the following ftp site (see Appendix B Existing Plans):

ftp://ftp.dot.state.oh.us/pub/districts/D05/Projects/GUE/110245/Appendices/

These are **NOT** as-built plans. The Design-Build Team (DBT) is advised to verify the preceding referenced plans to determine if they accurately depict existing field conditions.

1.3 Railroad Coordination

The rail line involved is referred to as the Cambridge Line, owned by CSX Transportation, and operated under lease by The Columbus & Ohio River Rail Road (CUOH), a subsidiary of the Genesee & Wyoming rail system.

Traffic Information: Please refer to https://gradecrossings.puco.ohio.gov/search for most recent traffic data for the subject location.

Location information: Milepost: 51.40, AARDOT #151687L.

Coordinate all needed railroad design reviews. Coordinate with the applicable railroad(s) to determine plan package submissions required for railroad review including defining limits of railroad regions of concern. Plan package review submissions shall be developed in the agreed defined limits of railroad regions of concern as applicable to

the impacted railroad. Design packages shall be submitted at interim, final, and construction unless otherwise agreed to with the applicable railroad(s). Submissions shall include all work within the applicable railroad region of concern (as agreed with the railroad and DBT) and shall not be segmented partial design pieces of buildable units, but shall be the overall design phased submission of the buildable units. Buildable units for railroad review submissions shall not be defined by types of work but shall be determined by the limits of railroad regions of concern. Construction submissions for track protection, construction erection procedures, and other construction related submissions which require railroad approval and review shall be submitted with the construction design submission to the railroad. These submissions shall be concurrent to the Department.
All planned design and construction within the Railroad Right-of-Way (RR ROW) is required to follow Genesee & Wyoming's 'Public Projects Manual', which is located in Appendix C.

To expedite responses from the railroad or the railroad's General Engineering Consultant, the subject line of all email communication shall be structured as follows:

"ODOT GUE-209-08.56 (PID 110245); CUOH Cambridge Line MP 51.40 (AARDOT #151687L – (Subject of email)"

If the DBT determines that a temporary railroad crossing is required, the DBT shall be responsible to design, obtain the agreement with the railroad, and schedule its subcontracted construction and removal within the project schedule. The DBT is hereby advised that a temporary railroad crossing is not covered by the railroad construction agreement attached to this contract (Appendix C). A separate agreement is required. The process to obtain the agreement shall be as outlined above and subject to the review times listed in section 18. The design and coordination for the crossing is considered incidental to the Project.

Temporary railroad crossings shall be constructed by one of the contractors on the pre-approved list provided by the railroad in Appendix C. The Department will pay for an appropriately installed, and subsequently removed if required, single temporary railroad crossing. The fixed amount shown in the proposal is included (as any other bid items) in the total bid amount. This fixed amount is the Department's estimate of the total cost for a single temporary railroad crossing installation (and removal if required) necessary to be performed for the project. If the single temporary railroad crossing installation work exceeds this amount, the temporary railroad crossing allowance will be increased to compensate the DBT for the full invoiced value for a correctly installed and removed single temporary railroad crossing. The invoiced value shall be calculated per CMS 109.05.C.9.e except no markup will be allowed. C&MS Table 104.02-2 does not apply to reductions in this contract item. The payment due will be deducted from the CONSTRUCTION RAILROAD CROSSING ALLOWANCE item provided in the proposal. Compensation for temporary railroad crossing installation/removal work will not be provided until the temporary railroad crossing selected contractor from the pre-approved list submits written invoices to the DBT and an initial inspection is performed by the railroad indicating that the temporary railroad crossing work meets the installation and/or removal requirements.

1.4 Airway/Highway Clearance

The DBT shall complete the Airway/Highway Clearance Analysis (Location and Design Manual Section 1404.1). The DBT is responsible for obtaining all necessary approvals from the District Capital Program Administrator and/or the Federal Aviation Administration. The DBT shall account for the required time for the approvals in their schedule and shall not be able to start work until the approvals are received by the ODOT Project Manager.

The following airports are within the vicinity of the Project: List nearby airports, helipads, and distance:

- Cambridge Municipal Airport (39.975042, -81.577594), Elevation = 800 feet, 15,000 feet from project site.
- Southeast Regional Medical Center

2 PRE-BID MEETING

There will be no pre-bid meeting for this project.

3 PRE-BID PROCESS

All questions prior to the letting date shall be directed to:

Web submittal form:
http://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/Pages/PBQs.aspx

4 CONTRACTOR PRE-QUALIFICATION

It is required that the bidder be a Contractor prequalified per C&MS 102.01, who has engaged the services of an ODOT pre-qualified Consultant to constitute the DBT.

The DBT shall perform all the design and construction work required in the Contract Documents. If the Contractor, Designer, and/or the Sub-Consultant(s) submitted do not meet all the required qualifications, the Office of Contracts may reject the bid.

5 DESIGNER

The DBT must name the Designer and all Sub-Consultant(s) in the electronic form on the following web-page prior to Bid submittal:

http://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/Pages/Scope.aspx

The DBT must list prequalification categories for Designer and sub-consultants to show that the prequalification requirements listed below are satisfied. All Consultant names and addresses must be the same as that on file with the Department as found on the following listing:

http://www.dot.state.oh.us/Divisions/Engineering/Consultant/Consultant/prequal-engineering.pdf

The following work types must be performed by members of the Consultant team (combination of Consultant and Sub-consultant(s)):

Roadway:

- Complex Roadway Design

Bridge Design:
- Level 2 Bridge Design

Soils/Geotechnical Services:
- Geotechnical Engineering Services
- Geotechnical Testing Laboratory
- Geotechnical Field Exploration Services
- Geotechnical Drilling Inspection Services

Highway Lighting Design:
- Limited Lighting Design

Environmental Services
- Waterway Permits

Cost Accounting System:
- Unlimited

5.1 Restrictions on Participation in Design-Build Contracts

Any Consultant who provided services to the Department that have been directly utilized in this design-build proposal or Scope of Services document will NOT be eligible to participate in this design-build contract for this project, either as a prime consultant or as a sub-consultant.

The following Consultants have been identified as being precluded from participation:
- HNTB
- TRC Companies
- Clune Consulting Services, LLC
- Buckley Group, LLC

6 SCOPE OF WORK

Work Length shall be determined by the DBT.

Estimated Project Limits: From 8.47 to 8.82.
Estimated Project Length: 0.35 miles.

The DBT shall provide for the engineering services, design, and preparation of detail construction plans for the construction of the proposed project.

The DBT shall provide for the design, furnishing of materials, construction and completion in every detail of all the work described in the Contract Documents in order to fulfill the intent of the Contract.

Project Description: Work will consist of existing bridge removal (includes superstructure, substructure, and foundation) with a new permanent replacement bridge. The work shall include all necessary roadway, MOT, and all other work necessary to fulfill the requirements of this contract. Resurfacing of SR 209 between the US 22/40 intersection and Jefferson Avenue intersection.

Completion date: 7-1-2024

Warranties: None

7 FIELD OFFICE

Field office Type __C__ , as required by Construction and Material Specification Item 619, shall be available and completely functional no later than 1 week prior to the start of construction work. The ODOT field office shall be located within 1.0 mile and 5 minutes of both the project site and the contractor's field office.

8 GENERAL PROVISIONS FOR THE WORK

8.1 Governing Regulations

All services, including but not limited to survey, design, MOT, and construction work, performed by the DBT and all subcontractors (including sub-consultants), shall be in compliance with all applicable ODOT Manuals and Guidelines.

The DBT shall acquire and utilize the necessary ODOT and other manuals that apply to the design and construction work required to complete this project.

The current edition, including updates released one month prior to the project sale date, of the following ODOT and other agency Manuals and Guidelines shall be met or exceeded in the performance of the design and construction work required to complete this project:

Bridge Design Manual
Location and Design Manuals
Volume One - Roadway Design
Volume Two - Drainage Design
Volume Three - Plan Preparation
Pavement Design & Rehabilitation Manual
Specifications for Geotechnical Explorations
American Welding Society, Bridge Welding Code D1.5
Connection Details for Prefabricated Bridge Elements and Systems: FHWA-IF-09-010
Survey and Mapping Specifications
Construction and Material Specifications
Proposal Notes for Construction and Material Specifications
Supplemental Specifications for Construction and Material Specifications
Item Master
Manual for Abandoned Underground Mines - Inventory and Risk Assessment
Pavement Design and Rehabilitation Manual
State Highway Access Management Manual Standard Construction Drawings
Office of Structural Engineering, Plan Insert Sheets
Traffic Engineering Manual
Ohio Manual of Uniform Traffic Control Devices
Real Estate Administration Policies and Procedures Manual
Wireless Communication Tower Manual
Environmental Services Handbooks and Guidelines
Waterway Permit Manual
Design Mapping Specifications
CADD Engineering Standards Manual for OHDOT (CONNECT)

Guidelines for Electronic Design Deliverables
Geotechnical Bulletins
Project Development Process Manual (Appendix B)
AREMA requirements

8.2 CADD files supplied by Consultant

The DBT shall comply with ODOT's CADD Standards, and supply files in accordance with the CADD Engineering Standards Manual for OHDOT CONNECT. All data shall be provided to the Department according to the provisions as detailed under the appropriate CADD links accessed from the Department's Division of Engineering's website. This includes, but is not limited to, the level assignments, symbols, lines and line styles that are to be used, line weights, cells, placement of text and file naming conventions. The websites can be accessed at the following URL addresses:

http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/Pages/default.aspx

http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Pages/default.aspx

http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Standards/Pages/Files.aspx

ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/Manuals/Guidelines_for_Electronic_Design_Deliverables.pdf

The following can be accessed from the above URL addresses:

- OHDOT CONNECT Standard files by selecting the "downloads" link
- ODOT's Location and Design, Volume 3 by selecting the "L&D Manual Vol. 3" link
- OHDOT CONNECT CADD Standards for MicroStation and OpenRoads Designer CONNECT Edition

The Department will accept CADD files on CD ROM or DVD electronic media.

1. The DBT shall submit all CADD information produced in the process of plan development. All CADD information shall be submitted in the current version of MicroStation (*.dgn) format as indicated in the CADD Engineering Standards Manual for OHDOT CONNECT. This requirement ensures that the Department receives an end product that is directly usable on ODOT's CADD systems without additional work. The responsibility to provide the Department with correct and complete CADD data rests with the DBT.

2. The DBT shall submit all information produced in the process of plan development according to L&D Volume 3, Section 1500.

A separate file name should be used for each horizontal or vertical alignment. The CADD Engineering Standards Manual provides specific requirements for the content of the required ASCII reports.

These requirements and procedures may be updated from time to time with notification in the Design Reference Resource Center (DRRC) website which is located at the following URL, http://www.dot.state.oh.us/drrc/.

Organizations exchanging ODOT CADD data are responsible for ensuring they are using the current version of these requirements, CADD reference manuals, ODOT cell files and ODOT seed files.

8.3 Pre-Award Conference

Within 7 days after bid opening, the apparent successful DBT shall attend a mandatory pre-award conference. This confidential meeting will be held with the Office of Estimating in the Division of Construction Management to discuss the DBT's bid of the Lump Sum items. The DBT shall be prepared to discuss general items of Work included within the Lump Sum bid items, approximate amounts of Work included within the Bid Item by the DBT, and general design approach and design concepts for the Work. Other Department representatives familiar with the Project may attend.

While not required, the DBT may prepare general engineering information to be presented to the Office of Estimating to help explain design concepts and quantities. This information will be used only by the Office of Estimating to assist in understanding the DBT's bid for award recommendation purposes.

No shared concepts, shared quantity information, discussions, comments made or shared by either party will be considered binding, a revision to the contract, or acceptance or validation of any design concept or assumed quantities of Work.

8.4 Partnering Agreement

The DBT will enter into a Facilitated cooperative partnership agreement with the Department on this project, as per Proposal Note 111. The objective of this agreement is the timely completion of the work and a quality product that will be a source of pride to both the Department and the DBT. Partnering will not affect the terms and conditions of the contract. It is intended to establish an environment of cooperation between the parties. The cost of the partnering workshop(s) will be per the Partnering Note.

