ODOT

DESIGN BUILD

SCOPE OF SERVICES

PID: 91095 **State Project Number:** 439348

County: WAY **Route:** SR 0083 **Section:** 10.81

1 PROJECT IDENTIFICATION & GENERAL INFORMATION

Table 1-1: Project Identification

PID	91095
State Project Number	439348
County-Route-Section	WAY-83-10.81
Local Route Name (if applicable)	Dix Expressway
Highway Functional Classification & Federal Aid System	NHS Non-Interstate – Freeways and Expressways (WAY-83-10.81-11.03) Other Federal-Aid Highway – Freeways and Expressways (WAY-3-14.57-17.43, WAY-83-13.73-14.05) Other Federal-Aid Highway – Other Principal Arterial (WAY-3-17.43-17.89, WAY-83-14.05-14.64, WAY-585-0.00-0.33)

1.1 Design Designation

The DBT shall use the design designations for each of the facilities below various design elements as specified within the Scope of Services.

Table 1-2: Design Designation

Location:	SR 83 10.81-11.03	SR 3 14.73-17.70	SR 83 13.73-14.64	SR 3 17.70-17.89
Current ADT (2023):	6,800	23,000	15,500	11,500
Design Year ADT (2043):	7,200	28,500	17,500	12,000
Design Hourly Volume:	650	2,600	1,600	1,200
Directional Distribution:	0.56	0.56	0.51	0.50
Trucks:	9%	5%	10%	14%
Design Speed:	55 MPH	55 MPH	45-55 MPH	35 MPH
Legal Speed:	55 MPH	55 MPH	45-55 MPH	35 MPH
Design Functional Classification:	Freeways and Expressways	Freeways and Expressways	Principal Arterial	Principal Arterial
NHS Project:	Yes	No	No	No

1.2 Existing Plans and Project Information

Available information related to the Project is available in the Document Inventory shown in Table 1-3. The Document Inventory will identify whether the document is designated as "Reference Documents" or "Contractual Appendices".

Reference Documents appendices are provided for informational purposes only. The Department makes no representation or warranty as to the accuracy, adequacy, applicability, or completeness of the Reference Documents. Except to the extent set forth to the contrary in the Contract Documents, reliance upon the Reference Documents 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 Documents, regardless of the contents thereof.

Contractual Appendices in the Document Inventory are considered binding obligations of the DBT. The DBT shall meet requirements identified in the Contractual Appendices and shall implement the Work in accordance with these requirements.

The Offerors (i.e. prospective Design-Build Teams) shall examine the information provided in the Document Inventory to determine if the information accurately depicts existing field conditions.

The following existing plans are considered part of the Document Inventory and are available for review:

Table 1-3: Existing Plans

Project	Year	Project Description
WAY-3-14.72	1966	New Construction
WAY-83-14.05B	1993	Interchange Reconfiguration
WAY-83-13.79	1996	Pavement Rehabilitation, Median Barrier
WAY-30-11.86	2004	New Construction (SR 3/SR 83 Interchange Ramps)
WAY-30-9.18	2004	Reconstruction (SR 3/SR 83 Interchange Ramps)
WAY-83-10.81	2013	Pavement Repairs
WAY-83-13.77	2014	Systematic Sign Replacement

The plans identified in the Document Inventory are not as-built plans. All existing plans are considered Reference Documents.

In addition to the existing plans, appendices to the Scope of Services are listed in the Document Inventory and posted on the FTP site.

ftp://ftp.dot.state.oh.us/pub/Districts/D03/91095/

Table 1-4: Document Inventory

Appendix #	Appendix Title	Contractual/Reference Designation
A	Railroad Agreement	Contractual Appendix
B	FAA Coordination	Contractual Appendix
C	Project Limits	Reference Document
D	Project Design Standards	Contractual Appendix
E	Environmental Commitments	Contractual Appendix
F	Geotechnical Information	Contractual Appendix
G	Survey Control Data	Contractual Appendix
H	Design Exception Study	Contractual Appendix

1.3 Railroad Coordination

The State Rail Coordinator at ODOT Central Office will be responsible for processing and executing Railroad Agreements. Additionally, unless otherwise specified in the Contract Documents, the District Railroad Coordinator will be responsible for managing technical coordination regarding Railroad Agreements. The Railroad Agreement and related documents can be found in Appendix A – Railroad Agreement.

The DBT shall:

1. Coordinate with the State Rail Coordinator prior to contacting the railroad(s) to verify the line(s) in question, necessary clearances for rail operations (both permanent and temporary), and/or to acquire the milepost and line identification information, etc.
2. Perform ongoing coordination of their design and construction with the railroad(s) throughout the Project in accordance with Section 17.11 of the Scope of Services.
3. Provide a monthly railroad coordination report to the Department and the railroad(s), including anticipated dates and milestones for the following items:
    a. Railroad Buildable Unit Plan Submittal (see Section 21);
    b. Construction submittals requiring railroad review and approval prior to beginning construction (in accordance with the Railroad Agreement);
    c. Construction start and end dates for work that may create an impact to the railroad facility/operations;
    d. Anticipated dates for flaggers;
    e. Anticipated dates for potential outage request; and
    f. Any other milestones that may impact railroad facilities or operations.

1.4 Airway/Highway Clearance

The DBT shall prepare and submit the Airway/Highway Clearance Analysis in accordance with the requirements of the FAA Obstruction Evaluation Group and as detailed in Appendix B – FAA Coordination. The DBT shall convey all relevant documentation to the ODOT District 3 FAA Coordinator for review and approval and obtain all necessary approvals through the FAA. The DBT shall account for the required time to obtain approvals in their schedule and will not be able to start work until the approvals and documentation are received by the ODOT District 3 FAA Coordinator.

2 PRE-BID MEETING

This meeting is to discuss and clarify all issues that the project may have. Offeror attendance at the pre-bid meeting is optional.

Location: Microsoft Teams

Date: July 15, 2021

Time: 1:30 PM

3 CONTRACTOR PRE-QUALIFICATION

It is required that the Bidder be a Contractor prequalified in accordance with Section 102.01 of PN 126. The Contractor or one of the subcontractors identified in the Proposal must be prequalified for all Work Type Codes included in the Proposal.

The Bidder is also required to have engaged the services of an ODOT pre-qualified Consultant (Designer) in accordance with Section 4 of the Scope of Services to constitute the DBT.

If the Contractor, Designer, and/or the sub-consultant(s) submitted do not meet all the required qualifications, the Office of Contract Sales may reject the bid.

4 DESIGNER

Each Offeror shall name the Designer and all design 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

Each Offeror must list relevant prequalification categories for the Designer and each design 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:

https://www.dot.state.oh.us/Divisions/Engineering/Consultant/Consultant/Prequalification%20Publish.xlsm

The Designer or sub-consultants of the Designer must be prequalified to perform design work associated with the following prequalification categories:

- Non-Complex Roadway Design
- Limited Highway Lighting Design
- Bridge Design Level 2
- Subsurface Utility Location Services
- Geotechnical Engineering Services
- Surveying Services

In accordance with Section 104.011 of PN 126, design services that require prequalification may only be performed by firms that are prequalified for those services at the time of performance of the services.

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:

- Gannett Fleming Engineers & Architects, P.C.

5 SCOPE OF WORK

Project Description:	Remove and replace all existing full-depth pavement within the Project Limits, including subgrade stabilization, underdrains, and some drainage improvements. Replace pavement markings with recessed wet-reflective and install new raised pavement markings and replace guardrail. Widen shoulders at the SR 585 interchange and increase merge tapers at the entrance ramps from US 30 westbound and SR 585 to SR 83 northbound. Modify lane configuration and traffic control for SR 83 northbound to SR 3 exit ramp and upgrade roadway curvature on SR 83 northbound south of SR 3 interchange. The Project also includes structural rehabilitation work including bridge deck patching, culvert concrete repairs and waterproofing, and installing vandal protection fence.
Completion Date:	October 15, 2023
Warranties:	None

The approximate Project Limits for each applicable roadway are provided in Table 5-1, and approximate project limits are shown in Appendix C – Project Limits.

Table 5-1: Approximate Project Limits

Roadway Name	Begin	End
WAY SR 83	10.81 (begin concrete pavement)	11.03 (SR 3)
WAY SR 3	14.57 (on SR 3 ramp)	17.89 (Milltown Rd)
WAY SR 83	13.73 (end SR 3 overlap)	14.64 (end concrete, 0.02 mi. south of Burbank Rd)
WAY SR 585	0.00 (begin exit ramp from SR 3)	0.33 (end ramp to Akron Rd)
WAY SR 3	17.71 (Cleveland Rd southbound right lane concrete pavement)	17.89 (begin Cleveland Rd southbound right lane concrete pavement)
WAY CR 3A (Cleveland Rd Northbound)	5.65 (Pavement joint on Cleveland Rd)	5.71 (begin SR 3 on Cleveland Rd)
US 30 Interchange	Ramps G, E, B, and Y	
SR 585 Interchange	Ramps I , I-2, I-1, H, H-1, and H-2	
SR 3 Interchange	Ramps T, R, S, SA, SB, and SC	

For informational purposes, project maps with approximate location layouts are in Appendix E – Environmental Commitments. Work Limits shall be determined by the DBT.

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

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

6 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 physical project work until 30 days following work complete, including all time extensions. The field office requirements are only applicable to the Department's personnel.

7 GENERAL PROVISIONS FOR THE WORK

7.1 Governing Regulations

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

It will be the responsibility of the DBT to acquire and utilize the necessary ODOT manuals that apply to the design and construction work required to complete this project.

The current edition, including updates released on or before the advertising date, of the following ODOT 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 (L&D)
- Volume One - Roadway Design
- Volume Two - Drainage Design
- Volume Three - Plan Preparation

Pavement Design Manual
Specifications for Geotechnical Explorations
Survey and Mapping Specifications
Construction and Material Specifications (CMS)
Proposal Notes (PN) for Construction and Material Specifications
Supplemental Specifications (SS) for Construction and Material Specifications
Item Master
Manual for Abandoned Underground Mines - Inventory and Risk Assessment
State Highway Access Management Manual (SHAMM)
Standard Construction Drawings (SCD)
Plan Insert Sheets (PIS)
Traffic Engineering Manual (TEM)
Ohio Manual of Uniform Traffic Control Devices (OMUTCD)
Real Estate Administration Policies and Procedures Manual:
- Appraisal
- Acquisition Property Management
- Relocation
- ROW Plans
- Utilities

Wireless Communication Tower Manual
Environmental Services Handbooks and Guidelines
Waterway Permit Manual
CADD Engineering Standards Manual
Geotechnical Bulletins
CADD files supplied by the DBT
Project Design Standards and Notes (Appendix D)

The DBT shall comply with ODOT's CADD Standards, and supply files in accordance with the CADD Engineering Standards Manual for ODOTcadd (SELECTseries). 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 Department will accept CADD files through 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 ODOTcadd (SELECTseries). The DBT shall provide a comprehensive set of complete and accurate CADD data which is compatible with ODOT's CADD systems with no additional work or modification.
2. The DBT shall submit all information produced in the process of plan development according to L&D Volume 3, Section 1500.

The DBT shall use a separate file name for each horizontal or vertical alignment. The DBT shall provide required ASCII report content in accordance with the CADD Engineering Standards Manual.

These requirements and procedures may be updated from time to time with notification provided on the ODOT Division of Engineering website. The DBT shall use ODOT cell files and ODOT seed files consistent with the version of the requirements identified in Section 7.1 (Governing Regulations).

7.2 Pre-Award Conference

Within 7 days following Bid opening, the apparent successful DBT shall attend a mandatory pre-award conference. This confidential meeting will be held with the Office of Contract Sales 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 DBT's Bid Items, 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 Contract Sales to help explain design concepts and quantities. This information

will be used only by the Office of Contract Sales 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 Documents, or acceptance or validation of any design concept or assumed quantities of Work.

7.3 Partnering Agreement

The DBT is required to enter into a partnering agreement with the Department that is:

☑ Facilitated

☐ Self-Facilitated

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. The partnering agreement is a document which is solely intended to establish an environment of cooperation between the parties. The costs associated with the partnering process will be in accordance with Proposal Note 111.

7.4 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:	Scott Ockunzzi
Phone number:	(419) 207-7174
E-mail:	Scott.Ockunzzi@dot.ohio.gov

District's Project Engineer's Name:	Megan Feller
Phone number:	(419) 565-8809
E-mail:	Megan.Feller@dot.ohio.gov

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

7.5 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.

7.6 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 ODOT's Survey and Mapping Specifications. Prior to performing said survey, the DBT will 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 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 activities were performed will 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 to the DBT by ODOT's Project Manager.

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.

8 ENVIRONMENTAL

The DBT shall ensure that the Project is designed, constructed and maintained in accordance with all environmental requirements, regulations, and applicable permits required for this Project.

8.1 NEPA & Environmental Commitments

The DBT shall perform all environmental commitments as described in Table 8-1 and in Appendix E – Environmental Commitments, unless otherwise specified in the Contract Documents.

Table 8-1: Environmental Commitments

Source	Description of Commitment
Endangered Species - Indiana Bat and Northern Long-Eared Bat (federal) and Tricolor and Little Brown Bat (state)	The Contractor shall not remove trees under this project from April 1 through September 30. All necessary tree removal shall occur from October 1 through March 31. The Contractor shall demarcate clearing limits in the field to avoid any unauthorized tree clearing. 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 inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet.
Waterway Permit(s)	ODOT shall obtain and adhere to all appropriate waterway permits prior to any work below the ordinary high water mark of any waterway and all Special Provisions for waterway permits will be included in the plans. ODOT will adhere to all appropriate waterway permits and all Special Provisions for waterway permits throughout construction. The Contractor shall not perform any work within the boundaries of any wetlands or below the ordinary high water mark (OHWM) of any stream until ODOT obtains the necessary waterway permit(s). This includes the placement of any temporary or permanent fills below the OHWM.
Floodplain Permit	ODOT shall self-permit for a floodplain permit or documentation of exemption prior to plan file based on the DBT's floodplain coordination documentation as outlined in Section 15.1

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 City 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.

Should the DBT determine the scope of work will include areas outside of the Environmentally Cleared Area, see Appendix E – Environmental Commitments, a re-evaluation will be conducted by the Department to determine if additional field investigations are needed to document environmental resources and potential impacts. The DBT shall notify the Department as soon as possible if work outside of the Environmentally Cleared Areas is needed to avoid potential delays. Depending on the additional impacts, the Department will require 1-2 months to complete the re-evaluation. As needed, the Department will conduct appropriate agency coordination prior to permit application submittal.

8.2 Environmental Permits

The DBT shall:

1. Be aware of all applicable environmental permits related to the Work.
2. Coordinate with the Department and prepare applications and other relevant information necessary to obtain all environmental permits required to perform the Work.
3. Comply with all conditions imposed by environmental permits in design and construction.
4. Notify the Department regarding any failure to comply with conditions of the environmental permits.
5. Maintain and update environmental permits to ensure they are in effect during the Work.
6. Coordinate with the Department and submit any documents regarding updates required for environmental approvals to the Department for coordination with the regulatory agency.

If the DBT modifies elements of the Conceptual Design used as the basis for obtaining a permit, the DBT accepts all responsibility for associated cost and schedule impacts resulting from the permit modification process and accepts the risk that the regulatory agency may not approve the proposed permit modification.

At no time shall the DBT coordinate environmental permitting issues directly with the regulatory agencies, unless directed to do so by the Department. The DBT shall not commence with Work covered by environmental permits until the applicable permit approval is obtained from the regulatory agency.

Table 8-2 identifies work performed by the Department related to various environmental permits and the status of Department activities. Table 8-2 is not a comprehensive list of the environmental permits required to perform the Work. Unless otherwise noted, the DBT shall be responsible to obtain all necessary environmental permits and pay all charges, fees and taxes associated with these permits.

Table 8-2: Status of Department Activities for Environmental Permits

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	ODOT RGP-B Maintenance	ODOT has obtained the Waterway Permit, and it is included in Appendix E – Environmental Commitments
Ohio Environmental Protection Agency	NPDES	To be submitted by ODOT to OEPA upon receipt of NOI from the DBT

The DBT shall acquire required noise permits and/or variances from the local jurisdiction.

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.

8.3 Temporary Sediment and Erosion Control

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 information to the Department for development of the Notice of Intent for the NPDES Permit, including the total acreage of earth disturbing activities for both off project and on project work. The DBT shall assume that approval from OEPA will require a minimum of 31 days following submittal to the ODOT Project Manager. Earth disturbing activity is not permitted prior to approval of coverage under the NPDES Permit.

For projects that require an NOI, the DBT must develop a Storm Water Pollution Prevention Plan in accordance with SS832 and the NPDES Permit. The DBT shall not initiate any earth disturbing activity until the SWPPP is approved.

The DBT shall be compensated for furnishing and installing items related to temporary sediment and erosion control requirements. The Department will compensate the DBT through an encumbered amount included in the Proposal as a non-bid reference number. The Proposal specifies the unit prices for the temporary sediment and erosion control items. Payments for temporary sediment and erosion control items that exceed the encumbered amount will be made through an Extra Work Change Order using the specified unit prices. The specified unit prices are fixed for the Contract Documents and may not be negotiated or adjusted for inflation or claimed changed condition.

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.

8.4 Regulated Materials

The DBT shall meet all regulatory conditions imposed with regulated materials, including hazardous materials, associated with the Project. The DBT shall characterize, collect, contain, and properly dispose of all waste generated or encountered during the Work. The DBT shall ensure that the site is properly contained during construction so that regulated materials do not migrate off-site. The DBT shall prepare and implement a Spill Prevention Control and Countermeasures (SPCC) Plan per the requirements of 40 CFR Part 112 that provides specific guidance for managing, handling, and disposing of regulated materials that may be encountered within the Right-of-Way and for protecting the health and safety of all on-site personnel and the general public.

The project will be conducted within existing ODOT right-of-way. Deep excavation will be required for the proposed culvert work. No utilities will need to be relocated to construct this project. In accordance with the ODOT Office of Environmental Services' (OES) Regulated Materials Review (RMR) guidelines, an RMR Screening was conducted. The current land use of the properties adjacent to this project are residential and forested floodplain. No regulated materials records were found within the project boundaries during a search of the Ohio Regulated Properties Search (ORPS) tool. Based on this information, the project is considered exempt from further regulated material investigations.

If any unknown regulated materials are discovered through work on the Project, the DBT shall notify the Department immediately and shall follow the SPCC Plan, as well as all appropriate regulations.

8.4.1 Asbestos

Based on the work being performed on this project, an Asbestos Survey is not required.

8.5 Noise Analysis and Noise Barriers

Based on the type of work being performed on this project, neither a Noise Analysis or new Noise Barriers are required.

9 RIGHT OF WAY (ROW)

The DBT shall perform all necessary construction work for the project within the Project Right of Way (ROW).

The DBT shall locate existing right of way lines 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). The DBT shall research existing right of way information from all available sources including but not limited to ODOT 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 will stake and flag the existing right of way in the field prior to the start of construction and will maintain stakes and flags throughout the duration of the Project.

The DBT shall identify all right of way encroachments on the construction plans with 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.

9.1 Temporary Easements

Not Applicable

10 UTILITIES

10.1 Existing Utilities

The District Utility Coordinator, in coordination with Ohio811 and other utility owners that are non-members of any utility protection services, has determined that the utilities identified in Table 10-1 are located in the area of the Project.

List all known utilities on the Project site in Table 10-1.

Table 10-1: Utility Contacts and Status

Utility Owner	Utility Contact	Relocation Status
AEP	Please begin/continue directing all communication relating to current or future projects to cantondistrictppr@aep.com	No relocation anticipated
Lumen (telephone)	Jeff Schoonover 2025 Akron Rd. Wooster,OH 44691 330-262-1128	
Massillon Cable TV	Jeremy Lehman P.O. Box 917 Wooster, Ohio 44691 330-345-5110, ext.219	
Dominion Gas	**All projects** must be submitted to engineering for conflict review. Engineering will follow up with a formal response letter for documentation. Plan sets less than 20 sheets can be sent in ***pdf format only*** to relocation@dominionenergy.com	

Utility Owner	Utility Contact	Relocation Status
City of Wooster	Roger Kobilarcsik, P.E., City Engineer 538 N. Market St. Wooster, Ohio 44691 330-263-5236	
Everstream	Jim Byrne 1228 Euclid Avenue, Suite 250 Cleveland, Ohio, 44115 216-581-7972	

10.2 Utility Coordination Responsibilities

The DBT shall coordinate all utility adjustments for construction activities on the Project.

As soon as it is feasible, the DBT shall stake the existing ROW (and new ROW, if additional ROW has been acquired) in the field and shall perform clearing and grubbing within that ROW in accordance with the Contract Documents to facilitate utility relocation. The DBT shall maintain and update ROW stakes as needed throughout the Project Limits for the duration of the Project.

The DBT shall design the project and perform construction work in a manner that minimizes the scope and extent of utility conflicts and adjustments. The DBT shall not design or construct the Work in a way that precludes legal occupancy of the highway right-of-way by the adjusted utility. The DBT shall minimize potential delays and coordinate efficient adjustments of utilities.

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 included in the Project without Department approval. The Department will not compensate for betterments or other ineligible utility work. The DBT shall coordinate determination of eligibility through the District Utility Coordinator.

10.3 Subsurface Utilities Engineering (SUE)

Subsurface Utility Engineering Required: ☑ Yes ☐ No

The DBT shall use an ODOT prequalified SUE location service to field verify all underground utilities prior to beginning any design work and shall incorporate the results in the design.

DBT shall have the SUE perform the following Quality Levels:

☑ SUE Level A (10 each)

☑ SUE Level B (DBT to determine quantity)

☐ SUE Level C

☐ SUE Level D

11 MAINTENANCE OF TRAFFIC (MOT)

11.1 General

The DBT shall be responsible for designing, providing, and maintaining safe and effective traffic control 24 hours a day for the duration of the Project. The DBT shall furnish, install, maintain and remove all traffic control devices. The DBT shall implement Maintenance of Traffic (MOT) in a manner that minimizes both construction duration and impact to the traveling public.

The DBT shall provide written notice to the Department twenty-one (21) days in advance of modifications in MOT or traffic patterns, including modifications to the following:

1. MOT configuration
2. Access
3. Detours
4. Schedule
5. Duration

In addition to the Department, please also copy the City of Wooster with all MOT notifications:

Roger Kobilarcsik, P.E.
City of Wooster – City Engineer
Phone: (330) 263-5236
Email: rkobilarcsik@woosteroh.com

11.2 MOT Requirements

The DBT shall be design and implement the MOT in accordance with the requirements referenced in Table 11-1.

Table 11-1: MOT Requirements

Feature	Requirement	Detailed Requirement Information
Mainline SR 83/SR 3 Freeway Full-Depth Reconstruction Section South of the Cleveland Rd Interchange (Sta. 950+00), including ramps where part-width construction is utilized	Minimum number of lanes open Minimum lane width Minimum shoulder/buffer width Protect phase line drop off Barrier to phase line drop-off width Short-duration freeway closures	1 Lane each direction 11 feet wide 2 feet wide Portable Barrier 2 feet wide Follow SCD MT-99.60
Mainline SR 83/SR 3 Southbound Right Lane Cleveland Rd to SR 585	The SR 83/SR 3 southbound right lane and shoulder from Sta. 837+00 to Sta. 921+00 (approximately bridge over Little Apple Creek to bridge over Cleveland Rd) full-depth replacement through surface course asphalt shall occur in a single phase	This phasing is related to the Ohio University pavement research as outlined in Section 13.2
Mainline SR 83 Arterial Section North of Cleveland Rd Interchange (Sta. 950+00), and SR 3 Cleveland Rd section for full-depth pavement reconstruction	Minimum number of lanes open Minimum lane width Minimum shoulder/buffer width Protect phase line drop off 55 mph Protect phase line drop-off less than 55 mph speed limit Drums/Barrier (un-anchored) to phase line drop-off width	1 Lane each direction 11 feet wide 2 ft wide Portable Barrier Barrier or Drums per SCD MT-101.90 2 feet wide barrier or 1.5 feet wide drums
SR 3 Cleveland Rd Resurfacing Section	Minimum number of lanes open Minimum lane width	1 Lane each direction 11 feet wide
Phase Changes	Phase changes shall not occur during weekday peak hour periods	6 AM – 9 AM or 3 PM – 6 PM
Ramps at US 30, SR 585, and SR 3	Maximum duration of ramp closure for pavement replacement Concurrent ramp closures for traffic island construction	See Section 11.2 for additional details Adjacent ramp closures may be concurrent for construction of traffic island if detours do not conflict

Feature	Requirement	Detailed Requirement Information
SR 3 northbound (Cleveland Rd) entrance ramp to SR 83 southbound (Ramp R) **SR 83 southbound exit ramp to SR 585 (Ramp H-1)**	These ramp closures may be extended longer than the maximum detour duration above if the ramp pavement replacement work is coordinated with the construction of the full-depth pavement replacement of the right lane and shoulder of SR 83/SR 3 southbound from the bridge over Cleveland Rd to the bridge over Little Apple Creek	This phasing is related to the mainline pavement replacement for the Ohio University pavement research as outlined in Section 13.2. These ramps shall be opened within 14 days of surface asphalt being placed on the corresponding mainline pavement section
Mainline SR 83/SR 3 Part-Width Construction	If constructing the mainline of SR 3/SR 83 part-width, the phase line shall follow the line that separates the right and left lane of the mainline of multi-lane highway sections	The above minimum lane, shoulder, and buffer widths can be reduced if required by this condition where pinch points exist, but portable barrier shall be anchored as design dictates. Lane widths shall not be less than 10 ft
Median Barrier Salvage Phasing	Full-depth pavement removal and replacement shall not occur on both sides of any existing SR 83/SR 3 median barrier simultaneously for any median barrier that is not being replaced.	Do not leave existing median barrier to remain unsupported by excavating on both sides
Side Road Lane Closures for Ramp Terminal Construction and Guardrail / Vandal Protection Fence Installation	SR 3 northbound/southbound lanes SR 585 southbound lanes Maximum lane closure duration 30 days for this work (does not apply to Cleveland Rd resurfacing)	While the adjacent ramp is closed for reconstruction, the side road lane closest to the subject ramp may also be closed.
Side Road Lane Closures for Mainline Paving Work	Friendsville Rd at SR 83 intersection Milltown Rd at SR 3 intersection	Maintain one lane in each direction except from 9 PM – 7 AM, when side road traffic may be restricted by flagging or local detour

Feature	Requirement	Detailed Requirement Information
Additional lane closures for holidays or special events	Other than long-term lane and ramp closures and restrictions already in-place, no additional or short-term restrictions, or phase changes shall be installed on holidays or special events	Holidays and special events are as-listed in TEM note 642-6 in addition to College of Wooster move-in/move-out periods
Bicycle and Pedestrian Traffic	Maintain existing walk, paths, and crosswalks at all times. If a pedestrian detour is required, it shall be installed concurrently with and comply with all requirements as the corresponding roadway closure	Pedestrian detour signing and other traffic control shall be included with the MOT plans
Closures or Restrictions	No closures or restrictions shall remain in-place when not required for an active work zone or to protect a hazard	Existing or proposed facilities shall be opened as soon as possible, even if allowed by PLCS or other requirements
Storage of Portable Barrier over Winter Shutdown	Median barrier storage Ramp infield barrier storage	Not Permitted Permitted

If the DBT requires any exceptions to the above table, they shall contact the District Work Zone Traffic Manager (DWZTM) for approval prior to proceeding:

Scott Ockunzzi, P.E.
ODOT District 3 – Work Zone Traffic Manager
Phone: (419) 207-7174
Email: Scott.Ockunzzi@dot.ohio.gov

Prior to the bid date, if an exception to the above table is anticipated during construction, the DBT is required to submit a pre-bid question for approval. If approval is not received prior to bid, the DBT shall assume that they will have to comply with all requirements of the above table and all MOT requirements below, except as approved by the DWZTM.

11.2.1 Detours

All detour routes have been provided by the Department below and shall be signed by the DBT. The designated local detour shall also be provided by the Department at the pre-construction meeting.

The DBT shall not install conflicting detour routes concurrently. Also, two adjacent entrance ramps or two adjacent exit ramps in one direction shall not be closed concurrently.

For any interchange ramps that are closed, black on orange "Closed" plaques shall be mounted to the face of any associated existing, proposed, or temporary guide signs.

All interchange ramps shall remain open, except when the following ramps may be detoured using the following routes:

Table 11-2: Ramp Detour Routes

Ramp	Description	Detour Route
Y	SR 83 South to Lincoln Way	SR 83 South to SR 302 North to US 30 East to Lincoln Way
B	SR 3 South to US 30 West	SR 83 South to SR 302 North to US 30 East to SR 3 North
C	US 30 West to SR 83 South	US 30 West to SR 302 South to US 30 East to SR 83 South
D	US 30 West to SR 3 North	US 30 West to SR 302 South to US 30 East to SR 3 North
E	SR 83 North to US 30 West	SR 83 North to SR 585 South to SR 83 South to US 30 West
G	US 30 East to SR 3 North	US 30 East to Apple Creek Rd North to US 30 West to SR 3 North
H-1	SR 3 South to SR 585	SR 83 South to US 250 West to SR 83 North to SR 585
H-2	SR 585 to SR 3 South	SR 585 to SR 3 North to Cleveland Rd South to SR 3 South
I-1	SR 585 to SR 3 North	SR 585 to SR 3 South to Lincoln Way West to US 30 East to SR 3 North
I-2	SR 3 North to SR 585	SR 3 North to Cleveland Rd South to SR 3 South to SR 585
S-C	SR 83 South to Cleveland Rd	SR 83 South to SR 585 North to SR 3 North to Cleveland Rd
R	Cleveland Rd North to SR 3 South	Cleveland Rd North Left Turn to SR 3 South (Ramp S)
S	SR 3 South to SR 83 (Includes S-A and S-B)	SR 3 South Left Turn to SR 3 South (Ramp R) to SR 585 North to SR 3 North
T	SR 3 North to Cleveland Rd	SR 83 North to SR 604 East

11.2.2 Window Contract

Disincentives for violations of MOT durations shall be assessed per proposal note PN 129 and the window contract table below:

Table 11-3: Window Contract Table

Description of Critical Work	Calendar Days to Complete	Disincentive $ Per Day	Work Window	
			Start	End
US 30 West to SR 83 South (Ramp C)*	30	$1,000	Contract Execution Date	Project Completion Date
US 30 West to SR 3 North (Ramp D)*		$3,500		
US 30 East to SR 3 North (Ramp G)*		$10,000		
SR 83 South to Lincoln Way (Ramp Y)*	45	$9,000		
SR 83 North to US 30 West (Ramp E)*		$500		
SR 3 North to Cleveland Rd (Ramp T)		$10,000		
SR 3 South to US 30 West (Ramp B)*	60	$10,000		
SR 585 to SR 3 South (Ramp H-2)		$10,000		
SR 585 to SR 3 North (Ramp I-1)		$2,000		
SR 3 North to SR 585 (Ramp I-2)		$10,000		
SR 83 South to Cleveland Rd (Ramp S-C)		$2,500		
SR 3 South to SR 83 (Ramp S, S-A, and S-B)		$7,000		
SR 3 South to SR 585 (Ramp H-1)	See Work Window	$4,000	Concurrently with SR 83 Southbound right lane from SR 3 to SR 585 per Table 11-1	
Cleveland Rd to SR 3 South (Ramp R)		No Disincentive		
All lanes on all roads returned to original or final configuration with all signs and long-term or final pavement markings installed (Winter Shut-Down)		$5,000	Second Friday in November	First Monday in April

**US 30 interchange ramp closures violate ODOT Policy 21-008(P) and Standard Procedure 123-001(SP), and are permitted by an exception granted by the Maintenance of Traffic Exception Committee (MOTEC)*

11.2.3 Additional MOT Requirements

In addition to the requirements and restrictions listed within this section, below are some project-specific MOT requirements:

- All temporary MOT devices will comply with the Manual for Assessing Safety Hardware (MASH) report and NCHRP-350 report if devices are manufactured prior to 12/31/2019 and meet the Quality Standards for Temporary Traffic Control Devices as applicable

- The limits of the Construction Zone include the length of roadway where work is being performed as well as the limits of the roadway where lane and shoulder restrictions are in-place using pavement markings or channelizing devices, etc.
- All intersections within the project shall always maintain stopping sight distance and intersection sight distance per design standards, or at a minimum, sight distance shall not be restricted to less than what is available in the pre-construction condition.
- Work zone Class I pavement markings on any existing multi-lane facility, including all ramps, shall comply with wet-reflective requirements per SS 807 and/or SS 873. Wet-reflective work zone pavement markings are not required for any Winter Shut-Down periods. Grooving for recessed pavement markings per SS 850 shall not be used for work zone wet-reflective pavement markings.
- The DBT shall resurface all transition areas within the Construction Zone at the time the associated surface course is being applied (or at the end of the project). The resurfacing shall use asphalt concrete surface course and tack coat per Pavement Treatment B in Table 13-3. All other requirements of Section 13 also apply. In preparation for resurfacing, the existing pavement shall be removed to a depth necessary to reach the level of the intermediate course of the existing pavement. The resurfacing of all transition areas shall also include the tangent area extending beyond the proposed work limits. The resurfacing shall include the entire width of the roadway, including shoulders.
- The DBT shall provide temporary pavement wedges where traffic is required to travel from or onto a pavement surface of a different elevation, including bridge decks. It is not necessary to provide a temporary wedge along lane lines between two thru lanes for a drop-off in conformance with SCD MT-101.90. The minimum slope of the temporary pavement wedge shall be 3:1 along longitudinal joints and 120:1 at transverse joints. These wedges shall be removed prior to placing the specified pavement course. Elevation differences along longitudinal joints located within the traveled lane, between traveled lanes, or between the shoulder and a traveled lane are not permitted during the Winter Shut-down periods.
- Repairs to the existing pavement within the Construction Zone may be required throughout the project to ensure that existing pavement is traffic-worthy. If the Engineer determines that repairs are required, they shall identify the locations and types of pavement repairs that are required and notify the DBT. The DBT shall make repairs as identified by the Engineer within 7 calendar days of notification. The DBT shall be compensated for these repairs, including maintenance of traffic and mobilization cost, by force account, through the Item 615 Pavement Repairs allowance budget. If the DBT does not make repairs as identified within 7 calendar days, the DBT shall not be compensated for this work, although the performance of this work is still required.
- If the DBT determines that existing guide signs be removed for construction phasing purposes, they shall either be re-erected or replaced with ground-mounted guide signs on temporary supports and replaced at the end of the project per the requirements of Section 18.
- If any existing lighting is taken out of service for longer than 24 hours, temporary lighting shall be provided by the DBT, including crossover lighting (if applicable).

- If the DBT requires that temporary traffic be maintained on existing shoulders, the following requirements apply:
    - The assumed depth of the existing concrete shoulders is adequate for maintenance of traffic purposes, but the existing rumble strips shall be removed by mill and fill or another method as approved by the Engineer
    - The assumed depth of the existing asphalt shoulders is not adequate for maintenance of traffic purposes. If the DBT elects to maintain traffic on existing asphalt shoulders, the existing shoulder pavement shall be removed and replaced with Item 615, Pavement for Maintaining Traffic, Class A. This shoulder pavement may be left in-place at the end of the project, so long as the cross-slopes and shoulder widths match the pre-construction condition
- The DBT shall submit the location of work zone access/egress points for Department review and approval before installation. Design of such access/egress points and acceleration/deceleration areas shall be in accordance with SCD MT-101.30 and the TEM.
- The length of acceleration or deceleration lanes for ramps or access points shall be maximized using existing and proposed pavement as much as possible and shall be installed and signed according to appropriate SCDs. If the minimum required acceleration or deceleration distance cannot be achieved by use of existing or proposed pavement, temporary pavement shall be installed.
- Where not stated elsewhere in this document, drop-offs in work zones shall be maintained per SCD MT-101.90, including conformance to Condition II in all full-depth pavement replacement locations where the posted speed limit is less than 45 mph.
- When developing MOT plans, the DBT shall ensure that drainage is maintained during all phases of construction, and for any temporary pavement that is constructed, and shall include any grading, conduit, and/or structures required to do so
- If the DBT's MOT plans include the removal and replacement of any existing concrete median barrier, the cost for replacement of the barrier and associated anchorages and assemblies in a shape matching what was removed shall be incidental to Item 614 Maintaining Traffic
- When opening pavement to traffic, traffic shall only be placed on existing full-depth pavement or new intermediate or surface course asphalt, or full-depth concrete pavement, and all pavement markings shall be in-place
- When opening traffic for the winter shut-down period on existing pavement, new pavement markings conforming with CMS 642 shall be installed on all existing pavement, whether they were removed for MOT purposes or not
- Work zone pavement markings shall not be placed on final surface course asphalt or concrete surface, unless temporary tape is used per CMS 740.06
- The DBT shall coordinate with The City of Wooster to ensure that the MOT plans do not conflict with the City's planned reconstruction of Melrose Drive from Milltown Rd to Smithville-Western Rd in 2022.
- The contractor shall perform a pre-construction video for any identified local maintenance detour routes or off-state-system haul routes.
- Unless required by other constraints, night work on the project is prohibited from 7:00 PM to 7:00 AM.

11.3 Work Zone Speed Reduction

The DBT shall evaluate if a work zone speed reduction is warranted based on the final MOT scheme. The evaluation requirements are listed in Section 600 of the Traffic Engineering Manual.

If a work zone speed reduction is warranted, the DBT shall design and implement signing in accordance with the requirements of SCD MT-104.10 and the TEM.

11.4 Haul Routes

In addition to the requirements of C&MS 105.13, the Progress Schedule shall account for 30 Days for the Department to secure approval for haul routes.

11.5 Additional Plan Submittal Requirements

The DBT shall prepare and submit, as part of each buildable unit submittal, a Maintenance of Traffic Plan (MOTP) to the Department for each buildable unit. In addition to compliance with all referenced design standards, the MOTP shall also address all aspects of MOT and shall contain specific MOT phasing plans and shall comply with the requirements listed below:

- Cover page/title sheet sealed by an Ohio registered Professional Engineer (P.E.)
- A schedule showing MOT phases and durations. All long-term (as defined in TEM 606-3) lane closures and lane restrictions shall be included and identified. All complete directional roadway closures shall also be identified.
- Discussion of sequence of operations and MOT procedures
- Comply with ODOT Standard Procedure 123-001(SP) Traffic Management in Work Zones
- Plans at 40-scale showing:
    - The work area
    - Horizontal Lane and Pavement begin/end tapers
    - Temporary pavements and/or structures
    - Location of signs (existing, proposed, covered, and modified, and PCMS units)
    - Locations of typical sections
    - References to applicable Standard Construction Drawings (SCD), Plan Insert Sheets (PIS), and Plan Notes
- Typical sections showing lane widths, pavements markings, drums, portable barrier (PB), limiting stations, work area, drop-offs, etc.
- Sign details for proposed signs and overlays/modifications of existing signs

11.6 Traffic Engineering Manual Notes

The DBT shall design and implement the MOT in accordance with the following TEM notes:

- 642-3 Maintaining Traffic (At All Times)
- 642-4 Maintaining Traffic (Time Limitation on a Detour)
- 642-5 Maintaining Traffic (Winter Time Limitations – use dates in Table 11-3)
- 642-6 Maintaining Traffic (Lanes Open During Holidays or Special Events)
- 642-7 Maintaining Traffic (Lane Closure/Reduction Required)

- 642-8 Maintaining Traffic (Notice of Closure Sign)
- 642-12 Maintain Traffic (Closing Paragraph)
- 642-13 Placement of Asphalt Concrete [for SR 3 north of SR 83]
- 642-17 Drum Requirements
- 642-18 Permitted Lane Closure Schedule (PLCS)
- 642-19 Dust Control
- 642-22 Replacement Sign (incidental to Item 614, Maintaining Traffic)
- 642-23 Replacement Drum (incidental to Item 614, Maintaining Traffic)
- 642-24 Work Zone Speed Zones
- 642-25 Designated Local Detour Route (See Appendix D – Project Design Standards)
- 642-27 Work Zone Increased Penalties Sign
- 642-28 Earthwork for Maintaining Traffic
- 642-29 Floodlighting
- 642-30 Work Zone Impact Attenuator for 24" wide hazards
- 642-32 Approved MOT Policy Exceptions
    - Closures of US 30 interchange ramps B, C, D, E, G and Y per above requirements
- 642-41 Portable Changeable Message Sign
- 642-42 Maintenance of Traffic Signal/Flasher Installation
- 642-44 Worksite Traffic Supervisor (WTS)
- 642-45 TIM During MOT
- 642-51 Barrier Delineation
- 642-52 Guardrail Delineation
- 642-55 Law Enforcement Officer (with Patrol Car) for assistance during construction operations
- 642-58 Notification of Traffic Restrictions

Depending on the maintenance of traffic plan implemented by the DBT, these TEM notes should be used as applicable:

- 642-14 Trench for Widening
- 642-15 Overnight Trench Closing (no more than the depth of the surface course of asphalt)
- 642-21 Portable Barrier, 50”, As Per Plan
- 642-31 Work Zone Impact Attenuator for Hazards Over 24” and Less than 36” Wide
- 642-35 Work Zone Crossover Lighting System
- 642-43 Advance Work Zone Information (required for work zones with SR 83 crossover)
- 642-47 Speed Measurement Markings (if existing speed measurement markings are discovered and requested to be maintained by the OSHP)
- 642-48 Work Zone RPM, As Per Plan
- 642-49 Work Zone RPMs on Permanent Concrete Surfaces

12 SURVEY

A. ODOT Survey Responsibilities

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

1. Appendix G – Survey Control Data
2. Primary Project Control Monuments/Benchmarks
    a. 10 – Type 'A' monuments (horizontal and vertical control) at approximately 1 mile intervals along the mainline of the project.
    b. 4 – Type 'B' outlying monuments for calibration purposes
3. Centerline of RW Alignment Based on the surveyed location of 36 record centerline monuments
4. Centerline Geometry Critical points such as P.C., P.I., P.T., T.S., C.S with coordinates
5. Project Adjustment Factor for scaling State Plane Grid Coordinates to Project Ground Coordinates
6. Aerial Imagery (2018)
7. CAD files: (ftp://ftp.dot.state.oh.us/pub/Districts/D03/91095/Survey/):
    a. 91095_BK001.dgn – Centerline of RW Geometry
    b. 91095_BA001.dgn – Aerial derived planimetrics
    c. 91095_KD001.dgn – LiDAR derived terrain model
    d. 91095_KD002.dgn – LiDAR derived terrain model
    e. 91095_BC001.dgn – Base combined of the above files
    f. Geopak TIN files (2), GPK file, project seed files

The DBT shall consider Appendix G a contractual document, and all other files shall be considered reference files for the DBT to use for project plan development.

B. DBT Survey Responsibilities

The DBT will be responsible for any and all survey work necessary for design and construction beyond what the district has provided as detailed above.

Survey work and deliverables will be accordance to all applicable ODOT standards including but not limited to the ODOT Surveying and Mapping Specifications, the ODOT CADD Engineering Standards Manual, ODOT L&D Manual and the 2019 Construction & Materials Specification (Note Section 623).

The DBT shall minimize the disturbance to existing control and centerline monumentation. Where disturbance to centerline monumentation is unavoidable quantities for the replacement of these monuments will be included as part of the construction plans. If replacement of said monuments is not feasible due to safety or design considerations, then reference monuments will be set at locations as agree upon by the DBT and the District Survey Operations Manager. A post construction monument verification report (CMS 623) will be provided by the DBT to the District at the end of construction activities.

The DBT shall include in the plans in table form all control points, centerline monumentation and geometry provided by the Department as well as new, replacement or reference monument constructed listed both State Plane Coordinates and Project Adjusted Coordinates.

All existing monuments should retain the original point numbers and coordinate values as assigned by the Department.

The DBT shall provide the following items prior to final acceptance of the Record-Drawing plans:

1. If requested - 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. If requested - 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 any additional found monumentation (Horizontal and Vertical).
4. Listing of all additional monumentation set or reset as part of the project (Horizontal and Vertical)
5. All monumentation and project related survey work shall be located utilizing Project Adjusted Ground Coordinates (Horizontal Data) scaled from NAD 83(NA2011) by scale factor provided, NAVD 88(GEOID12B) (Vertical Data).
6. Vertical clearances for the overhead structures, to serve as a check for the existing vertical clearances

13 PAVEMENT

13.1 Pavement Buildups

The DBT shall design and construct the following roadway pavement sections per the table 13-1 below.

*Table 13-1: Paving Roadway Sections**

Roadway	Direction	Station from/to	SLM from/to	Pavement Treatment	Notes
SR 83	North South	773+00/784+60 773+25/792+00	10.81/11.02 10.82/11.17	A	Start at concrete pavement joint
SR 3	North	784+60/792+00	14.72/14.87	A	Southbound SR 3 is Ramp B
SR 3	Both	792+00/886+00	14.87/16.75	A	Station equation in this section

Roadway	Direction	Station from/to	SLM from/to	Pavement Treatment	Notes
SR 3	North South	886+00/~925+00 886+00/924+94	16.75/17.49	A	Bifurcated section of SR 3/SR 83. South contains pavement research section as modified below
SR 83	North South	~925+00/927+67 924+94/927+67	13.73/13.84	A	
SR 83	Both	927+67/968+70	13.84/14.64	A	End at concrete pavement joint
SR 3	South	67+50/73+60~	17.67/17.79	A	Existing concrete right lane only. If no existing paved shoulder present, add per L&D Vol 1
SR 3	North South	69+16/78+20~ 67+50/78+20~	17.87/17.70 17.67/17.87	B	Southbound left lane only. End at traffic island
CR 3A	North	~66+00/69+16	5.65/5.71	B	Cleveland Rd start at pavement joint

**Roadway station and S.L.M limits derived from PID 90434 schematic plans*

The DBT shall also replace all ramp pavement in Table 13-2 below.

Table 13-2: Ramp Paving Sections

Ramp	Description	Notes
Y	SR 83 South to Lincoln Way	Do not replace ramp pavement widening constructed with PID 16285 near ramp terminal
C	US 30 West to SR 83 South	Ramp pavement was replaced with PID 16285. Do not replace ramp pavement, only mainline and gore pavement same as corresponding mainline treatment
D	US 30 West to SR 3 North	
B	SR 3 South to US 30 West	Do not replace ramp pavement constructed with PID 18631
E	SR 83 North to US 30 West	
G	US 30 East to SR 3 North	

Ramp	Description	Notes
H	SR 3 South to/from SR 585	See Section 14.5 for additional details. Replace existing traffic islands with new traffic islands per SCD RM-3.1. Replace curbing at Ramp I-2 with vertical curbing or curb & gutter per SCD BP-5.1
H-1	SR 3 South to SR 585	
H-2	SR 585 to SR 3 South	
I	SR 3 North to/from SR 585	
I-1	SR 585 to SR 3 North	
I-2	SR 3 North to SR 585	
R	Cleveland Rd North to SR 3 South	
S	SR 3 South to SR 83	Replace existing traffic islands with new traffic islands per SCD RM-3.1
S-C	SR 83 South to Cleveland Rd	
T	SR 3/SR 83 North to SR 3 North	See Section 14.5 for additional details

- Ramp pavement shall be replaced using Pavement Treatment C.
- Where ramps intersect with freeway routes, the start of the ramp pavement shall be at the point where the ramp meets the nose of the physical gore area. The paved gore and acceleration/deceleration lanes shall be replaced using the mainline treatment, or if on US 30, shall not be disturbed
- Where ramps intersect local roads, the start of ramp pavement replacement shall be from the end of the radius of return of the ramp pavement (local road edge of pavement).
- The intent of this project is to replace the existing concrete ramp pavement constructed prior to 2004, as outlined in Table 13-2. If any of the above ramps have an asphalt overlay or wedge, the removal of that asphalt overlay or wedge shall be incidental to the removal of the existing ramp pavement
- Where new concrete ramp pavement will meet existing pavement, Item 252 Full-Depth Pavement Sawing is required at those joints. Where new concrete pavement abuts existing concrete pavement, dowels shall be installed per SCD BP-2.5

The pavement treatments referenced above shall be installed per the Table 13-3 below:

Table 13-3: Project Pavement Treatments

Description	Pavement Treatment		
Treatment Label	**A**	**B**	**C**
Treatment Description	Mainline Full-Depth Flexible Pavement	Urban Paving Resurfacing	Concrete Ramp Pavement
Item 202 Pavement Removed	Reinforced Concrete Pavement	-	Existing Full-Depth Ramp Pavement
Item 254 Pavement Planing	-	3.25” Thick	-

Description	Pavement Treatment		
Treatment Label	**A**	**B**	**C**
Item 204 Subgrade Compaction	Yes	-	Yes
Item 204 Proof Rolling			
Item 206 Cement Stabilized Subgrade	12” Deep	-	12” Deep
Item 605 Underdrains with Fabric Wrap	Yes	-	Yes
Item 304 Aggregate Base	6” Deep	-	6” Deep
Item 302 Asphalt Concrete Base	5” PG 88-22M, As Per Plan	-	
Item 407 Trackless Tack Coat	Shall be applied to a surface prior to placing asphalt intermediate and surface course		-
Item SS861 Asphalt Concrete Intermediate Course	12.5 MM, Type A (446), As Per Plan, 1.75” (PG 88-22M)		-
Item 442 Asphalt Concrete Surface Course	12.5 MM, Type A (447), As Per Plan, 1.5” (PG 88-22M)		-
Item 452 Concrete Pavement	-		9” Non-Reinforced, Class QC 1P with QC/QA
Item 408 Prime Coat	As Per Plan for placement on compacted aggregate		
Item 617 Compacted Aggregate	2’ Wide, 2” Thick adjacent to all uncurbed edges of pavement		

- When removing pavement adjacent to the existing SR 3/SR 83 median concrete barrier wall footer, the contractor shall take care to not disturb the existing barrier wall footer
- The As Per Plan note for the Item 302 Asphalt Concrete Base course is for density as found in Appendix D – Project Design Standards
- All asphalt concrete installed on the project, including base course, shall use Item 442 anti-segregation equipment
- The requirements for the SS 861 intermediate and 442 surface courses shall be modified by plan note such that the binder used will be PG88-22M

- For the SR 3/SR 83 in the southbound direction, between stations 837+00 and 921+00, install and collect thermal temperature data for all test sections using a Paver Mounted Thermal Profiler (PMTP) Install and verify the PMTP system is operating properly prior to the start of asphalt placement. Work with the manufacturer to obtain training and/or any mounting hardware required for the specific paver application. Collect continuous thermal temperature data while placing each course of all test sections placed on the project. Provide electronic copies of all raw data files collected to the engineer and Ohio University at the end of each day of paving.
- Item 408 Prime Coat, As Per Plan Note: The contractor shall apply one coat of MC-70 (as per section 702) at a rate of 0.40 gal/sy to the completed aggregate shoulder (item 617) as directed by the engineer. The contractor shall provide a shield to prevent the spraying or drifting of liquid bituminous material onto the edge of pavement or edge line. The attention of the contractor is directed to 107.10 of the specifications.
- Proposal Note (PN) 420 Surface Smoothness Requirements for Pavements shall apply to all "Pavement Treatment A" sections except the SR 3 South Cleveland Rd right lane pavement section
- All coarse aggregate provided for asphalt concrete surface and intermediate courses shall be crushed carbonate stone meeting the requirements of CMS 703.01 and 703.05. All coarse aggregate for asphalt concrete base shall be crushed carbonate stone meeting the requirements of 703.04

13.1.1 Geotechnical Requirements

In addition to the requirements of Table 13-3, the following subgrade treatments are also required where the items are applicable:

- The DBT shall prepare stable subgrade conforming to CMS 204. Stable subgrade is defined as subgrade where proof rolling results in permanent rutting of 1 inch or less and elastic (rebound) movement of 1 inch or less.
- The Item 206 Cement Stabilized Subgrade shall include all requirements per Item 206, including curing coat and mix design
    - The DBT shall globally chemically stabilize the subgrade (except as noted below in the remainder of Section 13.1.1). Perform Subgrade Chemical Stabilization to conform to the requirements of Item 206 Chemically Stabilized Subgrade. Use the assumed spreading rate as specified by ODOT Geotechnical Bulletin 1, Figure C. for bid estimating purposes. The Department will adjust the contract for actual cement amount required by Supplement 1120 per CMS 109.05.B
    - Perform Mixture Design for Chemically Stabilized Soils per Supplement 1120. Use the assumed chemical spreading rates unless the ODOT Construction Engineer approves a change or as required by Supplement 1120.

  - The DBT shall locate and verify the depth of all existing underground utilities and sewers present in areas of subgrade stabilization to ensure no impacts or damage during construction. Stabilization depths may be adjusted or non-performed with Approval of the Department to accommodate utilities. Specific attention is directed to all existing waterlines. A 12-inch depth of undisturbed earth shall be kept above all water lines during subgrade construction. Where chemical stabilization is not possible, the contractor shall stabilize the subgrade by undercutting a minimum of 12 inches with geogrid and 304 materials. If utilizing the undercutting method, the DBT shall include plan note G121 from the ODOT L&D Volume 3 - Plan Preparation manual in plan submittals. However, when the stabilization is complete this area shall pass the proof rolling. Rollers shall be used for subgrade and subbase compaction in areas of existing water lines. Vibratory equipment over water lines is strictly prohibited.
  - The DBT shall be responsible for up to 5% of the repair areas failing proof roll after chemical stabilization. Should the total of the repair areas exceed 5% of the total subgrade treated area, ODOT will compensate the contractor per CMS 109.05 for the area more than 5%. The Department will only compensate the contractor once for each repair area.
- The Geotechnical Boring Logs have shown that rock is present in some locations on the project. Rock Undercuts are required in the following locations:
  - SR 3/SR 83 – Sta. 781+50 to Sta. 788+75
  - Ramp E – SR 3 Gore to Sta. 787+50
  - Ramp G – US 30 Gore (Pavement Joint) to Sta. 1570+00 (1966 Plans)

  Rock cut underdrains shall also be installed in the above rock cut areas. The rock undercuts shall conform to the requirements of CMS 204.05.
- To facilitate faster construction of concrete ramps, the DBT may perform undercuts in lieu of global stabilization under proposed concrete ramps. The design of these undercuts shall be based on CMS 204 and Appendix F. Please note that unless other unforeseen subgrade issues arise, the intent is to perform cement stabilization under all full-depth asphalt pavement outside of rock cuts as described above
- The DBT shall be responsible for the development of the Soil Profile Sheets utilizing the recent soil boring information conducted for the project. The Geotechnical Boring Logs, Subgrade Analysis, and Pavement Coring Information are available in Appendix F – Geotechnical Information.

13.2 Pavement Research Project

This project was selected as part of a statewide research project for perpetual pavement. The section of SR 3/SR 83 south from Sta. 837+00 to Sta. 909+00 was chosen as the Test Section for the project. The pavement buildup in this section will

consist of seven 1,200-foot different pavement buildups to test how different types Highly Modified Asphalt (HiMA) mixes perform in different pavement courses and in combination with other asphalt mixes and aggregate base thicknesses. The mixes and thicknesses that are to be used in the different test sections are identified Table 13-4 below, except that the Item 304 aggregate base course depth shall be 6 inches for every section.

Table 13-4: Test Section Pavements

Test Section Number	Station Begin	Station End	Monitoring Location	Asphalt Concrete Base Depth (in)	Asphalt Concrete Base Mix	Asphalt Concrete Int. Mix	Asphalt Concrete Surf. Mix
Mainline	(Outside test section limits)			5	B1	I1	S1
1	837+00	849+00	843+00	9.25	B2	I1	S1
2	849+00	861+00	853+00	9.25	B2	I2	S1
3	861+00	873+00	867+00	9.25	B2	I2	S2
4	873+00	885+00	878+00	7.25	B1	I2	S2
5	885+00	897+00	891+00	7.25	B1	I1	S1
6	897+00	909+00	904+00	5.75	B1	I1	S1
7	909+00	921+00	915+00	5	B1	I1	S1

The test section mixes and depths identified in Table 13-4 shall conform to the following thicknesses and requirements in Table 13-5.

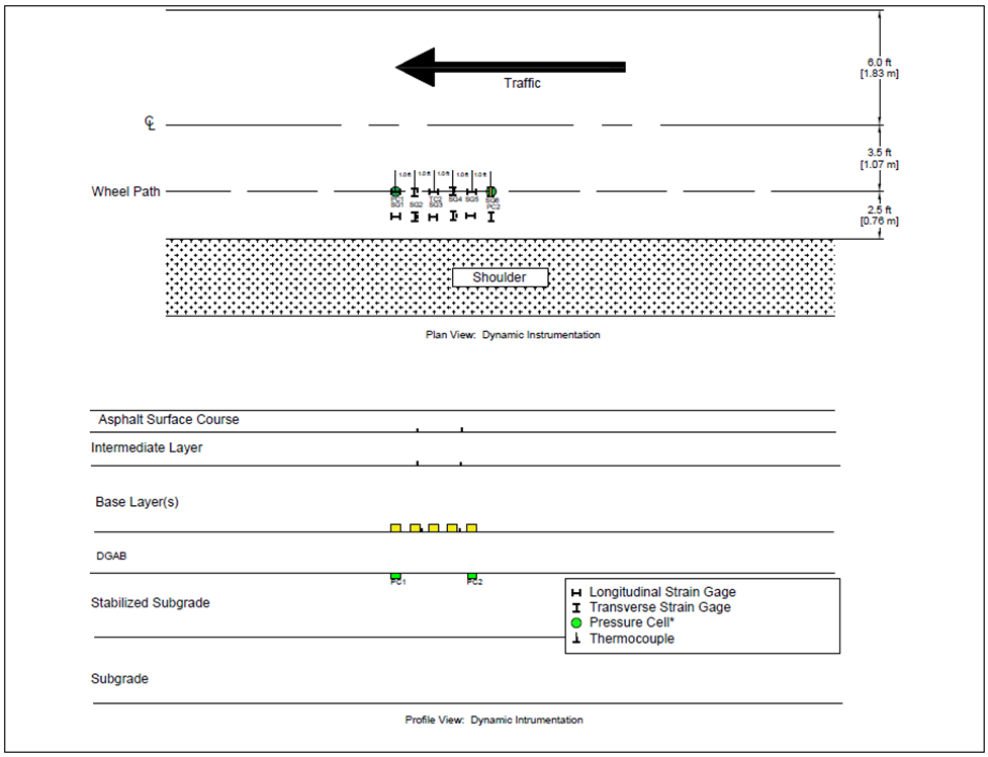
Table 13-5: Test Section Pavement Mixes

Asphalt Concrete Mix Number	Pavement Depth (in)	Pavement Mix Description
B1	See Table 13-4	Item 302 Asphalt Concrete Base, As Per Plan, (PG 88-22M)
B2		Item 302 Asphalt Concrete Base (PG 64-22)
I1	1.75	Item SS861 Asphalt Concrete Intermediate Course 12.5 MM, Type A (446) As Per Plan, (PG 88-22M)
I2	1.75	Item SS861 Asphalt Concrete Intermediate Course 12.5 MM, Type A (446)
S1	1.5	Item 442 Asphalt Concrete Surface Course 12.5 MM, Type A (446) As Per Plan, (PG 88-22M)
S2	1.5	Item 442 Asphalt Concrete Surface Course 12.5 MM, Type A (446)

- As noted in Section 12 MOT, the right lane and shoulder of SR 3/SR 83 southbound within the test section shall be constructed in the same phase with each pavement course being constructed as concurrently within all test sections as possible, considering that different mixes are used for the same course.
- A pavement layer will be placed continuously within a test section. No construction joints will be permitted in the stabilized subgrade and asphalt layers. A butt joint will be located in the asphalt base, asphalt intermediate course and surface course in accordance with Standard Construction Drawing BP-3.1 at the end of each test section. If the contractor is required to construct a transverse joint within a test section, that layer of pavement shall be removed in that test section and replaced at the DBT's cost
- The left lane and shoulder pavement buildups within the test section limits shall be the thicknesses specified in Tables 13-4 and 13-5, but the materials shall conform the requirements of Table 13-3
- When constructing the right lane and shoulder, the DBT shall notify the Research Project Lead from Ohio University 7 days prior to construction of each pavement course, starting with the finished subgrade prior to Item 206 Cement Stabilization. The DBT will confirm 24 hours prior to, and immediately following, completion of the pavement course. Upon notification from the DBT, the Research Team shall have 3 "Work days" (defined as Monday through Friday, excluding holidays as defined in Section 11) to perform testing on the pavement layer just installed. Within those 3 Work days, the DBT shall perform no work on the pavement that was just installed. The DBT will keep the surface of asphalt layers clear of debris until the Research Team has performed the testing. Testing will consist of falling weight deflectometer (FWD) testing by ODOT and light weight deflectometer and portable seismic pavement analyzer (PSPA) testing by Ohio University on the stabilized subgrade (LWD only), aggregate base, asphalt concrete base, asphalt concrete intermediate course and asphalt concrete surface course. Dynamic cone penetrometer (DCP) testing will be performed by Ohio University through core holes after placement of the asphalt concrete surface course. If the Research Team takes longer than 3 Work days to perform testing, the DBT is eligible to receive one excusable, non-compensable schedule day if the subsequent item of work is on the critical path and impacts the CPM schedule
- For the stabilized subgrade layer, the testing duration shall be increased from 3 days to 7 days. The DBT shall notify the Research Team as soon as stabilization mixing is performed, and the Research Team shall not conduct testing until 5 days after mixing to allow for cure
- The Research team will install instrumentation in the 304 Aggregate Base, 302 Asphalt Base and 442 Asphalt Concrete Surface and SS861 Intermediate Courses as the layer is placed. The proposed instrumentation layout is shown in Figure 13-1. The instrumentation will be installed at the "Monitoring Location" in Table 13-4. The DBT will notify the Research Project Lead from Ohio University at least one week before placement of these layers. The DBT will cooperate

with the Research Team during installation to ensure instrumentation is not damaged or wires cut during and after installation

Figure 13-1: Pavement Instrumentation Layout



- Corrective grinding shall not be performed, and the requirements of PN 420 shall be waived within 50 ft of an instrumentation site
- Cores for 442 or 302 density acceptance **will not** be removed from the driving lane or outside shoulder within 10' of the instrumentation location listed in Table 13-4.
- The contact information for the Ohio University Research Project Team is:

  Mary Robbins, Ph.D.
  Research Engineer – Ohio University
  Phone: (740) 681-3739
  Email: Robbinm1@ohio.edu

  Issam Khoury
  Associate Director, ORITE
  Phone: (740) 593-0010
  Email: khoury@ohio.edu

  Josh Jordan
  Operations Manager
  Phone: (740) 593-0582
  Email: jordanj6@ohio.edu

- The DBT shall also be responsible for the installation of some of the monitoring equipment as outlined in Section 18.5.
- Cores will be removed at the locations specified by the Research Team after placement of the 302 Asphalt Base, SS 861 Intermediate Course, and 442 Surface Course. A total of 42 each 6" diameter cores (6 per test section) will be removed from the asphalt base, 42 each 4" diameter cores (6 per test section) from the intermediate course, and 42 each 4" diameter cores (6 per test section) from the surface course. In addition, a total of 42 each full depth (through all asphalt layers) 4" diameter cores will be removed after placement of the surface course. Core dimensions are taken with respect to the inside diameter of the bit. The DBT will be responsible for filling the cores holes.
- For each test section mix type per Table 13-5, obtain a random plant sample and perform one full set of QC tests per CMS 441.09. In addition, for each test section mix type per Table 13-5, obtain a separate random sample and test for asphalt binder content and gradation only. Report all test results on the TE-199 QC record.
- For each test section mix type per Table 13-5, label and hold 25,000 grams of mixture for ODOT and 25,000 grams of mixture for the researcher. Obtain additional samples as required by ODOT and/or the researcher. The contractor shall provide Ohio University with the following:
  - 5 - one gallon containers of each binder used
  - 3 - 50 lb bags of each aggregate gradation used
  - 3 - 50 lb bags of each RAP used
- The material listed in Table 13-6, pounds of loose mix, shall be collected by the contractor and shipped to ORITE at the Ohio University Lancaster campus. (1570 Granville Pike, Lancaster, OH, 43130)

Table 13-6 Asphalt Mixture Loose Samples

Mix	Total for Mix (lbs)
Item 302 Asphalt Concrete Base, As Per Plan, (PG 88-22M)	272
Item 302 Asphalt Concrete Base (PG 64-22)	272
Item SS861 Asphalt Concrete Intermediate Course 12.5 MM, Type A (446) As Per Plan, (PG 88-22M)	304
Item SS861 Asphalt Concrete Intermediate Course 12.5 MM, Type A (446)	304
Item 442 Asphalt Concrete Surface Course 12.5 MM, Type A (446) As Per Plan, (PG 88-22M)	304
Item 442 Asphalt Concrete Surface Course 12.5 MM, Type A (446)	304
Total	1760

14 ROADWAY

14.1 Roadway General

The DBT shall design and construct roadway geometrics for all pavement replacement sections per the following requirements:

- The horizontal and vertical alignments shown in the existing plans were used to estimate the limits of disturbance for the proposed improvements. Environmental commitments are based on these limits.
- Horizontal and vertical alignments shall be maintained as close to the existing plans as possible. Any adjustments to the horizontal or vertical alignment must be approved by the Engineer. The exceptions to this are outlined in Section 14.5
- Safety grading shall be used for all areas where full-depth pavement is being replaced with the following exceptions:
    - Where safety grading would require the installation of new drainage conduit, barrier or guardrail, right of way encroachment or additional environmental impacts, common grading should be used
    - If common grading in the above condition would require the installation of new drainage conduit, barrier or guardrail, right of way encroachment or additional environmental impacts, barrier grading should be used
    - Where existing barrier or guardrail is present, barrier grading may be used
- Except as outlined in Section 14.5, all lane widths, paved shoulder widths, and graded shoulder widths in any full-depth pavement replacement area shall match existing widths
- The existing median crossovers at Sta. +/-890+00 and +/-919+00NB/918+00SB shall be replaced
- Any alignment, grading, or widths not addressed above shall conform to the L&D Manual, Volume 1.

When preparing roadway plans, the DBT should provide cross sections at 50-foot intervals and at any abrupt alignment changes.

All existing roadside objects to remain shall not be disturbed. This includes existing sign supports to remain, signal poles, and light poles to remain, among others.

All existing turn lane, acceleration lane, and deceleration lane lengths shall remain same as existing except as modified in Section 14.5.

Existing roadway geometry can be found in existing plan sets and in Appendix H – Design Exception Study.

Any fencing or other roadside objects that are disturbed as part of the project shall be replaced with the same type and in the same location as what was removed.

The disposal of any waste material from the project within state right of way shall not be permitted.

14.2 Design Exceptions

The Department has obtained approval for the following design exceptions:

- Shoulder Width: 8 ft Outside, 1.5 ft Inside Sta. 924+00 to Sta. 935+63
- Stopping Sight Distance: 278 ft for barrier obstruction from Sta. 924+30 to Sta. 931+60

Further details regarding the above design exceptions are found in Appendix H – Design Exception Report, which includes the approved Design Exceptions.

Although the above list is thought to encompass all required design exceptions on the project, the DBT shall notify ODOT regarding any design features that are believed to not meet the minimum design criteria and require a design exception.

14.3 Pedestrian and Bicycle Accommodations

The DBT shall not disturb any existing walk or curb ramp except to perform required upgrades as stated below:

- Review all curb ramps within the project limits to ensure compliance with the requirements of the Americans with Disabilities Act (ADA). Any curb ramp not in compliance with ADA requirements shall be replaced and upgraded to comply with the ADA.
- The locations below are not believed to be ADA-compliant, but do not necessarily constitute a comprehensive list of all non-compliant curb ramps within the project limits:
    - SR 83 & Friendsville Rd Southeast Corner (cross slope and landing pad location relative to pushbutton)
    - SR 83 & Friendsville Rd Northeast Corner (ramp grade)
- Wherever pavement is replaced or resurfaced at intersections or mid-block crosswalks where sidewalk is present, if no curb ramp exists, it shall be added at those locations to comply with ADA requirements
- If any curb ramp or associated sidewalk upgrades would necessitate the acquisition of additional Right of Way, the DBT shall request an ADA waiver from the District rather than pursuing this Right of Way acquisition.

14.4 Geometric and Safety Upgrades

Although the intent of this project is to keep existing lane and shoulder widths and horizontal and vertical alignments, there are a few locations where it was deemed necessary to improve the roadway geometry. The DBT shall implement the following geometric upgrades in Table 14-1.

Table 14-1: Geometric Improvements

Route	Station Begin	Station End	Existing Feature	Proposed Feature
Entire Project Various Locations			Sub-standard cross-slopes and superelevations	Upgrade to standard criteria for all cross-slopes and superelevations per L&D, except on bridge decks
Ramp D Acceleration Lane	797+50	803+00	Merge taper 13.5:1	Merge taper 21:1 Probably requires light tower replacement per Section 18.3
Ramp H	Entire Ramp		1 ft Inside shoulders Existing portable barrier at Akron Rd 4 ft GR offset south 10 ft graded shoulder south	3 ft Inside shoulders Upgrade SR 585 south right turn to WB-62 and replace existing portable barrier with guardrail or permanent concrete barrier and repair slope erosion 7 ft guardrail offset south 16 ft graded shoulder south
Ramp H-2	Entire Ramp		4 ft GR offset 10 ft graded shldr. SB R = 189.41', 167' SSD	7 ft guardrail offset south 16 ft graded shoulder south R = 190.99 ft, 180 ft SSD Attempt to minimize culvert impacts per Section 17
Ramp I	Entire Ramp		1 ft inside shoulders 4 ft GR offset north 10 ft graded shoulder north	3 ft inside shoulders Transition to 10 ft guardrail offset and 19 ft graded shoulder for 180 ft SSD
Ramp I-2	Entire Ramp		4 ft GR offset 10 ft graded shoulder 155 ft SSD	10 ft guardrail offset 19 ft graded shoulder 180 ft SSD
Ramp I-1 Acceleration Lane	834+00	846+50	Merge taper 40:1	Merge taper 50:1 Do not disturb the existing culvert. Modify guardrail, add barrier, and perform clearing as necessary to increase merge taper
SR 3/SR 83 Northbound	879+60	894+37	Curve C6 444 ft SSD	Curve C6 495 ft SSD 6 ft guardrail offset and 9 ft graded shoulder (55 mph design speed)

Route	Station Begin	Station End	Existing Feature	Proposed Feature
SR 3/SR 83 Northbound	879+60	918+50	Sub-standard outside graded shoulder and guardrail offsets	Standard graded shoulder and guardrail offsets per L&D. Alignment of northbound bifurcated section will have to be shifted a minimum 6 ft left of existing to achieve this
SR 3 Northbound Deceleration Lane and Exit Ramp to SR 3 Cleveland Rd (Ramp T)	918+50	Exit Ramp	2-lane exit ramp with mainline decision point	Single lane SR 3 ramp exit and 2-lane SR 83 mainline.
Ramp T	Entire Ramp		2-lane exit ramp	Single lane exit ramp with left turn lane configuration per L&D Figure 503-5a Alternate A with deceleration length of 415 ft
SR 83 Curve C-11	920+00	932+00	278 ft SSD Dc 6 degrees	318 ft SSD Dc 5 degrees, 30 minutes
Ramp R Acceleration Lane	911+00	929+00	Merge taper 40:1	Merge taper 50:1

- The above geometric improvements can be found on Sheets H-1 – H-23 in Appendix H – Design Exception Report with additional details in other parts of the study
- The station limits above are approximate. The DBT shall set the final limits of geometric improvements based on what is needed to develop the proposed geometric improvements
- The longitudinal limits of the graded shoulder and guardrail offset improvements at Ramps H-2, I, and I-2 shall be set based on what is required to upgrade the stopping sight distance

14.5 Barrier and Guardrail

The DBT shall design and construct new guardrail, end treatments, and assemblies within project limits per ODOT L&D Manual Volume 1, Section 600 and MASH compliant within the proposed project and existing right of way limits. This includes the existing guardrail and Bridge Terminal Assemblies between Ramps H and I and the existing parapet on the SR 585 structure over SR 3 / SR 83.

The DBT shall not disturb all existing median and outside concrete barrier within the project limits except as noted below:

- Where geometric improvements as detailed in Section 14.5 require the relocation of barrier or installation of new barrier for proposed alignments and roadside hazard protection.
- Any new guardrail that is installed shall comply with Midwest Guardrail System (MGS) requirements
- If a proposed guardrail or other new feature is required to tie-in to an existing barrier, the DBT shall retrofit the barrier so that the tie-in can be made
- If the replacement of a guardrail within the pavement replacement limits is part of guardrail that extends outside the pavement replacement limits, the entire run of guardrail shall be replaced, except at Ramp H exit ramp to SR 585/Bowman Street
- If there are any existing or proposed roadside objects or drop-offs that require protection, the DBT shall design and install adequate protection for those warranting features, even if those features are not currently protected
- Where the DBT is instructed by the Engineer to replace an existing median barrier inlet, the Engineer will also instruct the DBT to replace approximately 30 feet of existing median barrier at each of these inlet replacement locations. Incidental to this replacement is tying into the existing median wall and footer and preparing the subgrade under the footer. The DBT shall provide a unit price per foot for this barrier wall replacement as directed by the Engineer – Estimated Quantity: 300 ft
- The existing impact attenuator near Sta. 936+00 shall be removed and replaced with a Type 3 impact attenuator
- Any barrier that is replaced or installed abutting existing barrier shall conform to the shape and design of the existing barrier
- The following quantities have been set aside for existing median barrier wall repairs. The DBT shall provide a unit price for performing these repairs and will be paid for the quantity performed. These repair areas will be identified by the Engineer.
    - Item 512 Crack Repair by Epoxy Injection – 250 Linear Feet
    - Item 519 Patching Concrete Structures – 1,100 Square Feet

15 DRAINAGE

15.1 Drainage General

The DBT shall remove and replace all existing drainage features within the project limits, except as modified below:

- Drainage inlets and structures within median barrier are not intended to be replaced. The replacement of the conduit where it ties into the drainage structure shall conform to CMS 611.10 and the following:
    - The existing conduit to be replaced shall be removed in its entirety including the portion within the existing median inlet
    - The new conduit shall be installed and secured within the existing drainage structure

- The drainage structure invert shall be adjusted as necessary to ensure adequate flow, and the drainage structure walls shall be adequately sealed where the meet the new conduit
- The tops and castings of all existing drainage structures to remain in-place shall be adjusted to grade
- If the Engineer determines that an existing median inlet is in a condition such that conduit tie-ins are not possible or it necessitates replacement for another reason, the Engineer will instruct the DBT to replace the existing median inlet with a new precast inlet compatible with the proposed conduit and existing median barrier shape, as well as current ODOT hydraulic standard construction drawings. The DBT shall include with their bid a unit price to remove and replace the existing median inlet with a new inlet – Estimated Quantity: 10 each

Other requirements for drainage installed within the project limits are:

- Unless otherwise specified in, all drainage items within the project limits shall be designed per the L&D Manual, Volume 2
- Any conduit within the City of Wooster corporation limits shall be installed per the requirements of City of Wooster standard construction drawings ST-13.0 Storm Sewer Trench Details and/or PV-11.0 Road Bore Detail as shown in Appendix D – Project Design Standards
- Culverts and storm sewers outside the City of Wooster shall have materials specified per CMS 611.02 and per the ODOT Culvert and Storm Sewer Durability Design spreadsheet (L&D Manual, Volume 2, Section 1002.2.2).
- Wherever possible, existing open roadside drainage shall be maintained or adjusted accordingly to meet altered alignments. Roadside ditches which outlet to existing streams are preferred, however, replacement of ditches with enclosed conduit is permitted
- Drainage work shall also include the analysis and modification to existing storm sewer systems as required by the DBT's design.
- Culverts within the project limits shall either be replaced or not disturbed as detailed in Section 15.2

Post-construction Storm Water Best Management Practices (BMP) according to ODOT L&D Manual Volume 2, Section 1115 are to be investigated, designed, and installed.