To further promote partnering, this project will utilize the Department's Dispute Resolution Advisor Process, as per Proposal Note 109.

8.5 Communication

All communication during design and construction shall be with the District Project Manager and the District Project Engineer.

District's Project Manager's Name: Curtis Zigan
Phone number: 740-323-5109
E-mail: Curtis.Zigan@dot.ohio.gov

The District Project Engineer shall be named at the Pre-Design Meeting.

At the Pre-Design Meeting, the DBT shall name a Project Manager who will act as a liaison between the DBT and the Department.

8.6 Permits

The DBT shall ensure that the Project is constructed and maintained in accordance with all requirements, regulations, and applicable permits required for the Project. This includes the permits described herein and any additional permits not specifically identified in the Contract Documents.

Unless noted otherwise in the Contract Documents, the DBT shall obtain all necessary permits and pay all charges, fees and taxes associated with these permits (e.g., city street opening permits, street crossing/equipment moving permits, water department fees, sewer permits, rail permits and fees, etc.). The DBT shall be responsible for any fines levied by regulatory agencies as a result of their construction activities or non-compliance with any permit special or general conditions.

The DBT shall obtain a permit from the State or local government having jurisdiction, to perform any non-construction work within the existing Right of Way and/or limited access.

8.7 Entry On Private Property

The DBT, acting as The Department's agent, may enter upon any lands within the State for the purpose of inspecting, surveying, leveling, digging, drilling, or doing any work deemed necessary in the execution of any survey authorized by the Director of Transportation in accordance with Section 5517.01 of the Ohio Revised Code and Section 501.1 of ODOT's Survey and Mapping Specifications. Prior to performing said survey, the DBT shall send notification letters indicating the date and duration of entry to the affected property owners no less than forty-eight hours nor more than 30 days prior to the date of entry for said survey in accordance with 501.1 of ODOT's Survey and Mapping Specifications. The DBT shall forward copies of all notification letters distributed to ODOT's Project Manager.

Any subsequent claims for compensation due to damages incurred while said survey was being performed shall be negotiated between the DBT and the affected property owners with final approval from ODOT's Project Manager. Crop and property damage minimization and reimbursement information, together with the crop damage reimbursement formula and Special Waiver of Damage form, will be provided by the ODOT's Project Manager to the DBT.

Any subsequent entries onto private property for the purpose of obtaining additional survey or soil information prior to the submission of the bid will be made in accordance with the procedures outlined in this section.

See the Executed Rail Agreement located in Appendix C for access to railroad owned property.

9 HAZARDOUS MATERIALS

9.1 Ohio EPA Notification of Demolition and Renovation

The GUE-209-8.56 bridge structure was inspected for the presence of regulated asbestos containing materials (RACM) by a Certified Asbestos Hazard Evaluation Specialist on April 23, 2018. ~~No~~ Aasbestos containing materials were found on the

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bridge. A copy of the Asbestos Survey Report as well as a partially completed Ohio EPA Notification of Demolition and Renovation form are included in Appendix E (Environmental Data). The DBT shall complete Sections V (Other Operator), VIII and XVIII of the Notification of Demolition form and submit the completed form and Asbestos Survey Report to Ohio-EPA Central District Office located at 50 W. Town Street, Suite 700, Columbus, OH 43215 with attention to Mr. Richard Fowler. The form must be submitted at least 10 working days prior to the initiation of any demolition activities. A copy of the completed Notification of Demolition and Renovation form shall be provided to Audrey Seals in the ODOT District 5 Construction Department.

9.2 Hazardous Materials Identification

Environmental studies did not result in the identification of any areas within the project area that may contain hazardous materials/waste. In the event that any suspect materials are encountered during construction the DBT shall comply with 203.04 of the current ODOT C&MS.

10 ENVIRONMENTAL

10.1 Environmental Commitments

The DBT shall be aware of and comply with the following NEPA environmental commitments:

Wills Creek is designated as a warm water habitat by Ohio EPA and has a drainage area greater than 20 square miles at the bridge structure. Therefore, in accordance with the Memorandum of Agreement between the Department, the Federal Highway Administration, Ohio Department of Natural Resources and US Fish and Wildlife Service, no in stream work is permitted between April 15 and June 30.

The underside of the bridge shall be inspected for the presence of bats prior to demolition. The District 5 Environmental Coordinator, Brian Tatman (740) 323-5191, must be notified of the results.

To minimize potential impacts to the federally endangered Indiana bat and Northern long-eared bat, an isolated stream and an isolated wetland, several areas within the existing SR209 right of way have been identified as avoidance areas. The DBT shall design and construct the project to avoid these areas. The avoidance areas, which are shown in the Avoidance Area map (Appendix E Environmental Data), can be marked in the field by contacting the District 5 Environmental Coordinator, Brian Tatman at (740) 323-5191.

Tree removal shall occur between September 30 and April 1 to minimize impacts to the federally endangered Indiana and northern long eared bats.

The DBT shall:

1. Monitor and document Work to demonstrate compliance with environmental commitments.
2. Provide documentation of environmental commitment compliance at request of the Department.

3. Follow Department and local regulations regarding dust control, adhering to dust control measures outlined in C&MS 616.
4. Adhere to local ordinances for vehicle idling and all current U.S. Environmental Protection Agency (EPA) air quality regulations.

If the DBT becomes aware of any failure to perform an environmental commitment, the DBT shall notify the Department immediately.

10.2 Waterway Permits

It is required that the bidder be aware of Section 404/401 Permits/Certifications for all projects impacting "waters of the US". The level of permit, that is Nationwide or General versus Individual 404 and 401, is determined by the exact amount of impact to "waters of the US", (i.e., acreage of fill activities in a stream or wetland or linear feet of work in a stream) and in some cases the waters impacted. All Individual 404 Permits require 401 Water Quality Certification. Nationwide and General Permits are activity specific permits used to authorize projects with minor impacts. Projects with more than minor impacts require individual review by the U.S. Army Corps of Engineers and the Ohio Environmental Protection Agency.

The DBT should be aware of the Nationwide Permits and conditions as issued for the State of Ohio as well as the ODOT Regional General Permit and conditions and shall design the project to meet the requirements of these general permits to avoid the requirements for Individual 404/401 Permits, if possible. The Nationwide Permits for the State of Ohio can be found at the various Corps of Engineers' web sites. The Huntington District's web site can be found at: http://www.lrh.usace.army.mil/. A copy of the ODOT Regional General Permit can be found at:

http://www.dot.state.oh.us/Divisions/Planning/Environment/Ecological_Resources_Permits/WATERWAY_PERMITS/Pages/default.aspx

The Department has determined that the project will meet the criteria for authorization under the ODOT Regional General Permit, however, the existing ODOT Regional General Permit (see Appendix E Environmental Data, Waterway Permit Conditions) expires on October 24, 2024; therefore, a new permit determination shall be necessary.

It is imperative that the DBT submit plans (i.e., plan & profile, cross-section and detail sheets for any bridges, culverts, or fill areas in waters) to the District and the Office of Environmental Services, for permit determination, no less than 90 days prior to any in stream work. The review of plans, any required coordination or the processing of permit applications must be accomplished by the Office of Environmental Services prior to the commencement of construction activities. The DBT shall complete applications for 404 Permits and 401 Water Quality Certification, if they are required. At no time shall the DBT coordinate waterway permit issues directly with the permitting agencies unless directed to do so by the Office of Environmental Services. All Waterway Permit requirements are found in the Waterway Permits Manual.

All Waterway Permit requirements are found in the Waterway Permits Manual.

10.3 National Pollutant Discharge Elimination System (NPDES) permit
The DBT shall be responsible for designing and implementing all temporary sediment and erosion controls in accordance with SS 832 and the Ohio NPDES general permit for storm water discharges from construction activities (NPDES Permit). For information about OEPA's NPDES Permit requirements, see: https://epa.ohio.gov/dsw/permits/GP_ConstructionSiteStormWater.

The DBT shall submit to the ODOT Project Manager the total number of acres of earth disturbance activities for both off project and on project work in a timely manner. This information will be used to develop the NOI if required. The NOI will be submitted to the OEPA within 10 Workdays after this information is received from the DBT. Approval from the OEPA takes 21 days and the ODOT Project Manager has 10 Workdays to file the NOI so these 31 days will be counted for in the project.

All temporary erosion control is the responsibility of the DBT. A SWPPP is required. Earth disturbing activity is not permitted prior to the OEPA permit approval. The SWPPP must be in place prior to the initiation of any earth disturbing activity. All temporary erosion control work and the SWPPP shall be per SS832. For information about OEPA's NPDES permit requirements see http://www.epa.state.oh.us/dsw/storm/index.html.

Items used to implement the DBT's Erosion Control requirements are paid from an encumbered amount included in the proposal as a non-bid reference number. The SS832 Appendix F specifies the unit prices for the erosion control items and ODOT shall make payments for installed erosion control items. Payments for erosion control items that exceed the encumbered amount will be made by an Extra Work Change Order using the specified unit prices. The specified unit prices are fixed for the contract and may not be negotiated or adjusted for inflation or claimed changed condition.

The preparation of the SWPPP, Storm Water Pollution Prevention Inspection Software services, along with all requirements of SS832 for maintaining, inspecting, modifying and updating the SWPPP are considered incidental to the Project.

10.4 Removal of Temporary Erosion Control Items
All temporary erosion control items shall be removed before the project is accepted. Removed materials shall become the property of the DBT and shall be disposed of in accordance with the appropriate C&MS specifications.

10.5 Stream Crossing Investigations (flood plain analysis)
The DBT shall perform a detailed flood plain analysis for the waterway crossing. The analysis shall be as per the Location & Design Manual and The Bridge Design Manual and as follows: The extent of the analysis shall be from a minimum of 500' downstream, to the greater of either one bridge opening/width upstream, or to the limits of the area inundated by the 100-year event. The results of the detailed flood plain study, supporting hydraulic calculations, and recommendations shall be submitted to the District for review and comment prior to any construction work.

The project area is located in a special flood hazard area as defined by FEMA, therefore, following approval of the floodplain analysis by the District; the DBT shall submit a copy of the flood plain analysis along with an application for a Special Flood

Hazard Area Development Permit Application to the local floodplain administrator. The completed application and flood plain analysis shall be sent to the attention of Gerry Beckner. Director, Guernsey County Emergency Management Agency, 627 Wheeling Ave., STE 302, Cambridge, OH 43725. An approved Special Flood Hazard Area Development Permit must be obtained prior to any construction work within the special flood hazard area.

The ordinary high-water mark is 780.07 feet.

FEMA Hydrologic and hydraulic backup data for current or historical Flood Insurance Studies (FIS) and topographic mapping developed during the FIS process are provided for reference in Appendix E (Environmental Data).

10.6 Construction Noise

Activities and land use adjacent to this project may be affected by construction noise. In order to minimize any adverse construction noise impacts, the DBT shall not operate power-operated construction type devices between the hours of 12:00 AM and 5:00 AM from 6~~1~~/1/2023 through 10/1/2024. Prior to 6~~1~~/1/2023 and after 10/1/2024, the DBT shall not operate power-operated construction type devices between the hours of 10:00 PM and 7:00 AM, Monday through Saturday. Prior to 6~~1~~/1/2023 and after 10/1/2024, the DBT shall not operate power-operated construction type devices on Sunday. During any part of the restricted time periods described above, the DBT may request a waiver from the City to operate power-operated construction type devices. For consideration, requests will be submitted at least 60 days prior to the beginning of the requested work period. In addition, the DBT shall not operate any device in such a manner that the noise created substantially exceeds the noise customarily and necessarily attendant to the reasonable and efficient performance of such equipment.

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10.7 Threatened and Endangered Species

The project is located within the known habitat ranges of the federally listed Indiana Bat and Northern Long-Eared Bat. No trees shall be removed under this project from April 1 through September 30. All necessary tree removal shall occur from October 1 through March 31. This requirement is necessary to avoid and minimize impacts to these species as required by the Endangered Species Act. For the purposes of this note, a tree is defined as a live, dying, or dead woody plant, with a trunk three (3) inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet. The contractor shall remove only the trees necessary to construct the project.

10.8 Air Quality

The DBT shall follow Department and local regulations regarding dust control, adhering to dust control measures outlined in C&MS 616.

The DBT shall adhere to local City ordinances for vehicle idling and all current U.S. Environmental Protection Agency (EPA) air quality regulations.

10.9 Cultural Resources

A review of the State Historical Preservation Office Database on 1/29/2020 did not reveal any properties Eligible or Potentially Eligible for the National Register of

Historic Places, and the project is located just outside the City of Cambridge Historic District.

10.10 Section 4(f) and 6(f)
Based on a field review by ODOT a review of Guernsey County Auditor mapping, ODNR GIS mapping, a review of the Ohio State Historic Preservation Office GIS mapping, and review of the National Park Service Land and Water Conservation Fund 6f grants database, there are no Section 4(f) or 6(f) resources within the project area.

11 RIGHT OF WAY (ROW)

All necessary construction work for the project shall be performed within the existing right of way and temporary right of way already acquired for the project, as shown in Appendix F (Right of Way Plans and Data).

Existing right of way lines shall be located by the DBT based on requirements specified in Chapter 4733-37 of the Ohio Revised Administrative Code (Board Rules) governed by regulations outlined in Chapter 4733, Ohio Revised Code (Regulation Laws). It is the responsibility of the DBT to research existing right of way information from all available sources including but not limited to the Department records, County road records, Commissioners' Journals and records of other County offices to the extent necessary to provide an accurate basis for the establishment of the existing right of way.

The DBT shall stake and flag the existing right of way in the field prior to the start of construction and will maintain said stakes and flags throughout the duration of the project.

The DBT shall identify and show all right of way encroachments on the Interim Design Submission. ODOT's Project Manager will be responsible for clearing all encroachments on Federal-aid projects in accordance with standard encroachment removal.

12 UTILITIES

Utilities Special Provisions in addition to the Governing Regulations listed in Section 7.1 of this document and section 153.64 of the Ohio Revised Code.

12.1 Existing Utilities
The District Utility Coordinator, in concurrence with the registered Underground Utility Protection Services- Ohio Underground Protection Service (OUPS) and Oil and Gas Producers Underground Protection Service (OGPUPS) and other utility owners that are non-members of any utility protection services, has determined that the following utilities are located in the area of the project:

American Electric Power Co. (Distribution)
Attn: Paul Paxton
740-348-5322
ptpaxton@aep.com

Cambridge Utility Director
Attn: Lou Thornton

740-432-3601
Camb-ecs@cambridgeoh.org

Frontier Communications
Attn: Travis Art
(O) 740-432-6961
(C) 740-584-4003
travis.m.art@ftr.com

Columbia Gas of Ohio
Attn: Chris Dennis
740-509-1836
christopherdennis@nisource.com

Spectrum Cable TV
Attn: Zack Allen
614-255-2819
Zackary.Allen1@charter.com

12.2 Utility Coordination Responsibilities

As soon as it is feasible, the DBT shall stake the existing ROW in the field and shall perform clearing and grubbing within that ROW as required by the specifications and the proposal documents, in order to allow utility relocation and reduce potential delays. ROW stakes shall be maintained and updated as needed throughout the project duration.

The DBT shall be cognizant of the project's impact on utility facilities. In the event utility rearrangements are required, the project shall not be designed to preclude legal occupancy of the highway ROW by the rearranged utility facilities.

Note: Refer to Appendix G (Existing Utility Plans and Data).

The DBT shall coordinate all existing utilities with construction activities on this project. The DBT shall ensure that potential delays in coordination and relocation of the affected utilities are minimized. The DBT shall copy the ODOT Project Manager and the District Utility Coordinator on all correspondence or phone calls between the DBT and each utility. This shall include the submittal of plans to each utility.

A meeting at or near the Interim Design submission shall be held between the DBT, the District Utility Coordinator and the utility owners to determine if any significant utility relocations can be eliminated or mitigated.

Any betterment to the utility's facility and ineligible, or unnecessary, work shall not be a part of the project's expense but the utility company’s fiscal requirement. Determination of eligibility can be coordinated through the District Utility Coordinator. Payment for betterments or ineligible costs shall be made by the appropriated utility through the Department to the DBT.

The Department will be responsible for any utility relocation reimbursement costs, if applicable.

The costs of all utility coordination shall be bid as a Lump Sum Item.

12.3 Subsurface Utilities Location (SUL): _____ Yes __X___No

13 DESIGN AND CONSTRUCTION REQUIREMENTS: MAINTENANCE OF TRAFFIC (MOT)

Maintenance of Traffic (MOT) Special Provisions N/A

13.1 General

The DBT shall furnish temporary MOT devices compliant with the AASHTO Manual for Assessing Safety Hardware (MASH) or the National Cooperative Highway Research Program (NCHRP) 350 Hardware report, as applicable.

Notification of Construction and Road Closure or Restriction
The DBT shall advise the Project Engineer a minimum of thirty (30) days prior to the following: the start of construction activities, lane restrictions, lane closures, and/or road closures. The Project Engineer will forward this information to the following:

District Public Information Officer (PIO) by fax at (614) 887-4510 or email at D05.PIO@dot.state.oh.us

District Permit Section by fax at (614) 887-4525 or email at Brian.Bosch@dot.ohio.gov

Central Office Special Haul Permits Section by fax at (614) 728-4099 or email at Hauling.Permits@dot.state.oh.us

The PIO will, in turn, notify the public, the local emergency services, affected schools and businesses, and any other impacted local public agency of any of the above mentioned items, via media sources.

13.2 Detours

In addition to the official, signed detour route, a local route has been determined to be the secondary, unsigned detour route or "Designated Local Detour Route." The state detour and local detour routes are included in Appendix H Maintenance of Traffic (MOT DETOUR details). Detour signage and portable changeable message signs will be initially placed per the referenced details. The DBT will coordinate with ODOT and Cambridge City to obtain final field review approval of signage and PCMS layout. Any signage additions or subtractions necessary to obtain final approval from both agencies will be the responsibility of the DBT. Any PCMS additions or subtractions necessary to obtain final approval from both agencies will adjust the payable quantity for this item. During the time that traffic is detoured, the DBT shall maintain the designated local detour route in a condition which is reasonably smooth and free from holes, ruts, ridges, bumps, dust, and standing water (as compared to the initial condition). Once the detour is removed and traffic returned to its normal pattern, the designated local detour route shall be restored to a condition that is equivalent to that which existed prior to its use for this purpose. All such work shall be performed when and as directed by the Project Engineer.

The following estimated quantities are provided for use as directed by the Project Engineer to maintain the designated local detour route.

ITEM 410 – traffic compacted surface, type C	100 CU. YD.
ITEM 614 – asphalt concrete for maintaining traffic	100 CU. YD.

The following estimated quantities are provided for use as directed by the Project Engineer to subsequently restore the designated local detour route.

ITEM 254 – pavement planning	2,400 SQ. YD.
ITEM 407 – non-tracking tack coat (0.08 gal./s.y.)	192 GAL.
ITEM 410 – traffic compacted surface, type C	20 CU. YD.
ITEM 441 – asphalt concrete surface course type 1, (448), PG64-22	100 CU. YD.

13.3 MOT Restrictions

Minimum number of lanes in each direction to remain open during construction: __0__
Minimum lane width: ____0_____.

State Route 209 may be closed to through traffic to remove and replace the GUE-209-0857 structure (over Columbus & Ohio River Rail Road (CUOH) (Operated by G&W) and Wills Creek). A subsequent closure will be permitted to perform other work items. Each closure of SR 209 described in the PN 129 Window Contract Table (below) will be independent and consecutive calendar day closure durations. The DBT shall provide 30 days notice to the Department prior to closure of SR 209. The DBT shall install closure notice signs 7 days in advance to closure.

The City of Cambridge shall be notified one month (28 days) ahead of the SR 209 closure for traffic signal phasing/timing modifications at the following intersections: Southgate Parkway (SR 209) and Woodlawn Avenue, Wheeling Avenue (US 22/40) and 11th Street, Wheeling Avenue and 10th Street, Wheeling Avenue and 9th Street, Wheeling Avenue and Southgate Parkway. The DBT will be required to develop alternative signal timing plans and program alternative timing plans into the controllers at the intersections noted above in coordination with the City of Cambridge prior to the closure of SR 209. Alternative timing plans will be required for AM, mid-day, PM, and off-peak travel times. Traffic counts will be provided to the DBT by ODOT.

All critical work items shall be completed prior to opening SR 209 to unrestricted traffic. Unrestricted traffic is defined as all traffic lanes being available for use at their final design width with temporary markings and safety features installed, along with no restrictions within two (2) feet of the edge line shoulders. Intermediate asphalt coursing(s) will be complete and temporary asphalt for maintaining traffic may be utilized to open SR 209 to unrestricted traffic.

For work occurring outside of the complete closure duration(s), single lane closures with a minimum of one lane-two directions of traffic shall be maintained at all times by use of existing pavement and the completed pavement. While the single lane closures do not need to be consecutive days, it is the intent to minimize the impact to the travelling public. The level of utilization of maintenance of traffic devices shall

commensurate with the work in progress. The DBT shall provide 7 day notice to the Department prior to single lane closures. Any coordination and all costs associated with the use of law enforcement officers, which may become necessary with single lane closures, are the responsibility of the DBT. All work and traffic control devices shall be in accordance with C&MS 614 and other applicable portion of the specifications, as well as the Ohio Manual of Uniform Traffic Control Devices.

PN 129 Window Contract Table

Description of Critical Work	Calendar Days to Complete	Disincentive $ per Day	Work Window	
			Start	End
Closure #1: Full closure of SR 209 for the removal and replacement of the Gue-209-0857 Structure (existing SFN 3004058). Work items completed such that SR209 can be opened to unrestricted traffic as described above in Section 13.3 (MOT Restrictions).	250345	$8,000	1/16/20236/1/2023	12/1/20238/15/2024
Closure #2: Full closure of SR 209 for other work items	14	$8,000	After Closure #1	Project Completion Date

All roadway and bridge wearing courses shall be installed and any corrective work as per Proposal Note 555 and/or Proposal Note 420 performed prior to placement of permanent pavement markings.

13.4 Work Zone Speed Limit

The DBT shall evaluate if a work zone speed reduction is warranted based on the final MOT scheme. The evaluation requirements are listed in the Traffic and Engineering Manual.