The DBT shall perform a detailed flood plain analysis for all highways that encroach on floodplains, bodies of water or streams. The analysis shall be in accordance with the L&D Volume 2 and the Bridge Design Manual. 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 construction of the drainage structure. If the proposed crossing is in a special flood hazard area as defined by FEMA, the detailed flood plain analysis shall be submitted concurrently to the local flood plain coordinator.

In addition, the DBT shall prepare all floodplain coordination documents per the L&D Volume 2, Section 1005. This includes, but is not limited to, hydrologic and hydraulic calculations, no-rise certification (if applicable), associated FEMA FIRM mapping showing the area of impact to the floodplain, and completed Stage 2 plans (roadway, drainage, and structure plans with review comments addressed). These documents shall be submitted to the District 3 Hydraulic Engineer.

15.2 Culverts

The DBT shall perform work on SR 3/SR 83 culverts within the project limits as described in Table 15-1 below:

Table 15-1: Culvert Information

C-R-S	Station	CFN	Existing Conduit	Proposed Feature
WAY-83-10.911 (Ramp Y)	764+50	1830359	15” RCP	Remove and replace existing conduit and catch basins.
WAY-83-11.116	775+30	None	24”	Remove and replace existing catch basin on the west side of the ramp. Exiting conduit to remain.
WAY-83-11.129 (Ramp C)	786+00	1830361	24” PVC	Do not Replace. Ramp C pavement not replaced
WAY-250-12.302 (Ramp E)	786+00	1825239	24” RCP	Remove and replace from median inlet to outside catch basin, including catch basin.
WAY-83-11.231 (Ramp B)	790+20	1830354	24” RCP	Remove and replace existing half-height headwall and Reset the last 8 ft section of conduit. Replace the catch basin in the ramp gore.
WAY-3-14.877 (Ramp C)	781+00	1830362	24” CMP	No Work. Repairs to be performed by others.
WAY-83-11.23	791+80	1195777	33” CMP	Remove and replace including inlet and outlet structures
WAY-83-11.268	792+00	1825238	12” CMP	Remove and replace including inlet and outlet structures
WAY-3-15.053 (Ramp D)	796+00	1830356	15”	No Work. This portion of Ramp D is not being replaced.
WAY-3-15.41 (Ramp H)	816+00	Wooster	18”	No Work
WAY-3-15.49	820+00	Wooster	30”	No Work

C-R-S	Station	CFN	Existing Conduit	Proposed Feature
WAY-3-15.53	821+85	Wooster	15”	No Work
WAY-3-15.64 (Ramp I-2)	828+13	Wooster	15”	No Work
WAY-3-15.75	833+00	Wooster	42”	No Work
WAY-3-15.79	835+00	Wooster	-	Install 24” Steel Casing Pipe per CMS 748.06 for future water line to be installed by others
WAY-3-16.157	855+00	Wooster	36”	Replace culvert and half-height headwalls, and include RCP at outlet end
WAY-3-16.25	860+00	Wooster	48”	No Work
WAY-3-16.485	872+00	Wooster	54”	Replace culvert and full-height headwall at inlet end, half-height headwall at outlet end to move outlet further from stream. Include RCP at outlet end. The existing concrete invert section on the inlet end shall not be replaced, except what is required to replace the culvert
WAY-3-16.68	882+00	Wooster	48”	No Work
WAY-3-16.74	885+00	Wooster	84”	No Work
WAY-3-16.93 (NB)	895+00	Wooster	30”	No Work
WAY-3-17.49	924+50	Wooster	60”	No Work
WAY-3-17.61 (Ramp R)	930+65	Wooster	15”	No Work
WAY-3-17.61 (Ramp T)	931+00	Wooster	15”	No Work
WAY-3-17.72 (Ramp T)	935+90	Wooster	15”	No Work
WAY-83-14.06	938+00	Wooster	48”	No Work. No work on 48” Type B Conduit under Ramp S-C either. Replace the 15” Type B Conduit under Ramp S-B.
WAY-83-14.26	949+00	Wooster	15”	No Work
WAY-83-14.28	951+30	Wooster	18”	No Work
WAY-83-14.57	965+00	Wooster	36”	No Work. No work on culvert under Friendsville Rd or associated drainage structures either

- Any drainage conduit or structure not identified in the table above shall be replaced
- Culverts replaced within the City of Wooster shall be reinforced concrete pipe per CMS 706.02
- The existing location and conduit size information in Table 15-1 is approximate and shall be verified by the DBT
- Any culvert that runs under median barrier that is replaced, the DBT shall either replace the median barrier above the culvert or jack and bore the culvert
- Existing culverts to be replaced shall either be removed or plugged and filled
- The DBT will determine the appropriate sizes of all proposed culverts
- The proposed steel casing pipe shall be 24" in diameter and shall be installed as close as possible to the right of way limit without requiring the acquisition of temporary or permanent right of way. The casing pipe shall be sealed at each end with a removable cap by an approved method. Each end of each casing pipe shall be marked with a post-mounted object marker installed meeting the requirements of Section 18.2.

16 LANDSCAPING

Landscaping Required: ☐ Yes ☑ No

The DBT shall permanently grade and seed all impacted areas. Any disturbed slope steeper than 3:1 shall have slope erosion protection installed.

17 STRUCTURES

17.1 Existing Structures Identification

Structure Identification: CRS

Structure File Number: SFN

Feature Intersection: Over/Under Route/Waterway name

Table 17-1 below identifies all the structures within the project limits and the type of work performed on each structure, as further described below.

Table 17-1: Structure Information

C-R-S	SFN	Feature Intersection	Work Type
WAY-250-12.18L	8500606	US 250/SR 3/SR 83 Over US 30 East	Deck Patching
WAY-30-11.76L	8500568	US 30 West Over US 250/SR 3/SR 83	No Work
WAY-3-15.16	8500754	SR 3/SR 83 Over Apple Creek	Deck Patching
WAY-3-15.31	8500819	SR 3/SR 83 Under Norfolk-Southern Railroad	No Work
WAY-585-0.00L	8505853	SR 585 Over SR 3/SR 83 & Little Apple Creek	See Section 17.2

C-R-S	SFN	Feature Intersection	Work Type
WAY-3-15.52WR	8500843	Ramp H-2 Over Little Apple Creek	See Section 17.2
WAY-3-15.54	8500878	Ramp H-1 Over Little Apple Creek	Deck Patching
WAY-3-15.817	8500908	SR 3/SR 83 Over Little Apple Creek	No Work
WAY-3-16.69	8500932	SR 3/SR 83 Under Portage Rd	No Work
WAY-83-13.91	8503699	SR 83 Over SR 3/Cleveland Rd	No Work

17.1 General Requirements

The purpose of this project related to structures is to perform minor rehabilitation work on existing structures.

Several of the existing structures require concrete deck patching, which shall conform to the requirements of CMS 519. The DBT shall provide a unit price per square foot to perform deck patching for the quantities allocated to each structure in Table 17-2.

After the pre-design meeting, the DBT shall schedule an onsite field meeting with the District Bridge Engineer and Project Engineer to review the decks of the structures in Table 17-2 and identify deck patching areas. The DBT shall then prepare plans based on the locations identified in this meeting. The DBT will be paid at the contract unit price for the actual quantity of deck patching performed. Traffic control required for this review will be provided by the DBT and is incidental to Item 614, Maintaining Traffic.

Table 17-2: Deck Patching

C-R-S	SFN	Feature Intersection	Estimated Deck Patching Quantity (sy)
WAY-250-12.18L	8500606	US 250/SR 3/SR 83 Over US 30 East	52 sy
WAY-3-15.16	8500754	SR 3/SR 83 Over Apple Creek	37 sy
WAY-3-15.54	8500878	Ramp H-1 Over Little Apple Creek	17 sy

- When preparing roadway plans for this project, the DBT shall ensure that vertical clearances to existing overhead structures are not less than the existing vertical clearance
- After an initial field investigation, it is thought that all existing bridge terminal assemblies (BTA) can be upgraded to MGS requirements. The DBT shall verify that this is the case, and if not, shall retrofit the existing parapet such that BTAs can be upgraded to MGS

17.2 Design and Construction Requirements of Structures

Str: WAY-585-0.00L Over SR 3 / SR 83 & Little Apple Creek

Existing Structure Data:

Overall Length:	332 ft
Width o/o:	79.3 ft
Design Loading:	CF-400(57)
Type:	Continuous steel beam bridge with reinforced concrete deck and substructure
Spans:	5 (60.5 ft, 78 ft, 78 ft, 65 ft, and 45 ft)
Date Built:	1966

Alignment & Profile

Alignment: ☑ Follow Existing

☐ Relocated: ☐ Per ODOT ☐ Per DBT

Profile: ☑ Follow Existing

☐ Relocate: ☐ Per ODOT ☐ Per DBT

☐ Feathered (Adjustment): ☐ Per ODOT ☐ Per DBT

Span Configuration: ☑ Per Original

Span Lengths: ☐ Per ODOT ☐ Per DBT

☐ Variable

Transverse Sections:

Roadway Width: 70 ft

Railing: ☐ Yes ☑ No Existing railing on south side of bridge to remain

Fence:	☑ Yes ☐ No	South side existing VPF-1-90 (3/24/93) No work Add 6 ft coated straight VPF to the existing north side parapet
Sidewalks:	☐ Yes ☑ No	Existing 5 ft walk on south side of bridge to remain

Investigate the need for Prefabricated Structure: ☐ Yes ☑ No

Investigate the need for Retaining Walls: ☐ Yes ☑ No

Str: WAY-3-15.52 Ramp H-2 Over Little Apple Creek

Existing Structure Data:

Overall Length:	27.2 ft (width of culvert)
Width o/o:	113 ft (length of culvert)
Design Loading:	N/A
Type:	Two-celled reinforced concrete box culvert
Spans:	2 (13.6 ft and 13.6 ft)
Date Built:	1966

Alignment & Profile

Alignment: ☑ Follow Existing

☐ Relocated: ☐ Per ODOT ☐ Per DBT

Profile: ☑ Follow Existing

☐ Relocate: ☐ Per ODOT ☐ Per DBT

☐ Feathered (Adjustment): ☐ Per ODOT ☐ Per DBT

Span Configuration: ☑ Per Original

Span Lengths: ☐ Per ODOT ☑ Per DBT

☐ Variable

For the roadway geometric improvements as outlined in Section 14.4, the DBT shall not extend the existing box culvert nor shall any work be performed on this structure below the ordinary high water mark of Little Apple Creek.

Transverse Sections:

Roadway Width: 70 ft

Railing: ☐ Yes ☑ No

Fence: ☐ Yes ☑ No

Sidewalks: ☐ Yes ☑ No

Investigate the need for Prefabricated Structure: ☐ Yes ☑ No

Investigate the need for Retaining Walls: ☑ Yes ☐ No

Possible headwall installation and/or culvert extension to be determined by DBT based on required graded shoulder widening on Ramp H-2 per Section 14.5

Repair the top of the existing box culvert as outlined below:

- Remove the embankment above the culvert and clean the top of the box culvert
- Perform full-depth concrete repairs at the contraction joints on the top of the box culvert
- Waterproof the top of the box culvert. Terminate the waterproofing at least 6 inches down from the top onto the sides of boxes, except at the existing contraction joints. Waterproofing the existing contraction joints on the walls to the bottom of the boxes. The waterproofing shall extend at least 1'-6" to each side of the contraction joint
- Install embankment material up to the subgrade of the ramp

The following conditions apply to all structures on the project:

- All Shop Drawings shall comply with Item 501
- Initial foundation investigation will be performed by the DBT if their design dictates that one is required
- The DBT shall determine the need for additional subsurface investigations necessary to complete the Project. Geotechnical explorations shall be performed and documented in accordance with the Specifications for Geotechnical Explorations.

17.3 Noise Barrier

Noise Barrier Construction Required: ☐ Yes ☑ No

17.4 Approach Slabs

The purpose of this project related to approach slabs to keep the existing approach slabs but perform repairs as follows:

- Mill the existing asphalt overlay off the approach slabs down to the top of the concrete approach slabs per CMS 254
- Perform approach slab patching per the requirements of CMS 519 and as described below
- Install surface course asphalt conforming to the requirements of Section 13.1, ensuring a smooth transition from the proposed pavement to and from the existing bridge deck. If the proposed asphalt pavement depth is too thick for a surface course alone, the DBT shall also install a variable depth asphalt intermediate course conforming to the mix design requirements of Section 13.1.

The DBT shall provide a unit price per square foot to perform deck patching for the quantities allocated to each structure in Table 17-3. After milling is performed on each approach slab, the DBT shall schedule an onsite field meeting with the Project Engineer to review the approach slabs in Table 17-3 and identify patching areas. The DBT will be paid at the contract unit price for the actual quantity of patching performed. Traffic control required for this review will be provided by the DBT and is incidental to Item 614, Maintaining Traffic.

Table 17-3: Approach Slab Patching

C-R-S	SFN	Feature Intersection	Approach Slab Patching (sy)
WAY-250-12.18L	8500606	US 250/SR 3/SR 83 Over US 30 East	16 sy
WAY-3-15.16	8500754	SR 3/SR 83 Over Apple Creek	12 sy
WAY-3-15.54	8500878	Ramp H-1 Over Little Apple Creek	4 sy

18 TRAFFIC CONTROL

18.1 Pavement Markings and Delineators

The DBT shall perform Work related to pavement markings and delineators in accordance with Section 7.1 and the following sections.

A. Pavement Marking Requirements and Locations: Shall conform to CMS 640 and be installed within pavement replacement limits and MOT transition areas per the DBT's design. All permanent pavement markings shall be Item 644 thermoplastic on asphalt surfaces and Item 646 epoxy on concrete surfaces. Pavement marking types and optics shall conform to Table 18-1.

Table 18-1: Pavement Marking Requirements

Roadway Location	Pavement Marking Type	Pavement Marking Optics
Mainline SR 3/SR 83 and ramps	Long Line (Edge, Lane, Center, Channelizing, Dotted)	Wet Reflective Per SS 807, Grooved per SS 850
	Auxiliary (Word, Stop, Arrow, Transverse, etc.)	Glass beads per CMS 740.09
SR 3 / Cleveland Rd and SR 83 north of Friendsville Rd	All pavement markings	Glass beads per CMS 740.09

B. Raised Pavement Markers: ☑ Yes ☐ No.

Requirements and Locations: All RPMS shall conform to Item 626 and place in accordance with current design standards and standard construction drawings, including TC-73.20.

C. Delineators: ☑ Yes ☐ No.

All flexible delineators shall conform to Item 620 and shall be placed in accordance with current design standards. Confirmation that no conflicts exist between the proposed locations of delineators and any underground utilities shall be made prior to the installation of the delineators.

Locations and requirements: All ramps where flexible delineators currently exist and replace the existing flexible delineators on SR 83 from the bridge over SR 3 to the intersection with Ramp SB.

D. Barrier Reflectors: ☑ Yes ☐ No.

All barrier reflectors shall confirm 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 and shall be Type 3 or Type 5. All existing barrier reflectors on barrier sections that are to remain in-place shall also be replaced.

E. Object Markers: ☑ Yes ☐ No.

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

Locations and requirements: Replace any existing object markers and upgrade to current design standards

F. Rumble Strips and Rumble Stripes: ☑ Yes ☐ No.

All rumble strips and stripes shall confirm to Item 618.

Locations and requirements: Shoulder rumble strips shall be installed on any new or resurfaced shoulder within the project limits or MOT transition zones per SCD BP-9.1. Centerline rumble stripes shall be installed on the undivided section of SR 83 from Ramp SB to Friendsville Rd per SCD TC-64.10.

18.2 Signing

The DBT shall perform Work related to signs in accordance with Section 7.1 and the following sections.

18.2.1 Flat Sheet Signs

A. Flat Sheet Sign work required: ☑ Yes ☐ No.

It is the intent of the project to leave the existing flat sheet signs in-place

Redesign and replace all existing flat sheet signs with new signs within the limits of roadway alignment changes as outlined in Section 14.5. Size and design the signs in accordance with the OMUTCD, TEM, and SDMM.

1. All flat sheet signs within the City of Wooster corporation limits shall be installed per the requirements of City of Wooster standard construction drawings TR-3.0 and TR-3.1 Sign Post Specifications.

2. The following signs shall be installed where none currently exist:
   - Install signs on exit ramps per SCD TC-73.20
   - SR 585 Interchange: Install chevron signs on the loop portions of the ramps. Install horizontal alignment warning signs for Ramps H-2 and I-2 per OMUTCD recommendations

Removed flat sheet signs shall become the property of the Contractor.

18.2.2 Extrusheet Signs

1. Extrusheet Sign Work Required: ☑ Yes ☐ No.

It is the intent of the project to leave existing extrusheet signs in-place.

The exception to this is that the DBT shall remove, re-design, and replace the following existing overhead guide signs on SR 3 / 83 north where the exit ramp to SR 3 / Cleveland Rd is being re-configured per Section 14.5:
- Cantilever sign at Sta. 905+00
- Span-mounted sign at Sta. 932+00

Size and design the signs in accordance with the OMUTCD, TEM, and SDMM.

2. Tourist-Oriented Directional Signs (TODS) and logo signs: ☑ Yes ☐ No.

Tourist-Oriented Directional Signs (TODS) and logo signs are installed and maintained by Ohio Logos, Inc., under contract with and in locations approved by ODOT. Under the terms of the contract, the DBT shall be required to temporarily relocate the signs during construction. Provide temporary suitable supports, adjust the location with the

Engineer's approval, and temporarily re-erect the signs. Signs shall be re-erected within 72 hours of removal. Remove and dispose of the existing foundations. The DBT shall visually document the condition of the signs prior to disturbance by the DBT. The DBT is responsible for any damage to the sign during construction. Upon completion of the project, the DBT shall contact Ohio Logos at 1-800-860-5646 to coordinate permanent relocations of TODS and logo signs.

Removed extrusheet signs shall become the property of the Contractor.

18.2.3 Ground Mounted Post Supports

A. Replace: ☑ Yes ☐ No.

Although it is not anticipated that ground mounted post support replacements are required, if the DBT's design requires the replacement or installation of ground mounted beam supports, they shall comply with the following requirements:

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

2. All post support signs within the City of Wooster corporation limits shall be installed per the requirements of City of Wooster standard construction drawings TR-3.0 and TR-3.1 Sign Post Specifications.

3. All post-mounted signs outside the City of Wooster corporation limits shall be 3# posts 72 inch stub with 18 inches above ground using aluminum bolts, stainless steel washers, stainless steel lock washers, and stainless steel nuts

Removed ground mounted supports shall become the property of the Contractor.

18.2.4 Ground Mounted Beam Supports

A. Ground Mounted Beam required: ☑ Yes ☐ No.

Although it is not anticipated that beam support sign replacements are required, if the DBT's design requires the replacement or installation of ground mounted beam supports, they shall comply with the following requirements:

1. Supports subject to multidirectional impacts at intersections shall use the alternate connection on sizes larger than S4 x 7.7

2. The DBT shall evaluate the existing protection of existing beam supports and, if required, add protection or upgrade existing protection to meet current design standards

Removed ground mounted beam supports shall become the property of the Contractor. Remove all existing foundations.

18.2.5 Overhead Supports

A. Overhead Supports: ☑ Yes ☐ No.

1. Design all location of all supports per the Traffic Engineering Manual unless otherwise specified in the Scope of Services.

2. The following overhead supports shall be reused in place: All except as noted below

3. The following overhead supports shall be replaced:
   - Cantilever sign on SR 3/SR 83 North at Sta. 905+00
   - Span-mounted sign on SR 3/SR 83 North at Sta. 932+00 (this replacement support may be beam-mounted if adequate space is available)

4. The DBT shall evaluate the existing protection of existing overhead sign supports and, if required, add protection or upgrade existing protection to meet current design standards

5. Minimum clearance from any overhead electric wires shall comply with National Electric Safety Code and OSHA 29 CFR 1926.1407-141.

6. Prior to fabricating the overhead sign supports, the DBT shall verify the dimensions and design of each support and verify the vertical clearance from the highest pavement elevation under the sign to the bottom of the sign is at least 17 feet. The DBT shall provide elevation views per T.E.M. 240-4.7 for each support to the Engineer once the DBT has determined the final locations.

7. The DBT shall install appropriate grounding with each overhead sign support

Removed overhead supports and sign lighting components shall become the property of the Contractor. Remove existing foundations per the requirements of CMS 202.

18.3 Lighting

The DBT shall perform Work related to lighting in accordance with Section 7.1 and the following sections.

It is anticipated that the following existing lighting will be affected by the construction of this project and relocated as necessary. The DBT shall design and relocate any impacted lighting. This shall be verified for final design by the DBT. The number of impacted poles and power supplies is estimated to be:

- 1 light tower – Right side of Ramp D at Sta. 801+09 which is anticipated to be impacted by the proposed alignment change detailed in Section 14.5.

If possible, the DBT may re-use the existing high mast light pole, luminaires, ring, and lowering mechanism.

If relocation is required by the DBT's design, a new light pole foundation shall be installed, and the contractor shall install new 3-#2 AWG 2400V distribution cable and CMS 625 1.5" conduit, spliced to the existing cable with 3 unfused permanent connector kits, inside a new 18" pull box per CMS 725.08, with 4" underdrain for pull box per CMS 625.11.

18.4 Traffic Signals

The DBT shall perform Work related to lighting in accordance with Section 7.1 and the following sections.

A. Signal Support work required: ☐ Yes ☑ No.
B. Vehicle Signal Heads: ☐ Yes ☑ No
C. Pull box: ☐ Yes ☑ No
D. Conduit: ☐ Yes ☑ No
E. Cable and Wire: ☐ Yes ☑ No
F. General
    1. There are three signals maintained by the City of Wooster within the project limits
        - SR 585 & Ramp I
        - SR 83 & Friendsville Rd
        - SR 3 & Milltown Rd
    2. The intent of the project is not to disturb any part of these signals. If the DBT disturbs any components of these signals, the DBT shall replace what is disturbed at no cost to the Department or City
    3. The existing detection method at these signals is video, so in-pavement loop replacements are not anticipated for this project
    4. Per the requirements of Section 11: MOT, the DBT shall perform the following signal-related work according to their MOT plan:
        - Adjust signal head locations and displays to correspond to associated MOT phases, and signal heads shall be moved or covered if necessary
        - Adjust video detectors to detect approaches where alignment is changed due to MOT phases
        - Adjust signal phasing and/or timing based on MOT phases. If the MOT signal phasing or timing is found to be deficient in the field, the DBT shall make signal timing and/or phasing adjustments based on the Engineer's recommendations
        - A law enforcement officer is required to flag traffic against active signal phases

Signal(s) part of an Intelligent Transportation System (as defined by the Traffic Engineering Manual, Part 13): ☑ Yes ☐ No (SR 83 & Friendsville Rd only)

18.5 Intelligent Transportation Systems (ITS)

A. ITS Work Required: ☑ Yes ☐ No

All proposed ITS work on this project is related to traffic and pavement monitoring for the Pavement Research Project. The final installation of all equipment below will be by the Ohio University Pavement Research Team and by the ODOT Office of Traffic Monitoring. However, the DBT is required to install the following equipment prior to the final activation of the traffic and pavement monitoring systems.

1. Automatic Traffic Recorder Station (SR 3 / SR 83 Sta. 894+00)
    - Install 4 each 24" pull boxes and 3" conduit per SCD HL-30.11 and HL-30.22. Jack and bore under pavement and conduit in trench to pull boxes and to pole.
    - Install one 30 ft aluminum pole with transformer (breakaway) base, foundation, grounding per CMS 625.16 at approximate STA 894+00 Right. Final location shall be approved before installation by Traffic Monitoring, Technical Services:
        Ed Newmeyer: Edward.Newmeyer@dot.ohio.gov
        Sandra Mapel: Sandra.Mapel@dot.ohio.gov
    - Install a size 3 pole-mounted ATR cabinet
    - Install a 130 watt (minimum) solar panel on the pole, facing south.
    - Provide grounding per CMS 625.16

2. Pavement Monitoring Stations – 7 each (1 per test section from Table 13-4)
    - Install 18" pull boxes and 3" PVC conduit per CMS 725, SCD HL-30.11, SCD HL-30.22. Install each pull box adjacent to the edge of pavement, run conduit from the pull box to the cabinet per SCD TC-83.10 (power service and controller mounting on wood poles)
    - Install a mounting setup per SCD HL-40.20 sheet 1 of 3. The only items to include on the mounting setup are cabinet and 3" conduit that connects from nearest pull box to cabinet
    - Cabinet for use with pavement monitoring equipment shall be at least 24"x24"x18", and shall be a type adequate for pole-mounting
    - Each cabinet shall be equipped with a 2500W 12VDC/120VAC Pure Sine inverter to allow for future hookup to a portable generator
    - Provide grounding per CMS 625.16

Pole and cabinet details and approved products should be per ITB Contract 157-22. Details are included in Attachment D of the following document:

https://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/PurchDocs/157-22.pdf

19 PROJECT SCHEDULE REQUIREMENTS

The DBT shall develop and maintain a project schedule in accordance with the selected notes:

☐ CM&S 108.03 A. Progress Schedule

☐ Proposal Note 105 - Critical Path Method Progress Schedule for Single Season Projects

☐ Proposal Note 107 - Critical Path Method Progress Schedule for Multi-Season Projects

☑ Proposal Note 131 – Early Completion Schedule

☑ Proposal Note 132 - Critical Path Method Progress Schedule for Design/Build Multi-Season Projects including updates released on or before the prebid meeting date, shall be met or exceeded.

20 PLAN SUBMITTALS AND REVIEW REQUIREMENTS

20.1 Plan Components

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

1. Real Estate Policies and Procedures Manual Section 3100.
   The DBT shall also identify all topographic features within the existing and proposed Right-Of-Way limits, including underground utilities.

2. Bridge Design Manual.
   Note: Bridge subsummaries are required.

3. 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.

20.2 Quality Control

The DBT is responsible for the professional quality, technical accuracy and adherence to the Governing Regulations listed in Section 7.1 (Governing Regulations) 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.

The Department shall have the discretion to dictate the level of Design review. The Department's acceptance of the design or failure to identify improper design does not, in any way, relieve the DBT of the responsibility for the quality, accuracy, or feasibility of the Design.

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 7.1 (Governing Regulations) of this document, the Department will advise the DBT of the shortcomings and direct the DBT to revise and resubmit the plan. No time extension will be granted as a result of such action. The Department will schedule a review meeting or issue review comments as appropriate.

20.3 Comment Resolution Process

This section establishes transmittal processes and interaction between the Department and the DBT during submittal reviews in addition to the requirements found within the Scope of Services and other Contract Documents. The process can be modified upon mutual agreement between the DBT and the Department with the intention of meeting the requirements of the Contract or specific submission needs. This process may be revised by mutual agreement of both parties.

Specific identified procedures may be amended, revised, eliminated, or added to address project specific needs or mutual party understanding.

This process shall utilize electronic transmittals for all design submissions unless otherwise specified in the Scope of Services. Plan and design submissions shall be in PDF format, Microsoft Excel, Microsoft Word, or other document types as mutually agreed and appropriate to and for the submission.

Submissions should generally conform to the Scope of Service and other specification included in the Contract Documents, as appropriate, with variations as mutually agreed.

The Department shall establish a file transfer website (typically, an ODOT Project SharePoint, ProjectWise site, or other appropriate file transfer and storage site), with controlled and controllable access, for uploading design submissions and subsequent transmittal of design review comments.

Project specific process details shall be discussed at the Pre-Design Meeting. These details include the responsible contacts (Department and DBT), file server location/IP address, known required persons needing access, and login requirements.

A. Procedure

The Department will grant access to an identified DBT representative who will have authority and responsibility to create Buildable Unit Submission (BUS) folders and other folders within the transfer website. Each folder shall be logically named. Within each BUS folder, additional folders representing each stage of review (i.e. Interim/Final/Construction) will be created. If mutually agreeable, the DBT may perform this role if management by the DBT facilitates submissions.

With each Buildable Unit with each Design Submission, the DBT shall include a transmittal sheet describing the BUS, the BUS stage (Interim/Final/Construction), the contractual review response date (from the Department as well as any other third-party reviewer, if applicable), critical assumptions made for the BUS impacting subsequent BUS submissions, and any information which could facilitate review.

The DBT shall develop and utilize a Comment Resolution Spreadsheet (CRS) for each Buildable Unit with each Design Submission (Interim, Final, Construction) for use in logging and tracking review comments. The DBT shall provide a blank CRS to the Department and other third-party reviewers at Interim Design Submission

An updated copy of the CRS shall be provided to all reviewers at the Final Submission. With the Final Submission on the transmittal page, the DBT shall identify major design revisions and design approaches made between Interim and Final Submission being outside the course of typical design progression and were not made to address Interim Review comments. The updated copy shall include all comments received at Interim submittal along with the DBT's written disposition of all Non-Compliant comments made during formal Interim design submittals.

The DBT shall clearly identify if an ODOT Interim review comment responded with an "Accept" by the DBT is not being corrected within a Final submission. If an "Accept" comment is not being addressed, the DBT shall clearly describe the intended resolution for the RFC submission. The Department may require additional information before the Construction Plan submission, or may request a Comment Resolution meeting (or phone call if appropriate) to understand the DBT's design direction. The DBT shall memorialize the time of the Comment Resolution Meeting within the CRS submitted with the Construction Plans.

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

The DBT is not required to comment nor respond to ODOT identified Preference comments.

For comments considered substantial to the Department or the DBT, the DBT shall schedule a Comment Resolution Meeting with the Department to discuss.

1. The Department shall notify the DBT, either within the CRS or other notice, if the Department requires a Comment Resolution Meeting.

2. The DBT shall notify the Department within seven days of any “Non-Compliant” comments they intend to “Dismiss” or “Resolve”. The DBT shall schedule a Comment Resolution Meeting prior to the next stage submittal.
3. For less substantial comments and as agreed by the Department and the DBT, a comment resolution conference call may be sufficient.

The DBT shall obtain Department concurrence with the “Non-Compliant” comment dismissal and this concurrence shall be documented on the CRS.

The DBT shall resolve all outstanding issues and comments from the Final Submittal (or other outstanding comments) and prepare a full set of Design Documents stamped "Checked and Ready for Released for Construction” (RFC). The Department’s expectation is that no revisions shall be made except for those required to address Final review comments. In the event that other revisions are required unrelated to review comments, the DBT shall notify the Department and coordinate revisions for concurrence.

The DBT has the responsibility for ensuring the RFC meets all contract requirements. If upon Department review it is determined that it is questionable as to whether comments received from the Department or other agencies have been resolved or addressed appropriately, the DBT shall stop construction of the portion of the Buildable Unit in question, consult with the commenter to resolve such comments. The DBT shall document resolution of the comment within the CRS.

The DBT continues to be liable for design accuracy regardless of ODOT review.

B. General Third-Party Requirements

A “Third-Party”, in regard to the Design-Build Comment Resolution process, is any overseeing agency with oversight and design approval authority of relevant portions of the design as identified in the Contract.

Other third-party reviewers may not utilize the CRS.

It is the DBT’s responsibility to reasonably add all third-party markups and comments received; the DBT shall consolidate third-party comments into the CRS corresponding to each Buildable Unit and save on the ODOT Project SharePoint site. Any plan markups shall also be scanned by the DBT and included on SharePoint within the appropriate BUS folder.

The DBT shall address all third-party review comments. All third-party review comments shall be, initially, considered as a “Non-compliant” comment type, as identified below.

With ODOT’s concurrence, the DBT may subsequently identify comments as potentially a “Preference” or “Recommendation”. The DBT shall obtain Department concurrence with the “Non-Compliant” comment dismissal and this concurrence shall be documented on the CRS.

C. Comment Resolution Spreadsheet

Minimum requirements of the CRS along with information on content is included below. The DBT may modify format or include additional information with Department concurrence.

Reviewer	
Comment ID No	Consecutive listing
Document	Submittals may include multiple components including plans, reports, calculations, etc. This column will list which item the comment is on.
Page	Page reference/location comment refers to
Comment type	Either “Non-compliant”, “Preference”, or “Recommendation”. Non-compliant – elements that do not meet requirements of the Contract. Preference – elements which depict the owner’s preferred design method or result but are not required by the Contract. Recommendation – a general noted item intended to make the designer aware of potential troublesome design methods.
Contract Section	If Comment Type is Non-compliant to the Contract, the reviewer shall include the Contract Document of the requirement that is non-compliant (for example, Scope Section 8.2, L&D Volume 1, BDM, etc)
Reviewer Note	A Reviewer Note is optional but is recommended to ensure the designer understands the intent to the comment made. Reviewer shall note if a Comment Resolution Meeting or discussion is desired.
Reviewer Agency	Representing Agency
Reviewer Name	Name of reviewer
DBT Response	
Resolution Code (Approve, Dismiss, or Resolve)	Accept – DBT agrees with the comment and addressed the comments Dismiss – DBT disagrees with the comment based on comment no longer applying because the design has changed, reviewer error, or other reasons. Resolve – DBT needs additional clarification and/or coordination to address the comment accordingly. Comment may also reflect a change to the Contract Documents which will require additional discussion and direction by the Department due to the financial/schedule impacts.

DBT Comment/Disposition	The DBT shall provide a more detailed response to the comment as necessary. Response shall note if a Comment Resolution Meeting or discussion is desired.
Reviewer Response	
Status	Open – the submittal did not address the original comment made. Closed – the submittal or disposition addresses the original comment. The DBT shall schedule a comment resolution meeting with the Department to discuss any comments from previous submittals that remain "Open" according to the reviewer. The DBT and the Department will also discuss whether review comments are in conformance with the Contract Document requirements or preferential comments. For less substantial comments and as agreed by the Department and the DBT, a comment resolution conference call may be sufficient.
Reviewer Name	Name of reviewer
Date Closed	Date that the reviewer responded to the comment.
Comments	Provide a more detailed response clarifying why comment remains "Open" or other information

20.4 Document Management

The DBT shall create and maintain a BUS Log sheet to facilitate submission tracking. The BUS Log shall identify the name of the Buildable Unit, brief description of the BUS, Interim Design submission date, Interim Submission review comments transmittal date, Final Submission date, Final Submission comments transmittal date, Released for Construction date, and a BUS Comments field. The BUS Comments field shall note any necessary resubmissions, dates of Comment Resolution meetings with noted submission stages, Over-the-Shoulder meeting dates resulting in design adjustments, or any other needed summarized data to help understand the BU submission process. The BUS Log Sheet may be modified as necessary to facilitate review. The BUS Log shall be maintained in the master project folder, or in a location mutual agreeable and accessible to the DBT and the Department.

The DBT shall create a folder for each BU on the Department's Project SharePoint Site. Each BU folder shall have an "Interim", "Final", and "RFC" folder. All Design Documents (plans, calculations, reports, etc) submitted at each phase (Final, Interim, RFC) shall be uploaded by the DBT to the Project SharePoint Site. An updated CRS at each submittal shall be included in each folder with the latest including all comments "closed". Meeting minutes from comment

resolution meetings or over-the-shoulder reviews shall be prepared by the DBT and also saved to SharePoint.

20.5 Optional Pre-submission Meeting

The DBT may request a Pre-submission Meeting to be held prior to, or concurrent with, the submission of a buildable unit. The intention of the Pre-submission meeting is an opportunity for the DBT to explain design intent to facilitate owner review. Formal assembly and submittal of drawings or other documents will not be required, but the DBT is encouraged to provide informal submittals to facilitate reviews.

20.6 Optional Over-the-Shoulder Reviews

The DBT or the Department may request "Over-The-Shoulder" (OTS) review of designs at any time in the design process. The OTS is an informal review of a partial design during development. This may include in-progress drawings, calculations, sketches, design concepts, proposed specifications, or any other document used or created during the design. They are to facilitate communication and the design process. These can be in the form of a phone call, meeting, correspondence, or any other means of information sharing between the DBT and the Department.

An Over-the-Shoulder review may be necessary to discuss direction on potential design changes. An OTS may be requested during any period in the design development. Appropriate third-party agencies, as well as the DBT and Department, may also participate in these meetings. The DBT or the Department may include the decision or direction given in an OTS within the applicable CRS submission.

The OTS reviews shall not replace the formal Interim and Final Review. Likewise, the Department may also request an OTS review during any stage of design to facilitate review or design development.

20.7 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 design, they must advise the District Project Manager in writing.