13.5 Additional Description of Required Work and special provisions:
Outside of the work window period given for Closure #1, as given in section 3.3, no work shall be performed and all existing lanes shall be open to traffic during the following designated holidays or events:

Labor Day (September 5, 2022)
Christmas Day (December 25, 2023)
New Year's Day (January 1, 2023)
Martin Luther King Jr. Day (January 16, 2023)
Presidents' Day (February 20, 2023)
Memorial Day (May 29, 2023)
Labor Day (September 2, 2024)
New Year's Day (January 1, 2024)
Martin Luther King Jr. Day (January 15, 2024)
Presidents' Day (February 19, 2024)
Memorial Day (May 27, 2024)
Fourth of July (July 4, 2024)

The period of time that the lanes are to be open depends on the day of the week on which the holiday or event falls. The following schedule shall be used to determine this period:

Day of holiday/event	Time all lanes must be open to traffic
Sunday	12:00N Friday through 6:00 AM Monday
Monday	12:00N Friday through 6:00 AM Tuesday
Tuesday	12:00N Monday through 6:00 AM Wednesday
Wednesday	12:00N Tuesday through 6:00 AM Thursday
Thursday	12:00N Wednesday through 6:00 AM Friday
Friday	12:00N Thursday through 6:00 AM Monday
Saturday	12:00N Friday through 6:00 AM Monday

The following notes from the ODOT Traffic Engineering Manual will apply to this project:

A. 642-8 (Item 614, Maintaining Traffic (Notice of Closure Sign))
B. 642-9 (Item 614, Maintaining Traffic (Estimated Quantities))
C. 642-10 (Item 614, Maintaining Traffic (ROAD CLOSED Sign))
D. 642-22 (Item 614, Replacement Sign)
E. 642-23 (Item 614, Replacement Drum)
F. 642-34 (Extra Advance Warning Signs, Note B)

14 DESIGN AND CONSTRUCTION REQUIREMENTS: LOCATION & DESIGN

Location & Design Special Provisions in addition to the Governing Regulations listed in Section 7.1 of this document:

14.1 Survey

A. ODOT Survey Responsibilities

The Department survey crews have provided the following survey information, listed below:

1. Centerline monument recovery and benchmarks
2. Beginning and ending centerline points for the project
3. At least two benchmarks. Detailed information for project control can be found in Appendix F (Right of Way Plans and Data).
4. Critical points such as P.C., P.I., P.T., T.S., C.S.
5. Project Control (See Appendix F – Right of Way Plans and Data)

B. DBT Survey Responsibilities

The DBT shall perform all remaining surveying operations necessary to complete the design. All survey data shall be submitted using ODOT's standard mapping codes. Reduced point data, in comma delimited ASCII text format, will be provided for all surveyed points. This data will include point number, North (y) coordinate, East (x) coordinate, elevation and point ID.

Monumentation shall not be disturbed. If the DBT does disturb the monumentation, then it shall be replaced, in-kind, by a Registered Surveyor, with a current registration, recognized by the Ohio State Board of Registration for Professional Engineers and Surveyors. Costs associated for this item shall be borne by the DBT. Copies of all monumentation changes shall be forwarded to the District Real Estate Administrator.

All control points, provided by the Department, shall be included in the ASCII file supplied by the DBT to the Department. They shall retain the original point numbers and coordinate values as assigned by the Department. Survey data and files are included in Appendix I (Survey Plans and Data).

The DBT shall provide the following items prior to Final Acceptance of the Record-Drawing plans:

1. Copies of all field notes (written or electronic) which shall include the following information:
   a. Date
   b. Crew members
   c. Weather conditions, including temperature, barometric pressure, etc.
   d. Instrument(s) used (Serial Number)
   e. Raw observation field data
   f. Other notes as needed
2. Copies of all Deeds, Plats, Maps and other written evidence used to establish points related to the project including summaries of all parole evidence acquired as a part of the survey operation.
3. Listing of all found monumentation (Horizontal and Vertical).

4. Listing of all monumentation set as part of the project (Horizontal and Vertical) including reference ties for recovery.
5. All monumentation shall be located utilizing benchmarks referenced in Appendix F (Right of Way Plans & Data).
6. Short report indicating adjustment factors and methods, signed and certified by a Registered Surveyor (State of Ohio). The Registered Surveyor (State of Ohio) shall include in the report the datum used and all associated adjustments used.

14.2 Vertical and Horizontal Alignment
Horizontal alignment shall be as per Appendix J Design Detail Sheets (ALIGNMENT SCHEMATIC PLAN details). Minor adjustment of centerline of construction will be permitted to meet designer preference. Vertical alignment shall remain the same as existing with minor corrections, to meet the stated design speed. See Appendix J Design Detail Sheets (PAVEMENT TYPICAL SECTION details) for areas of anticipated minor corrections.

14.3 Pavement
Pavement Typical Sections shall be as per Appendix J Design Detail Sheets (Pavement Typical Section details).

14.4 Roadway
Lane width shall be 12'-0", paved shoulder shall be 3'-0" left / 4'-0" right on bridge and approach slabs. Roadway shoulder widths shall taper from bridge transverse section to match existing widths per L&D 1 shoulder taper rates (Shoulder composition shall match the buildup as the pavement. Graded widths shall taper from bridge transverse section to match existing). See Appendix J Design Detail Sheets (Pavement Typical Section details).

Upon completion of structure installation and all temporary traffic control has been removed, Mill and Fill all existing pavement (full width throughout the Estimated Project Limits given in section 6 or temporary marking limits, whichever is greater, on all lanes and paved shoulders). The Mill and Fill single surface course layer thickness will be 1.25".

Remove and replace sidewalk and curb within the limits given in Appendix J Design Detail Sheets (PAVEMENT TYPICAL SECTION details).

Entirely remove the full run of guardrail along the curb line to the southwest of the bridge. Remove and replace all other guardrail within Project Limits. Extend the removal/replacement to the ends of full runs. The new MGS guardrail shall be placed in accordance with Standard Drawing MGS-1.1.

14.5 Drainage Yes ☒ No ☐
The DBT shall design and install new drainage as per L&D Manual Volume 2 within the Project Limits for all impacted drainage installations. Reuse of existing drainage structures (including conduits), if impacted by construction, is not allowed. Impacted installations shall be removed, redesigned, and replaced. An "Impacted installation"

shall be considered any drainage structure, drainage run, or any ancillary drainage item which

- is needing modified, moved, or extended
- is damaged by the contractor's equipment
- is temporarily placed under construction work fill (Note: drainage structures only)

The DBT shall perform hydraulic checks along all existing drainage structures/features (ex. scupper, catch basin, conduit, curb inlets, curb, shoulder width, etc.) within the Project Limits as per L&D Manual Volume 2. Any existing drainage structures/features within the Project limits that fail this capacity check shall be removed, redesigned, and replaced/upgraded to meet the required flow capacities.

If required, the DBT shall design and install Post construction BMP's per L&D Manual Volume 2. The DBT may determine there is reserve capacity within any existing BMP systems found. Office of Hydraulic Engineering approval will be required to propose use of any found reserve capacity for this project.

14.6 Design Exceptions
There shall be no design exceptions allowed for the project.

14.7 Interchange Modification/Justifications Studies: N/A

14.8 Landscape: Yes ☐ No ☒

14.9 Roadway Fencing: Yes ☐ No ☒

14.10 Additional Description of Required Work and Special Provisions:

STAIRWAY: See Appendix J (STEPS details) for stairway rehabilitation.
ARCH: See Appendix B (Existing Plans) for details of the existing decorative arched truss sign located just to the north of Br. No. GUE-209-0857. The DBT will remove, transport, temporarily store, transport, and re-erect the entire aerial arch section to provide more overhead site access during the bridge removal and new construction phases. The arch will not be disassembled during this project. The arch support posts and anchors will remain in place throughout the project. The DBT will adhere to the following measures:

- Care will be exercised when removing, handling, transporting, storing, and re-erecting the arch section.
- The arch section will be temporarily stored at elevations above the 100-year design storm floodwaters. The arch will be blocked and shimmed so that it will always remain at least 2 feet above grade. The arch will be stored with the existing erected face facing the ground. Blocking grid points will be separated by no more than 10 feet.

- All attachment hardware will be replaced with new hardware during the re-erection process matching that originally specified.
- The DBT will be responsible for any adjustments and re-tightening of the post jacking/leveling nuts that could be necessary to perfectly align the arch-to-post holes for final bolt insertion and torqueing.
- Any material coating damages and replaced hardware will be repaired as per C&MS 514.22, identically matching the existing color.
- The arch will be removed prior to the existing bridge demolition and re-erected after the proposed bridge parapets are cast but prior to the initial opening to traffic.

The DBT is responsible for all time, labor, equipment, materials, temporary storage grounds in order to facilitate the described work.

15 DESIGN AND CONSTRUCTION REQUIREMENTS: STRUCTURES

15.1 Data Provided by the Department

The Department has provided the following items listed below:

A. Hydraulic survey data (Appendix I Survey Plans and Data)
B. Soil boring information in structure areas (Appendix K Geotechnical Data).

15.2 Existing Structures Identification

Structure File No.: 3004058 (Proposed SFN 3004059)
Bridge No.: GUE-209-0857
Feature Intersection: Columbus & Ohio River Rail Road (CUOH) (Operated by G&W) and Wills Creek
Latitude: 40.023508
Longitude: -81.59005

15.3 GUE-209-0857

Design and Construction Requirements of Structure GUE-209-0857 in addition to the Governing Regulations listed in Section 7.1 of this document:

A. Existing Structure Data

Length: 848 ft.
Width o/o: 39'-0"
Design Loading = CF2000
Type: Steel Girder (floor system) deck
Spans = 5
Date Built: 1967
Existing Structure Data included in Appendix D Existing Structure Data. Existing plans (Appendix B) posted at:

ftp://ftp.dot.state.oh.us/pub/districts/D05/Projects/GUE/110245/Appendices/

B. Alignment & Profile

Alignment: Existing _X_ Relocated ____ ; By ODOT _____ ; By DBT ___X___:

Profile: Existing _____ Relocated _____ Feathered (Adjustment) __X__ .
By ODOT _____ ; By DBT ___X____:

C. Proposed Transverse Sections (see Appendix J Design Detail sheets – Bridge Transverse Section)

Bridge Width: The clear width on the bridge shall match the clear width at both ends of the bridge (see Appendix J Design Detail sheets – PAVEMENT TYPICAL SECTION details)

Railing: Type ___Parapet__ Height _42" (modified ODOT Standard Drawing BR-2-15)
Fence: Yes __X__ No ____ Height/Configuration __6' / Straight.
Sidewalks: Yes __X__ No ____ Width 6' only on west side of the bridge.
Lighting: Yes __X__ No ____ Type: See Appendix J for details.

15.4 Bridge Removals

The DBT shall remain solely responsible for all aspects of safety, construction load impacted structural capacity, structural stability, applicable regulations, and permits associated with bridge removal work. The DBT shall assume any and all risk and liability of surrounding and adjoining properties. For all vibrations influenced on adjoining properties and structures, the DBT shall assess the need for and subsequently provide monitoring and control requirements, with sufficient accuracy, to determine any level of repairs necessary to the surrounding and adjoining properties. Any repairs necessary, or indemnification alternatively agreed upon by a subjected adjoining property owner, will be the responsibility of the DBT.

The DBT shall prepare demolition plans for the removal of the bridge in accordance with C&MS 501.05 and all applicable railroad requirements.

The uses of explosives may be allowed, See Section 1.3 (Railroad Coordination).

No debris shall be allowed to fall onto railway property or the Wills Creek. No staging of equipment or material is allowed on Railroad property without the express written permission of the Railroad.

Before construction equipment is mobilized over or operated on the existing bridge, the DBT shall analyze the capacity of the bridge to ensure it is structurally adequate for all loads induced by the equipment.

15.5 Governing Regulations

Governing regulations are listed in Section 8.1 and supplemental specifications are listed in Section 8.1. For cases where AASHTO Specifications conflict with ODOT Manuals or Standards, ODOT's Manuals or Standards shall take precedence. For structural components not addressed by the standards listed in Section 8.1, other guidelines or specifications that reflect currently accepted industry practice can be used as agreed to by the Department.

The ODOT Bridge Design Manual (BDM) is written to represents ODOT structural design specifications and commentary. See the BDM for further explanation. Unless otherwise restricted or clarified in the Scope of Services, follow all the ODOT structural design specifications. Unless specifically required within the Scope of Services, the DBT is not required to consult with the Department concerning structural design specifications as noted in the BDM structural design specifications.

15.6 General Bridge Criteria

The bridge on this project shall be new construction.

Redesign and replace bridge number GUE-209-0857 (SFN 3004058– Bridge over Wills Creek and Columbus & Ohio River Rail Road (CUOH) (Operated by G&W)) with a new structure. Construct new approach slabs at both the forward and rear abutments. The bridge piers, abutments, retaining walls and all foundations shall be placed outside of the railroad right-of-way. For this project, all portions of proposed structural elements above footings and below the 100 year high water surface elevation will not be within the area detailed in Appendix J Design Detail Sheets – RESTRICTED BUILD AREA details. Exposed portions of all proposed piers, abutments, and retaining walls will be in areas with existing ground elevations greater than 777.07. All structures will be permanently protected/armored, as necessary per the scour analysis performed by the DBT.