20.8 Interim Design Review Submission

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

Interim Design Submission is defined as followed:

A. Maintenance of traffic, traffic signals, lighting, utilities (water, power, sanitary, etc.), and landscaping shall be developed to Stage 2 level of detail as defined the ODOT Location & Design, Volume 3.
B. Full signing plans are not required at Interim, however, all overhead signage and major ground mounted signage shall be shown on plan sheets (may be shown on pavement marking plans if signing plans are not submitted).
C. All other plan components and supplemental submittal requirements as defined as Stage 1 per the ODOT Location & Design, Volume 3.

Unless indicated below, the Department and all other parties will 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.

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 Table**:** The DBT shall supply an electronic version (in PDF format) along with half size (11" x 17") paper prints simultaneously to the parties indicated below.

	Number of half size Sets
ODOT District Engineering	Electronic Only
ODOT District Construction	Electronic Only
ODOT Central Office, Division of Construction Management	Electronic Only
City of Wooster Engineer	1
Each affected utility or railroad company	2

20.9 FINAL DESIGN Review Submission

For each Buildable Unit the DBT shall submit the Final Design submission for 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, subsummary 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 and all other parties 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.

Following the review, the Department will 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 Table: The DBT shall supply an electronic version (in PDF format) along with half size (11" x 17") paper prints simultaneously to the parties indicated below.

	Number of half size Sets
ODOT District Engineering	Electronic Only
ODOT District Construction	Electronic Only
ODOT Central Office, Division of Construction Management	Electronic Only
City of Wooster Engineer	1
Each affected utility or railroad company	2

20.10 Released for 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 on the Plan Distribution Table 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 Table: The DBT shall supply an electronic version (in PDF format) along with half size (11" x 17") paper prints of each plan submission simultaneously to the parties indicated below.

	Number of half size Sets
ODOT District Engineering	Electronic Only
ODOT District Construction	Electronic Only
ODOT Central Office, Division of Environmental Services	Electronic Only
ODOT Central Office, Division of Construction Management	Electronic Only
Federal Highway Administration	Electronic Only
City of Wooster Engineer	1
Each affected utility or railroad company	2

20.11 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 90 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.

20.12 Plan Distribution Addresses

Ohio Department of Transportation, District 3
906 N. Clark Avenue
Ashland, OH 44805
Attn: Scott Ockunzzi, P.E.
Scott.Ockunzzi@dot.ohio.gov

Ohio Department of Transportation Central Office
Division of Construction Management
1980 West Broad Street
Columbus, Ohio 43223
Attn: Eric Kahlig, P.E.
Eric.Kahlig@dot.ohio.gov

Ohio Department of Transportation Central Office
Office of Environmental Services
1980 West Broad Street
Columbus, Ohio 43223
Attn: Timothy Hill
Tim.Hill@dot.ohio.gov

Federal Highway Administration
200 North High Street
Room 328
Columbus, OH 43215
Attn: Charmagne' Crook
Charmagne.Crook@dot.ohio.gov

City of Wooster Engineer
538 N. Market Street
Wooster, OH 44691
Attn: Roger Kobilarcsik, P.E.
rkobilarcsik@woosteroh.com
Utility Companies
(As shown in Section 12)

20.13 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 Contractor 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 Contractor indicating that all red-lined and field changes have been incorporated into the As-Built Construction Record-Drawing.

Note: The Contractor'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 Contractor's verification statement shall be signed by the Contractor'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.

21 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 Contractor 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. The Progress Schedule for design review shall be developed such that information from other dependent BUs is available at the time of submission of the BU at hand. 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 Contractor and no time extensions shall be approved for this.

For projects with railroad involvement, 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.

APPENDIX A
RAILROAD AGREEMENT

OHIO DEPARTMENT OF TRANSPORTATION
Mike DeWine, *Governor*
Jack Marchbanks, Ph.D., *Director*

1980 W. Broad Street, Columbus, OH 43223
614-466-7170
transportation.ohio.gov

November 24,, 2020

Agreement No. 35800

David A. Becker, PE
Chief Engineer - Design & Construction
Norfolk Southern Corporation
1200 Peachtree Street, NW
Atlanta, Georgia 30309

SUBJECT: Proposed Letter Agreement for S.R. 3/83 roadway resurfacing under Norfolk Southern Fort Wayne Line, Pittsburgh Division

City of Wooster, Wayne County, Ohio

Agency Reference: WAY-83-10.81
PID No. 91095

NS Reference: MP PC-134.07
AARDOT# 502494J

Dear Mr. Becker:

This Letter Agreement is authorization for Norfolk Southern and/or their consultants to begin engineering-review tasks for the above-referenced project.

The proposed work for this project includes roadway milling and resurfacing of S.R. 3/83 below NS's Fort Wayne Line tracks at the above-referenced location in the City of Wooster in Wayne County, OH. Work will include roadway milling & resurfacing below the referenced NS bridge, with no change in vertical clearance

1) No work will commence until the Railway has approved the State's final plans for the project. All work will be performed in accordance with the approved plans, specifications and the attached Special Clauses in the Proposal.

2) During the performance of the work, temporary construction clearances of 22'-0" vertically above the top of rail and 13'-0" horizontally from the centerline of a track shall be maintained to any form work, false work or other temporary obstruction.

3) The State's Contractor will not be allowed to commence work under Railway property until the following conditions have been met:

a) The State has received notice from the Railway that the required insurance is satisfactory.

b) The State has received written authorization from the Railway to begin work on Railway property.

The written authorization will include the name and telephone number of the local representative who must be contacted to arrange for flag protection.

4) The State shall reimburse the Railway for all necessary force account work to accommodate the project, including but not limited to flagging, and construction engineering.

5) All obligations of the State provided for in this agreement which require the expenditure of funds by the State shall terminate at the end of the present biennium, being June 30, 2021. If construction covered under said agreement is not completed by June 30, 2021, it is the expressed intention of the parties to automatically renew said obligations for one successive biennium period; with the renewal period beginning July 1, 2021 and ending no later than June 30, 2023; until such time as construction covered under said agreement is complete. Said renewal is conditioned upon the State determining future appropriations will permit the State to renew said obligations.

6) Contingent upon meeting requirements indicated above, railroad shall permit the State and/or its contractor to enter upon lands owned or operated by the company to permit construction and/or maintenance referenced herein.

7) The State shall reimburse the railroad for applicable construction and engineering costs, based upon project billings rendered from the railroad in accordance with Federal Aid Policy Guide 140(1) of the Federal Highway Administration. The railroad shall render its billings to the State within 90 days in accordance with said rules and regulations, and further agrees to provide and furnish such itemized records and substantiating data for such costs as may be necessary.

If you agree with the terms of this Letter Agreement, please indicate your concurrence by signing in the space below, and then scan and email back the signed Agreement to Richard Behrendt, ODOT State Rail Coordinator/ORDC Project Manager at richard.behrendt@dot.ohio.gov

Thank you for your assistance in this matter. Should you have any other questions or concerns about this project, please contact Mr. Behrendt at (614) 429-8432

Sincerely,

DJG

Jack Marchbanks, Ph.D.
Director of Transportation

Accepted by Norfolk Southern Corporation:

By: D A Beahn (CPB)

Title: CHIEF ENGINEER

Date: 12-10-2020

WAYNE COUNTY
WAY-83-10.81, PID 91095

NS Fort Wayne Line, Pittsburgh Division
MP PC-134.07, AARDOT #502494J

SPECIAL CLAUSES IN THE PROPOSAL

The bidder, if awarded the contract for this improvement agrees:

1. To cooperate at all times with the local officials of the railroad company.

2. To use all reasonable care and diligence in the work in order to avoid accidents, damage or unnecessary delay to, or interference with the trains and other property of the railroad company.

3. To conduct his work in a manner satisfactory to the Chief Engineer of the railroad company or his authorized representative, to perform his work in such manner and at such time as not to unnecessarily interfere with the movements of trains or railroad traffic, and to hold his work at all times open to inspection of railroad company inspectors.

4. To cooperate with a public utility, railroad or other organizations having occasion to do work on or in connection with the improvement.

5. To avoid unnecessary use of railroad property without written permission of the railroad company and to leave railroad roadbed and property in a condition acceptable to the Chief Engineer of the railroad company.

6. To execute a bond conditioned according to Section 5525.16 of the Revised Code of Ohio, in favor of the State of Ohio, and further to carry insurance of the kinds and amounts as delineated on pgs. 9-12 in the railroad's 'Special Provisions for Protection of Railway Interest' (attached).

The number of trains operating over the crossing at the referenced location is estimated to be:

_0_Passenger trains per day @ a maximum authorized operating speed of _ miles per hour.

_12_Freight trains per day @ a maximum authorized operating speed of _50_ miles per hour.

- Norfolk Southern accepts electronic submissions of insurance policies at:

  NSRisk3@nscorp.com

  Required documentation and other requirements are outlined in the attached Norfolk Southern 'Special Provisions for Protection of Railway Interest' under subsection 14 - Insurance. Contractors should email their insurance documentation to Norfolk Southern a min. of 30 days prior to their anticipated start date.

- Allow a min. of **30 days** from the day that Norfolk Southern receives your submission until approval or denial is received back from NS - Resubmission of missing or revised information may take an additional 30 days for NS to review and approve.

- Including the NS file number (at the top of pg. SC-1) on the cover page of the insurance transmittal will aid in quickly identifying the project for which the submission has been made. However, do not include milepost data or DOT #'s in the actual policy.

- **No work can begin on NS ROW until the Contractor's insurance has been submitted and approved in writing by NS.**

- **The Contractor will not be paid for RR insurance coverage until evidence of insurance acceptance by Norfolk Southern is provided to the ODOT District Area Engineer or his/her designee.**

(a) General Insurance Requirements

The insurance hereinbefore specified shall be with an acceptable insurance company authorized to do business in the State of Ohio, and shall be taken out before execution of the Contract by the Director and kept in effect until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by the formal acceptance by the State. Such policies shall include thirty (30) days canceling notice. The cost of insurance hereinbefore specified in subsection (a) will be a specific bid item.

Notwithstanding the Department's Construction and Material Specification No.107.12 "Evidence" as above set forth shall consist of furnishing the Director of Transportation three (3) certified copies of the railroad policy.

7. To indemnify, defend, and hold Norfolk Southern (NS) and its affiliates harmless from and against all claims, demands, payments, suits, actions, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages), for any injury to or death to any person(s) (including, but not limited to the employees of NS, its affiliates, the State or the Contractor), for the loss of or damage to any property whatsoever (including but not limited to property owned by or in the care, custody, or control of NS, its affiliates, the State or the Contractor, and environmental damages and any related remediation brought or recovered against NS and its affiliates), arising directly or indirectly from the negligence, recklessness or intentional wrongful misconduct of the Contractor, the State, and their respective agents, employees, invitees, contractors, or its contractor's agents, employees or invitees in the performance of work in connection with the project or activities incidental thereto, or from their presence on or about NS's property.

8. The Railroad company will assign, at the sole cost and expense of the Department, railroad flaggers or other protective services and devices as necessary to insure the safety and continuity of the work to be performed as a part of this contract. Said services and devices will be provided when necessary, as determined by the railroad company, because of any of the Contractor's operations over, under or adjacent to tracks over which trains are operating. The provision of such protective personnel and devices does not relieve the Contractor from the liability of payment for damage caused by his operations.

   The Contractor shall notify the following named individual for each railroad company at least 30 days, or as directed by the authorized representative of the Railroad, in advance of starting any work which might require protection:

   David A. Becker, PE
   Chief Engineer - Design & Construction
   Norfolk Southern Corporation
   1200 Peachtree Street, N.E.
   Atlanta, GA 30309
   Attn: E.W. Chambers
   Telephone: (404) 529-1436

   All email correspondence should include (at a minimum) either the ODOT Project Identification (PID) Number, and/or the NS File Number in the Subject line for ease of reference.

   The Contractor shall notify the railroad at least 5 working days in advance of suspending or ceasing operations that require a flagger, and must provide the Project Name, PID number, railroad line and milepost information and/or AARDOT# as shown at the top of pg. SC-1.

The Contractor will be responsible for protective services provided at his request and not utilized due, in the opinion of the Engineer, to a change in the Contractor's construction schedule or if it is determined by the Engineer that the requested services were not necessary. The actual costs for such protective services so assessed to the Contractor will be deducted from the Contract.

The decision of the Director of Transportation shall be final in the event of controversy as to the necessity for any protection services provided and not utilized by the Contractor as described in the preceding paragraph.

9. To pay the railroad or owning company for any changes, requested for his convenience, to railroad property, facilities, wire, fiber optic and/or pipe lines other than shown on the plans for the project.

10. If at any time the contractor desires a temporary crossing of the railroad's tracks, he shall make a request for a temporary crossing from the railroad. If approved, he shall arrange with the railroad company, execute its regular form of private grade crossing agreement covering the crossing desired, paying any fees directly to the railroad necessary for construction, maintenance, removal, protection and other costs associated with the temporary crossing – See attached NS 'Private Road Crossing Application'

    Contractor should be aware that submittal, review and approval of a temporary crossing application may take anywhere from 8-12 weeks after submittal of the application to the railroad, and Contractor should account for this in his construction schedule.

11. Methods and procedures for performing work on property of Norfolk Southern Railway Company, including temporary crossing applications, must be approved by:

    E.W. Chambers
    Norfolk Southern Corporation
    Engineer – Public Improvements
    1200 Peachtree Street N.E.
    Atlanta, GA. 30309
    404-529-1436
    eldridge.chambers@nscorp.com

AUTHORITY OF RAILROAD ENGINEER AND STATE ENGINEER

The authorized representative of the Railroad company, hereinafter referred to as the Railroad Engineer, shall have final authority in all matters affecting the safe maintenance of railroad traffic of his company including the adequacy of the foundations and structures supporting the railroad tracks.

NOTICE OF STARTING WORK

A. The Contractor shall not commence any work on Railroad right of way until he has complied with the following conditions:

1. Give the Railroad Engineer at least ten working day advance written notice, with copy to the Engineer, of the date he proposes to begin work on railroad right of way. Said notice shall be sent to Mr. Kevin G. Hauschildt, Chief Engineer, Bridges and Structures, Norfolk Southern Corporation, 1200 Peachtree Street, N.E., Atlanta, Georgia 30309 – Attn. EW Chambers

2. Obtained written authorization from the Railroad Engineer to begin work on Railroad right of way.

3. Obtained written approval from the Railroad of the Railroad Protective Liability Policy of Insurance.

B. The Railroad Engineer's written authorization to proceed shall include the names, addresses, and telephone numbers of the railroad's local representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility shall be specified.

FLAGGING SERVICE

A. WHEN REQUIRED

Under the terms of the Agreement between the Department and the Railroad, the Railroad has the sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such flagging services will be whenever the Contractor's men or equipment are, or are likely to be, working on the Railroad's right of way and is across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a railroad track structure, railroad roadbed or the track surface and alignment of any track to such an extent that the movement of trains must be controlled. Normally the Railroad will assign one flagger to a project; but in some cases, more than one may be necessary. However, if the contractor works within distances that violate instructions given by the Railroad's local representative, or performs work that has not been scheduled with the Railroad's local representative, additional flaggers may be required full time until the project has been completed. See pg. 4 in the railroad's 'Special Provisions for Protection of Railway Interest' (attached).

For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal.

The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project,

B: SCHEDULING AND NOTIFICATION

The Contractor shall furnish to the Railroad's local representative and the Engineer a schedule for all work required to complete the portion of the project within the Railroad right of way and arrange for a job site meeting between the Contractor, Engineer and the Railroad's local representative. Flagging services may not be provided until such meeting has been conducted and the contractor's work scheduled.

The Contractor shall give the Railroad's local representative, copy to the Engineer, at least 10 working days of advance written notice of work to be performed within railroad right of way. Such notices shall include sufficient details of the proposed work to enable the Railroad's local representative to determine if flagging will be required. If flagging is required no work shall be undertaken until the flaggers are present at the job site. Railroad labor agreements usually require flaggers to be assigned to a project on a continual basis and therefore cannot be called for on a spot basis.
If flagging service becomes unnecessary and is suspended it may take up to thirty days to again obtain service from the Railroad. The Contractor shall give five working days notice to cease flagging service.

C: EMERGENCIES

If emergencies arise which require the flagger's presence elsewhere, the Contractor shall delay his work until such time as the flaggers are again available.

D: SUSPENSION OF WORK

If work is suspended the Contractor shall give the Railroad's local representative at least three working days notice before resumption of said work.

E. VERIFICATION

The Railroad flagman assigned to the project will be responsible for notifying the State or Contractor's on-site project representative or Contractor Superintendent upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The State or Contractor's on-site project representative will document such notification in the project records. When requested, the State or Contractor's on-site project representative will also sign the flagman's diary, timesheet or flagging report showing daily time spent and activity at the project site.

End of Special Clauses

A. Norfolk Southern – Special Provisions for Protection of Railway Interests

RESURFACING ONLY

1. AUTHORITY OF RAILROAD ENGINEER AND SPONSOR ENGINEER:

   Norfolk Southern Railway Company, hereinafter referred to as "Railroad", and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Public Projects impacting the Railroad, the Railroad's Public Projects Engineer, hereinafter referred to as "Railroad Engineer", will serve as the authorized representative of the Railroad.

   The authorized representative of the Project Sponsor ("Sponsor"), hereinafter referred to as the "Sponsor's Engineer", shall have authority over all other matters as prescribed herein and in the Project Specifications.

   The Sponsor's Prime Contractor, hereinafter referred to as "Contractor" shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice, from time to time in the sole discretion of the Railroad. Contractor must request from Railroad and follow the latest version of these provisions prior to commencing work.

2. NOTICE OF STARTING WORK:

   A. The Contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:

      1. Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement.

      2. Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor's Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of-way.

      3. Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

      4. Obtained Railroad's Flagging Services as required by paragraph 7 herein.

      5. Obtained written authorization from the Railroad to begin work on Railroad's rights-of-way, such authorization to include an outline of specific conditions with which he must comply.

      6. Furnished a schedule for all work within the Railroad's rights-of-way as required by paragraph 7.B.1.

B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS:

A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.

B. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.

4. TRACK CLEARANCES:

A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.

1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.

2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.
3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.

4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

B. Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad's representative at least 72 hours in advance of the work.

2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.

3. Receive permission from the Railroad's representative to proceed with the work.

4. Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

1. Construction work and operations by the Contractor on Railroad property shall be:

a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.

b. In accordance with the Railroad's written outline of specific conditions.

c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.

d. In accordance with these Special Provisions.

2. Submittal Requirements

a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.

b. The Contractor shall allow for 30 days for the Railroad's review and response.

c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.

d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.

e. All submittals shall first be approved by the Sponsor's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.

f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:

(1) General Means and Methods
(2) Roadway Protection and/or Phasing Plans
(3) Anticipated Schedule of Work

B. Track Monitoring

1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.

2. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

C. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.

2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

D. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or his authorized representative.

6. DAMAGES:

A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.

B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Railroad.

2. Under the terms of the agreement between the Department and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.

3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed.

4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal. The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.

2. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.

3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way.

   Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer.

If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad.

When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days' notice before flagging service may be discontinued and responsibility for payment stopped.

4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

C. Payment:

1. The Department will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.

2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Department by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.

3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.

4. Railroad work involved in preparing and handling bills will also be charged to the Department. Charges to the Department by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Department's Engineer. Address all written correspondence electronically to Railroad Engineer.

2. The Railroad flagman assigned to the project will be responsible for notifying the Department Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Department's Engineer will document such notification in the project records.

   When requested, the Department's Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. COOPERATION AND DELAYS:

   A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.

   B. No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

9. TRAINMAN'S WALKWAYS:

   A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

10. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHT-OF-WAY:

   A. The Contractor and/or the Department's personnel authorized to perform work on Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway Worker Protection Training; However the Contractor and the Department's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

   B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. In the vicinity of at-grade crossings, it is strongly recommended that reflective vests be worn.

   C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.

D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.

E. No one is allowed to cross tracks without specific authorization from the flagman.

F. All welders and cutting torches working within 25' of track must stop when train is passing.

G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

11. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHT-OF-WAY:

A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.

B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

C. All employees will stay with their machines when crane or boom equipment is pointed toward track.

D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).

E. Swinging loads must be secured to prevent movement while train is passing.

F. No loads will be suspended above a moving train.

G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.

H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.

I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.

K. All equipment, loads and cables are prohibited from touching rails.

L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.

N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

12. INSURANCE:

A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:

1. a. Commercial General Liability Insurance having a combined single limit of not less than $2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.

b. Automobile Liability Insurance with a combined single limit of not less than $1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.

2. Railroad Protective Liability Insurance having a combined single limit of not less than $2,000,000 each occurrence and $6,000,000 in the aggregate applying separately to each annual period.
If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of $5,000,000 each occurrence and $10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

a. The insurer must be rated A- or better by A.M. Best Railroad, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.

b. The policy must be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:

(1) CG 00 35 01 96 and CG 28 31 10 93; or
(2) CG 00 35 07 98 and CG 28 31 07 98; or

(3) CG 00 35 10 01; or
(4) CG 00 35 12 04; or
(5) CG 00 35 12 07; or
(6) CG 00 35 04 13.

c. The named insured shall read:

Norfolk Southern Corporation and its subsidiaries
Three Commercial Place
Norfolk, Virginia 23510-2191
Attn: S. W. Dickerson Risk Management

(NOTE: Norfolk Southern does not share coverage on RRPL with any other entity on this policy)

d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.

e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.**

f. The name and address of the prime Contractor must appear on the Declarations.

g. The name and address of the Sponsor must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."

h. Endorsements/forms that are **required** are:
(1) Physical Damage to Property Amendment
(2) Terrorism Risk Insurance Act (TRIA) coverage must be included.

i. Other endorsements/forms that will be accepted are:

(1) Broad Form Nuclear Exclusion – Form IL 00 21
(2) 30-day Advance Notice of Non-renewal or cancellation
(3) Required State Cancellation Endorsement
(4) Quick Reference or Index Form CL/IL 240

j. Endorsements/forms that are NOT acceptable are:

(1) Any Pollution Exclusion Endorsement except CG 28 31
(2) Any Punitive or Exemplary Damages Exclusion
(3) Known injury or Damage Exclusion form CG 00 59
(4) Any Common Policy Conditions form
(5) An Endorsement that limits or excludes Professional Liability coverage
(6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement

(7) An Endorsement that excludes TRIA coverage
(8) A Sole Agent Endorsement
(9) Any type of deductible endorsement or amendment
(10) Any other endorsement/form not specifically authorized in item no. 2.h above.

B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad's right of way.

C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Sponsor at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor's and any subcontractors' Commercial General Liability Insurance shall be issued to the Railroad and the Sponsor at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Sponsor. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

SPONSOR:

RAILROAD:
Risk Management
Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191

D. The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.

E. Insurance Submission Procedures

1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes. **Please provide point of contact information with the submission including a phone number and email address.**

2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:

    a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirely inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.

b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of $2M per occurrence of general and $1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.

3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

13. FAILURE TO COMPLY:

A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:

1. The Railroad Engineer may require that the Contractor vacate Railroad property.

2. The Sponsor's Engineer may withhold all monies due the Contractor on monthly statements.

B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor's Engineer.

14. PAYMENT FOR COST OF COMPLIANCE:

A. No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

End of Norfolk Southern Special Provisions for Protection of Railway Interests
RESURFACING ONLY

FORCE ACCOUNT ESTIMATE

Work to be Performed By:	Norfolk Southern Railway Company
Project Description:	SR 3/SR 83 Resurfacing
Location:	Wooster, Wayne Co., OH
Project No.:	PID 91095
Milepost:	PC-134.07
File:	BR0028045
Date:	December 3, 2020

ITEM A - Preliminary Engineering		1,736
ITEM B - Construction Engineering		0
ITEM C - Accounting		274
ITEM D - Railroad Protective Services		6,073
ITEM E - Communications Changes		0
ITEM F - Signal & Electrical Changes		0
ITEM G - Track Work		0
ITEM H - T-Cubed		0
	GRAND TOTAL	**$ 8,083**

ITEM A - Preliminary Engineering

(Review plans and special provisions,
prepare estimates, etc.)

Labor:	5 Hours @ $60 / hour=	300
Labor Additives:		236
Travel Expenses:		0
Services by Contract Engineer:		1,200
	NET TOTAL - ITEM A	$ 1,736

ITEM B - Construction Engineering

(Coordinate Railway construction activities,
review contractor submittals, etc.)

Labor:	0 Hours @ $60 / hour=		0
Labor Additives:			0
Travel Expenses:			0
Services by Contract Engineer:			0
	NET TOTAL - ITEM B	$	-

ITEM C - Administration

Agreement Construction, Review and/or Handling:			0
Accounting Hours (Labor):	5 Hours @ $30 / hour=		150
Accounting Additives:			124
	NET TOTAL - ITEM C	$	274

ITEM D - Railroad Protective Services

(During construction on, over,
under, or adjacent to the track.)

Labor:	Protective Services		
	5 days @ 390.00 per day=		1,950
	(based on working 12 hours/day)		
Labor Additive:			3,623
Travel Expenses, Meals & Lodging:			
	5 days @ $100/day=		500
Rental Vehicle	0 months @ $950/month=		0
	NET TOTAL - ITEM D	$	6,073

ITEM E - Communications Changes

Material:			0
Labor:			0
Purchase Services:			0
Subsistence:			0
Additive:			0
	NET TOTAL - ITEM E	$	-

ITEM F - Signal & Electrical Changes

Material:		0
Labor:		0
Purchase Services:		0
Other:		0
	NET TOTAL - ITEM F	$ -

ITEM G - Track Work

Material:		0
Labor:		0
Additive:		0
Purchase Services:		0
	NET TOTAL - ITEM G	$ -

ITEM H - T-CUBED

Lump Sum $ -

NOTES

1. For all groups of CONTRACT employees, the composite labor surcharge rate used in this estimate (including insurance) is **185.81%**. Self Insurance - Public Liability Property Damage is estimated at 16.00%. Work will be billed at actual current audited rate in effect at the time the services are performed.

2. For all groups of NON-CONTRACT employees, the composite labor surcharge rate used in this estimate (including insurance is **78.59**%. Self Insurance - Public Liability Property Damage is estimated at 16.00%. Work will be billed at actual current audited rate in effect at the time the services are performed.

3. All applicable salvage items due the Department will be made available to it at the jobsite for its disposal.

4. The Force Account Estimate is valid for one (1) year after the date of the estimate (12/03/2020). If the work is not performed within this time frame the Railway may revise the estimate to (1) include work not previously indicated as necessary and (2) reflect changes in cost to perform the force account work.

APPENDIX B
FAA COORDINATION

FAA Coordination for PID 91095

It is the responsibility of the Design-Build Contractor to perform Airway/Highway Clearance and Coordination (A/H C&C) through the Federal Aviation Administration (FAA) on this project. The contractor will obtain and file any appropriate determinations from the FAA. The contractor will comply with and obey any further instructions required by the FAA secondary to the completion of A/H C&C. The contractor will, at a minimum, evaluate the project for construction equipment and the final proposed condition of the facility.

Construction Equipment

The contractor will evaluate the project's construction equipment via the FAA's Notice Criteria tool found on the oeaaa.faa.gov website. The following points will be evaluated, at a minimum:

- Project Beginning
- Project Ending
- Every half-mile point along the project
- Every structure
- Every culvert
- Any other point of interest (where stationary work will occur)

In the FAA's Notice Criteria Tool, the contractor's inputs for each point should be:

- Latitude: The Latitude of the point to the nearest 1/100th of a second
- Longitude: The Longitude of the point to the nearest 1/100th of a second.
- Horizontal Datum: NAD83, unless otherwise specified by a licensed surveyor
- Site Elevation (SE): The existing ground elevation of the point, to the nearest foot. For structures, the SE should be the deck surface when bridging over natural formations such as creeks and rivers, and the underlying facility's elevation when bridging over another man-made facility.
- Structure Height: The anticipated construction equipment's height over the Site Elevation of this point, to the nearest foot. Take special consideration when evaluating structures over other facilities; the height must be measured from the underlying facility's elevation, not the fly-over deck. 25' is a general minimum, increased depending on the work type at that point.
- Traverseway: No Traverseway. If you select any other option, this automatically adds height to the facility. As construction equipment is being evaluated, no addition is needed.

Final Proposed Surface

The contractor will evaluate the project's proposed surfaces via the FAA's Notice Criteria tool found on the oeaaa.faa.gov website. The following points will be evaluated, at a minimum:

- Project Beginning
- Project Ending
- Every half-mile point along the project
- Every structure
- Every pole, including lighting masts, light poles, utility poles, etc.
- Any other point of interest

In the FAA's Notice Criteria Tool, the contractor's inputs for each point should be:

- Latitude: The Latitude of the point to the nearest 1/100th of a second
- Longitude: The Longitude of the point to the nearest 1/100th of a second.
- Horizontal Datum: NAD83, unless otherwise specified by a licensed surveyor

- Site Elevation (SE): The proposed ground elevation of the point, to the nearest foot. For structures, the SE should be the deck surface when bridging over natural formations such as creeks and rivers, and the underlying facility's elevation when bridging over another man-made facility.
- Structure Height: The anticipated above ground height over the Site Elevation of each point, to the nearest foot. For general roadway, this will be 0. Poles, parapets, and other above ground facilities will reflect their actual proposed height. Take special consideration when evaluating structures over other facilities; the height must be measured from the underlying facility's elevation, not the fly-over deck.
- Traverseway: For roadway points, use "Public Roadway." For other above ground appurtenances, use "No Traverseway."

The output of the FAA's Notice Criteria Tool is explicit on the requirements for filing. If the system requires filing, it will say so.

Project Filing with the FAA

Based on the output of the FAA Notice Criteria Tool, file the points deemed necessary through the FAA's oeaaa.faa.gov website. The contractor will be required to create an account with the FAA, if not already completed, and add "Off-Airport Cases" for each point. File construction equipment and proposed facility points separately. The FAA will then reach determinations for each point filed and may or may not require additional actions from the contractor. Comply with all requirements of the FAA put forward in the determination letters. Maintain the determination letter as per the FAA's requirements for the duration of the project.

Other References

For additional information or if there are any questions on the above requirements, contact the District Three FAA Coordinator, Kenny Knapp, PE at 419.207.7175 or kenneth.knapp@dot.ohio.gov.

Appendix FAA_001 – Sample FAA Coordination Spreadsheet
Helpful in organizing points for evaluation and submission to the FAA
Appendix FAA_002 – Sample Plan Notes
Appendix FAA_003 – FAA Coordination for ODOT Projects
For reference only – This document is intended for use in In-House FAA Coordination, but is applicable to D-B projects a well.
Appendix FAA_004 – FAA Process (Coordinator)
Gives a process for filing points with the FAA. Some information is irrelevant to this project, but gives overall guidance
Appendix FAA_005 – FAA Process (General User)
Gives information on point selection and preparing for filing with the FAA

Project Name:		Project Manager:		Other General Comments for FAA Coordination of this project:
PID:		Project Designer 1:		
Filing Date:		Project Designer 2:		
Award Date:		Spreadsheet Submitted By:		
Begin Construction:		Spreadsheet Submitted Date:		
End Construction:		Analysis Completed By:		
Construciton Duration:	Check Dates	Analysis Completed Date:		

County	Route	Point SLM	Point Type	Latitude and Longitude (Decimal)		Latitude and Longitude (Degree-Minute-Second)		Ground Elevation	Working Height	Point in Notice Area?	Airport Involved	Notice Requested?	Filing Point?	Areonautical Study Number	Comments
				Latitude	Longitude	Latitude	Longitude	FT AMSL	Feet		ID Num.				

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS (G118A)

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. THE CONTRACTOR IS ADVISED THAT NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF [XXX] FEET WITHIN THE LIMITS OF [XXX] TO [XXX]. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, THE CONTRACTOR IS ADVISED THAT FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA) WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO FILE A NEW FAA FORM 7460-1, ADVISING THE FAA THAT AERONAUTICAL STUDY NO. (SEE BELOW LIST) IS BEING RESUBMITTED AND THAT AN ALTERATION TO THE ORIGINAL SUBMISSION IS REQUESTED. THIS FILING SHALL BE COMPLETED BY USE OF THE FAA OBSTRUCTION EVALUATION GROUP'S ONLINE PROJECT FILING PROCESS. COPIES OF THE ALTERATION AND FORM 7460-1 SHALL BE FORWARDED TO THE ODOT OFFICE OF AVIATION. THE CONTRACTOR IS ADVISED THAT NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

THE CONTRACTOR IS FURTHER ADVISED THAT THE FAA APPROVAL WILL TAKE A MINIMUM OF 45 DAYS. ALL SUBMISSIONS SHALL BE DIRECTED TO THESE OFFICES DIRECT ALL SUBMISSION SO THE FEDERAL AVIATION ADMINISTRATION USING THE CONTACT INFORMATION INCLUDED WITH THE OBSTRUCTION EVALUATION DETERMINATION LETTERS INCLUDED IN THE PROJECT PROPOSAL, COPYING THE ODOT OFFICE OF AVIATION AT 2829 W DUBLIN GRANVILLE ROAD, COLUMBUS, OH 43235, PH: 614.793.5046, EMAIL: Ohio.Airport.Protection@dot.ohio.gov. ADDITIONALLY, ENSURE THE DISTRICT FAA COORDINATOR IS COPIED ON ALL FAA CORRESPONDENCE VIA EMAIL AT Kenneth.Knapp@dot.ohio.gov.

[XXX] (INSERT FAA AUTOTABLE HERE)

Designer Note: Use this note when the construction equipment penetrates the notification surface of a public-use airport or heliport. The omitted height shall be that which is determined by the FAA in its letter of response, or approval to Form 7460-1, regarding the elevations that were submitted. If the FAA approves the original submission, then the maximum height included in the original submission shall be entered in the note. However, if the FAA approves contingent upon a lesser elevation, then that elevation shall be entered. The Aeronautical Study No. is assigned by the FAA when the Form 7460-1 is originally submitted. An example autotable is located at X:\Planning&Engineering\PRODUCTION\Design Section\FAA Coordination\EXAMPLE AUTO TABLE.xlsx

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS (G118B)

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF [XXX] FT. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND THE DISTRICT THREE FAA COORDINATOR, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA VIA THE FAA OBSTRUCTION EVALUATION GROUP'S ONLINE PROJECT FILING PROCESS. NOTIFY THE ODOT DISTRICT THREE FAA COORDINATOR WHEN SUBMITTING FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND THE ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER AND THE DISTRICT FAA COORDINATOR VIA EMAIL AT Kenneth.Knapp@dot.ohio.gov..

FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
OBSTRUCTION EVALUATION GROUP
10101 HILLWOOD PARKWAY
FORT WORTH, TX 76177
FAX: 817.222.5920
http://ceaaa.faa.gov

ODOT DISTRICT THREE
DISTRICT FAA COORDINATOR
906 CLARK AVENUE
ASHLAND, OHIO 44805
419.207.7175
kenneth.knapp@dot.ohio.gov

Designer Note: Use note G118B when the construction equipment does not penetrate the notification surface of a public airport, or heliport. The omitted height shall be the available clearance below the notification surface.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS (G118C)

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PRIVATE-USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT, AT MAXIMUM OPERATING HEIGHT, SHALL EXCEED A HEIGHT OF ____ FT. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, COORDINATION WITH THE AIRPORT OWNER AND THE ODOT OFFICE OF AVIATION WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. FOR PRIVATE USE AIRPORTS OR HELIPORTS, COORDINATE WITH THE AIRPORT OWNER AND THE ODOT OFFICE OF AVIATION. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL COORDINATION IS MET AND DOCUMENTATION HAS BEEN FURNISHED TO THE PROJECT ENGINEER. IF COORDINATION IS NOT OBTAINED, THEN THE PROJECT ENGINEER WILL HAVE THE AUTHORITY TO PROVIDE RESTRICTIONS AS REQUIRED.

[XXX] THE PRIVATE AIRPORT
[XXX] THE PRIVATE AIRPORT OWNER
[XXX] ADDRESS OF AIRPORT
[XXX] CITY, STATE, ZIP
[XXX] PHONE NUMBER

Designer Note: Use note G118C when the construction equipment penetrates the notification surface of a private-use airport or heliport. The omitted height shall be the available clearance below the notification surface.

FURTHER SPECIAL INSTRUCTIONS FOR AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THE FEDERAL AVIATION ADMINISTRATION OBSTRUCTION EVALUATION GROUP HAS DETERMINED THAT THE MANAGER OF THE PORT BUCYRUS-CRAWFORD COUNTY AIRPORT (17G) AND THE FAA BE ADVISED OF THE ACTUAL BEGINNING AND ENDING OF CONSTRUCTION WITHIN THE AREA OF INFLUENCE OF THE AIRPORT. DUE TO THIS REQUEST, THE CONTRACTOR IS INSTRUCTED TO CONTACT THE DISTRICT THREE FAA COORDINATOR (KENNY KNAPP) VIA EMAIL AT kenneth.knapp@dot.state.oh.us FIVE (5) BUSINESS DAYS BEFORE BEGINNING AND ENDING OF ALL CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF CRA-98-3.50 TO CRA-98-6.50.