The DBT shall assume any and all risk and liability of surrounding and adjoining properties. For all vibrations influenced on adjoining properties and structures, the DBT shall assess the need for and subsequently provide monitoring and control requirements, with sufficient accuracy, to determine any level of repairs necessary to the surrounding and adjoining properties. Any repairs necessary, or indemnification alternatively agreed upon by a subjected adjoining property owner, will be the responsibility of the DBT.

No permanent wood elements shall be allowed.

Tub girders will require a minimum depth of five feet to provide accessibility during post construction inspections.

Any structural component(s) that restrict(s) access to maintain and/or inspect items within permanent cavities may be proposed. In each instance, an access plan shall be submitted to the project engineer, for approval by The Department. An Access Plan shall be submitted with the buildable unit for each restriction the requirement applies.

The Access plan shall address, but not be limited to the following topics:

- How an individual gains access to the interior areas.
- Allowances for a hands-on inspection to critical or complex component areas.
- Ingress and egress security.
- Inspection access details (i.e. tie off points, hand holds, hatch dimensions, etc.)
- Durability of materials used.

Use the following table for reinforcing steel to be used on this project.

REINFORCING STEEL MATERIAL AND COATING TYPE TABLE	
Location of Reinforcing Steel	*Material and Coating Type*
Superstructure deck, diaphragms, sidewalks, and parapets/barriers/bridge railing.	Reinforcing steel Type CM, grade 100, and conforming to ASTM A1035.
Approach slabs and abutments.	Galvanized reinforcing steel conforming to ASTM A767, Class 1. The galvanized coated reinforcing steel will meet all other requirements of C&MS 509. The galvanized coating will be applied after the reinforcing has been fabricated. If the galvanized surface becomes damaged during handling in the field, repairs will conform to ASTM A780. Only suppliers certified under S1068 may provide this reinforcing. OR Continuously galvanized reinforcing steel (CGR) conforming to ASTM A1094, Grade 60. The galvanized coated reinforcing steel will meet all other requirements of C&MS 509. The galvanized coating will be applied before the reinforcing has been fabricated. If the galvanized surface becomes damaged during handling in the field, repairs will conform to C&MS 711.02. Only suppliers certified under Supplement 1068 may provide this reinforcing. OR

	Reinforcing steel Type CM, grade 100, and conforming to ASTM A1035.
Piers, retaining walls, deep foundations, and other components not separately listed.	Epoxy coated reinforcing steel as per C&MS 509. OR Galvanized reinforcing steel conforming to ASTM A767, Class 1. The galvanized coated reinforcing steel will meet all other requirements of C&MS 509. The galvanized coating will be applied after the reinforcing has been fabricated. If the galvanized surface becomes damaged during handling in the field, repairs will conform to ASTM A780. Only suppliers certified under S1068 may provide this reinforcing. OR Continuously galvanized reinforcing steel (CGR) conforming to ASTM A1094, Grade 60. The galvanized coated reinforcing steel will meet all other requirements of C&MS 509. The galvanized coating will be applied before the reinforcing has been fabricated. If the galvanized surface becomes damaged during handling in the field, repairs will conform to C&MS 711.02. Only suppliers certified under Supplement 1068 may provide this reinforcing. OR Reinforcing steel Type CM, grade 100, and conforming to ASTM A1035.

A. Foundations

The following items shall not be permitted:

- Under-reamed drilled shafts,
- Auger-cast piles or continuous flight auger (CFA) piles,

The existing rear abutment spread footing foundations may not be reused. Other foundations: footings, H-piles, and cast-in-place reinforced concrete pipe piles (CIP pipe piles), may be reused. The following limitations shall apply:

- The concrete used in the existing footings shall be assumed to be Class "E," 3.4 ksi concrete.
- The concrete used for infill of CIP pipe piles shall be assumed to be Class "C," 4.0 ksi concrete.
- Reinforcing steel used in the existing footings shall be assumed to have F_y = 40 ksi.
- Existing H-piles shall be assumed to be ASTM A7, 33 ksi steel.
- Shells for existing CIP pipe piles shall be assumed to be ASTM A252 Grade 1, 30 ksi steel, 7-gauge (0.1875 inches) nominal thickness.
- For the calculation of nominal structural resistance of the piles, account for section loss in the steel for the H-piles and CIP pipe piles in accordance with BDM Section 405.11.1, for "undisturbed natural soils" for the existing life of the foundation elements plus the proposed 75 year service life.
- For re-use of CIP pipe piles, the LRFD nominal bearing resistance (axial geotechnical resistance) is 2 times (2×) the allowable bearing capacity given in the historic project plans (e.g. for a 44 ton pile, the nominal axial geotechnical resistance is 2×44 = 88 tons, or 176 kips per pile). The resistance factor to be used in this case shall be φ_{dyn} = 0.55 from the use of the dynamic driving formula and indicator piles used to verify resistance in the original construction. This is separate from any limitations on the structural resistance of the piles.

No portions of the existing foundations may be reused.

In order to use the resistance factors associated with static load testing of deep foundation elements, perform load tests in accordance with *ODOT 2019 Construction and Material Specifications* Item 506. Perform tests representing different substructure units and different design conditions, with consideration of site variability in accordance with the definition of a "project site" per AASHTO LRFD Articles 10.5.5.2.3 and 10.5.5.2.4. Obtain the acceptance of the Office of Geotechnical Engineering on the division of areas into "project sites."

1. Spread Footing Foundations

No bridge substructure unit shall be supported on spread footings founded in soil. Spread footings founded entirely in bedrock are permitted. The bottom elevation of a spread footing shall extend a minimum of 3 inches into bedrock.

2. Drilled Shaft Foundations

In addition to the requirements within the ODOT BDM and C&MS:

a. The DBT shall determine the need to use slurry, to prevent soil cave-ins during drilling, based on the soil assessment and design requirements for each location.

b. If drilled shafts will be constructed by the "Wet Construction Method," per *ODOT 2019 Construction and Material Specifications* Item 524.04.B, then provide one demonstration drilled shaft, constructed by the same method. Installation of production drilled shafts shall not begin until the successful construction, testing, and acceptance of the demonstration drilled shaft.

c. Demonstration drilled shafts shall be constructed in accordance with the approved drilled shaft installation plan.

d. A demonstration drilled shaft may be utilized as a production drilled shaft, provided that it is demonstrated to have no construction defects, and that it has not been displaced more than 5 percent of the drilled shaft diameter during load testing. All demonstration drilled shafts not founded on bedrock shall be static load tested.

e. All drilled shafts regardless of nominal shaft diameter, including production and demonstration, shall be tested with thermal integrity profiling (TIP). TIP and Crosshole Sonic Logging (CSL) shall be performed per the procedures specified in Appendix J Design Detail Sheets (Drilled Shaft Testing).

f. Socket drilled shafts founded in bedrock a minimum depth of 1.5 times the drilled shaft diameter into the bedrock. Disregard skin friction resistance within the top 2 feet of the drilled shaft rock socket. Disregard all skin friction resistance provided by soil for drilled shafts founded in bedrock.

g. For drilled shaft foundations not founded in bedrock, static load test a minimum of two production drilled shafts. If drilled shafts are used for more than one substructure, test drilled shafts from different substructures.

h. A substructure foundation with less than four drilled shafts will be considered non-redundant. Apply a capacity reduction factor of 20% to each drilled shaft for a substructure foundation with less than four drilled shafts.

3. Driven Pile Foundations

a. Use a saximeter or equivalent method, as accepted by the Department, to accurately measure and record the average stroke for each unit of length driven.

b. Do not design or construct a foundation unit with less than four piles per pile cap regardless of pile size.

c. Comply with the following additional requirements for Steel H-Piles (HP):

    i. Steel for HP piling shall conform to ASTM A572 Grade 50 or higher.

d. Comply with the following additional requirements for Cast-in-Place Reinforced Concrete (CIP) Pipe Piles:

    i. Steel for CIP pipe piles shall conform to ASTM A252 Grade 2 or 3 or ASTM A572 Grade 50 or higher.

    ii. Only CIP pipe piles of ASTM A252 Grade 2 and nominal outside diameters 12 through 16 inches are subject to the pile wall thickness equation in C&MS 507.06. To determine the minimum pile wall thicknesses for other steel grades and diameters of pipe, perform a drivability analysis using the wave equation method and the selected driving system that will be used to install the pile; determine whether the pile can be driven to the ultimate bearing value without overstressing the pile in accordance with the ODOT Bridge Design Manual and AASHTO LRFD Bridge Design Specifications Articles 10.7.3.8.4 and 10.7.8.

e. In addition to the C&MS and BDM, comply with the following additional requirements for Open-ended Pipe Piles:

    i. Prior to commencing work, prepare and submit to the Department for acceptance, a written installation plan of procedures to follow when driving the piles, cleaning out the piles, placing steel reinforcement, placing the concrete, and monitoring the concrete placement. Submit the installation plan at least 14 calendar days before constructing the open-ended pipe piles. Do not begin pile driving operations until the Engineer gives authorization upon acceptance of the installation plan. The acceptance of the installation plan will not relieve the DBT of the responsibility of obtaining the required results, including selecting the appropriate hammer and pile wall thickness to install the pile to the required ultimate bearing value and tip elevation. Include the following information in the installation plan:

        a. Details of the sequence proposed for the overall pile construction operation.

        b. Procedures for maintaining correct horizontal and vertical alignment.

        c. Pile drivability analysis using the wave equation method, including all electronic input and output data files.

        d. Details of methods for cleaning out of the steel pipe pile interior.

        e. Details of reinforcement placement including support and centralization methods.

f. Details of concrete placement including proposed operational procedures for tremie or pumping methods.

g. A list of proposed equipment to be used such as cranes, hammers, final cleaning equipment, concrete pumps, tremies, etc.

h. The proposed method to be used for completing the pile driving while preventing damage to the steel pipe piles should obstructions to driving be encountered.

ii. Furnish steel pipe piles with a minimum pile wall thickness of 0.5 inch. Provide steel pipe piles with a wall thickness greater than the minimum if the pile drivability analysis indicates that a greater wall thickness is required. Do not attach cover plates to the pile tips. To facilitate plugging of the piles during driving, internal plug plates may be attached to the steel pipe piles.

iii. Furnish steel pipe piles that conform to ASTM A252 Grade 2 or 3 or ASTM A572 Grade 50 or higher, with the following additional requirements:

a. Welding and pre-qualification of base metal shall be in conformance with the requirements in AWS D1.1.

b. Provide fabricator documentation that the outside circumference of each steel pipe pile section does not vary more than 3/8 inch from the nominal plan dimension.

iv. If it is necessary to splice the piles, ensure that one end of each steel pipe sections is beveled and pre-prepared for field splicing with full-penetration welding.

v. Drive the steel pipe piles open ended, without cover plates at the pile tips. The piles may be installed up to a depth of 20.0 feet using a vibratory hammer for enhanced control of vertical and horizontal alignment. Use an impact hammer to complete pile installation.

vi. Use only automated guided cutting equipment for all steel pipe pile cutoffs. Manual flame cutting will not be allowed.

vii. After the Department has accepted all installed piling, clean all soil from within the steel pipe pile interior to the elevation shown on the design documents. Keep the top of steel pipe pile covered after cleaning until the reinforcing steel and concrete are placed. Place the reinforcing steel in the steel pipe pile, then place the concrete in the steel pipe pile according to C&MS 524.10 either with a tremie

according to C&MS 524.12 or by pumping according to C&MS 524.13. Use class QC5 or QC4 concrete that meets the requirements of C&MS 524.10.

viii. The minimum length of the steel pipe pile interior that shall be cleaned and filled with concrete shall be equal to the length necessary to fully develop reinforcing steel to tie the pile into the pile cap or pier column, plus twelve inches.

ix. During the cleaning of the steel pipe pile interior, prevent disturbing the foundation material surrounding the pile or the soil within the plugged portion of the pile. Equipment or methods used for cleaning out the steel pipe piles must not cause quick soil conditions or cause scouring or caving around or below the piles. The cleaned portion of the steel pipe pile must be free of any soil, rock, or other material deleterious to the bond between concrete and steel. After cleaning out is completed, place the reinforcing steel and concrete within 24 hours to prevent deterioration from water of the soil within the plugged portion of the pile. Because the piles are open ended, the department will not check for water tightness.

x. Ensure that the minimum clear distance between longitudinal and lateral reinforcement placed within the pile, and the space between the reinforcement and the inner wall of the pile, is five times the maximum aggregate size.

xi. Perform dynamic load testing on every pile during driving according to C&MS 523. Perform a CAPWAP analysis on each pile tested for every dynamic load test. Submit all electronic data files to the Engineer, including but not limited to recorded data during the initial pile driving operation, and CAPWAP analysis input and output data files.

xii. For open-ended pipe pile foundations not founded in bedrock, static load test a minimum of two piles, each from different substructure units.