SPECIAL NOTIFICATION OF BEGINNING AND ENDING OF CONSTRUCTION SHALL BE PROVIDED TO THE FAA COORDINATOR FIVE (5) DAYS PRIOR TO THE BEGINNING AND ENDING OF CONSTRUCTION WITHIN THE SECTION FROM CRA-98-5.00 TO CRA-98-6.00. ALONG WITH THE DATES OF CONSTRUCTION FOR THIS SECTION, THE CONTRACTOR SHALL PROVIDE THE NAME AND A CONTACT PHONE NUMBER FOR THE PERSON RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE FAA GUIDELINES ON THE SITE. THIS PERSON SHALL BE ON-SITE FOR THE DURATION OF THE WORK WHILE WITHIN THIS SECTION OF THE PROJECT AND SHALL BE ABLE TO BE CONTACTED BY PHONE AT ALL TIMES. THIS RESPONSIBLE PERSON SHALL ENSURE THAT THE CONTRACTOR COMPLIES WITH ALL FAA AND ODOT REGULATIONS AS SET FORTH IN THIS PLAN AND PLAN PACKAGE AND SHALL IMMEDIATELY IMPLEMENT ANY ADDITIONAL MEASURES REQUESTED BY THE FAA OR IMPACTED AIRPORT.

THE CONTRACTOR IS ADVISED THAT THE FAA HAS REQUIRED SPECIAL MARKINGS BE PROVIDED ON ALL CONSTRUCTION EQUIPMENT WITHIN THE AREA OF CRA-98-5.00 TO CRA-98-6.00. ALL CONSTRUCTION EQUIPMENT, OTHER THAN PASSENGER VEHICLES, SHALL BE EQUIPPED WITH A RED LIGHT CONFORMING TO CHAPTER 5, RED OBSTRUCTION LIGHT SYSTEM (L-810 OR EQUIVALENT AND MINIMUM 32.5 CANDELAS) AND A FLAG CONFORMING TO CHAPTER 3, MARKING GUIDELINES IN ACCORDANCE WITH THE FAA'S ADVISORY CIRCULAR 70/7460-1K, OBSTRUCTION MARKING AND LIGHTING. A COPY OF THE PERTINENT SECTIONS OF THIS CIRCULAR WILL BE PROVIDED TO THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING.

ALL CONSTRUCTION EQUIPMENT SHALL BE REMOVED FROM THE ABOVE REFERENCED ONE-MILE SECTION OF SR 98 AND LOWERED TO ITS LOWEST VERTICAL POSITION (i.e. DUMP TRUCK WITH BED LOWERED) WHEN NOT IN USE.

FOR ANY INFORMATION NOT GIVEN HERE, REFERENCE THE FAA DETERMINATION DOCUMENTS AS PART OF THE PLAN PACKAGE SUBMITTAL. ANY QUESTIONS NOT ANSWERED BY THOSE DOCUMENTS MAY BE DIRECTED TO THE DISTRICT THREE FAA COORDINATOR AT THE ABOVE EMAIL OR BY PHONE AT 419.207.7175.

ALL EXTRA WORK, MATERIAL, AND EQUIPMENT NEEDED TO COMPLY WITH THE FAA'S REQUESTS, REQUIREMENTS, AND REGULATIONS SHALL BE PAID FOR UNDER THE LUMP SUM CONTRACT BID PRICE FOR ITEM 614 MAINTENENCE OF TRAFFIC.

Designer Note: This is an example of the note needed for special instructions from the FAA. Modify it to fit your project.

AIRPORT CONTACT REQUIRED

IN ORDER TO COMPLY WITH ALL FAA REQUIREMENTS AND ALLEVIATE ANY ISSUES THAT MAY ARISE BETWEEN THE WORK ON THE HIGHWAY AND AIRWAY TRAFFIC, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE [XXX] AIRPORT MANAGER ADVISING THE MANAGER OF THE LOCATION, SCOPE AND DURATION OF THE PROJECT A MINIMUM OF FIVE BUSINESS DAYS PRIOR TO BEGINNING WORK. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AIRPORT MANAGER. THE FAA HAS MANDATED THAT THE CONTRACTOR ABIDE BY ALL REGULATIONS AND REQUESTS SET FORTH BY THE AIRPORT MANAGER. A MINIMUM OF FIVE BUSINESS DAYS PRIOR TO THE COMPLETION OF ALL WORK ON THE PROJECT, AGAIN CONTACT THE AIRPORT MANAGER IN ORDER TO NOTIFY THE MANAGER OF THE ACTUAL COMPLETION DATE OF THE PROJECT. ANY QUESTIONS REGARDING THIS REQUIREMENT MAY BE DIRECTED TO KENNY KNAPP, DISTRICT FAA COORDINATOR, AT 419.207.7175.

[XXX] [AIRPORT NAME]
[XXX] [AIRPORT MANAGER]
[XXX] [STREET ADDRESS]
[XXX] [CITY, STATE ZIP]
[XXX] [PHONE]
[XXX] [OTHER]

Use this note when FAA coordination mandates that the airport manager be contacted prior to beginning and ending work, as guided by the District FAA Coordinator.

OHIO DEPARTMENT OF TRANSPORTATION
John R. Kasich, Governor
Jerry Wray, Director

District 3
906 Clark Ave., Ashland, OH 44805
419-281-0513
transportation.ohio.gov

Federal Aviation Administration (FAA) Coordination for ODOT Projects

Last updated on 01NOV2017

Overview

Project managers are ultimately responsible to notify the current District FAA Coordinator of any project that may require FAA Coordination. This document will outline the necessary steps that shall be taken by the project managers/designers. The document will also inform you of the necessary steps that the FAA Coordinator will be performing to file a Notice of Obstruction Evaluation with the FAA.

What projects should be considered for Obstruction Evaluation (OE)?

In short, since there are so many smaller airports in the district and the notice plane extends so far away from the actual airport in question (roughly 20,000 feet, depending on the size of airport and the use), all projects should be considered for OE. The exception to this is any project that will not use any equipment that is taller than normal traffic on the roadway. For instance, a long line paving job would need evaluation because of the use of dump trucks with raised beds, but a project like field paving a culvert, which occurs mostly below grade, would not need evaluated. However, to be certain of cooperation with the FAA, all projects should be submitted for evaluation to the FAA Coordinator.

Timeframe for FAA Coordination

Once locations are submitted to the FAA, they may take up to 45 days to supply us with an approval, plus any time they may need to evaluate any changes submitted to them. Because of this, it is best for FAA Coordination to occur early in a project, preferably directly after a final scope has been approved. However, if this is not possible, acceptable time frames would be with the Stage 1 or 2 submissions for Path 2 and higher projects and with the Stage 3 submission for Path 1 projects.

What is needed from the project manager and/or designer to begin the process?

Fill out the FAA Coordination Spreadsheet Template:

- Fill in the pertinent project information at the top of the page
- Fill in the County, Route, and Straight Line Mileage columns according to:
    - For Long Line Projects
        - Beginning point, end point, and every half mile in between

        - All structure and anomaly (culvert work, etc.) locations
        - Note any special locations, like structures, in the comments column
    - Point Projects (like an individual or multiple culvert project)
        - One point at every location of the project
        - Note any special items like SFNs in the Comments column
- Fill in the Decimal Latitude and Longitude columns; there is a 'Multiple CRS' tab in the converter that works well for this.
- Fill in the Approx. Elev. AMSL (Above Mean Sea Level) column for each point using Google Earth. Save your file and inform the FAA Coordinator that your project is ready for evaluation. Ensure you include a brief overview in your email notification of what the scope of the project is, i.e. plane and pave, deck sealing, etc. making special note of any supplementary structure work and type on paving project.

What will the FAA Coordinator do?

Using the information supplied, the FAA Coordinator will execute the following steps to file an Obstruction Evaluation with the FAA.

- Unless provided, complete the Approx. Elev. AMSL column on the provided FAA Coordination Spreadsheet for the project.
- Using ODOT's guidelines for structure heights located in the Location and Design Manual, Volume Three (see Figure 1404-3 and Appendix A), fill in the Struct. Height column based on project type and expected equipment on the site.
- Using the FAA's Notice Criteria Tool and the data obtain thus far, determine whether each individual point given needs to be filed for Obstruction Evaluation with the FAA
    - During the process, the In Notice Zone, Notification Required, Reasoning, Airport Involved, and Comments columns will be filled in with all of the pertinent information.
- Any points deemed necessary to be filed will then be electronically submitted to the FAA for Obstruction Evaluation.
    - At this time, all points filed are assigned an Aeronautical Study Number (ASN) by the FAA.
- The FAA Coordinator will then update the project's FAA Coordination Spreadsheet and the ASN Lookup spreadsheet reflecting the file date and the ASN associated with all points.

- Notification will then be given to the Project Manager and Designer that the filing has been submitted and all spreadsheets have been updated.
    - Note again that clearance from the FAA may take up to 45 days.
- Once the filing is reviewed by the FAA the FAA Coordinator will receive an electronic document for each point filed either clearing the point without further instructions or conditionally clearing the point giving instruction on what needs to be done during construction to comply with the FAA's rules
    - Note that the ANS Lookup spreadsheet will then be updated with the date clearance was received.

- Notification will then be sent to the Project Manager and Designer that FAA Coordination has been completed, along with any special instructions received.

What has to go in the plans?

If FAA Coordination was needed and any ASNs were provided, a note is required in the General Notes section of the plans. An example of this note can be found under the X:\\ Drive FAA Coordination folder. Any special provisions needed by the FAA should be placed in the note as well. All of the needed information regarding each point should be added at the end of the note. The data including ASN, County, Route, SLM, and Lat-Long for each point should be supplied in table format. The following is an example of what should be supplied. Please note that there is language in the note regarding a maximum working elevation of any equipment. That elevation can be found under the Struct. Elev. Column in the FAA Coordination Spreadsheet for the project. Should there be multiple elevations for one project, i.e. 25' for the pavement of the project and 50' for a structure, a column should be added to the note's table showing the maximum operating height for each point.

AERONAUTICAL STUDY NUMBER	COUNTY	ROUTE	STRAIGHT LINE MILE	LAT-LONG	
				LATTITUDE	LONGITUDE
2015-AGL-464-OE	CRA	98	3.50	40.7527760	-82.9897730
2015-AGL-465-OE	CRA	98	4.00	40.7598370	-82.9876410
2015-AGL-466-OE	CRA	98	4.27	40.7636490	-82.9864880
2015-AGL-467-OE	CRA	98	4.50	40.7668960	-82.9854990
2015-AGL-468-OE	CRA	98	5.00	40.7739500	-82.9833300
2015-AGL-469-OE	CRA	98	5.50	40.7810010	-82.9811650
2015-AGL-470-OE	CRA	98	6.00	40.7880390	-82.9789980
2015-AGL-471-OE	CRA	98	6.50	40.7950300	-82.9768450

Conclusion

The District FAA Coordinator should be invited to all pre- and post-construction meetings involving FAA Coordination. The FAA Coordinator will then make a determination of whether to attend the meetings or not based on the complexity of the points and the presence of any special instructions from the FAA. The FAA Coordinator will either deliver applicable sections of the FAA Obstruction Marking and Lighting Advisory Circular and cover page to the pre-construction meeting or designate the project manager to do so.

Should there be any questions regarding any of the above, please feel free to contact the District FAA Coordinator.

APPENDIX A – LOCATION AND DESIGN MANUAL, VOL. 3 REFERENCES

Sections used for FAA Coordination:

- Section 1400 – Review Submissions
  - 1401.5.2 Limited Review Process
  - 1401.5.3 – Design-Build Review Process
- Section 1402 – Review Agencies
  - 1402.4 – Other Governmental Agencies
- Section 1403 – Design Review Submittals
  - 1403.5 – Stage 1 Detailed Design
    - 1403.5.3 – Stage 1 Detailed Design Review Submission
  - 1403.9 – Stage 3 – Detailed Design
    - 1403.9.2 – Stage 3 Detailed Design Activities
    - 1409.9.3 – Stage 3 Detailed Design Review Submission
- Section 1404 – Miscellaneous Studies
  - 1404.1 – Airway/Highway Clearance Analysis

Figures used for FAA Coordination

- 1402-1* – Design Information Sources
- 1404-1** – Relationship of Traverse Ways to the Imaginary Notification Surface
- 1404-2** – Examples of Factors Affecting the Imaginary Surface
- 1404-3* – Maximum Operating Height of Construction Equipment
- 1404-4** – Cross-Sectional and Profile Views of Imaginary Surfaces
- 1404-5** – Runway Protection Zone
- 1404-6** – Dimensions for Runway Protection Zone
- 1404-7+ – Sample Letter of Airway/Highway Clearance Analysis

* - Currently used in the FAA Coordination Process

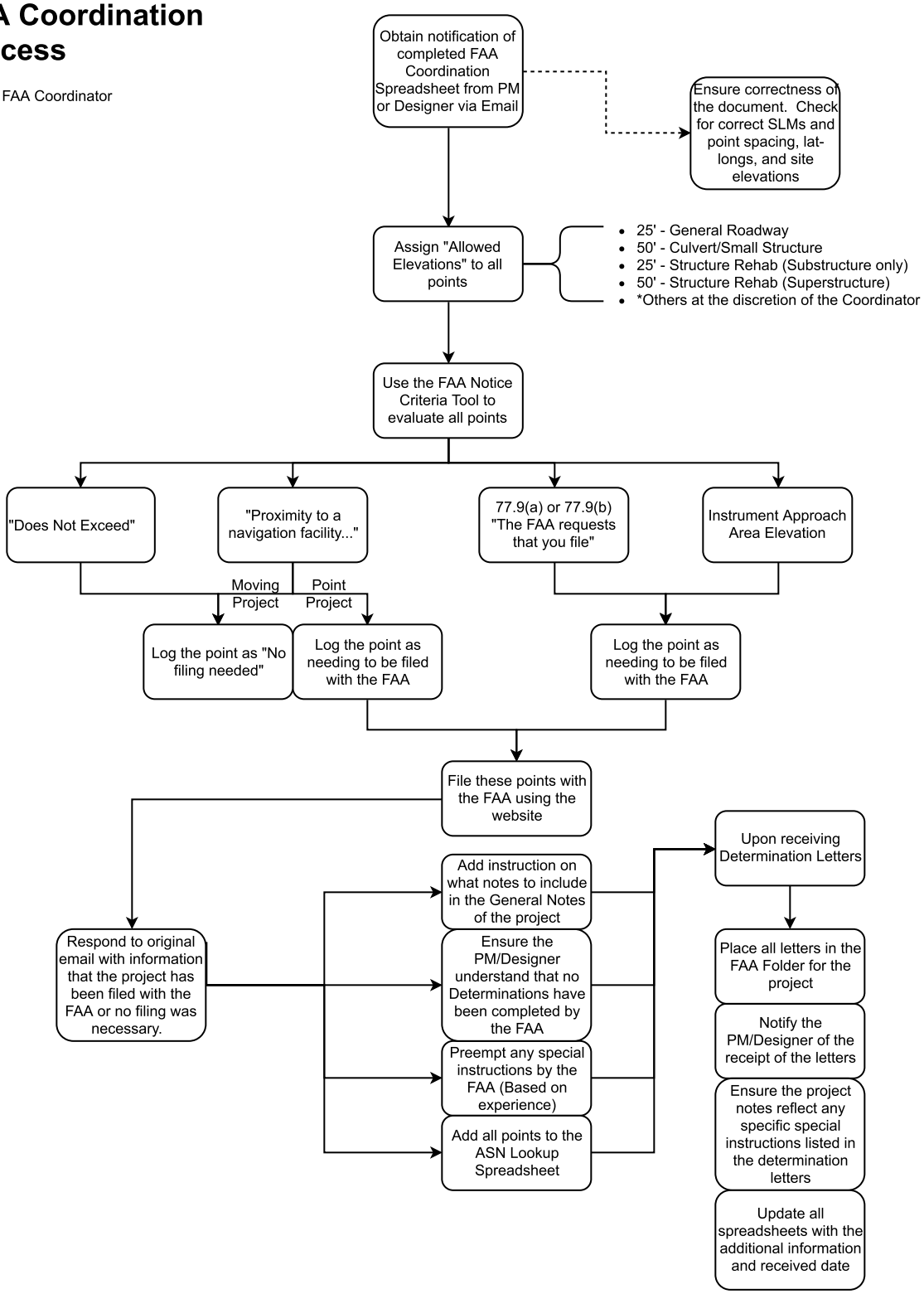
** - Replaced by the FAA with the Notice Criteria Tool on their website

\+ - No longer necessary due to electronic filing process

Please Note: The FAA process dictates that we do ***NOT*** follow our L&D for the procedure of submitting locations for FAA Obstruction Evaluation as it is based on the older process of paper filing. Rather, follow the instructions given within this document to allow for electronic filing.

FAA Coordination Process

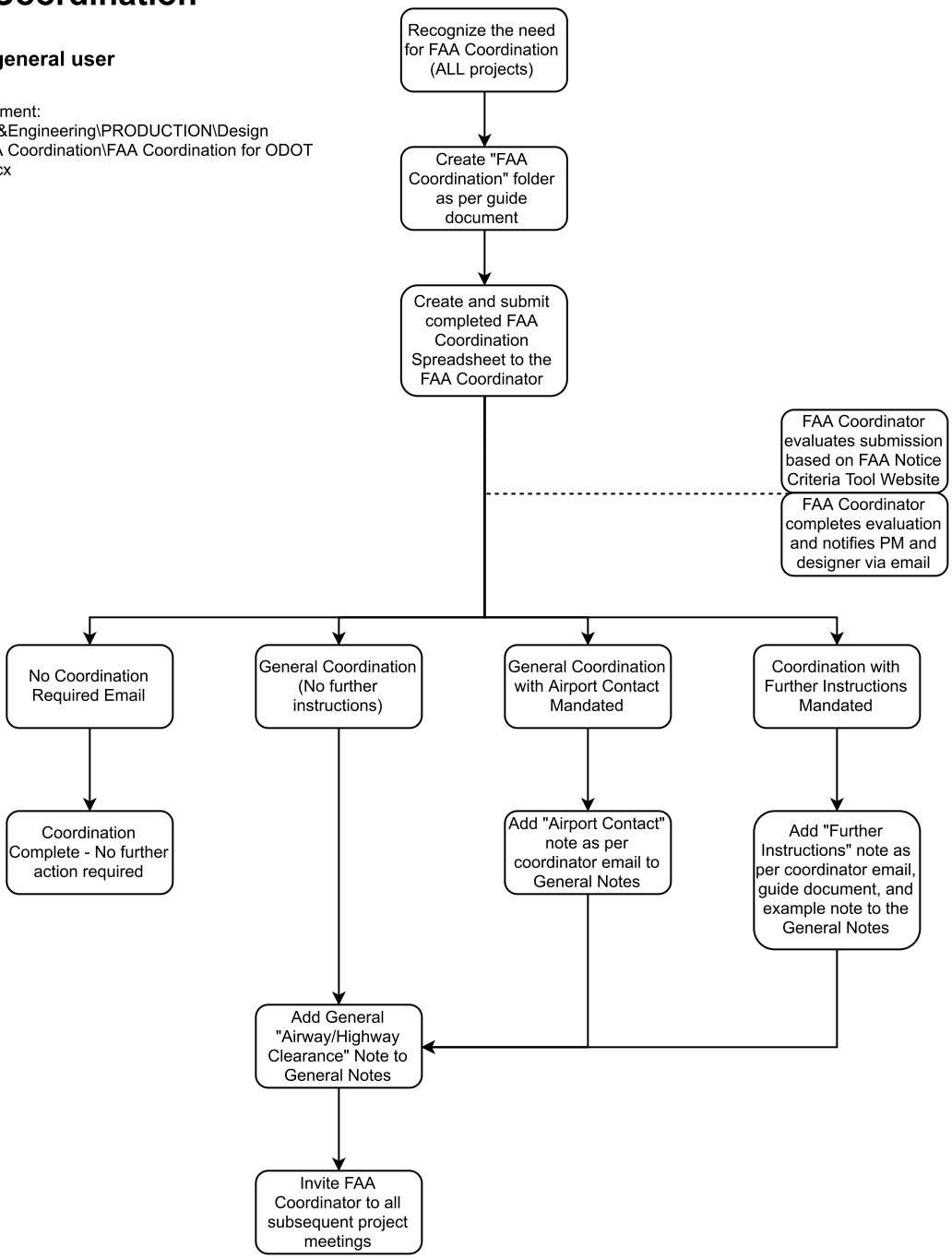
For the FAA Coordinator



FAA Coordination

For the general user

Guide Document:
X:\Planning&Engineering\PRODUCTION\Design Section\FAA Coordination\FAA Coordination for ODOT Projects.docx



APPENDIX C
PROJECT LIMITS

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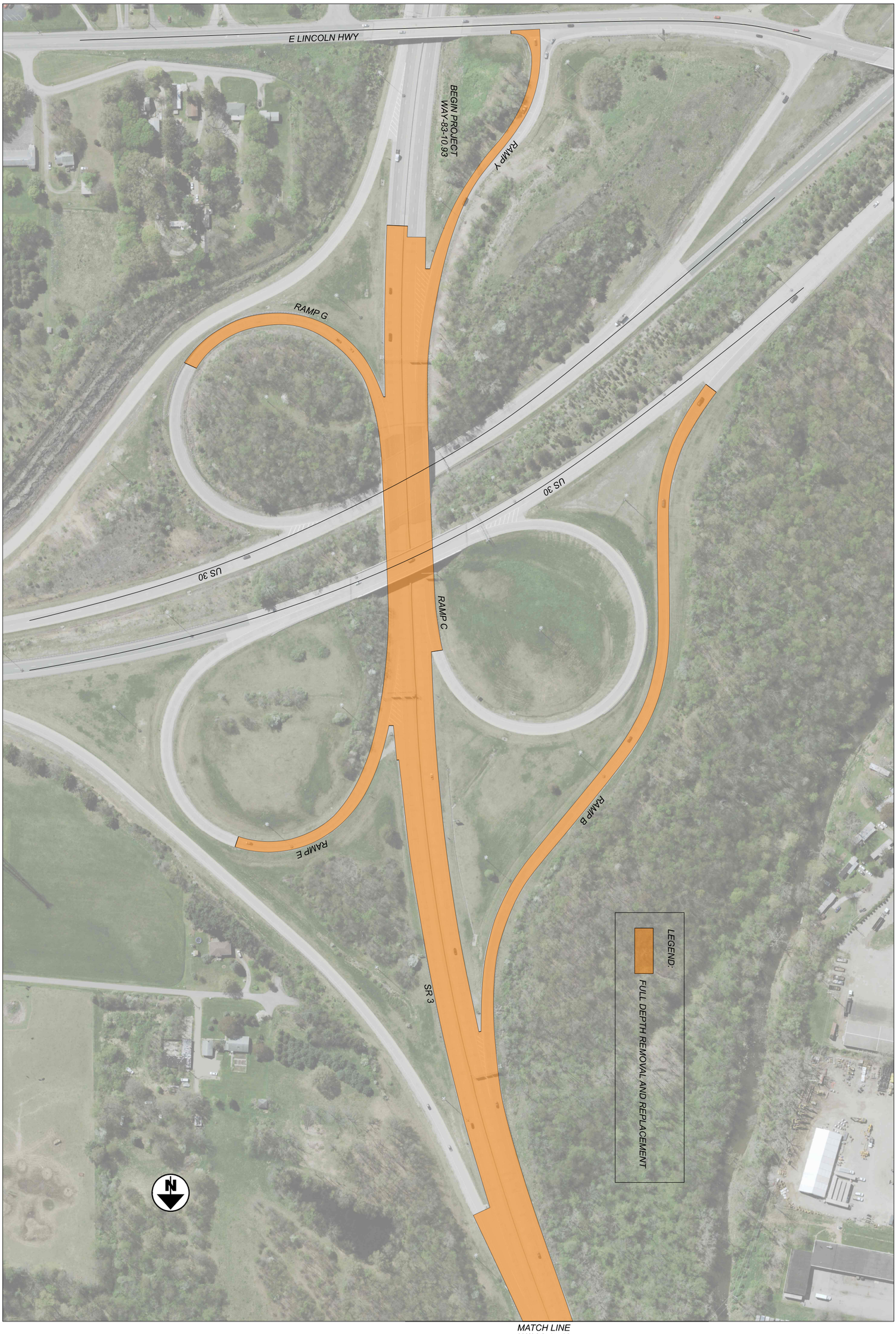

MATCH LINE
WAY-3-15.10

SHEET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1 / TOTAL 6	91095	XXX MM-DD-YY	TPG	

SCHEMATIC PLAN

HORIZONTAL SCALE IN FEET
0 250
125 500

CTY-RTE-SECTION

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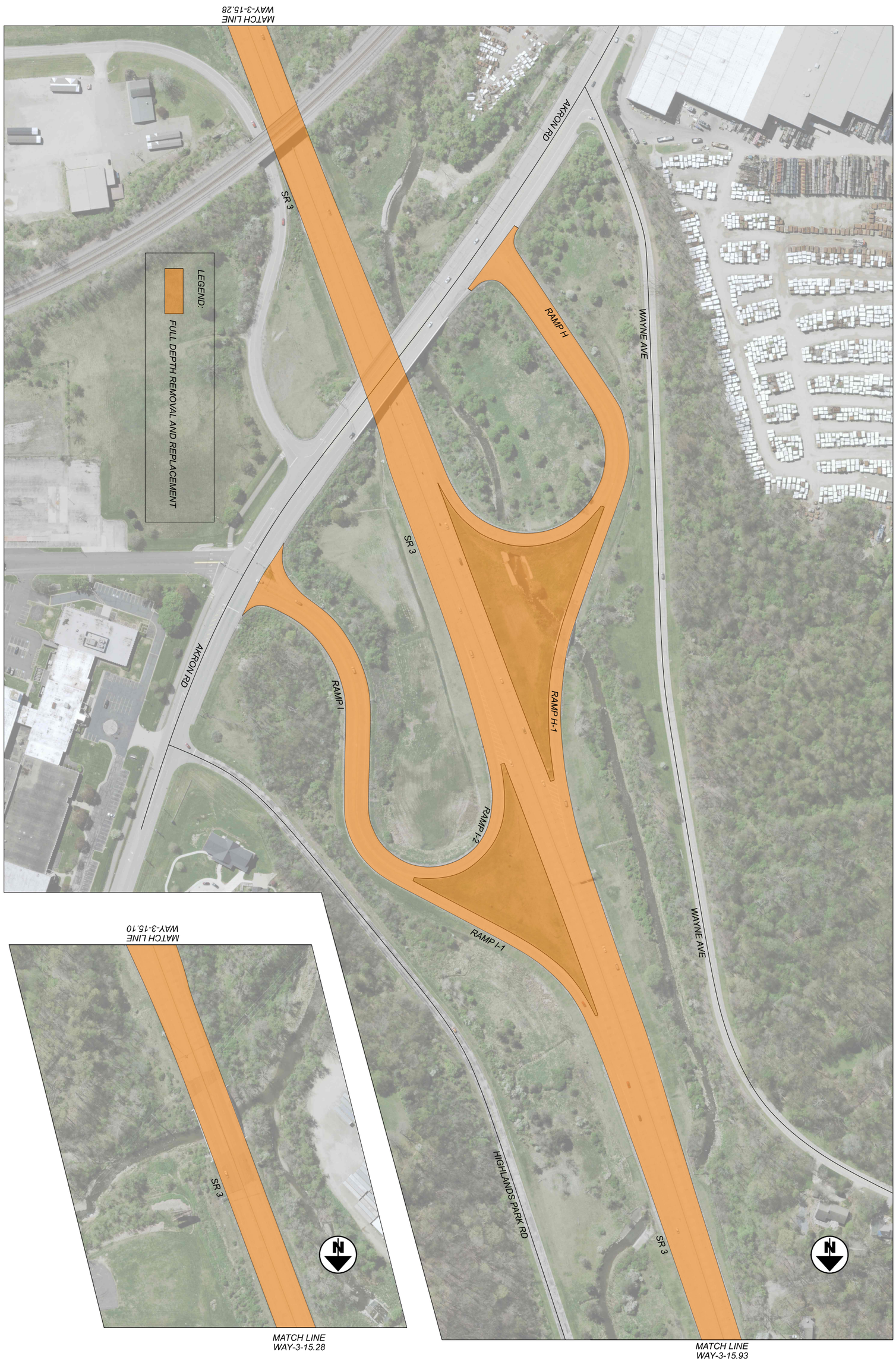

SCHEMATIC PLAN

HORIZONTAL SCALE IN FEET
0 250
125 500

SHEET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
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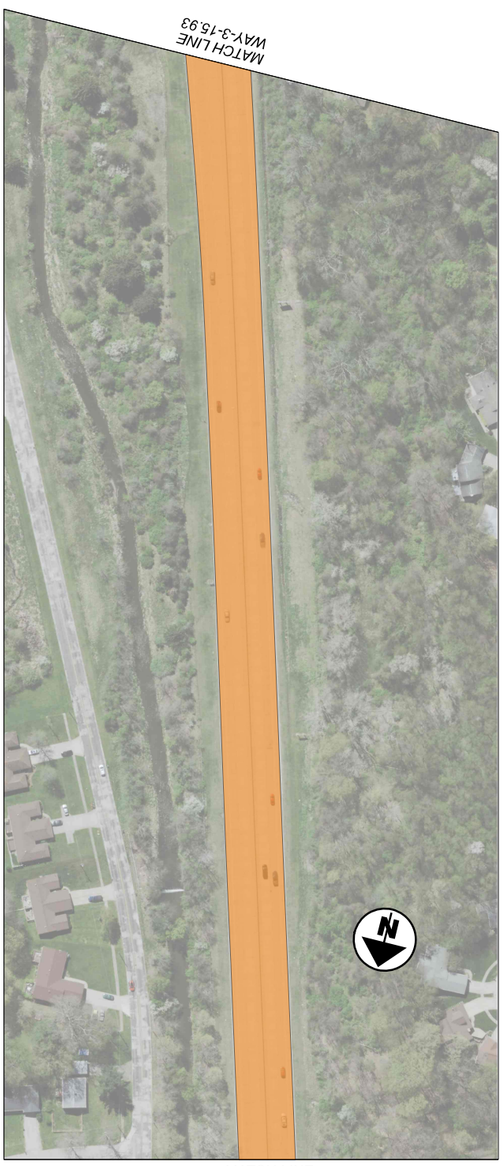

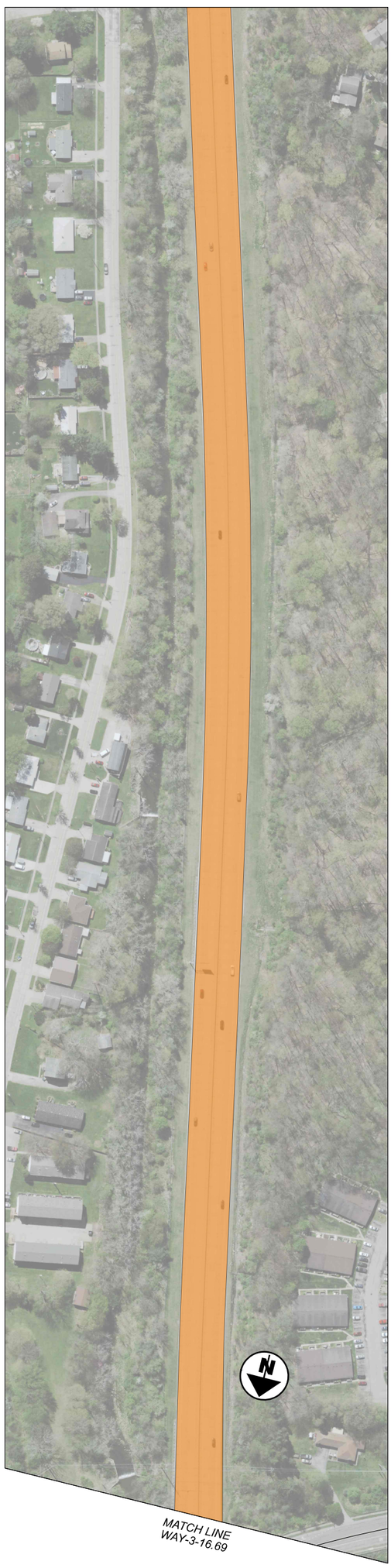

LEGEND:

FULL DEPTH REMOVAL AND REPLACEMENT

SCHEMATIC PLAN

HORIZONTAL SCALE IN FEET
0 250
125 500

SCHEMATIC PLAN

HORIZONTAL SCALE IN FEET
0 250
125 500

SHEET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.4 | TOTAL 6	91095	XXX MM-DD-YY	TPG	

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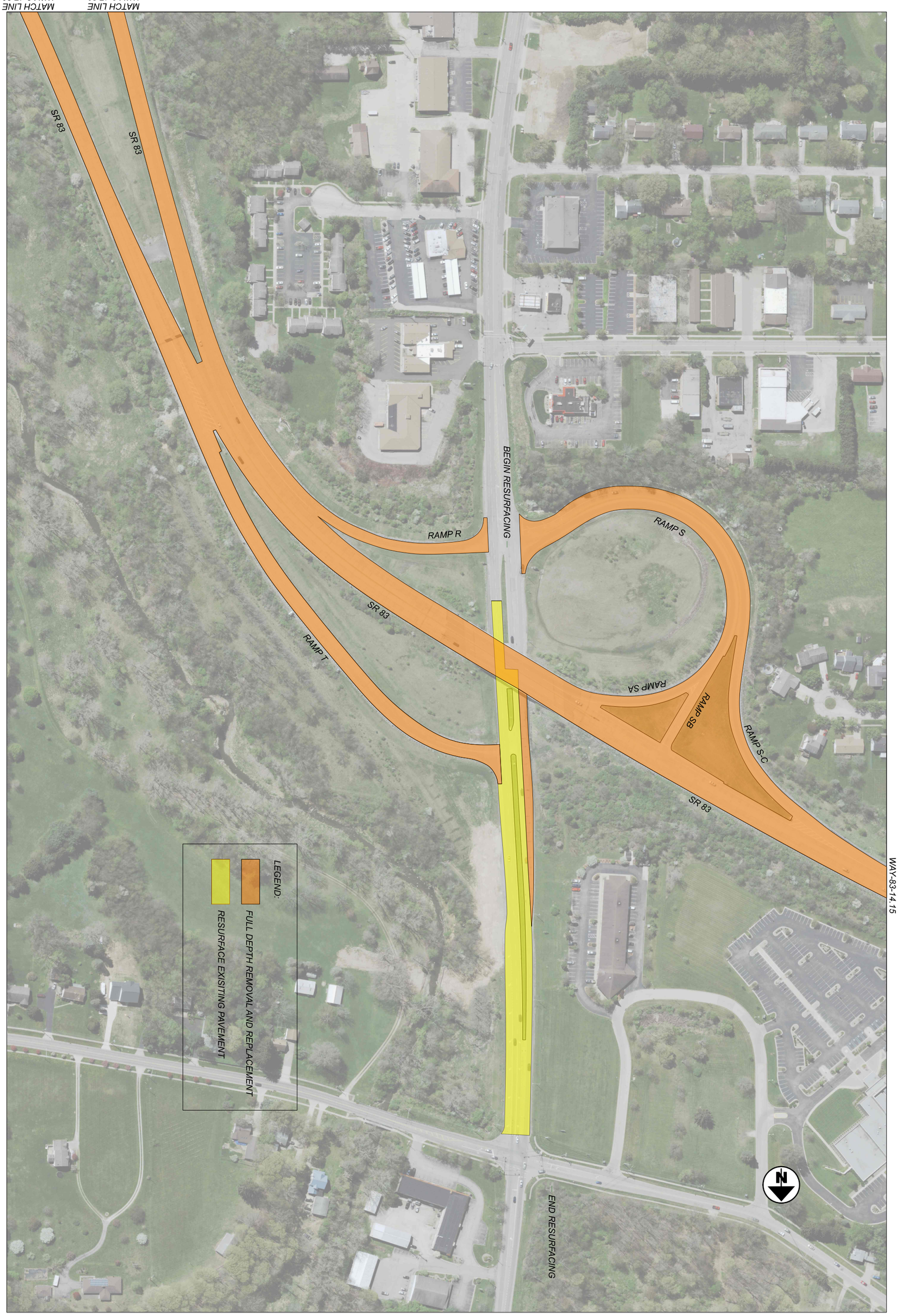

SHEET P.5 / TOTAL 6	PROJECT ID 91095	REVIEWER XXX MM-DD-YY	DESIGNER TPG	DESIGN AGENCY	SCHEMATIC PLAN

HORIZONTAL SCALE IN FEET
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125 500

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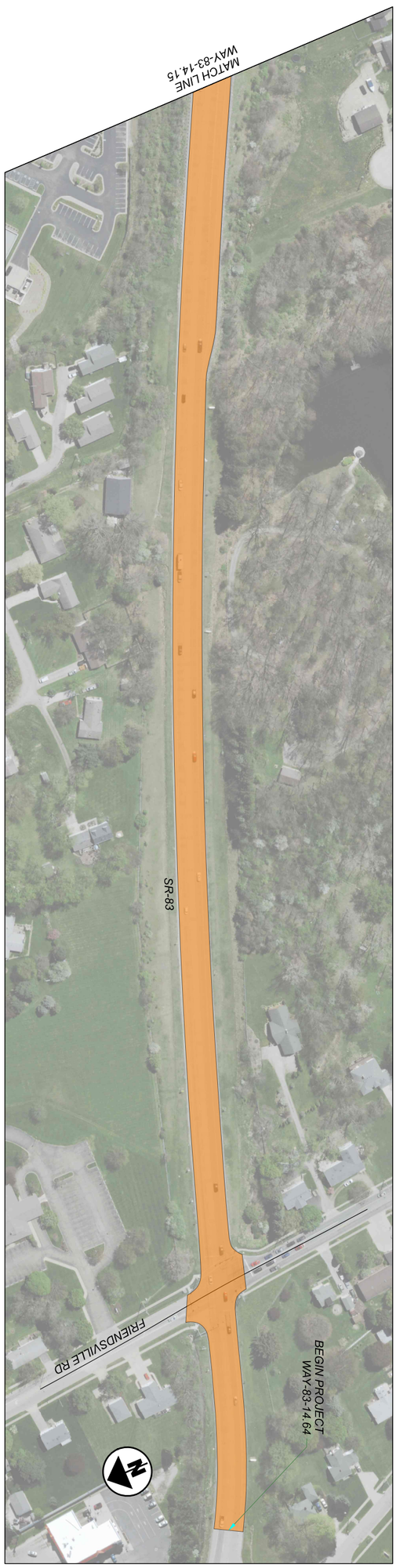
LEGEND:

FULL DEPTH REMOVAL AND REPLACEMENT



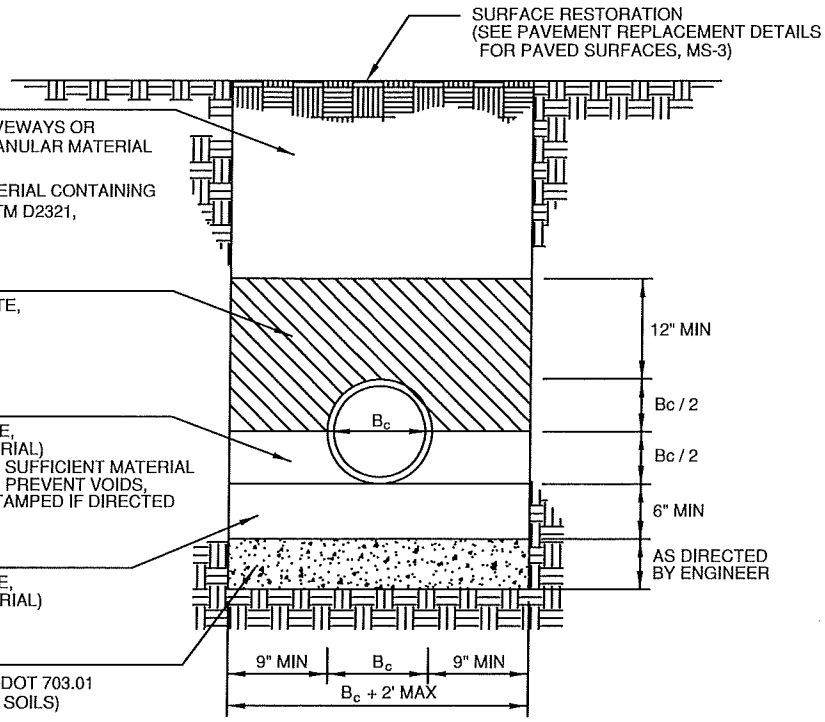
SCHEMATIC PLAN

HORIZONTAL SCALE IN FEET
0 250
125 500

SHEET	PROJECT ID		DESIGNER		DESIGN AGENCY
P.6 / TOTAL 6	91095		TPG		

APPENDIX D
PROJECT DESIGN STANDARDS

PVC PLASTIC PIPE
TYPICAL TRENCH SECTION
BEDDING AND BACKFILL



FINAL BACKFILL:

UNDER OR WITHIN 2' OF PAVEMENT, DRIVEWAYS OR SIDEWALKS - COMPACTED ODOT 411 GRANULAR MATERIAL
NOT UNDER PAVEMENT -
COMPACTED SUITABLE EXCAVATED MATERIAL CONTAINING NO REFUSE OR ORGANIC MATERIAL, (ASTM D2321, CLASS 1 THRU 3 BACKFILL)

INITIAL BACKFILL:

COMPACTED NO. 8, OR NO. 67 AGGREGATE, ODOT 703.01,
(ASTM D2321, CLASS I MATERIAL)

HAUNCHING:

COMPACTED NO. 8 OR NO. 67 AGGREGATE, ODOT 703.01, (ASTM D2321, CLASS I MATERIAL)
CARE MUST BE TAKEN TO ENSURE THAT SUFFICIENT MATERIAL HAS BEEN WORKED UNDER THE PIPE TO PREVENT VOIDS, HAUNCHING SHALL BE HAND PLACED & TAMPED IF DIRECTED

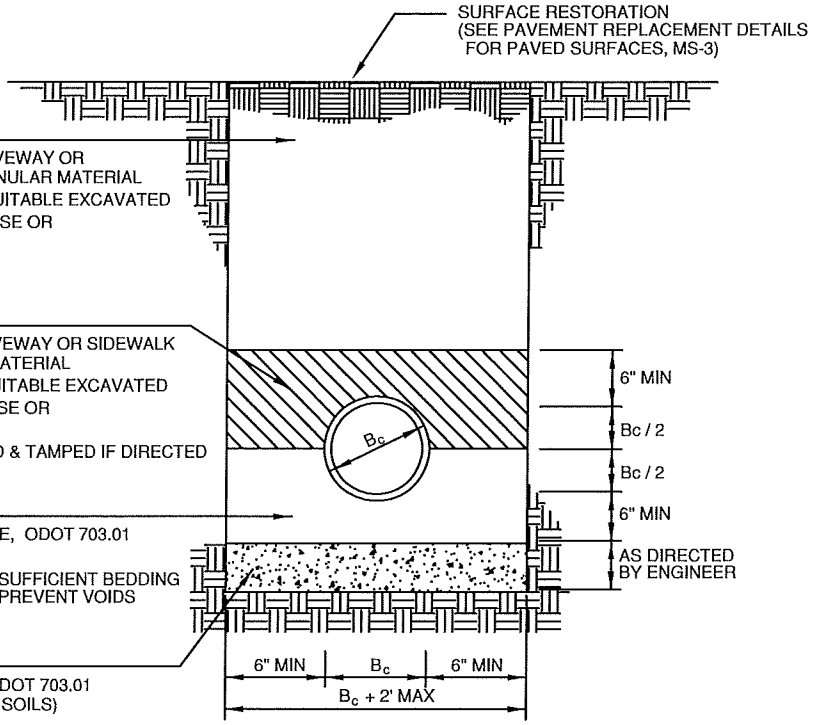
GRANULAR BEDDING:

COMPACTED NO. 8 OR NO. 67 AGGREGATE, ODOT 703.01, (ASTM D2321, CLASS I MATERIAL)

FOUNDATION AGGREGATE:

COMPACTED NO.1 & NO.2 LIMESTONE, ODOT 703.01
(AS REQUIRED TO REPLACE UNSUITABLE SOILS)

CONCRETE PIPE
TYPICAL TRENCH SECTION
BEDDING AND BACKFILLING



FINAL BACKFILL:

UNDER OR WITHIN 2' OF PAVEMENT, DRIVEWAY OR SIDEWALK - COMPACTED ODOT 411 GRANULAR MATERIAL
NOT UNDER PAVEMENT - COMPACTED SUITABLE EXCAVATED MATERIAL CONTAINING NO ROCKS, REFUSE OR ORGANIC MATERIAL.

INITIAL BACKFILL:

UNDER OR WITHIN 2' OF PAVEMENT, DRIVEWAY OR SIDEWALK
COMPACTED 411 OR NO. 67 GRANULAR MATERIAL
NOT UNDER PAVEMENT - COMPACTED SUITABLE EXCAVATED MATERIAL CONTAINING NO ROCKS, REFUSE OR ORGANIC MATERIAL.
INITIAL BACKFILL SHALL BE HAND PLACED & TAMPED IF DIRECTED

GRANULAR BEDDING:

COMPACTED NO. 8 OR NO. 67 AGGREGATE, ODOT 703.01
(ASTM C12, BEDDING CLASS B)
CARE MUST BE TAKEN TO ENSURE THAT SUFFICIENT BEDDING HAS BEEN WORKED UNDER THE PIPE TO PREVENT VOIDS

FOUNDATION AGGREGATE:

COMPACTED NO.1 & NO.2 LIMESTONE, ODOT 703.01
(AS REQUIRED TO REPLACE UNSUITABLE SOILS)

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

NOTE 2: CONTACT OHIO811 AT LEAST 48 HOURS BUT NO MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND LEGAL HOLIDAYS) BEFORE ANY EXCAVATION.

NO.	DATE	REVISION
1	10/31/08	REV. AGGREGATE NOTES
2	10/25/10	PVC,TRENCH WIDTH 4' TO 2'
3	7/1/12	ADDED DRIVE OR SIDEWALK

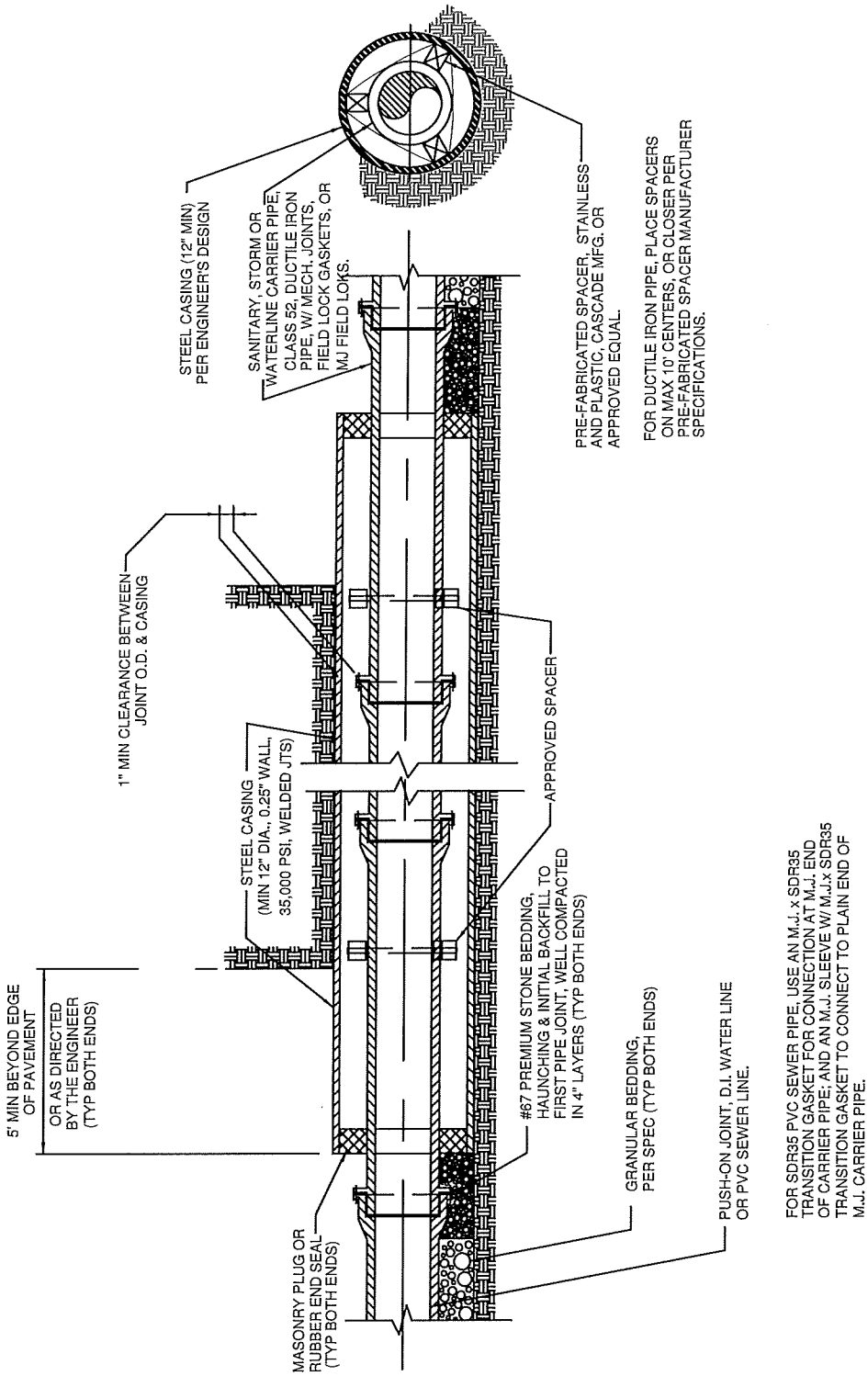
City of Wooster : Division of Engineering
538 N. Market Street Wooster, Ohio 44691
Phone: (330) 263-5236 Fax: (330) 263-5283
Roger Kobilarcsik, P.E.
City Engineer

STORM SEWER TRENCH DETAILS

CAD FILE: \ENGINEERING STANDARDS\ST-13.0.DWG

DRWN BY:	APPRVD BY:	ISSUE DATE:	SCALE:
AJM	EPO	5/02/02	NONE

SHEET: ST-13.0



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NO.	DATE	REVISION
1	7/17/01	ELIMINATED VENT PIPES &
		FILL SAND; ADDED NOTE
		FOR TRANS. GASKET.
2	3/1/02	ELIMINATED WOOD SPACERS
		ADDED RUBBER END SEALS
3	9/30/06	ADDED MJ FIELD LOKS

ROAD BORE DETAIL

CAD FILE:				SHEET:
\ENGINEERING STANDARDS\PV-11.0.DWG				PV-11.0
DRWN BY: AJM	APPRVD BY: EPO	ISSUE DATE: 11/13/98	SCALE: NONE	

Ground Mounted Street Name Post and Attaching Hardware

1) All Street Name signs shall be installed on a single 12" long, 0.130" wide slot, round post mount with set screws (SMC #103 or equivalent) for flat (non-extruded) street name signs only.

2) Clustering of street name signs on a single street name post is permitted in residential areas with a 12" long, 0.130" wide slot cross bracket. Where a 12" sign and a 9" high sign are to be mounted on the same post, the 12" high sign shall be mounted on the bottom with the 9" high sign on the top.

3) All street name posts shall be 2-3/8" O.D.,12' long with 9' above grade. Posts shall be galvanized, except in Streetscape areas where they shall be black power coated.

4) No street name signage will be allowed on top of Stop signs or their posts without prior approval.

5) Street Name signs in business, commercial, and primary arterials should be mounted on separate round posts located diagonally opposite from each other, unless otherwise approved by the City Engineer.

6) No ground mounted street name post shall be located on the same corner as a stop sign post. The use of two dead men (minimum of 5/16" x 18" rods) opposing each other shall be welded within 12" to the lower end of the post. This will help support and minimize the post from rotating in the ground.

Overhead Street Name Sign Attaching Hardware

1) The mounting of ALL overhead street name signage shall be done with Pelco Astro-Sign Brac cable mount (standard). No articulated or other style of sign hanger assemblies will be accepted.

Stop, Yield, and Do Not Enter Sign Posts and Attaching Hardware

1) All posts shall be galvanized square posts, 12 gauge breakaway style, and perforated continually.

2) 3' x 2" I.D. Anchor.

3) 10' x 2" O.D. Post.

4) Stiffener sleeve for above anchor and post.

5) Corner bolts as per manufacturer's specifications.

6) Signs shall be installed with a minimum of two 5/16"-18 by 2-1/2" HHCS aluminum bolts and 5/16"-18 aluminum nuts with 5/16" nylon washers between the sign face and the bolt head.

7) A 2" red post prismatic reflector shall be installed on the square post to within 12" of grade.

8) All Stop, Yield, and Do Not Enter signs shall be installed according to the current edition of the Ohio Manual of Uniform Traffic Control Devices.

9) Any square post reinstallation shall be upgraded to the current standards.

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Roger Kobilarcsik, P.E.
City Engineer

NO.	DATE	REVISION
1	2/12/04	Updated Specifications
2	8/9/04	Updated Specifications
3	2/28/05	Added note 4 mount signs
	"	over sidewalk
4	9/30/06	Updated Specifications
5	1/2/17	Updated Specifications

SIGN POST SPECIFICATIONS

CAD FILE:				SHEET:
\ENGINEERING STANDARDS\TR-3.0.DWG				TR-3.0
DRWN BY:	APPRVD BY:	ISSUE DATE:	SCALE:	
TLH		02/12/04	NONE	

U Channel Posts

1) All U Channel posts shall be galvanized and punched full length.

2) Posts shall be Lap Splice Breakaway System for 3# and 4# U Channel posts, consisting of one 1/2"x3/4"'x5" gold bar spacer, two cut washers, two Grade 9 bolts, and two self-locking flange nuts. The system shall be NCHRP-350, FHWA, and AASHTO approved.

3) Not used.

4) Not used.

5) The anchor posts shall be 3#, 3.5' in length and installed per manufacturer's recommendations.

6) The upper posts shall be 2#, with the length determined by the sign or signs.

7) All signs other than Street Names signs and Stop, Yield, and Do Not Enter signs shall be installed on U Channel posts with a minimum of two 5/16"-18 x 2" HHCS aluminum bolts and 5/16"-18 aluminum nuts with 5/16" nylon washers between the sign face and the bolt head.

8) All other street signs shall be installed according to the current edition of the "Ohio Manual of Uniform Traffic Control Devices."

9) Any U channel post reinstallation shall be upgraded to the current standards.

Sign Posts in Streetscape Areas

1) All sign posts in the designated Streetscape areas shall be round with 2-3/8" O.D., 12' long minimum, black powder coated with 9' minimum above grade.

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NO.	DATE	REVISION
1	2/12/04	Updated Specifications
2	8/9/04	Updated Specifications
3	2/28/05	Added note 4 Safety Cable
4	9/30/06	Updated Specifications
5	10/26/10	Added 6" Reveal & 1/2" Spacer
6	1/2/17	Updated Specifications
7	1/2/20	Revised Notes 2,3,4

SIGN POST SPECIFICATIONS

CAD FILE:				SHEET:
\ENGINEERING STANDARDS\TR-3.0.DWG				TR-3.1
DRWN BY:	APPRVD BY:	ISSUE DATE:	SCALE:	
TLH		02/12/04	NONE	

MAINTENANCE OF LOCAL DETOUR ROUTE
(ITEM 642-25)

A LOCAL DETOUR ROUTE, OTHER THAN THE OFFICIAL SIGNED ODOT DETOUR ROUTE, AS NOTED IN THESE PLANS, WILL BE SELECTED BY AGREEMENT BETWEEN ODOT AND LOCAL GOVERNMENTAL AGENCIES PRIOR TO THE HIGHWAY CLOSURE. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST, AND STANDING WATER. 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 ENGINEER. THE DESIGNATED LOCAL DETOUR ROUTE IS TO BE REVIEWED AND REPAIRED PRIOR TO THE ASPHALT CONTRACTOR OR SUBCONTRACTOR LEAVING THE PROJECT.

PAYMENT FOR THE WORK NECESSARY TO REPAIR THESE LOCAL ROADS WILL BE PERFORMED BY CHANGE ORDER.

Designer Note:
Procedures relative to detours and designated local detour routes are set forth in sop ops-103, detours and sop ops-104, maintenance & repair of local roads and streets used as official detour routes, designated local detour routes, or haul roads. These documents are available on the maintenance administration website via the intranet.

ITEM 408 - PRIME COAT, AS PER PLAN

THE CONTRACTOR SHALL APPLY ONE COAT OF MC-70 (AS PER SECTION 702) AT A RATE OF 0.40 GAL/SY TO THE COMPLETED AGGREGATE SHOULDER (ITEM 617) AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A SHIELD TO PREVENT THE SPRAYING OR DRIFTING OF LIQUID BITUMINOUS MATERIAL ONTO THE EDGE OF PAVEMENT OR EDGE LINE. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO 107.10 OF THE SPECIFICATIONS.

ITEM 442 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446), AS PER PLAN

ON THIS PROJECT SUPPLY A 19MM INTERMEDIATE COURSE MEETING THE REQUIREMENTS OF 442 EXCEPT AS MODIFIED BELOW.

MODIFY TABLE 442.02-2 AS FOLLOWS:

ITEM 302, Asphalt Base, As Per Plan

In addition to the requirements of Item 302, provide the following:

Use no more than 35% RAP.

Mix Design - Follow the requirements of 302.02 except as modified below:

- Use a maximum F/A ratio of 1.4
- Minimum TSR is 0.70 as determined using Supplement 1051. Add antistrip additive as specified in 441.04 if required based on TSR.

Quality Control and Acceptance – Follow the requirements as specified in 403 using 446 acceptance and 441.09 and 441.10 except as modified below:

- Replace MSG comparison in Table 403.06-1 with 0.015.
- Notify Eric Biehl - OMM 614-275-1380 and Julie Miller – OCA 614-466-3165 one week prior to planned beginning production and placement.
- Maintain the F/A ratio such that no F/A ratio is greater than 1.4.
- If the F/A ratio is greater than 1.2, recalculate the F/A ratio using the effective asphalt binder content.
- Compact air voids specimens using a six-inch Marshall hammer with 70 blows on both sides per 302.02. Out-of-Specification limits for air voids is 2.5 to 5.5 percent (design air voids of 4.0 percent).
- For information purposes only: Compact three specimens using the Superpave gyratory at 50 gyrations and three at 65 gyrations for the first five production days and for production days 10, 20, 30, and so on that are sampled with a QC or VA sample. If the production day is small quantity, use the following production day. Use the same sample for both gyratory levels as well as the QC air void samples. Properly label each with gyratory level and lot split sample ID and set aside for District Testing to take possession. Do not dispose of specimens.

Density Acceptance - Follow the requirements of 446 *Asphalt Concrete Core Density Acceptance*, including joint cores, except as modified below:

Obtain 6-inch diameter cores on each lift placed.
Obtain joint cores at cold longitudinal joints such that the core's closest edge is 6 inches (152 mm) from the edge of the mat.
Pay Factors for each lift of 302 APP will be as specified in the following table.

Mean of Lot Core Density[1]	Pay Factor 302, APP
>98.0%	[2]
>97.0% to 98.0%	[3]
92.0% to 97.0%	1.00
91.0% to 91.9%	0.90
90.0% 90.9%	0.80
89.0% to 89.9%	0.70
<89.0%	[4]

[1] Mean of cores as percent of average MSG for the production day.

[2] The District will determine whether the material may remain in place.
The pay factor for material allowed to remain in place is 0.50.

[3] The District will determine whether the material may remain in place.
The pay factor for material allowed to remain in place is 0.70.

[4] The District will determine whether the material may remain in place.
The pay factor for material allowed to remain in place is 0.50.

If material is removed and replaced the Contractor will remove and replace this course and all courses paved on this course.

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION 000
PAVER MOUNTED THERMAL PROFILING

September 12, 2017

000.01 Description. This work consists of obtaining thermal profiles to identify the presence of any thermal segregation of an un-compacted mat of hot mix asphalt. This method includes procedures for determining thermal profile using a paver-mounted thermal imaging system.

000.02 Equipment. Provide a Paver Mounted Thermal Profiler (PMTP) system as follows:

A. PMTP System Supplier. Use a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing, as needed, during the Project to maintain equipment within specifications and requirements.

B. PMTP System Software. Provide the Engineer with access to the cloud storage and cloud computing before the start of paving requiring the PMTP method until ninety (90) days after final acceptance of all work.

Use PMTP software, and cloud computing and storage, capable of collecting, mapping, retaining and analyzing the mat temperature readings during placement and exporting thermal profile data meeting the requirements of this provision and supporting the following features:

(1) Filtering by surface temperature reading location (items 8 through N of Table 2016-3 [PMTP]).
(2) Display through a map/graph:
(2.1) Surface temperature readings across the required width and with respect to a user defined sublot length,
(2.2) Paver speed and
(2.3) Paver stops (location and duration).
(3) Provide the paving length and duration.

C. PMTP System

1. System Requirements. Use a PMTP system that functions independently from the paving crew during normal paving operations, but requires an operator to initiate the start of data collection. After initializing the equipment, no operator attendance is required for continuous data collection.

Ensure that the power consumption of all installed equipment does not exceed the capacity of the equipment providing operating power. Complete discharge of this system shall not impact the vehicle's regular electrical system.

Provide the Engineer with PMTP System(s) calibrated and installed according to Manufacturers recommendations.

Ensure the PMTP System meets the requirements of Table 2016-1 (PMTP) and is instrumented with the following:

Table 2016-1 (PMTP)
PMTP System Requirements

Parameter	Requirement
Longitudinal and Lateral Surface Temperature Readings	≤ 1-ft (300-mm) intervals **at all paving speeds** Tolerance: ± 1 in (25 mm)
Surface Temperature Readings Total Measurement Width	Traffic / Required Auxiliary lane(s) paved in one (1) pass.
Surface Temperature Readings	Range: 32°F (0°C) to 480°F (250°C) Accuracy: ± 3.6°F (2°C) or ± 2.0% of the sensor reading, whichever is greater.
GNSS	Accuracy ≤ ± 4 feet (1.2 m) in the X and Y Direction

(1) Modem, or Wi-Fi, for transferring data to cloud storage.
(2) Onboard Documentation System – Use an onboard documentation system with a minimum of the following capabilities:
  (2.1) Display (in real-time) a map of the surface temperature readings, total distance, paver speed and location in terms of station and/or GNSS coordinates.
  (2.2) Report the surface temperature readings and GNSS status.
  (2.3) Provide real-time statistical summaries of the surface temperature readings.
  (2.4) Have the ability to manually export data using a removable media device.
  (2.5) Allows the operator to define the lot currently being placed per Tables 2016-4 (PMTP) and 2016-5 (PMTP).

2. Thermal Profiling Data. Export the thermal profiling data as dbase ASCII or Text Format, or directly into Veta if a file format compatible with Veta is available. Ensure the PMTP date/time stamp is reflective of the local time zone for both mapped and exported data. Encrypt the data logged in the results files to prevent tampering or manipulation.

Include the information in Table 2016-2 (PMTP) in the header of each data file or section. Include the fields in Table 2016-3 (PMTP) with each data point.

Table 2016-2 (PMTP)
Required Information in Data Header

Item No.	Description	Example Data included in Header
1	State Project Number, Highway and/or Section	Highway 77
2	Machine Trade Name	ABC Company
3	Machine ID	1234AC78
4	Lateral Spacing between surface temperature measurements (in)	12
5	Longitudinal Spacing between surface temperature measurements (inch)	12
6	Vertical Distance between the temperature sensor(s) and asphalt pavement mat (inch)	120
7	Reporting resolution for independent surface temperature data – in the paver moving direction (inch)	13
8	Number of lateral surface temperature measurements/sensors	12

Table 2016-2 (PMTP) Required Information in Data Header		
Item No.	**Description**	**Example Data included in Header**
9	Number of surface temperature measurement data blocks	5000

Table 2016-3 (PMTP) Required Fields for Each Data Block		
Item No.	**Date Field Name**	**Data Format Examples**
1	Date Stamp (YYYYMMDD)	20080701
2	Time Stamp (HHMMSS.S -military format)	090504.0 (9 hr 5 min. 4.0 s.)
3	Longitude (decimal degrees, with at least 6 significant digits)	94.859204
4	Latitude (decimal degrees, with at least 6 significant digits)	45.227773
5	Distance (feet)	1
6	Direction heading (degree angle, clockwise from the north); or calculated value, in Veta, using values from the other data blocks, ft/min	45
7	Speed (feet per minute or inches per minute)	30.0
8	Surface temperature Reading/Location 1 (°F)*	290
9	Surface temperature Reading/Location 2 (°F)*	295
…	…	…
N	Surface temperature Reading/Location N (°F)*	300

* Surface temperature readings/locations are numbered from 1 to N, left to right, in the direction of paving.

3. Design File. Create the background and alignment file(s) containing, at a minimum, the following layers: centerline, station text, station tick marks and labeling for exceptions. Highly accurate horizontal positioning is not required since the required accuracy for the PMTP system is less than or equal to ± 4 ft (1.2 m).

4. Field Stationing**.** Ensure that field station markers, when used, match the centerline stationing used in the background alignment design file.

5. PMTP System Setup on Paver(s). Instrument all pavers that are paving the traffic and required auxiliary lanes with the PMTP System. The PMTP system is not required on secondary pavers. Secondary pavers are those pavers that are not used for paving of traffic lanes, but are used for paving of shoulders, ramps, intersecting streets, etc.

Ensure the installed PMTP System takes measurements within 10 ft (3 m) of the trailing edge of the screed plate. Ensure that brackets and/or other obstructions, used for pavement smoothness, that are located in the measurement area do not affect more than two (2) surface temperature readings recorded in the lateral direction (items number 8 through N in Table 2016-3 [PMTP]).

Verify that the surface temperature readings and the GNSS are working within the requirements of this specification when requested by the Engineer.

000.03 Thermal Profile Data Collection.

A. Lot Establishment. The Engineer defines a lot as all asphalt paving for a given day, lift, material type and centerline offsets.

Distinctly identify the lots for thermal profile measurements using the standardized format per Tables 2016-4 (PMTP) and 2016-5 (PMTP). Ensure that the lot designations are digitally stored with the associated thermal profile measurements.

The GNSS coordinates contain the date component of the lot designation, and therefore, it is not included in the standardized naming convention.

Table 2016-4 (PMTP)
Standardized Naming Convention for Thermal Profile Lots

Standardized Format	**Definition**
ROUTE-MATL-L#-XXX-XXX	Undivided Highways (e.g., US40-424B-L1-12L-CL)
ROUTE-MATL-L#-XXX-XXX-DT	Divided Highways (e.g., I70-19.0mm-L3-12L-CL-NB)

Table 2016-5 (PMTP)
Standardized Abbreviations for Thermal Profile Lots

<table>
<tr><th>Abbreviation</th><th>Definition</th></tr>
<tr><td>ROUTE</td><td>ROUTE DESIGNATION. Replace “ROUTE” with the route system, as designated by the following acronyms or short form, immediately followed by the route number (e.g., I70).

<table>
<tr><th>Acronym or Short Form</th><th>Full Name or Meaning</th></tr>
<tr><td>I</td><td>Interstate Highway</td></tr>
<tr><td>US</td><td>US Highway</td></tr>
<tr><td>SR</td><td>State Route</td></tr>
<tr><td>CR</td><td>County Road</td></tr>
<tr><td>TH</td><td>Township Highway</td></tr>
</table></td></tr>
<tr><td>MATL</td><td>MATERIAL/ SURFACE TYPE. The material/surface type is designated by the following acronyms or short form:

<table>
<tr><th>Acronym or Short Form</th><th>Specification</th><th>Full Name or Meaning</th></tr>
<tr><td>301</td><td>301</td><td>Asphalt Base</td></tr>
<tr><td>302</td><td>302</td><td>Asphalt Base</td></tr>
<tr><td>424A</td><td>424</td><td>Fine Graded Polymer Type A</td></tr>
<tr><td>424B</td><td>424</td><td>Fine Graded Polymer Type B</td></tr>
<tr><td>SMA</td><td>423</td><td>Stone Matrix Asphalt</td></tr>
<tr><td>T1</td><td>441</td><td>Type 1</td></tr>
<tr><td>T2</td><td>441</td><td>Type 2</td></tr>
<tr><td>9.5mm</td><td>442</td><td>9.5mm</td></tr>
<tr><td>12.5mm</td><td>442</td><td>12.5mm</td></tr>
<tr><td>19.0mm</td><td>442</td><td>19.0mm</td></tr>
</table></td></tr>
<tr><td>L#</td><td>LIFT NUMBER. The lift number is designated by the following acronym or short form:

<table>
<tr><th>Acronym or Short Form</th><th>Full Name or Meaning</th></tr>
<tr><td>L1</td><td>Lift 1</td></tr>
<tr><td>L2</td><td>Lift 2</td></tr>
<tr><td>L3</td><td>Lift 3</td></tr>
<tr><td>…</td><td>…</td></tr>
<tr><td>Ln</td><td>Lift n</td></tr>
</table></td></tr>
</table>

<table>
<tr><th colspan="2">Table 2016-5 (PMTP)
Standardized Abbreviations for Thermal Profile Lots</th></tr>
<tr><th>Abbreviation</th><th>Definition</th></tr>
<tr><td>XXX-XXX</td><td>CENTERLINE OFFSET. The location of the left and right edge of the production area with respect to the centerline, facing in the direction of increasing stationing. Stationing typically increases from West to East and South to North. Each character of the abbreviation is defined as the following:

XX X – XX X
(a) (b) (c) (d)

(a) The offset distance (in feet rounded to the whole number) from the centerline to the left edge of the production area (e.g., CL, 12, 24). CL reflects the Center Line.

(b) R or L, to reflect Right (R) or Left (L) of Centerline, in the direction of increasing station numbering.

(c) The offset distance (in feet rounded to the whole number) from the centerline to the right edge of the production area (e.g., CL, 12, 24). CL reflects the Center Line.

(d) R or L, to reflect Right (R) or Left (L) of Centerline, in the direction of increasing station numbering.</td></tr>
<tr><td>DT</td><td>DIRECTION OF TRAVEL. The direction of travel is designated by the following acronyms or short form:

<table><tr><th>Acronym or Short Form</th><th>Full Name or Meaning</th></tr><tr><td>NB</td><td>North Bound</td></tr><tr><td>SB</td><td>South Bound</td></tr><tr><td>EB</td><td>East Bound</td></tr><tr><td>WB</td><td>West Bound</td></tr></table></td></tr>
</table>

B. Sublot Establishment Using Veta. Once established, the Engineer will divide the lot into 150 linear ft (45 linear m) sublots. Partial sublots will be treated as follows:

(1) Lot ≥ 150 linear ft (45 linear m)
  (1.1) Sublot < 75 linear ft (23 linear m) is combined with the previous sublot.
  (1.2) Sublot ≥ 75 linear ft (23 linear m) is treated as one sublot.
(2) Lot < 150 linear ft (45 linear m)
  (2.1) Surface temperature readings from lot are treated as one sublot.

Set the sublot "start" and "end" location for the given lot in Veta to correspond with the start and end of paving, respectively. Ensure that these locations are immediately adjacent to the beginning and end of the surface temperature readings.

C. Thermal Profile Measurements. Collect thermal profiles on **100 percent of each lift** of trafficked lanes:

Thermal profiles are not required on auxiliary lane tapers, ramps less than 1500ft, shoulders, cross-overs, non-continuous turn lanes, acceleration/deceleration lanes less than 1500ft and intersecting streets.

Ensure that the PMTP system is not capturing measurements outside of the traffic and required auxiliary lanes, as 100 percent of the recorded data is used in the thermal segregation analysis. Turn the data collection and recording off when not collecting thermal profile measurements.

D. PMTP System Failure**.** System Failure occurs when the PMTP system does not collect and/or store data per the requirements of this provision and/or the paver becomes inoperable.

Immediately notify the Engineer when PMTP system failure occurs and immediately after resolution of the issues. Additionally, provide the Engineer with a written notification of the dates of PMTP system failure, along with a brief description detailing the PMTP system failure and the paving areas affected by this failure. Do not proceed with placement the next working day without a functioning PMTP system.

000.04 Thermal Profile Analysis Software. Use the Veta software to plot thermal profile measurements and to determine thermal segregation and coverage. Produce *.VETAPROJ filenames in the **SPXXXX-XXX ROUTE PMTP** standardized format per Table 2016-6 (PMTP).

Table 2016-6 (PMTP)
Standardized Naming Convention for *.VETAPROJ Files * ‖

Abbreviation	Definition
XX-XXXX	**PROJECT NUMBER.** Replace the "X's" with the project numbers (e.g., 16-0056).
ROUTE	**ROUTE NUMBER.** Replace "ROUTE" with the route system, as designated by the following acronyms or short form, immediately followed by the route number(s) mapped in the given Veta project. (e.g., I70, US40, SR13)
PMTP	PMTP reflects the paver mounted thermal profile method, the data set contained within the Veta project file.

Acronym or Short Form	Full Name or Meaning
I	Interstate Highway
US	US Highway
SR	State Route
CR	County Road
TH	Township Highway

* Example *.VETAPROJ filename: **16-0056 US40 PMTP**

Create filter groups, operation filter and sublot names using the **LOT# MMDDYY LOTNAME** standardized format per Table 2016-7 (PMTP).

Table 2016-7 (PMTP) Standardized Naming convention for Veta Filter Group, Operation Filter and Sublot Names *	
Abbreviation	**Definition**
LOT#	**LOT NUMBER.** The lot number is a two-digit number increasing sequentially (01, 02, 03, …, n). Create filter groups, operation filters and sublot names in sequential order with respect to the lot dates. Lots containing Exceptions and/or Temporary Exceptions: ‖ Include a capital letter, in alphabetical order (A, B, …), immediately after the two-digit lot number to designate the side of the exception, or temporary exception, that the thermal profile data reflects (e.g., 01A, 01B, 02A, 02B, …).
MM	**MONTH** (include leading zeros)
DD	**DAY OF MONTH** (include leading zeros)
YY	**TWO-DIGIT YEAR**
LOTNAME	**STANDARDIZED LOT NAME** per Table 2016-4 (PMTP)
* Example Filter Group/Operation Filter Name (lot contains no exceptions): 01 070915 I70-12.5mm-L1-CL-12R, 02 071015 I70-12.5mm-L1-CL-12R, … * Example Filter Group/Operation Filter Name (lot contains an exception): 01A 070915 I70-12.5mm-L1-CL-12R, 01B 070915 I70-12.5mm-L1-CL-12R, 02A 071015 I70-12.5mm-L1-CL-12R, 02B 071015 I70-12.5mm-L1-CL-12R, … ‖ Temporary exceptions are areas to be paved at a later date.	

000.05 Calculations and Submittals

A. Thermal Segregation

1. Surface Temperature Readings**.** Evaluate thermal segregation using 100 percent of the recorded data for each sublot. Exclude the following surface temperature readings from each sublot:

(1) Surface temperature readings less than 180°F (80°C); and
(2) Surface temperature readings within 2 ft (0.5 m) prior to and 8 ft (2.5 m) after paver stops that are greater than 1 minute in length.