B. Substructures

No portions of the existing substructure may be reused.

All substructures shall be Cast-In-Place reinforced concrete or pre-cast reinforced concrete.

The following items are not permitted:

- Steel box beam pier caps
- Steel abutment and pier caps
- Capped pile type piers
- Hollow pier units
- Modular block walls
- Sheet piling
- MSE Walls

Seal the entire limits of the substructure with non-epoxy sealer per ODOT BDM 306.1.2. Seal all exposed areas of piers from top down to finished grade line.

C. Superstructure

The entire limits of the structure shall have a consistent superstructure material (steel or concrete) and type.

An inspection access handrail system is not required.

The DBT may use non-ODOT standard prestressed I-beams shapes.

The following structure types are not permitted:

1. Precast prestressed concrete box beams.
2. Trusses of any type.
3. Non-redundant designs.
4. Precast reinforced concrete three-sided flat-topped culverts or arched sections
5. Structures designs using precast prestressed/pretensioned concrete I-beams with a web thickness less than 8-inches.
6. Structure with fracture critical members.

Structural Steel Considerations
Structural Steel shall be A709 or A709W:

If A709 is utilized, the structural steel shall be completely painted. If A709W is utilized, all portions of structural steel within 15 feet of the beam ends will be painted (except any scuppers to be galvanized per section 15.6.F). In addition, the left and right fascia beams will be partially painted for their entire remaining lengths as per the BDM Figure 308-1.
Where painting is specified, new structural steel shall be painted using the IZEU coating system. The urethane top coat shall be tinted to achieve a color similar to Federal color # FS-595C-15180 (Blue). The painting contractor shall present an array of physical paint samples, of shades including and surrounding Federal color # 15180 (Blue), to the project engineer for final color selection. The array shall consist of at least 7 different colors, including Federal color #'s 15092, 15123, and

15182. The final selection process will be coordinated between the City of Cambridge and ODOT. A final color selection will be supplied to the DBT within 10 calendar days of the array received date.

Beam type superstructure will require four (4) or more beam lines. The final design shall enable one 12' (minimum) face/face barrier traffic lane (temporarily utilizing bridge mounted PCB) to be maintained on the structure for future part-width deck replacement projects.

For haunched girders, the intersection of the flat bottom flange bearing seat area and the curved section of the bottom flange shall be detailed as two plates with a full penetration weld.

For the steel ductility requirements of AASHTO LRFD Article 6.10.7.3, the design haunch shall not be included in the determination of Dp and Dt.

Concrete Considerations
All new concrete beams shall be sealed with non-epoxy sealer.

Bearing Considerations
The moment redistribution provisions of AASHTO LRFD Bridge Design Specifications Appendix B shall not be allowed.

D. Deck and barrier

All bridge decks shall be full depth cast-in-place concrete with a monolithic concrete wearing surface. The typical bridge section shall be as per Appendix J Design Detail Sheets (Bridge Transverse Section details).

Barriers and sidewalks shall not be considered part of the superstructure cross section for calculation of structural capacity.

Stay-In-Place (SIP) deck forms are permitted between beam lines. SIP forms are not permitted to form the deck cantilever overhang areas. SIP forms and concrete filled flutes are not to be used as a structural component of the bridge. The beams must be designed to carry the additional load due to the SIP forms. Concrete shall completely fill the flutes of the SIP forms. Fillers shall not be used. The SIP forms shall be designed to support the self-weight of SIP forms, reinforcement, wet concrete for the deck, any construction equipment loads, and at least a 50 PSF load for construction live loads. SIP forms shall meet the deflection requirements of 508. The SIP forms used must be galvanized (G235) and a minimum 20 gage panel. Panel thickness shall be determined by calculated thickness or a minimum 20 gage, whichever is thicker. SIP forms shall not interfere with or limit current or future painting of all steel beam surfaces below the top of the top flange. The SIP forms shall not be cut after fabrication and galvanizing. Any cut/damaged SIP forms will be discarded and replaced. The deck shall be conventionally formed for at least 5' at intersections with any concrete abutment diaphragm and/or pier diaphragm faces. Reference section 15.6.F Drainage System for additional requirements. The deck cantilever overhang areas beyond the exterior beams shall be conventionally formed.

The parapet details and materials shall be as per Appendix J Design Detail Sheets (Parapet details).

The vandal protection fence shall be as per Appendix J Design Detail Sheets (Vandal Protection Fence details). The fence length will match the entire deck length and will be installed on top of the left and right bridge parapets.

The entire limits of the deck and sidewalk surface shall be sealed with HMWM Resin as per C&MS 512. The deck sealing shall occur after the deck has been cured for more than 120 days. All other portions of the entire superstructure shall be sealed to the limits per ODOT BDM 309.2.1 using non-epoxy sealer.

E. Structure Expansion Joints

Open-type joints that accept bridge deck surface drainage, such as finger joints, are not permitted.

Intermediate deck expansion joints are not allowed.

F. Drainage System

Furnish a drainage design that will reduce the need for scuppers. Intercept the roadway drainage flow prior to the bridge. The bridge deck surface drainage design shall conform to the following:

Scupper and Conduit Requirements on the structure:

Deck drainage shall be collected at the gutter lines (toe of curb/parapet) by scuppers. Over-the-side drainage is not permitted. Provide erosion control at bridge ends according to Section 1103 of the ODOT L & D Manual, Volume 2. In lieu of concrete slope protection as required within BDM Section 306.5, crushed aggregate slope protection, rock channel protection (grouted per C&MS 601.05 if necessary), or an approved equal will be utilized on spill through slopes beneath the bridge. Use these items to restore, regrade, and permanently protect the eroded area adjoining the right half of the forward abutment face. The eroded area, to be restored, extends approximately 100 feet down the spill through slope.

The water spread (flow) on the deck shall not exceed the shoulder width for a 10-year design storm.

Transverse deck drains are not permitted.

Welding of scuppers, downspouts, or drainage supports to main steel members in tension zones is not allowed.

Use a closed deck drainage system for scuppers within 15 feet of a pier. A free fall of two (2) feet above ground is permitted. The drainage shall be controlled at the

point of discharge (i.e. bottom of the vertical conduit) by permanent features that completely contain the discharge and prevent erosion to the adjacent ground while discharging up to the 10-year design storm away from the adjoining substructure unit. The adjoining, above finished grade, substructure unit surfaces shall not be wetted by the discharge.

Encasing drainage conduit in substructures is not permitted.

Locate vertical drainage conduit runs at piers.

The maximum permissible drainage conduit bend angle is 45 degrees, from the vertical, per bend. Consecutive conduit bends are not permissible.

Clean outs shall be provided upstream of each bend and on vertical downspouts.

Scupper material will be as per C&MS 707.10. Additional material specifications for scuppers and supports, typical details, and notes will be as per Standard Construction Drawing GSD-1-19. Scupper size and shape may be custom fabricated to fit the proposed structure as detailed by the DBT. If protrusions are located where the SIP forms are located; the deck shall be conventionally formed for at least 5' around each protrusion. SIP forms shall not be cut for scuppers.

As per S.C.D. GSD-1-19, scuppers are all superstructure drainage piping above 8 inches below the bottom of a bottom beam flange. Drainage piping below this elevation is miscellaneous drainage of structures. Piping and fastener materials for drainage systems below the scuppers will be per C&MS 518.

G. Clearance Requirements

Piers or any permanent structural element inside the railroad right-of-way are not permitted. Substructures adjacent to railroad, including retaining walls, shall comply with AREMA requirements for crashwalls if applicable. For all clearance requirements pertaining to existing and future placement of railroad tracks and access roads, reference shall be made to this project's Special Provision-CUOH PPM April 2019.

H. Approach Slabs

Approach slabs shall be placed at both abutments. Refer to Appendix J Detail Design Sheets (Buried Appr Slab details) for details on buried approach slabs.

I. Material Properties

Lightweight concrete of any kind is not permitted for use.

J. Bridge Load Ratings

Bridge shall be load rated per Section 900 of the ODOT BDM with the following clarifications and exceptions:

1. The DBT shall utilize the load rating software described in BDM section 920. At the approval of ODOT OSE in Central Office, the DBT will be required to provide a rating manual for any bridge type that is not compatible with the preferred software listed. The rating manual shall include a Microsoft Excel compatible spreadsheet in electronic format to load rate the bridge for future permit vehicles (i.e. overweight or super-load vehicles). Such vehicles may weigh up to 600,000 pounds; have as many as 25 axles, two to eight tires per axle to a width of 20 feet, and a length of 200 feet. The spreadsheet must be capable of rating the structure with the permit vehicle isolated on the bridge in addition to rating the structure with a combination of legal loads on the bridge and the permit vehicle.
2. Each bridge loading rating submission shall include the computer files in electronic format.
3. The DBT must submit a load rating to the Department stating that traffic can be maintained on half of the beams system such that at least one lane of traffic can be maintained on the structure for future deck replacement projects. For this analysis, a longitudinal construction joint may not be directly above or within 6 inches of any beam flange edge. The analysis will state portable barrier loadings and assumed construction equipment loading to realistically portray future part-width deck replacement rehabilitation of the structure. Portable barrier and shifted traffic lane positions will be specified to satisfy this requirement.

15.7 Criteria for All Retaining Walls

The following criteria are for all retaining walls:

K. Slopes above retaining walls cannot exceed a 3:1 slope.
L. Incorporate a paved gutter above all retaining walls to control drainage over the wall. The paved gutter shall be sized for a 5-year flood event.
M. The lateral deflection shall be limited to 1% of the exposed wall height or 3 inches, whichever is less.
N. Reinforced concrete facing is required. The minimum thickness of concrete facing shall be ten (10) inches with two mats of steel reinforcements.
O. All pre-cast concrete panels attached to retaining walls, if used, shall be structurally connected with the main members supporting lateral loads.
P. See Appendix J Design Detail Sheets (Wall with adjacent slope) for detail sheet pertaining to adjacent slope and gutter. All retaining walls shall have same detail as shown in Appendix J.
Q. The following retaining wall types are not permitted:
   - Modular block walls

- Sheet piling
- MSE walls

15.8 Noise Barrier: Yes ☐ No ☒

16 DESIGN AND CONSTRUCTION REQUIREMENTS: TRAFFIC CONTROL

16.1 Pavement Markings and Delineators Special Provisions
In addition to the Governing Regulations listed in Section 8.1 of this document.

A. Pavement Marking Requirements and Locations Yes ☒ No ☐

Placement on SR 209 throughout the project limits and as per Standard Construction Drawings. Use Item 642 to replace all existing pavement markings within the disturbed areas of the project limits for temporary markings, as described in section 13.3. Use Item 644 (on asphalt surfaces) and 646 (on concrete surfaces) to replace all existing pavement markings within the disturbed areas of the project limits for permanent markings after final paving and, any corrective work as per Proposal Note 555 and/or Proposal Note 420 is performed, and HMWM deck sealing has been completed.

B. Raised Pavement Markers Requirements and Locations: Yes ☐ No ☒

C. Delineators: Yes ☐ No ☒

D. Barrier Reflectors: Yes ☒ No ☐

All barrier reflectors shall conform to Item 626 and shall be placed on bridge parapets, concrete barrier walls, retaining walls, and guardrail in accordance with current design standards. Guardrail blockout reflectors shall be installed on the side of the blockout away from traffic.

E. Object Markers: Yes ☒ No ☐

All object markers shall conform to Item 630, Sign, Flat Sheet.

Locations and requirements: Type 3 Object Markers shall be placed near the bridge end terminal assemblies at the end of each parapet. There shall be a total of four object marker signs installed (Two each of OM3-L and OM3-R).

All work associated with Section 16.1 shall be paid under Item 640E99000, Special – Pavement Marking.

16.2 Signing Special Provisions
In addition to the Governing Regulations listed in Section 7.1 of this document:

A. Flat Sheet Signs: Yes ☒ No ☐

B. Redesign and replace all existing flat sheet signs with new signs within the Project Limits. This includes all signs on the mainline. Size the signs in accordance with the OMUTCD. Install bridge end signage as per Appendix J Design Detail sheets – BRIDGE OBJECT MARKERS details.

C. Extrusheet Signs: Yes ☐ No ☒

D. Ground Mounted Post Supports: Yes ☒ No ☐

Redesign and replace all existing ground mounted post supports with new supports throughout the project limits. New sign installations shall be on new supports. No reuse of existing ground mounted supports shall be allowed.

E. Ground Mounted Beam Supports: Yes ☐ No ☒

F. Overhead Supports: Yes ☐ No ☒

16.3 Lighting Special Provisions

In addition to the Governing Regulations listed in Section 7.1 of this document:

A. Existing Bridge Lighting (Removed by Others): Yes ☒ No ☐

The existing conventional bridge lighting is owned by American Electric Power (AEP). The DBT shall notify AEP a minimum of 60 days prior to the start of construction for removal of the existing conventional lighting being affected within the footprint of the project. AEP notification shall occur in coordination with the City of Cambridge through the AEP Solution Center at 1-800-672-2231.

Additional contact information for AEP is below:

American Electric Power
Attn: Kevin Bates
Email: kbbates@aep.com
330-407-5646

The existing decorative lighting at the intersection of S.R. 209 and Turner Ave. shall not be disturbed during the duration of the project. Any damage to the existing decorative light poles or circuit shall be replaced by the DBT at no cost to the project or to the City of Cambridge.

B. Proposed Bridge Lighting: Yes ☒ No ☐

The DBT shall design and construct all new light poles and luminaires within the footprint of the project meeting lighting levels set forth in TEM Table 1197-4. The light poles and luminaires shall be decorative in nature and adhere to Standard Construction Drawing HL-10.11 “Post-Top Decorative Lantern” style painted black and not exceed a height of 16 ft.

The standard decorative light pole should be equivalent to an Hapco RSA12C7A4BA or approved equal with no aesthetic features (fluted pole, decorative base, plant hanger, banner arm, decorative crossarm, GFCI, finial, etc.).

Light pole assembly shall be designed per 2013 AASHTO LTS5 Criteria (except breakaway) for a 90 MPH design wind speed supporting two luminaires with EPA of 2.8 sq. ft. (ea.) and weight of 50 lbs. (ea.) and two plant hanger arms with EPA of 0.2 sq. ft. (ea.) and weight of 25 lbs. (ea.). Poles shall be designed to be mounted up to 80 feet above grade.

Decorative luminaires shall adhere to TEM plan note 1142-24 “625 Decorative Post-Top Luminaire, Solid-State (LED), Lantern Style, 3000K, Black Finish” or approved equal.

The painting of all lighting supports shall adhere to Supplemental Specification 916.

Light poles on the bridge shall be barrier mounted with no breakaway bases. Luminaires and plant hangers on the light poles shall have a minimum clearance of 3 feet above vandal protection fencing. Centerline of luminaire arms shall be oriented parallel to centerline of construction. Centerline of plant hanger handholds placed on barrier with no adjacent sidewalk present (right side) shall be orientated parallel to the centerline of construction. Centerline of plant hanger handholds placed on barrier with adjacent sidewalk present (left side) shall be oriented perpendicular to the centerline of construction. For each respective side (left and right), luminaire arm and plant hanger handhold centerline orientation for ground mounted poles shall match that defined on the bridge barrier. Ground mounted light poles placed off the bridge shall have breakaway bases meeting NCHRP-350 or MASH and shall only be placed to meet lighting levels set forth in TEM Table 1197-4 while using the existing lighting (not being removed) along the corridor in lighting calculations. Pole height for ground mounted poles shall be adjusted to match the height of the bridge mounted poles and not exceed a height of 16 ft.

All conduit and cable shall be placed ether inside parapet/barrier or underground. All connections for bridge mounted light poles shall be accessed through a structure junction box mounted in the bridge parapet below each light pole. No access to the light pole shall be made through the vandal protection fence. See Appendix J “End Parapet Conduit Details” for how bridge conduit should exit parapet into adjacent pull box on each corner of structure.

All connections for ground mounted light poles shall be accessed in the breakaway base of the light pole. If the breakaway base is not large enough to fit a minimum of two 2” conduits than a separate pull box shall be placed adjacent to the light pole for the connections.

Grounding of the bridge mounted light poles and structure junction boxes shall be incorporated in the grounding of the structure.

C. Power Service: Yes ☒ No ☐

The DBT shall supply 120/240-volt, single phase, 3-wire service for the proposed bridge lighting. The power service shall be ground mounted as specified in CMS 625.15, 725.19, and standard drawing HL-40.20.

The DBT will be responsible for contacting the AEP Solution Center at the number listed in Section 16.3A to establish new service. A minimum of three (3) months' notice shall be given. The DBT will be responsible for requesting and scheduling any inspections the power company may require for the power service hook up. Under no circumstances shall the DBT splice service cable into the power company's circuits. The DBT is responsible for obtaining any necessary permits and paying of all fees associated with the installation and maintaining the service until accepted by the maintaining agency at the end of the project. A change order will be processed to reimburse the DBT for all charges incurred outside those stated in CMS 625.22.

The DBT will be responsible for supplying or requesting from power company a wood pole (conforming to CMS 725.19h) be installed for overhead power service connection. Service will then run down the pole inside conduit to control center. The proposed power service location from the DBT shall be approved by the City of Cambridge "in writing" before any work may begin.

The photocell shall adhere to CMS 725.19e and be mounted per standard drawing HL-40.20. The photocell shall be placed clear of all obstructions including tree branches. All integral photocells on luminaire fixtures shall be covered. Padlocks furnished shall be either brass or bronze, equal to master no. 4bka or Wilson Bohannan 660a, and shall be keyed in accordance with CMS 631.06. Each enclosure shall have a safety switch disconnect.

D. Arc Flash Calculations and Label: Yes ☒ No ☐

The DBT shall include arc flash calculations and label for each electrical enclosure per supplemental specification 825.

E. Alternate Bid Items: Yes ☒ No ☐

The DBT shall submit an alternate design and pricing for an aesthetic Hapco decorative light pole and Main Street Lighting luminaire as shown in Appendix J "Hapco Decorative Light Pole" and "Main Street Lighting Luminaire". The difference in pricing compared to the standard decorative pole and luminaire items used in Part B above shall be paid for by the City of Cambridge. The DBT shall submit paint chips and cut sheets to the City for approval prior to ordering the light poles and luminaires. City contact information is below:

City of Cambridge

1131 Steubenville Avenue
Cambridge, OH 43725
Attn: Nick Cunningham
Email: camb-engdept@cambridgeoh.org
740-432-3601

All work associated with Sections 16.3 and 16.4 shall be paid under Item 625E99000, Special – Lighting, except for light poles and luminaires which have been itemized separately as Alternate Bids.

16.4 Traffic Signals Special Provisions
In addition to the Governing Regulations listed in Section 7.1 of this document:

A. Signal Supports: Yes ☐ No ☒
B. Vehicle Signal Heads: Yes ☐ No ☒
C. Pull box: Yes ☐ No ☒
D. Conduit: Yes ☐ No ☒
E. Cable and Wire: Yes ☐ No ☒
F. Signal(s) is part of an Intelligent Transportation System (as defined by the Traffic Engineering Manual, Part 13): Yes ☐ No ☒

16.5 Intelligent Transportation Systems (ITS): Yes ☐ No ☒

17 PROJECT SCHEDULE REQUIREMENTS

The current edition of Proposal Note 132~~107~~, including updates released one month before the project sale date, shall be met or exceeded.

Commented [Add2- 3]: Addendum 2

18 PLAN SUBMITTALS AND REVIEW REQUIREMENTS

18.1 Plan Components
All plans submitted by the DBT shall be in conformance with the following ODOT manuals:

A. Real Estate Policies and Procedures Manual Section 3100.
B. The DBT shall also identify all topographic features within the existing Right-Of-Way limits, including underground utilities.
C. Bridge Design Manual. Bridge sub-summaries are required.
D. Location and Design Manual, Volume 3:

The following sections of the Location and Design Manual, Volume 3 are **NOT** required:

1302.13	Plan Signatures
1307.2	General summary sheet
1307.4	Quantity Calculations
1310.3	Earthwork and Seeding Quantities

Units of measure are NOT required

Simplified plans (section 1301.2) are **NOT** allowed.

Note: Bridge Calculations as required per the BDM will be required.

18.2 Quality Control

The DBT shall be responsible for the professional quality, technical accuracy and adherence to the Governing Regulations listed in Section 8.1 of this document, for all plan submittals required under this contract.

The DBT shall immediately notify the Department of any apparent discrepancy between the various design and construction manuals and the Contract Documents.

Unless stated otherwise, review comments do not revise the scope or intent of the project and do not constitute a request for changes beyond the current contracted Scope of Services.

In the event the Department determines that any required submission is incomplete, contains inaccuracies which preclude a meaningful review, or does not adhere to the Governing Regulations listed in Section 8.1 of this document, the Department shall advise the DBT of the shortcomings and direct the DBT to revise and resubmit the plan. No time extension shall be granted as a result of such action. The Department shall schedule a review meeting or issue review comments as appropriate.

In the event the DBT believes that any review comment, or orders issued by the Department, require a change to the scope of the agreed work, the DBT shall first contact the Department for clarification and shall, within 10 Workdays of receipt of the comments or orders, provide written notice to the District Project Manager and Project Engineer concerning the reasons why the DBT believes the scope has been changed.

18.3 Major Design Decision

Separate submittals for concurrence with major design decisions are required. The submittals may be required during any phase of Design. Major design decisions involve significant utility relocation, unforeseen acquisition of ROW by the Department, traffic operation or geometric decisions that involve two or more viable solutions, designs not typical nor standards not ordinarily exercised by members of the engineering profession practicing under similar conditions at the same time and locality, and any other decision that impacts the public, operation of the facility or designs which require future long term excessive maintenance. The level of development of the submittal is dependent upon the level of detail necessary to accurately depict the major design decision.

When the DBT becomes aware of additional decisions during the course of the design, they must advise the District Project Manager in writing.

18.4 Interim Design Review Submission

For each Buildable Unit, the DBT shall submit Interim Design submissions for review by the Department and other third-party agencies as appropriate.

Interim Design Submission is defined as followed:

A. All plan components and supplemental submittal requirements through Stage 2 per the ODOT Location & Design, Volume 3.
B. Stream crossing calculations and details

Unless indicated below, the Department shall have 10 Workdays from receipt to review complete submissions. The following are excluded as Workdays: State Holidays, Federal Holidays, Saturdays, Sundays, the Friday after Thanksgiving, Christmas Eve, and the days between Christmas and New Year's Day. This review time must be shown on the required Progress Schedule.

In addition, the DBT shall submit the Interim Design for review to the following third-party agencies. Review times listed below shall be included in the Progress Schedule.