2. Range. Calculate the Range, reported to the nearest tenth degree Fahrenheit, for each sublot per Equation 2016-1 (PMTP):

Equation 2016-1 (PMTP): $\text{Range} = T_{max} - T_{min}$

Where: T_{max} = surface temperature reading at the 98.5 percentile (°F) and
T_{min} = surface temperature reading at the 1 percentile (°F).

3. Thermal Segregation Category. Categorize the surface temperature readings for each sublot with respect to the ranges specified in Table 2016-8 (PMTP). Record the total number of low, moderate and severe sublots for the given lot in electronic form PMTP-102.

Table 2016-8 (PMTP) Sublot Temperature Differential	
Range Equation 2016-1 (PMTP)	**Thermal Segregation Category**
Range ≤ 25.0°F	Low
25.1°F < Range ≤ 50.0°F	Moderate
50.1 °F < Range	Severe

B. Thermal Coverage**.** Calculate thermal coverage for each lift per Equation 2016-4 (PMTP).

1. Thermal Profile Lot Length

Equation 2016-2 (PMTP): Thermal Profile Lot Length = $\sum_{i=1}^{n} Sublot\ Length_i$

Where:

Thermal Profile Lot Length = the total linear length of the surface temperature readings used for the thermal segregation analysis for the given lot, ft (reported to the nearest whole number);
n = the total number of sublots; and
Sublot Length = the linear length of sublot *i*, ft (reported to the nearest whole number).

2. Thermal Profile Lift Length

Equation 2016-3 (PMTP): Thermal Profile Lift Length = $\sum_{i=1}^{n}(Thermal\ Profile\ Lot\ Length)_i$

Where:

Thermal Profile Lift Length = the total linear length of the surface temperature readings used for the thermal segregation analysis for the entire lift, ft (reported to the nearest whole number);
n = the total number of lots for the entire *lift*; and
$(Thermal\ Profile\ Lot\ Length)_i$ = the total *linear* length of the surface temperature readings used for the thermal segregation analysis for the given lot *i* and lift as calculated by Veta, ft (reported to the nearest whole number). (See Equation 2016-2 [PMTP])

3. Thermal Coverage

Equation 2016-4 (PMTP): Thermal Coverage = $\left(\frac{Thermal\ Profile\ Lift\ Length}{LM \times 5280}\right) \times 100$

Where:

Thermal Coverage = % (reported to the nearest whole number);
Thermal Profile Lift Length = see Equation 2016-3 (PMTP), ft (reported to the nearest whole number); and
Lane Miles (LM) = Total number of lane miles for the given lift requiring thermal profiling, miles (reported to the hundredth).

C. Submittals

1. Thermal Profiling Data Submittal. Store the thermal profiling data internally until transfer of data. Transfer the thermal profiling data directly from the PMTP to Cloud Storage within 15-minute intervals, or at least once per day when there is limited cellular coverage. Notify the Engineer when cellular coverage is limited or not available. Transfer the thermal profiling data directly to the Engineer at the end of daily paving when cellular coverage is not available.

2. Veta Projects. Submit the first Veta project to the Engineer within three (3) days after the start of production for mixture requiring the PMTP Method. Submit an updated Veta project(s) to the Engineer at least two (2) non-consecutive days per calendar week. Ensure Veta projects include the following:

(1) Alignment File
(2) Surface Temperature Readings
(3) Filter Groups per:
  (3.1) lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL),
  (3.2) lane and per lift (e.g., I70-19.0mm-L1-12L-CL) and
  (3.3) lift (e.g., I70-19.0mm-L1)

(4) Operation Filters per lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL)
(5) Data Filter (Temperature ≥ 180°F)
(6) Sublot Creation per lot (e.g., 01 090415 I70-19.0mm-L1-12L-CL)
(7) Override Filters per Machine ID per:
    (7.1) lift (e.g., I70-19.0mm-L1 Machine ID) and
    (7.2) lane and per lift (e.g., I70-19.0mm-L1-12L-CL Machine ID)

Note – the override filters are needed for cases where more than one paver (paving in Echelon) is instrumented with the PMTP system.

Submit the final version of the Veta Project(s) within 14-calendar days of completion of paving efforts requiring the PMTP method.

000.06 Basis of Payment. Interruptions in the availability of VRS Network and/or satellite signals to operate this system will not result in any reduction to the daily thermal coverage or adjustment to the "Basis of Payment" for any construction items or to Contract time.

The Department will pay for accepted work at the contract prices as follows:

Item	**Unit**	**Description**
XXX	Lump Sum	Paver Mounted Thermal Profiling

APPENDIX E

ENVIRONMENTAL COMMITMENTS

OHIO DEPARTMENT OF TRANSPORTATION
INTER-OFFICE COMMUNICATION
District 3

DATE: November 13, 2020

TO: Scott Ockunzzi, District 3 Project Manager
Bradley Corder, District 3 Real Estate Administrator
Dustin Vousden, District 3 Design Engineer

FROM: Don Rostofer, District Environmental Coordinator DER

SUBJECT: Environmental Document Approval

PROJECT: **WAY-SR83-10.81 PID 91095**

Please note the date of **11/13/18** as the environmental document approval date for this project. The District Three Environmental Section has reviewed the environmental studies, coordination and documentation to ensure all areas of potential environmental concern have been addressed. Based on our review it appears that the subject project will not result in significant environmental impacts. We have also found that the project meets the conditions for a C2, Programmatic Categorical Exclusion (CE) under criteria 26.

The following Environmental Commitments will need to be carried forward into the plans as plan notes.

1. The project is located within the known habitat ranges of the federally listed and protected Indiana bat and northern long-eared bat and the state listed Tricolor and Little Brown bat. The Contractor shall not remove trees under this project from April 1 through September 30. All necessary tree removal shall occur from October 1 through March 31. The Contractor shall demarcate clearing limits in the field to avoid any unauthorized tree clearing. 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 inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet.
2. ODOT will obtain and adhere to all appropriate waterway permits prior to any work below the ordinary high-water mark of any waterway and all Special Provisions for waterway permits will be included in the plans. ODOT will adhere to all appropriate waterway permits and all Special Provisions for waterway permits throughout construction. The Project Designer shall incorporate the following plan note into the plans: The Contractor shall not perform any work within the boundaries of any wetland or below the ordinary high-water mark

(OHWM) of any stream until ODOT obtains the necessary waterway permit(s). This includes the placement of any temporary or permanent fills below the OHWM.

3. ODOT shall self-permit for a floodplain permit or provide documentation of exemption prior to plan file.

Further re-evaluation of the project is required if the scope of the project or the degree of environmental impact changes during final design and construction. If you have any questions or concerns, please call Don Rostofer at (419) 207-7178 or by email at: Donald.Rostofer@dot.ohio.gov

Ohio Department of Transportation
Environmental Consultation Form

Project Name: WAY SR 0083 10.81 PID:91095

Funding Source: Federal

Environmental Document Level: C2

Environmental Document Approval Date: 11/13/2020

Environmental Document Re-Evaluation Approval Date:

Commitments:

Are all environmental commitments, including the compliance measure and responsible party, listed on the Environmental Commitments Tab? **Yes**

Are there long-term commitments that would require the federal authorization end date to be extended/revised? **No**

Has the federal reimbursement end date been revised in Ellis?

Permits and Required Agency Notifications:

Type of Permit	Required for this Project?	Obtained?	Approval Date	Special Provisions in Plans
USACE Clean Water Act 404 Nationwide Permit	No			
USACE Clean Water Act 404 Regional General Permit	Yes	No		
USACE Clean Water Act 404 individual	No			
OEPA Individual 401 WQC	No			
OEPA NPDES Stormwater Notice of Intent (NOI)	Yes	No		
OEPA Isolated Wetland Permit	No			
OEPA 27-13 Landfill	No			
OEPA Demolition/Renovation Form	No			
USCG Section 9 of the Rivers and Harbors Act	No			
USACE Section 10 of the Rivers and Harbors Act	No			
Floodplain	Yes	No		

Remarks:

The district will receive the Special Provisions for a waterway permit by the time the project is advertised.

Preparer & Approver:

Prepared By: Donald Rostofer Date Submitted: 4/10/2021

Approved By: Donald Rostofer Approved Date: 4/10/2021

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 03
906 CLARK AVE. • ASHLAND, OH 44805 • 419-281-0513

Environmental Document

for

WAY SR 0083 10.81 PID 91095

Environmental Document Level: C2

Approved: 11/13/2020

Prepared By: District 3

Donald Rostofer
Phone: 419-207-7178
E-mail: Donald.Rostofer@dot.ohio.gov

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ODOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 14, 2020, and executed by FHWA and ODOT.

Table of Contents

C2

PID:	91095
Project Sponsor:	ODOT SPONSORING AGENCY
ODOT District:	3
Funding Source:	Federal
Private Funding:	No

Project Description:

This is an ODOT-let major roadway rehabilitation design-build project located along SR-83, SR-3 and SR-585 and along the associated ramps located in Wayne and Wooster Townships, Wayne County, Ohio.
The project will replace the pavement along the mainlines, shoulders and ramps, replace guardrail, repair the concrete median barrier, and replace some lighting. Additionally, there will be culvert replacements at the following locations: WAY-83-11.231,WAY-3-16.157,and WAY-3-16.485,and catch basin work at the WAY-83-10.911 location.
The culvert at WAY-83-16.157conveys roadside drainage and runoff from a hill within existing right-of-way. This culvert and its drainage are not jurisdictional, but the replacement of the outlet cause approximately 50-feet of impacts to Little Apple Creek. The culvert outlet at WAY-3-16.485will also result in about 50-feet of impacts to Little Apple Creek. The catch basin work at WAY-83-10.91[illegible] catches roadway runoff and will have no impact on streams, SWH, or any federal or state listed. This project could impact 280-feet of streams due to the replacements and repairs to culverts at the three culvert locations. Approximately 0.67 acres of SWH will be removed for this project. As proposed this project will not impact any non-bat federal and state listed species. To avoid impacts to listed bat species during summer roosting, all trees will be removed between October 1 and March 31.
The project will be conducted within existing ODOT right-of-way. Deep excavation will be required for the proposed work. No utilities will need to be relocated to construct this project. In accordance with the ODOT Office of Environmental Services' (OES) Regulated Materials Review (RMR) guidelines, an RMR Screening was conducted. The current land use of the properties adjacent to this project are residential and forested floodplain. No regulated materials records were found with the project boundaries during a search of the Ohio Regulated Properties Search (ORPS) tool. Based on this information, the project is considered exempt from further regulated material investigations.
District environmental staff accessed the SHPO GIS database on September 28,2020, and in accordance with Appendix A of the Section 106 PA executed November 8, 2017, the project will not cause impact to historic properties or historic districts.
Traffic will be detoured during construction. The detour duration will be for 120 days. The Detour is as follows:

- Ramp Y (SR83 south to Lincoln Way) will use SR83 south to SR302 north to US30 east to Lincoln Way
- Ramp B (SR3 south to US30 west) will use SR83 south to SR302 north to US30 east to SR3 north
- Ramp C (US30 west to SR83 south) will use US30 west to SR302 south to US30 east to SR83 south
- Ramp D (US30 west to SR3 north) will use US30 west to SR302 south to US30 east to SR3 north
- Ramp E (SR83 north to US30 west) will use SR83 north to SR585 south to SR83 south to US30 west
- Ramp G (US30 east to SR3 north) will us US30 east to Apple Creek Road north to US30 west to SR3 north
- H-1 (SR3 south to SR585) will use SR83 south to US250 west to SR83 north to SR585
- H-2 (SR585 to SR3 south) will use SR585 to SR3 north to Cleveland Road south to SR3 south
- I-1 (SR585 to SR3 north) will use SR585 to SR3 south to Lincoln Way west to US30 east to SR3 north
- I-2 (SR3 north to SR585) will use SR 3 north to Cleveland Road south to SR3 south to SR585
- State Route 3 will maintain one lane
- C-3 (SR83 south to Cleveland Road) will use SR83 south to SR585 to SR3 north to Cleveland Road
- Ramp R (Cleveland Road north to SR3 south) will use Cleveland Road north left turn to SR3 south (Ramp S)
- Ramp S (SR2 south to SR83) will use SR3 south left turn to SR3 south (Ramp R), flip at SR585

Construction is anticipated to begin in April 2022. This project is design-build. The environmental document and associated studies are being approved using the scoping document. A copy of the scope is included in the project file.

STIP Reference #: 2018AM11ID0320FDENV, 9`095: 21-24 STIP SLI Group Project

Select the appropriate project type:

(26) Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (including parking, weaving, turning, and climbing lanes), if the action meets the constraints in paragraph (e) of this section. ***Examples include: Joint or limited use of right-of-way where the proposed use would have minimal or no adverse social (including highway safety), economic or environmental impacts; Installation of new noise walls and other new noise mitigation projects; Construction of highway safety and truck escape ramps; Construction of bicycle lanes and pedestrian walkways, sidewalks, shared-use paths, or facilities and trailhead parking that do not otherwise qualify for a C1 designation; Beautification or facility improvement projects (i.e. landscaping, curb and gutter installation and replacement, ADA ramps/curb ramps, installation of park benches, decorative lighting, etc.); Construction of alternative energy facilities (fuel tank farms, wind turbines, etc.)***

In accordance with 23 CFR 771.117(e), the proposed project cannot be processed as a C2 CE, if it involves -

a. Acquisition of more than a minor amount of right-of-way b. Residential or non-residential displacements c. A Coast Guard, Individual Section 404 and/or a Section 10 permit d. A Section 106 finding of Adverse Effect e. A Section 4(f) Programmatic or Individual Evaluation f. A finding of May Affect, Likely to Adversely Affect to Threatened and Endangered Species g. Construction of temporary access, or the closure of existing road, bridge, or ramps, that would result in major traffic disruptions h. Changes in access control i. Floodplain encroachment other than functionally dependent uses (e.g., bridges, wetlands) or actions that facilitate open space use (e.g., recreational trails, bicycle and pedestrian paths) j. Construction activities in, across or adjacent to a river component designated or proposed for inclusion in the National System of Wild and Scenic Rivers k. No minor public or agency controversy on environmental grounds (no opposition from any organized groups or agencies and no unresolved environmental coordination) l. If an EJ Analysis Report is required, the project must be processed as a D-level CE or higher level document For certification purposes, documentation is required to illustrate no significant impacts will occur to the following environmental resources and that no unusual circumstances exist that would warrant a higher level of NEPA document. Upload all supporting documentation to the project file.

Waterways:	Present; No Coast Guard, Individual 404, and/or Section 10 Permit required
Waterways Permit Type:	Permit Determination and/or Permit Application Approval Pending
Isolated Wetland Permit	No
Endangered Species:	Present; No finding of May Affect, Likely to Adversely Affect
Endangered Species - Coordination	May Affect, Not Likely to Adversely Affect
Endangered Species - Coordination Date	10/08/2020

Endangered Species - Critical Habitat Present/Impacted

Indiana bat

Northern long-eared bat

Endangered Species - Other Critical Habitat Present/Impacted:	No
100-Year Floodplain:	No Encroachment Within a Special Flood Hazard Area (SFHA)
Section 4(f):	Not present
Section 6(f):	Not present
Cultural Resources:	Not Present
Cultural Resources Coordination - ODOT Approval/SHPO Concurrenc Date	10/01/2020

Since no Tribe was interested in this project based on their customized preferences, no furtl Tribal consultation was conducted.

Projects that meet C2 criteria are not anticipated to have impacts to the following environmental resources. If resources are present, documentation is only required if there is a potential for impacts.

Air Quality:	Studies Not Required

Environmental Document Level: C2
PID 91095 WAY SR 0083 10.81
Approved: 11/13/2020

Air Quality - Coordination with OES:	No
Noise:	Studies Not Required
Noise Coordination - OES Approval Date:	11/03/2020
Hazardous Materials - ESA Screening Conducted	Studies Not Required
Farmland:	Urbanized Area; No Impacts in Accordance With the Farmland MOU and 7 CFR 658
Scenic Rivers	No National Wild and Scenic River Within 1000 Feet of the Proposed Project Area

Projects that meet C2 criteria must be in accordance with ODOT's UP Guidance and activities conducted for Public Involvement are commensurate to the project's type and scope of work.

Underserved Populations	Does Not Exceed UP Guidance Criteria; No UP Analysis Report Required and No UP Issues Raised During Public Involvement
Public Involvement:	Minimum PI Requirements Met; No Minor Public or Agency Controversy on Environmental Grounds
Environmental Commitments	Yes

Environmental Commitments

C2

1) The project is located within the known habitat ranges of the federally listed and protected Indiana bat and northern long-eared bat and the state listed Tricolor and Little Brown bat. The Contractor shall not remove trees under this project from April 1 through September 30. All necessary tree removal shall occur from October 1 through March 31. The Contractor shall demarcate clearing limits in the field to avoid any unauthorized tree clearing. 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 inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet.

2) ODOT will obtain and adhere to all appropriate waterway permits prior to any work below the ordinary high water mark of any waterway and all Special Provisions for waterway permits] will be included in the plans. ODOT will adhere to all appropriate waterway permits and all Special Provisions for waterway permits] throughout construction. The Project Designer shall incorporate the following plan note into the plans: The Contractor shall not perform any work within the boundaries of any wetland or below the ordinary high water mark (OHWM) of any stream until ODOT obtains the necessary waterway permit(s). This includes the placement of any temporary or permanent fills below the OHWM.

3) ODOT shall self-permit for a floodplain permit or documentation of exemption prior to plan file.

Preparers and Approvals

Form Preparer

District 3
Contact: Donald Rostofer
419-207-7178
Donald.Rostofer@dot.ohio.gov

Approvals & Electronic Signatures

Approved & Electronically Signed By:	Approval Date:
Donald Rostofer (ADM OFF 2)	11/13/2020

Appendix

General

Aerial Map.pdf

County Map.pdf

ESA

District Determination - Exempt Memo.pdf

Cultural Resources

Records Check.pdf

Ecological

Coordination with USFWS.pdf

OES Approval - No ODNR Notification.pdf

Underserved Populations

Census Mapping.pdf

Underserved Populations Documentation Form.pdf

Public Involvement

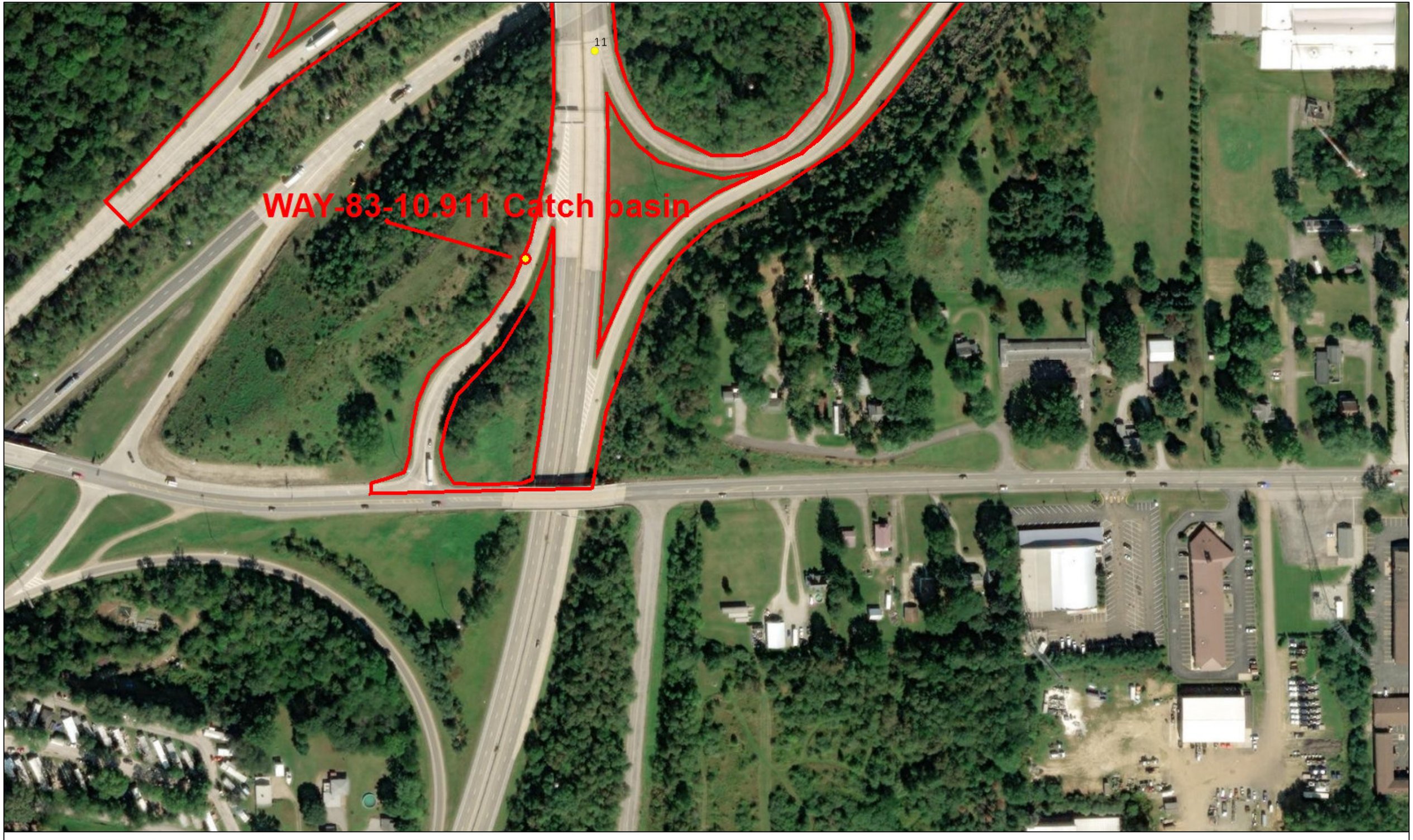
Press Release.pdf

Permits

FEMA FIRM - Northern Portion.pdf

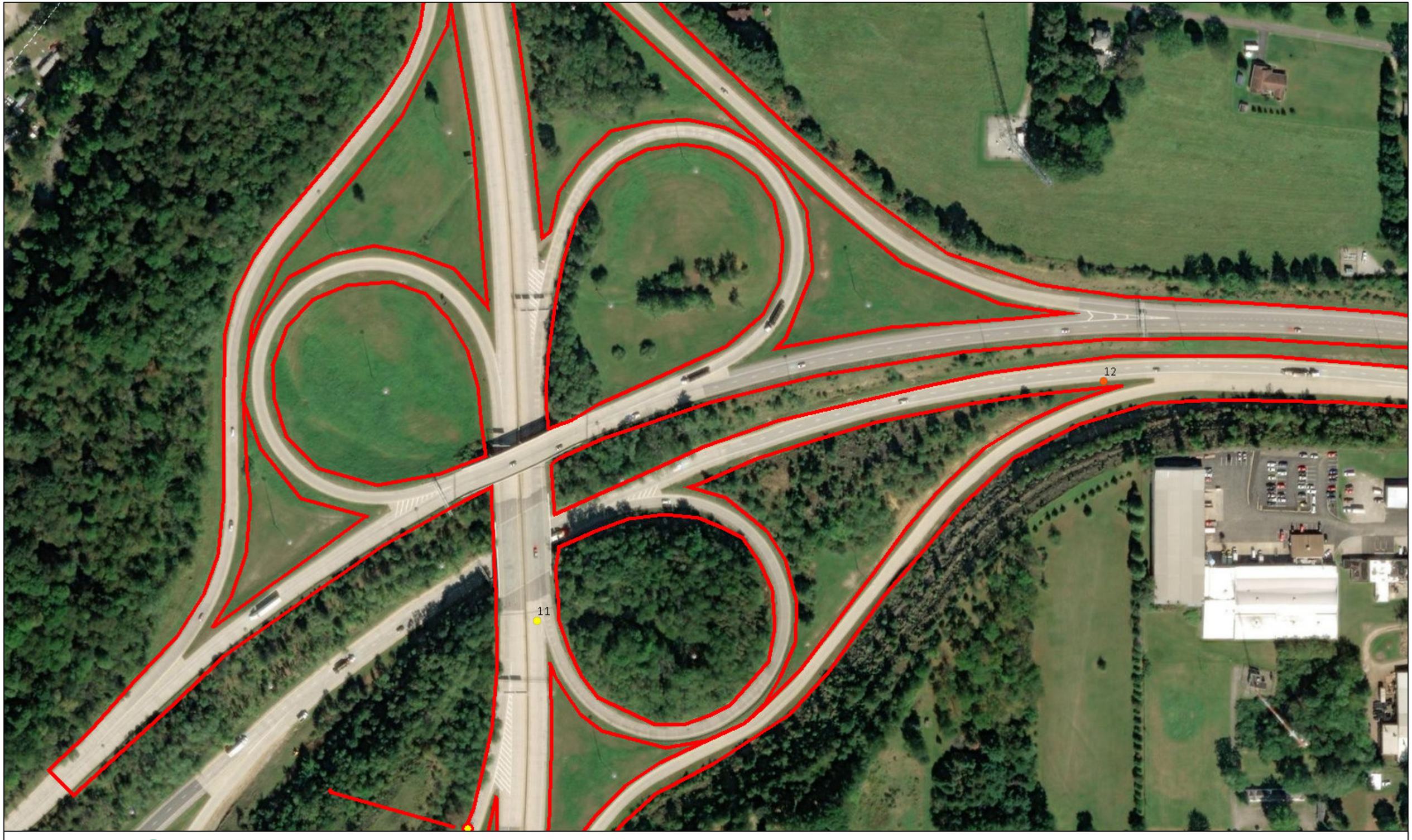
FEMA FIRM - Southern Portion.pdf

Statement of Findings.pdf



TIMS TRANSPORTATION INFORMATION MAPPING SYSTEM

Date: 9/11/2020



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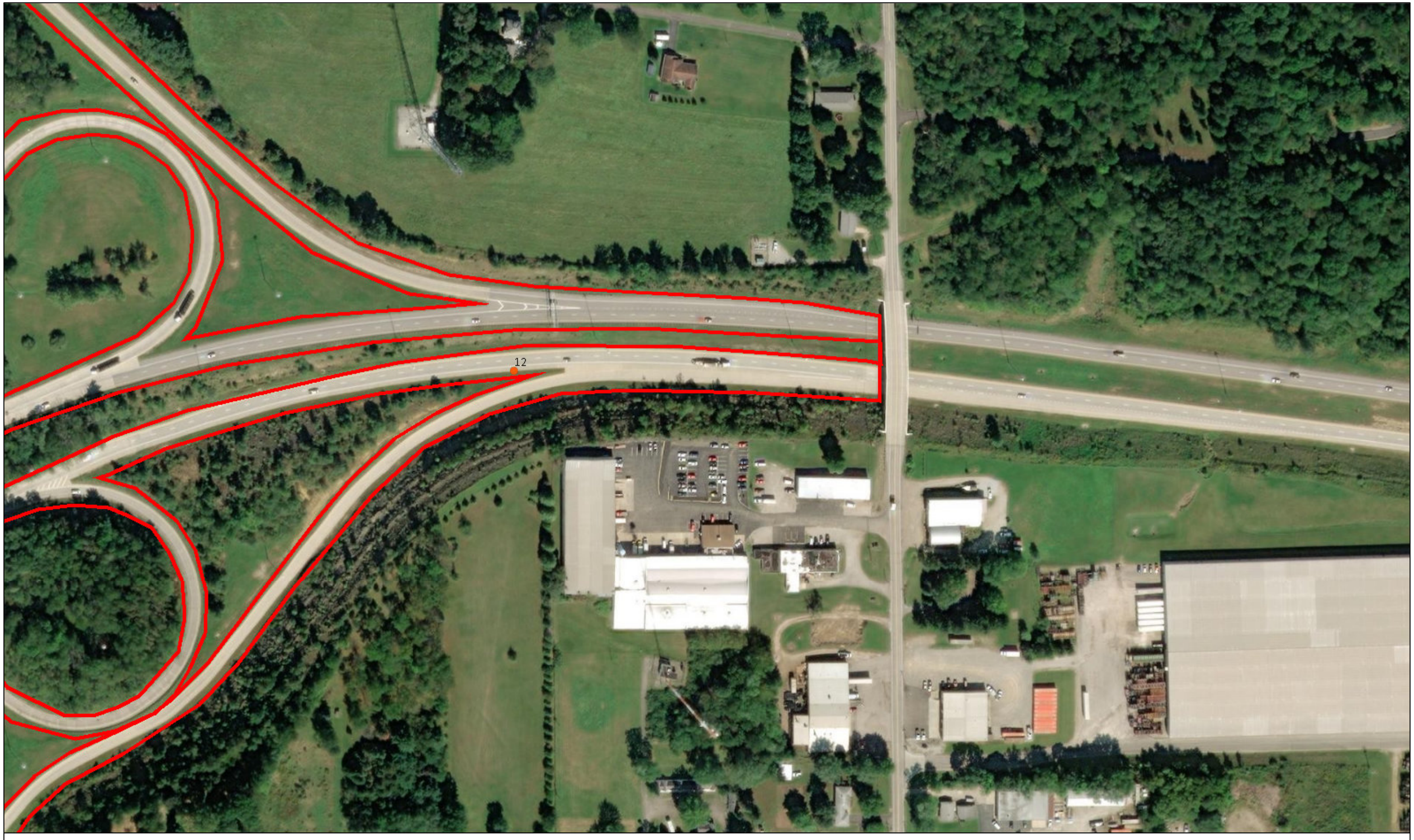

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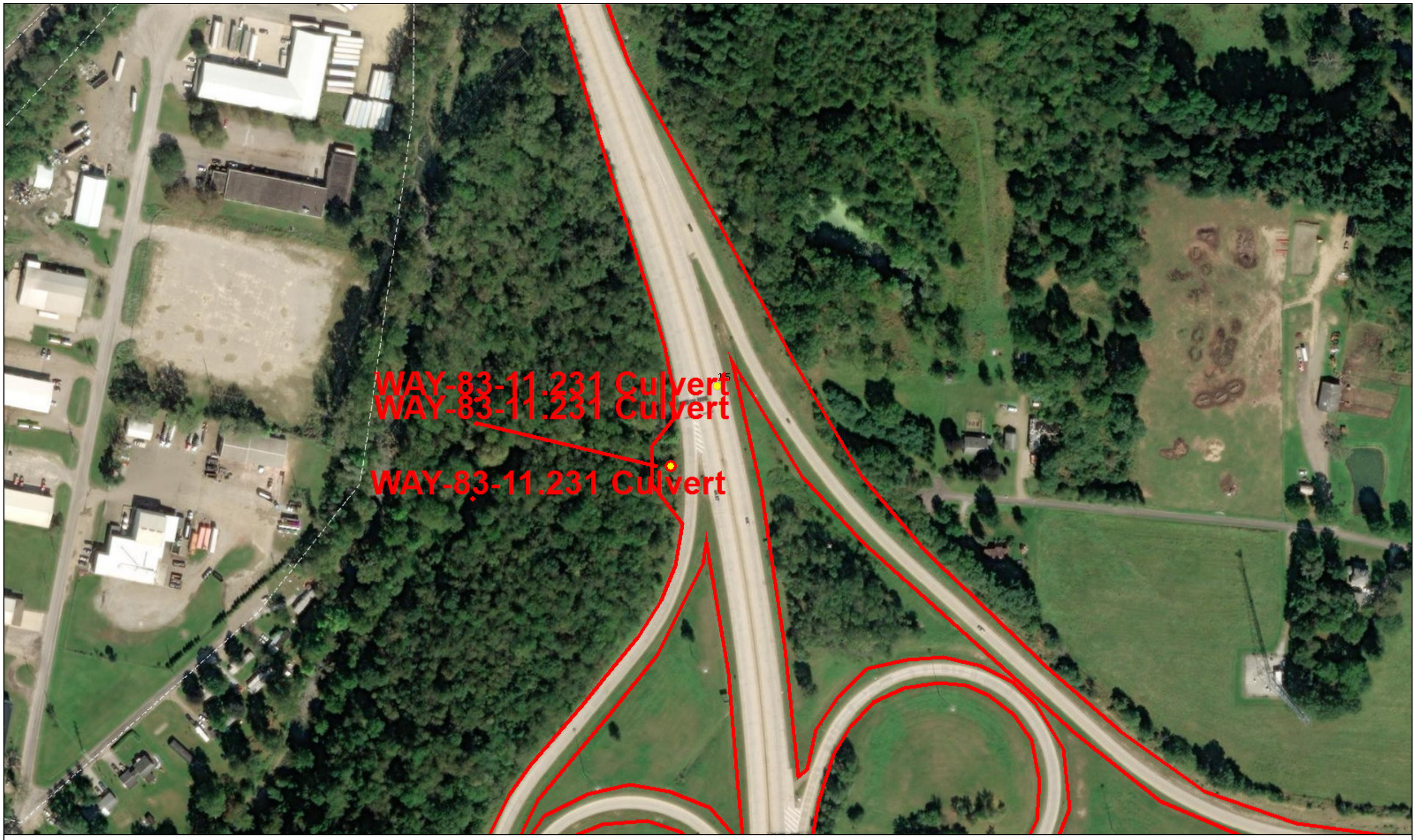

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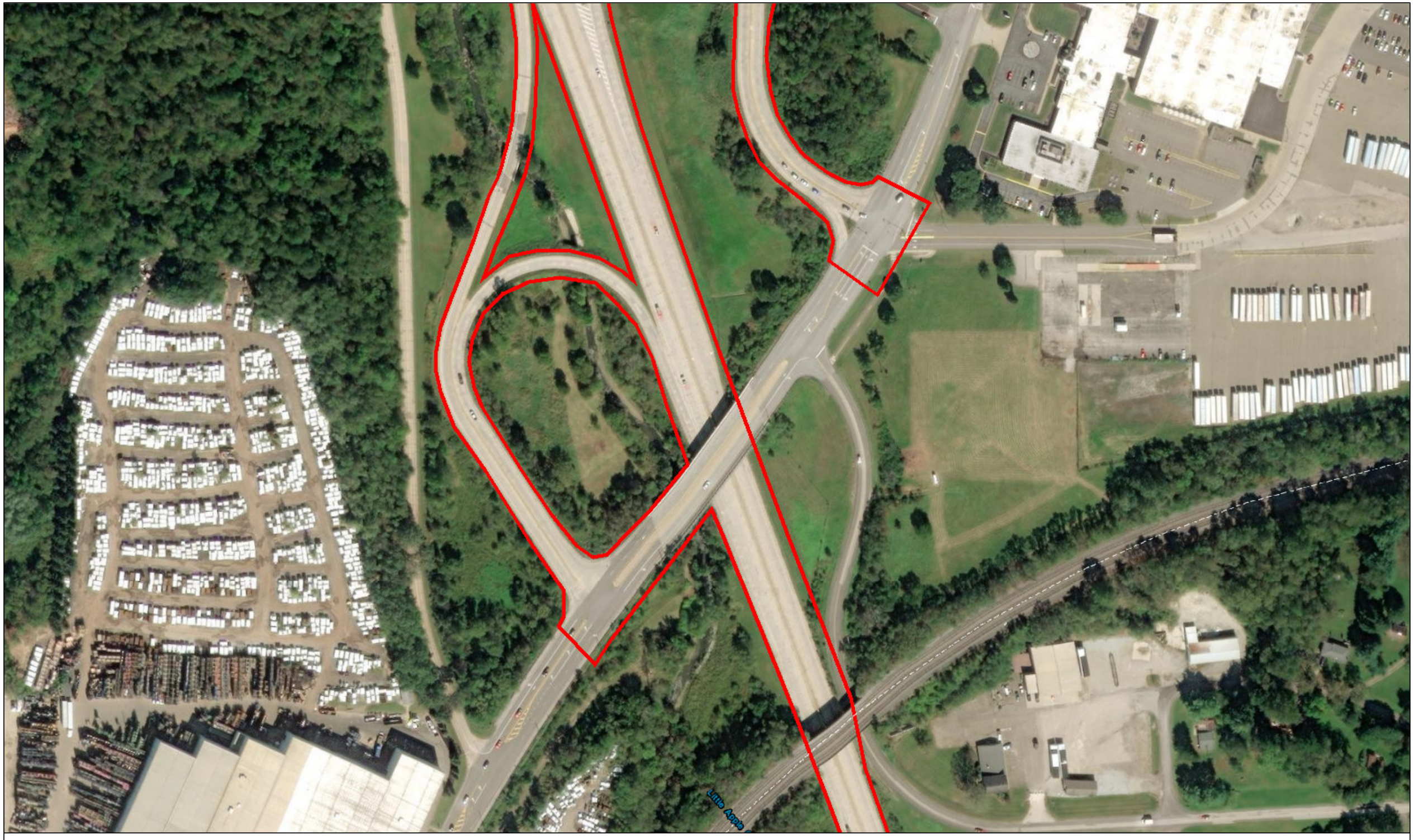