Submittal	Adjusted Review Time
City of Cambridge	10 Work Days
Railroad	45 Calendar Days
Utilities (per Section 12)	10 Work Days

Following this review, the DBT shall correct any errors, incorporate modifications, perform required investigations and make related changes to the plans and supporting documents prior to submitting the plans for Final Design review.

Plan Review Distribution: The DBT shall supply one (1) electronic version (PDF file) to the ODOT Project Manager for distribution within the Department. The DBT shall submit an electronic version to necessary third-party agencies.

18.5 Final Design Review Submission

For each Buildable Unit the DBT shall submit Final Design plans or review by the Department and other third-party agencies as appropriate.

The Final Design submission shall include submittal requirements as defined as Stage 3 per the ODOT Location & Design, Volume 3, however, sub summary and general summary sheets are not required. Quantity summaries shall be provided in electronic format (Excel and PDF) prior to construction for the Department's use in establishing testing requirements.

The Department shall have 10 Work Days from receipt to review complete submissions. The following are excluded as Work Days: State Holidays, Federal Holidays, Saturdays, Sundays, the Friday after Thanksgiving, Christmas Eve, and the days between Christmas and New Year's Day. This review time must be shown on the required Progress Schedule.

In addition, the DBT shall submit Final Design plans for review to the following third party agencies. Review times listed below shall be included in the Progress Schedule.

Submittal	Adjusted Review Time
City of Cambridge	10 Work Days
Railroad	45 Calendar Days
Utilities (per Section 12)	10 Work Days

Following the review the Department shall return to the DBT marked plans noted 'ACCEPTED', 'ACCEPTED AS NOTED' or 'NOT ACCEPTED' as described in section 105.02 of the Construction and Material Specifications. The DBT shall correct errors, incorporate changes, perform investigations and make related changes to the plans and supporting documents prior to submitting construction plans.

Plan Review Distribution: The DBT shall supply one (1) electronic plan file (PDF file) to the ODOT Project Manager for distribution within the Department. The DBT shall submit an electronic version to necessary third-party agencies.

18.6 Construction Plans

After the review comments for the Final Design review submission have been complied with, and following approval of the design documentation, the DBT shall prepare plan sets for use during construction. All review comments shall be resolved in writing by the DBT to the satisfaction of the Department and appropriate third-party agencies before the DBT submits the construction plans. No revisions shall be made except for those revisions needed to address Final Design review comments.

Each plan sheet shall have its last revised date noted on the sheet and clearly marked 'Released For Construction'. The 'Released For Construction' plan set shall be signed, dated and sealed by a Professional Engineer. Physical construction shall not begin until the plans marked 'Released For Construction' are delivered to each party given in the Plan Distribution below. No time extensions will be approved by the District Construction Engineer if the plan distribution is not completed and project delays occur as a result.

Plans Distribution: The DBT shall supply one (1) electronic plan file (PDF file) to the ODOT Project Manager for distribution within the Department. The DBT shall submit an electronic plan file (PDF file) to all third-party agencies.

18.7 Railroad Submittals

A. Design Submittals to Railroads

The DBT shall perform ongoing coordination of their design, and anticipated construction schedule with the railroad throughout the Project. This coordination shall include, but is not limited to, Interim and Final BU plan submittals as well as informal submittals and resubmittals, as determined by the DBT, in accordance with the Governing Regulations to ensure a design acceptable to the railroad. Upon concurrence of design with the railroad, the DBT shall submit professional engineer signed, stamped and dated RFC plans to the railroad for final review and approval.

This submission shall include resolution of all comments received throughout the design process. The railroad will attempt to complete their review of BU's within the timeframes identified in the contract, however for all BU submittals, the DBT shall include at least 45 Calendar Days for railroad review for Interim, Final, and Construction Plans in the Project Progress Schedule.

B. Construction Submittals to Railroads

The DBT shall continue coordination with the railroad after design is complete. This coordination shall include, but is not limited to, required construction submittals in accordance with the Governing Regulations. Unless otherwise approved by the Department and railroad, the DBT shall not make construction submittals to the railroad until railroad approval of the Construction Plan BU submission. Railroad review times for these submittals are in accordance to the Rail Agreement.

18.8 As-Built Construction Record-Drawing Plans

At the completion of the construction work for each respective Buildable Unit, the DBT shall provide a "Red-Line" set of drawings that clearly identify all changes made to the Construction Documents. They may be noted by hand markup of the revisions, utilizing the Clouding command in MicroStation (or other CAD software) or the Clouding command in PDF editing software. The red-lined drawings shall have a DBT signed verification on the title sheet indicating all field changes are being incorporated into the red-lined drawings.

Prior to Final Acceptance of the Work, the DBT shall furnish the Department formal As-Built Construction Record-Drawing plans. The DBT shall provide a general summary within the final As-Built Construction Record-Drawing plans. The formal As-Built Construction Record-Drawing shall include all red-lined changes. Red-line change shall be denoted utilizing the Clouding command in MicroStation (or other CAD software) or the Clouding command in PDF editing software. The As-Built Construction Record-Drawing shall have a signed verification on the title sheet from the Designer and the DBT indicating that all red-lined and field changes have been incorporated into the As-Built Construction Record-Drawing.

Note: The DBT's verification statement indicates all known field modifications made after the RFC plans where sealed by the Designer have been included in the formal Record-Drawing. The DBT's verification statement shall be signed by the DBT's Project Manager (or acceptable representative).

Note: The Designer's verification indicates the Designer's acknowledgement of the red-line and field changes, the presented field changes have been included within the As-Built Construction Record-Drawing and is the Designer's concurrence that these changes meet the design intent of the Contract. The Designer's verification statement shall be signed by the Lead Designer's representative.

The DBT may choose to omit the "Red-Line" submission and submit only formal As-Built Construction Record-Drawing.

As-Built Construction Record-Drawing plans shall be submitted using the following method:

PDF Images created according to the documentation on the Office of Contracts website

http://www.dot.state.oh.us/DIVISIONS/CONTRACTADMIN/CONTRACTS/Pages/TIFF.aspx

In addition to the information shown on the construction plans, the Record-Drawing plans shall show the following:

1. All deviations from the original approved construction plans which result in a change of location, material, type or size of work.

2. Any utilities, pipes, wellheads, abandoned pavements, foundations or other major obstructions discovered and remaining in place which are not shown, or do not conform to locations or depths shown in the plans. Underground features shall be shown and labeled on the Record-Drawing plan in terms of station, offset and elevation.

3. The final option and specification number selected for those items which allow several material options under the specification (e.g., conduit).

4. Additional plan sheets may be needed if necessary to show work not included in the construction plans.

Notation shall also be made of locations and the extent of use of materials, other than soil, for embankment construction (rock, broken concrete without reinforcing steel, etc.).

The Plan index shall show the plan sheets which have changes appearing on them.

Two copies of the As-Built Construction Record-Drawing plans shall be delivered to the Project Engineer for approval upon completion of the physical work but prior to the request for final payment. After the Department has approved the As-Built Construction Record-Drawings, the associated electronic files shall be delivered to the District Capital Programs Administrator. Acceptance of these plans and delivery of the associated electronic files is required prior to the work being accepted and the final estimate approved.

The plans shall be prepared in conformance with the Location and Design Manual, Volume 3, Section 1200 - Plan Preparation.

19 BUILDABLE UNITS (BU)

Buildable Units are portions of the projects which can be designed, reviewed and built with only limited controls and assumptions coming from the design of other portions of

the project. Often a Buildable Unit will be defined by a geographic area within the plan, but it may also be defined by types of work or construction stages which may require or permit similar, nearby work to be divided into separate Buildable Units.

All Buildable Units shall summarize the materials required to construct that portion of the project. The summary shall include the Construction and Material Specifications Item Number, and a description of the materials to be used.

For the Interim and Final Design submittals, the DBT may break the project work into two or more separate BU which can be progressed through design and construction with minimal or known effect on each other and/or which can be dealt with sequentially such that sufficient data is available for design and review of each BU. In order that the design and construction of one BU may proceed without significant approved information from an associated BU, the DBT may develop and propose assumptions which will allow for the first BU to proceed through design and/or construction. These assumptions shall be submitted for review and comment but their accuracy and effort upon the final design are the sole responsibility of the DBT. Should error in these assumptions result in additional work, remedial work or other changes to assure an acceptable design or should they result in the need to remove work and substitute additional work, the DBT shall be responsible for all such costs including, removal of unacceptable materials from the site, modification, additional work, repairs, etc. as necessary to produce an acceptable result.

If the DBT elects to develop Buildable Units, the DBT shall prepare, for review by the Department, a table of Buildable Units for the project with each BU described in detail. If the table is approved, the DBT shall modify the Progress Schedule to show a separate group of activities for BU and these activities shall encompass all of the design and construction work in each BU. Work activities shall be further separated in the Progress Schedule to show a meaningful completion status (i.e. separate activities comprising the placement of a bridge deck on steel beams shall describe; shoring, form building, steel placement, placement of conduit & joints, pouring concrete, forming parapets, pouring or slip forming parapets, provision of membranes, provision of wearing surfaces, curing, repair, form removal, cleaning, etc.).

The Final Review Submission and construction plans shall specifically be identified by the Buildable Unit code. If the design of a BU requires input information from an adjacent or related BU, the source for that information in previously approved plans shall be cited or the DBT shall provide an estimated value of the data. The input data shall also be carefully identified. In the same way any assumption, calculations or results from the stage and BU which are used as input to another BU shall be similarly identified, and where appropriate, compared back to that BU to verify previous assumptions. Should assumptions not match values calculated later, the DBT shall re-analyze all affected components and determine appropriate changes. Should those elements have already been constructed, the DBT shall recommend repairs, adjustments, modifications or replacement of the existing work as necessary to comply with the Scope of Work. All costs for re-design, re-submissions, modifications, removals, disposal of materials and new work needed to remedy the project and bring it to compliance shall be borne by the DBT and no time extensions shall be approved for this.

A separate BU shall be submitted for review that includes all work components over, under, within and adjacent to the railway that could impact or influence railroad operations. Buildable units for railroad review submissions shall not be defined by types of work but shall be determined by the limits of railroad regions of concern. The BU shall include all work within the applicable railroad region of concern (as agreed with the railroad and DBT) and shall not be segmented partial design pieces of an entity but shall be the overall design phased submission of the entity. Subdivision of work components that impact or influence railroad operations into multiple BU's shall not be performed unless previously agreed to by the Department and railroad.

20 DOCUMENT INVENTORY

All Appendices have been placed on the D5 FTP server at the following location:

ftp://ftp.dot.state.oh.us/pub/districts/D05/Projects/GUE/110245/Appendices/

Appendix List and Contractual Status

Appendix A	Design Designation	Contractual
Appendix B	Existing Plans	Reference
Appendix C	Railroad Coordination	Contractual
Appendix D	Existing Structure Data	Reference
Appendix E	Environmental Data	Contractual
Appendix F	Right of Way Plans and Data	Contractual
Appendix G	Existing Utility Plans and Data	Reference
Appendix H	Maintenance of Traffic	Contractual
Appendix I	Survey Plans and Data	Contractual
Appendix J	Design Detail Sheets	Contractual
Appendix K	Geotechnical Data	Contractual

The Reference Appendices are provided for informational purposes to assist the Proposers in preparing their proposals, but the Reference Appendices do not represent requirements binding on the DBT. The Department makes no representation or warranty as to the accuracy, adequacy, applicability, or completeness of the Reference Appendices. Except to the extent set forth to the contrary in the contract, reliance upon the Reference Appendices shall be at the Proposer's risk, and the Department shall have no liability or obligation as a result of the inaccuracy, inadequacy, inapplicability, or incompleteness of the Reference Appendices, regardless of the contents thereof. The Design-Builder shall be solely responsible for Project design and construction in accordance with the Contract.

Appendices indicated as "Contractual Requirement" are binding on the DBT and must be followed in the design bid process.