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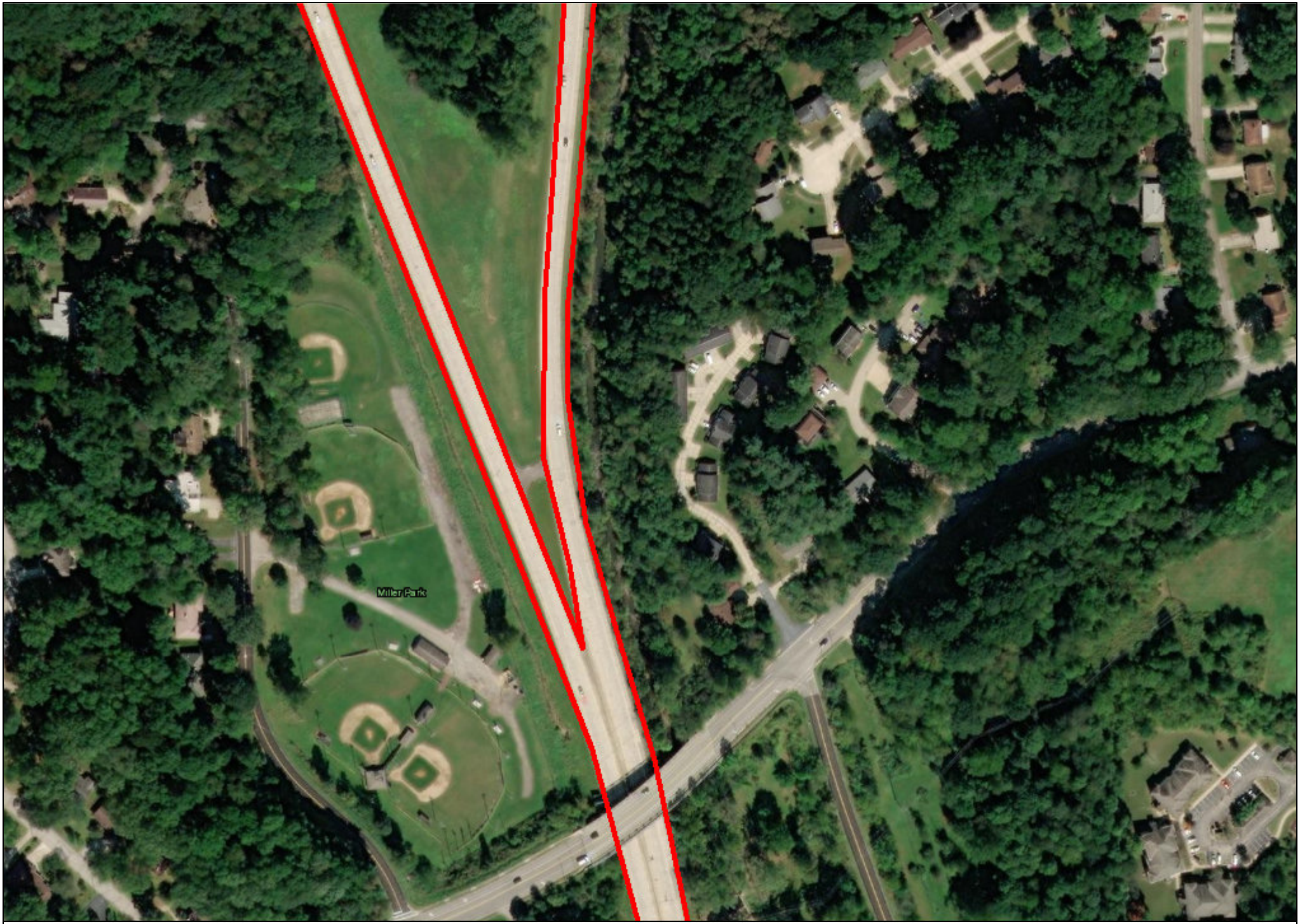

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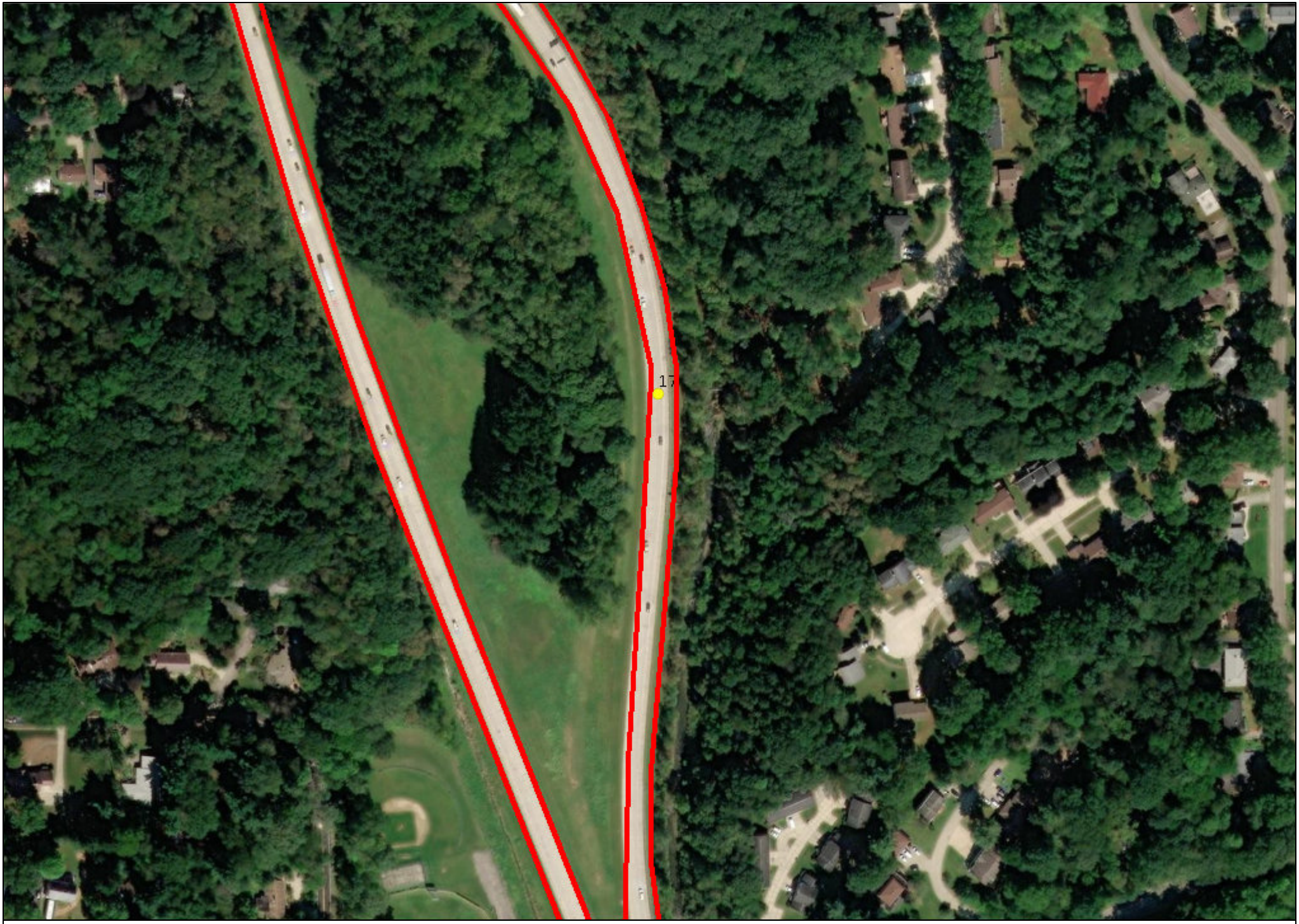

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Date: 4/12/2021

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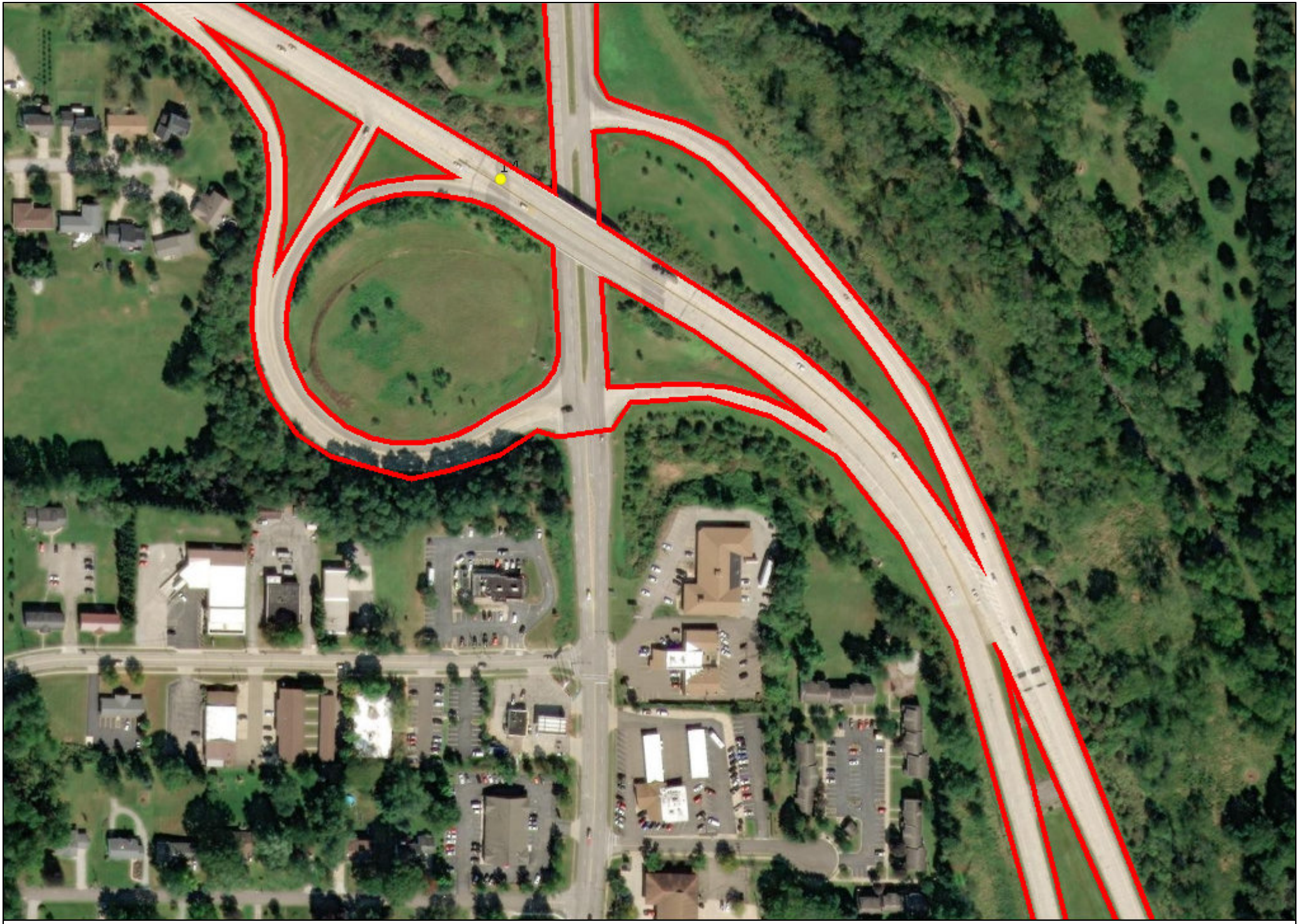
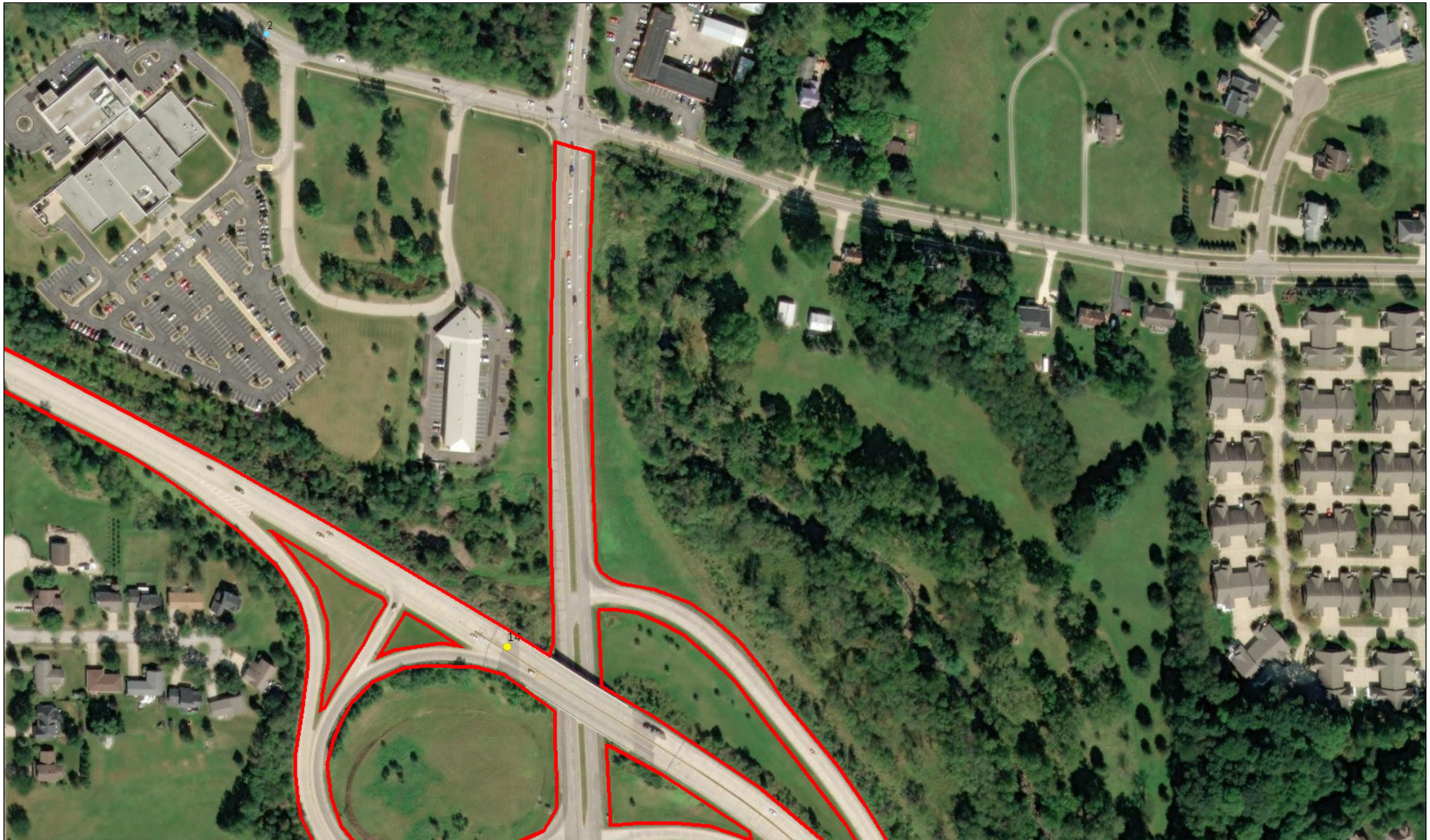


TIMS TRANSPORTATION INFORMATION MAPPING SYSTEM

Date: 4/12/2021



TIMS TRANSPORTATION INFORMATION MAPPING SYSTEM

Date: 9/11/2020

TIMS TRANSPORTATION INFORMATION MAPPING SYSTEM

Date: 9/11/2020

SPECIAL PROVISIONS

WATERWAY PERMITS CONDITIONS

C-R-S: WAY-SR 83-10.81

PID: 91095

Date: 04/29/2021

1. Waterway Permits Time Restrictions:

Regional General Permit – Section B (Maintenance) is authorized for WAY-SR 83-10.81, PID 91095. A copy Regional General Permit B shall be kept at the work site at all times and made available to all contractors and subcontractors. The permit is effective starting: April 30, 2021. The permit expires: October 24, 2024.

For authorized work in aquatic resources (including streams, wetlands, jurisdictional ditches, captured streams, lakes, ponds), the Department will consider the Contractor's submission of a reauthorization to the waterway permit expiration date based on project constraints. If more than one permit is authorized for the project, then all permits become invalid once the first permit expires. In order for the request to be considered, the Contractor must submit a justification to the Engineer at least 90 days prior to the waterway permit expiration date. The Engineer will submit the request for a time extension to the Ohio Department of Transportation, Office of Environmental Services, Waterway Permits Unit (ODOT-OES-WPU) for consideration and coordination with the U.S. Army Corps of Engineers (USACE), Ohio Environmental Protection Agency (OEPA), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), and Ohio Department of Natural Resources (ODNR) as appropriate.

2. Deviations From Permitted Construction Activities:

No deviation from the requirements for work in aquatic resources depicted in the plans, Special Provisions, and/or Working Drawings may be made unless a modification has been submitted to ODOT-OES-WPU and approved by the appropriate agencies (i.e., USACE, OEPA, USCG, ODNR, and USFWS).

For emergency situations resulting in unanticipated impacts to aquatic resources, provide notification (verbal or written) to the Engineer as soon as possible following discovery of the situation. Written notification to the Engineer and notification to the ODOT-OES-WPU (614-466-2159) must be made within 24 hours.

For non-emergency situations, notify the Engineer in writing for submission to the ODOT-OES-WPU (614-466-2159) for consideration and coordination with the appropriate agencies. Notification must be made at least 90 days prior to planned, non-permitted activities. Consideration of the requested deviation is at the discretion of the Director and must be coordinated with the appropriate regulatory agencies.

3. In-Stream Work Restrictions:

Work in the following aquatic resources is further restricted as follows:

Stream Name/Description	Location	Work restriction dates (No in-stream work permitted)
UNT 1 to Little Apple Creek	STA. 872+00	None
Little Apple Creek	STA. 872+00	None
Little Apple Creek	STA. 855+00	None
UNT 2 to Little Apple Creek	STA. 792+25	None

UNT = unnamed tributary stream

*Restriction dates do not apply if the stream has been dewatered prior to April 15.

In-stream work has been defined as the placement and/or removal of fill materials (temporary or

permanent) below ordinary high water of a stream. Examples of "fill" include, but are not limited to: bridge piers, abutments, culverts, rock channel protection, scour protection, and temporary access fills.

Fills placed within a stream identified in the above table (outside of the work restriction dates) can continue to be worked from during the work restriction dates, but cannot be expanded, removed, or otherwise modified (below ordinary high water) until once again outside of the work restriction dates.

4. Materials:

Materials utilized in or adjacent to aquatic resources for temporary or permanent fill or bank protection shall consist of suitable material free from toxic contaminants in other than trace quantities. Asphalt products are specifically excluded for use as fill. Chromated Copper Arsenate (CCA), creosote, and other pressure treated lumber shall not be used in structures that are placed in aquatic resources.

5. Cultural Resources:

Per CMS 107.10, if archeological sites, historical sites, or human remains are discovered, cease all work in the immediate area and notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-Cultural Resource Section at 614-466-2159. In the event of human remains are identified by OES-Cultural Resources Section, the Engineer shall also contact the Wayne County Sheriff's Office at (330) 287-5750.

6. Aquatic Resource Demarcation

The table below includes detailed fill quantities authorized within the aquatic resources, which are shown on mapping attached to these Special Provisions. Aquatic resources not authorized for impact by these Special Provisions shall be demarcated in the field as per SS 832 prior to site disturbance. The fence shall remain in place and be maintained throughout the construction process. Following the completion of the project, the fence and posts shall be removed.

Resource ID	Resource Location	Impact Location	Temporary Impact Amount	Permanent Impact Amount	Total Impact Amount
UNT 1 to Little Apple Creek	WAY-SR 83-10.81	STA 872+00	15 feet (0.001 acre)	230 feet (0.03 acre)	245 feet (0.031 acre)
Little Apple Creek	WAY-SR 83-10.81	STA 872+00	50 feet (0.02 acre)	50 feet (0.02 acre)	50 feet (0.02 acre)
Little Apple Creek	WAY-SR 83-10.81	STA 855+00	50 feet (0.02 acre)	50 feet (0.02 acre)	50 feet (0.02 acre)
UNT 2 to Little Apple Creek	WAY-SR 83-10.81	STA 792+25	15 feet (0.001 acre)	20 feet (0.002 acre)	35 feet (0.003 acre)

7. Spill containment:

Provide and Maintain an Oil Spill Kit with a minimum capacity of 65 gallons. The Spill Kit shall contain:
- 6 - 3 in. X 8 ft. Oil only socks
- 4 - 18 in. X18 in. Oil only pillows
- 2 - 5 in. X 10ft. Booms

- 50 - 16in. X 20 in. Oil only pads
- 10- Disposable Bags
- 1 - 65 Gallon drum with lid
- 25 pounds of Granular Oil Absorbent

The Oil Spill Kit shall be located within 150 feet of any equipment working in a stream or wetland. The oil Spill Kit shall be maintained for the life of the contract. Any materials utilized during the project will be replaced within 48 hours. All costs associated with furnishing and maintaining the above referenced spill containment kit is incidental to work.

8. Blasting:

State law requires notification to the Ohio Department of Natural Resources should blasting be required within or near stream channels (See ORC 1533.58 & CMS 107.09). Notify the Engineer, in writing, a minimum of 30 days in advance of blasting, for submission to ODOT-OES-WPU (614-466-2159) for coordination with ODNR.

9. Project Inspection:

Inspection of Work may include inspection by representatives of other government agencies or railroad corporations that pay a portion of the cost of the Work or regulate the Work through State and Federal law. Comments from the representatives of these agencies shall be directed to the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-WPU at 614-466-2159.

10. Temporary Access Fills:

Special Provisions Notes:

Definitions:

Hydraulic Opening
The cross-sectional area allowing an unimpeded discharge equal to twice the highest monthly flow without producing a rise in the backwater above the Ordinary High Water Mark (OHWM).

Standard Temporary Discharge
Discharge equal to twice the *highest monthly flow* without producing a rise in the backwater above the OHWM. The U.S. Geologic Service publication "Techniques for estimating Selected Streamflow Characteristics of Rural Unregulated Streams in Ohio" provides equations that estimate monthly flow for Ohio Waterways These flows are also available in a web application by USGS StreamStats, (https://water.usgs.gov/osw/streamstats/ohio.html). The highest monthly flow is the highest monthly mean discharge occurring in a 12-month period from January to December.

Average Monthly Flow
The average monthly flow represents the estimated "normal" flow.

Temporary Access Fills (TAFs)
Include, but are not limited to, dewatering fills, causeways, cofferdams, access pads, temporary bridges, etc. below the OHWM.

Requirements

21 calendar days prior to the initiation of any in-stream work, provide the Engineer with Working Drawings that include:

- Plan view drawing (50 scale or less) showing the location of all TAFs proposed for use on the project
- Scaled cross section and profile drawing showing the OHWM and the proposed hydraulic opening.
- Identify the minimum diameter size, placement location and thickness of non-erodible Dumped Rock Fill material on the plan and profile.
- Calculations analyzing the hydraulic impacts of the TAF on the waterway. Include in the calculations an analysis of the hydraulic opening sized adequately to pass the Standard Temporary Discharge without producing a rise in backwater above the OHWM. Include, in the analysis, calculated channel velocities adjacent to the TAF, culvert exit velocities, calculated headwater and tailwater elevations, and any additional appropriate calculations to assess potential impacts to the waterway during normal and anticipated high flow (twice the highest monthly flow) events.
- A description of all temporary material to be placed below the OHWM elevation.
- A description of the installation and staging of all temporary fill over the life of the contract.
- Identify the protection methods and/or structural Best Management Practices for minimizing impacts to the waterway.
- Volume of temporary fill below the OHWM elevation.
- A description of the diversion ditches, equipment, conduits or means for maintaining normal flows in the waterway.
- A description of the removal of all temporary fill and restoration of the channel and all areas impacted by the TAFs.
- A schedule outlining the timing of the placement and removal of all temporary fill.
- Have competent individuals prepare and check the Working Drawings and hydraulic calculations. Provide a cover sheet containing the preparer(s) and checker(s): First Name, Last Name and Initials. The preparer(s) and checker(s) shall not be the same individual. Have an Ohio Registered Engineer review, approve, sign, seal and date the Working Drawings and hydraulic calculations according to ORC 4733 and OAC 4733-35. Include the following statement on the Working Drawings:

"These Working Drawings were prepared in compliance with the terms of these Special Provisions and all contract documents."

Do not begin in-stream work until the Engineer has accepted the Working Drawings and hydraulic calculations.

The design and construction of the Contractor's TAF must minimize impacts to water bodies, stream banks, stream beds, and riparian zones to the maximum extent practicable.

Fording of waterways and other aquatic resources is prohibited.

Construct TAFs in such a manner that will maintain flows, minimize upstream flooding, and avoid overtopping the TAF on a regular basis. ***TAFs shall be designed and constructed so that the hydraulic opening provides capacity for a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the (OHWM)***.

If the Contractor proposes a TAF which does not meet all the requirements of these Special Provisions, the Contractor must submit a request in writing for a modified TAF to the Engineer. The request must include all Working Drawings and hydraulic calculations required by these Special Provisions. The Department makes no guarantee to grant the request. The Contractor's proposed TAF request will be coordinated by OES with the USACE and the OEPA, as appropriate. The time frame allowed for the coordination of the contractor's proposed TAF will be a minimum of 60 days.

Installation of any temporary fill without appropriate authorization is strictly prohibited. All direct

coordination with the USACE and/or OEPA will be performed through OES.

TAFs Construction and Payment

Begin planning and installing causeways and access fills as early in construction as possible to avoid conflicts with these Special Provisions or other environmental commitments that have been included in the construction plans.

TAFs in Streams and Rivers may include, but are not limited to, causeways, cofferdams, access pads, sheet piling, temporary bridges, etc. The Contractor must make every attempt to minimize disturbance to waterbodies, stream banks, stream beds and riparian zones during the construction, maintenance, and removal of the TAF. Construct the TAFs as narrow as practical. Install in-stream conduits parallel to the stream banks. Make the TAFs in shallow areas rather than deep pools where possible. Minimize clearing, grubbing, and excavation of stream banks, and approach sections. Construct the TAFs as to not cause erosion or allow sediment deposits in the waterway.

Prior to the initiation of any in-stream work, establish a monument upstream of the proposed TAF to visually monitor the water elevation in the waterway where the fill is permitted. Maintain the monument throughout the project. Provide a visual mark on the monument that identifies the elevation 1 foot above the OHWM. Ensure that the monument can be read from the bank of the waterway. Have this elevation set and certified by an Ohio Registered Surveyor. All costs associated with furnishing and maintaining the above referenced monument is incidental to the work.

Should the surface water elevation exceed the elevation 1 foot above OHWM, the Department will compensate the Contractor for repair of any resulting damage to the TAF up to the elevation of 1 foot above the OHWM, except as noted. The Department will recognize this event as an excusable, non-compensable delay in accordance with Section 108.06 B. of the Construction & Materials Specifications.

Follow the requirements in Item 502 for Structures for Maintaining Traffic and in Item 503 for Cofferdams and Excavation Bracing and any modifications to these items as shown in the plans. The Department will not pay for repair and maintenance of TAFs associated with Items 502 and 503 as a result of surface water elevation exceeding 1 foot above the OHWM. Compensation for damages associated with waterway flows will be provided as described in Items 502 and 503.

Construct the TAFs, not including Items 502 and 503, to a water elevation at least 1 foot (0.3 m) above the OHWM. If more than one-third the width of the stream is filled, then use culvert pipes to allow the movement of aquatic life. Ensure that any ponding of water behind the TAF will not damage property, flood roadways, or threaten human health and safety.

The following minimum requirements apply to TAFs where culverts are used.

A. Furnish culverts on the existing stream bottom.
B. Avoid a drop in water elevation at the downstream end of the culvert that would result in an adverse impact to the waterway.
C. Furnish a sufficient number of culverts in addition to stream openings to provide a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the OHWM.
D. Furnish culverts with a minimum diameter of 18 inches (0.5 m).

All TAFs must be constructed of suitable materials. Causeways and access fills must be encapsulated with clean, non-erodible, nontoxic Dumped Rock Fill, Type A, B, C, or D, meeting the requirements of C&MS 703.19.B. Utilize appropriately sized Dumped Rock Fill determined by the Contractor's engineer for encapsulating the sides of the TAF. Encapsulate all sides of the TAF with the non-erodible material. For causeways, contractors may use clean aggregate meeting C&MS 703.01 Size Number 1 and 2 for creating a working surface above the OHWM. Extend the non-erodible encapsulating material to at least the elevation of the top of the working surface. Extend clean aggregate up the slope from the original stream bank for 50 feet (10 m) to remove erodible material and prevent tracking from equipment onto

the TAF.

When the work requiring TAF is complete, all portions of the TAF (including all rock and culverts) will be removed in its entirety. Do not dispose of TAF material in other aquatic resources or where erosion into another aquatic resource is possible. The stream bottom affected by the TAFs will be restored to its pre-construction elevations. The TAFs will not be paid as a separate item but will be included by the Contractor as part of the total project cost.

Unless specific TAF compensation is included in the plans, all environmental protection and control associated with the authorized activities, are incidental to the work within the boundaries of the aquatic resources.

11. Excavation Activities:

Excavated material will be placed at an upland site and disposed of in such a manner that sediment and runoff to streams and other aquatic resources is controlled and minimized. Additionally, no more than incidental fallback into aquatic resources is permitted during the excavation process. If any changes to the proposed work are deemed necessary, notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-WPU at 614-466-2159.

12. Demolition Debris:

The intentional discharge of demolition debris from any structure (including but not limited to bridges, culverts, abutments, wing walls, piers) is not authorized for this project. If any demolition debris inadvertently falls into aquatic resources, it must be removed immediately. Notify the Engineer immediately in writing of any inadvertent fill discharged into aquatic resources. The Engineer will immediately contact ODOT-OES-WPU at 614-466-2159 if any unintentional discharge occurs.

Version: July 2020

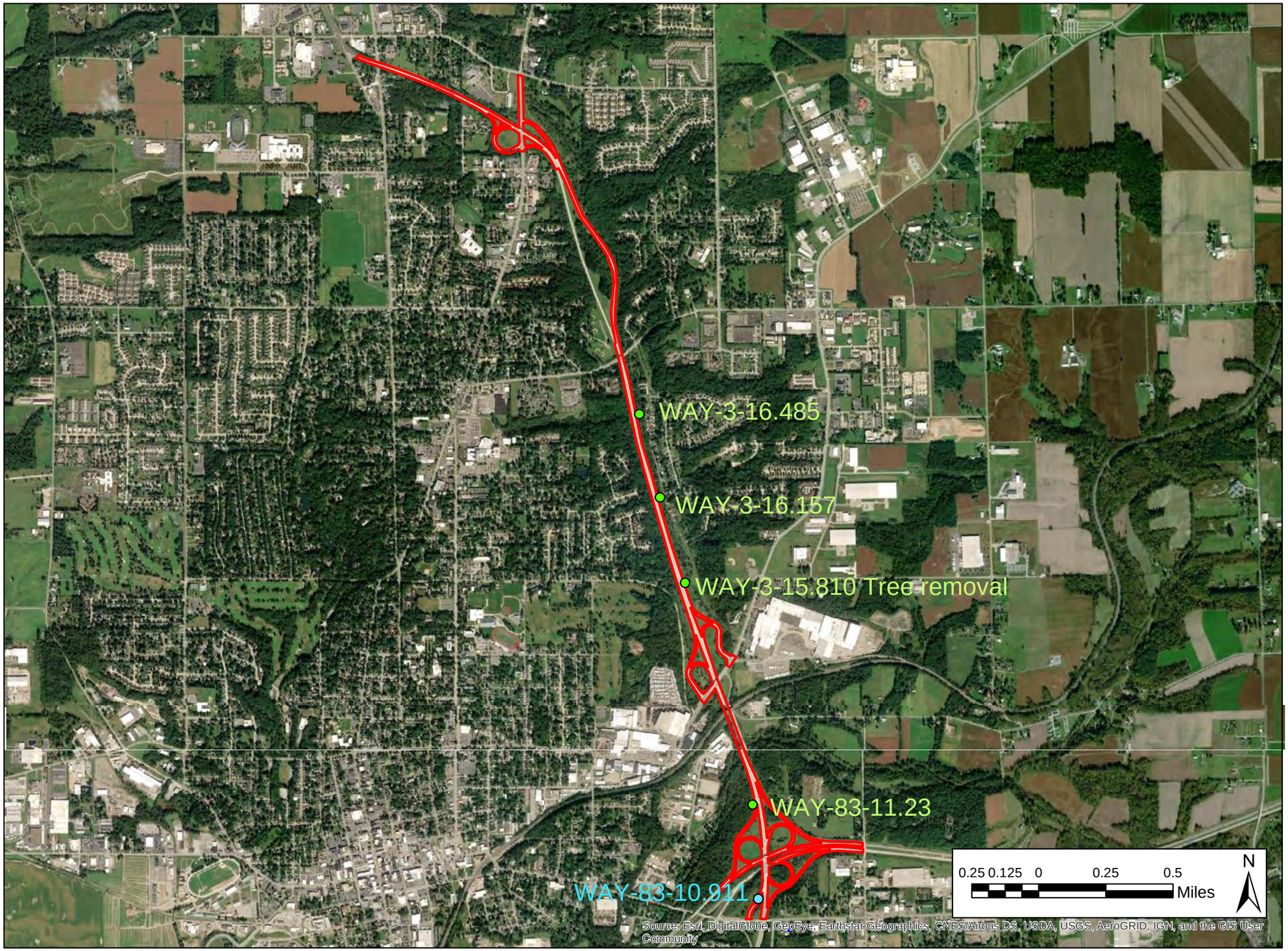


Figure 4: WAY-83-10.81 PID 91095 Aerial photo zoomed in

Legend

- Construction limits
- Culvert replacement
- Catch basin repair

OHIO DEPARTMENT OF TRANSPORTATION

THE OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENTAL SERVICES
1980 W. BROAD ST.
COLUMBUS, OH 43223
PRODUCED WITH ARC GIS SOFTWARE
DATE CREATED: 9/22/2020

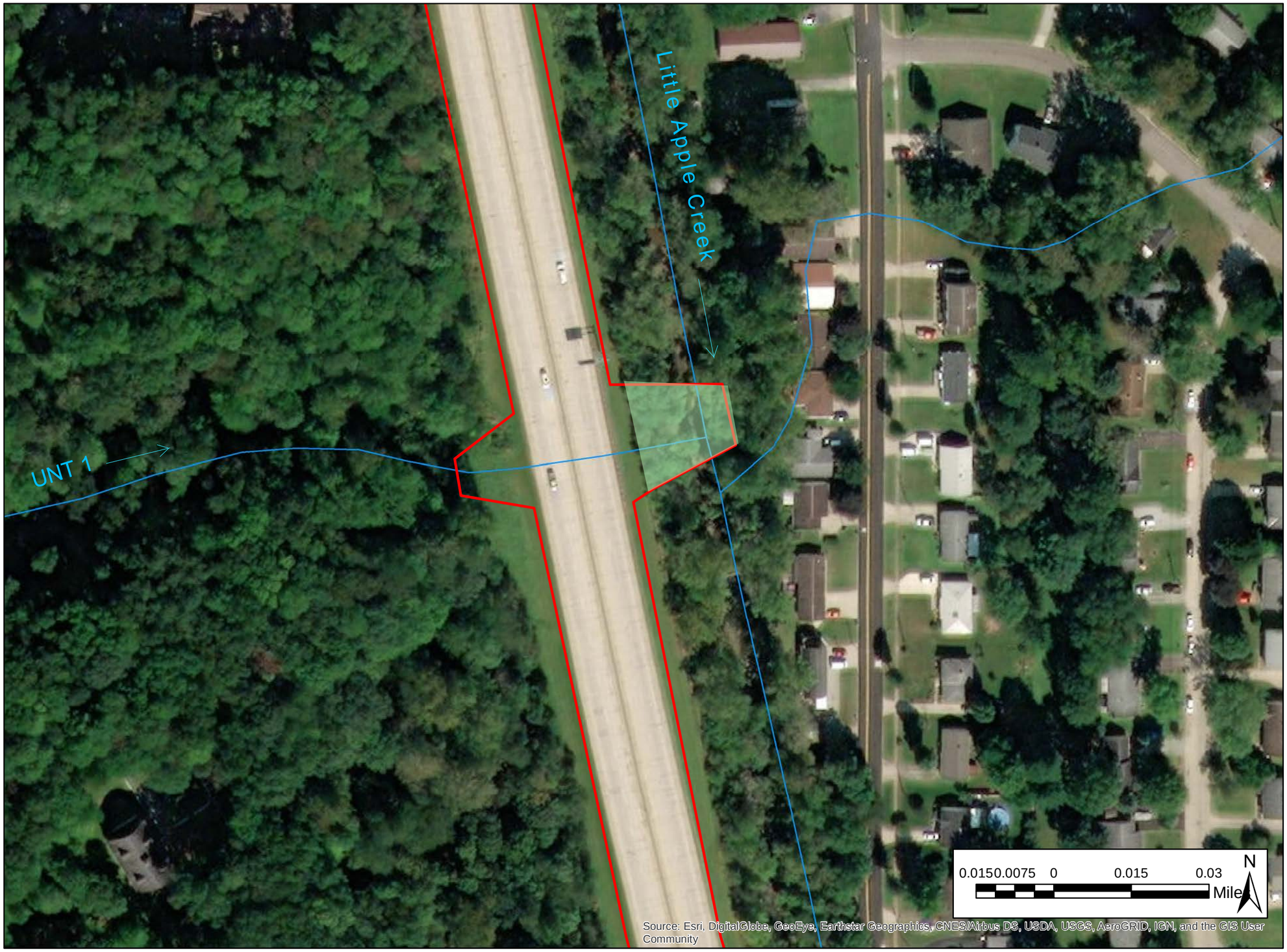


Figure 7: WAY-83-10.81 PID 91095 Culvert replacement location for WAY-3-16.485

Legend

WAY83

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Figure 8. WAY-83-10.81 PID 91095 culvert repair at WAY-3-16.157

Legend

NHD - Flowlines

WAY83

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Figure 10. WAY-83-10.81 PID 91095 culvert repair at WAY-83-11.23

Legend

NHD - Flowlines

WAY83

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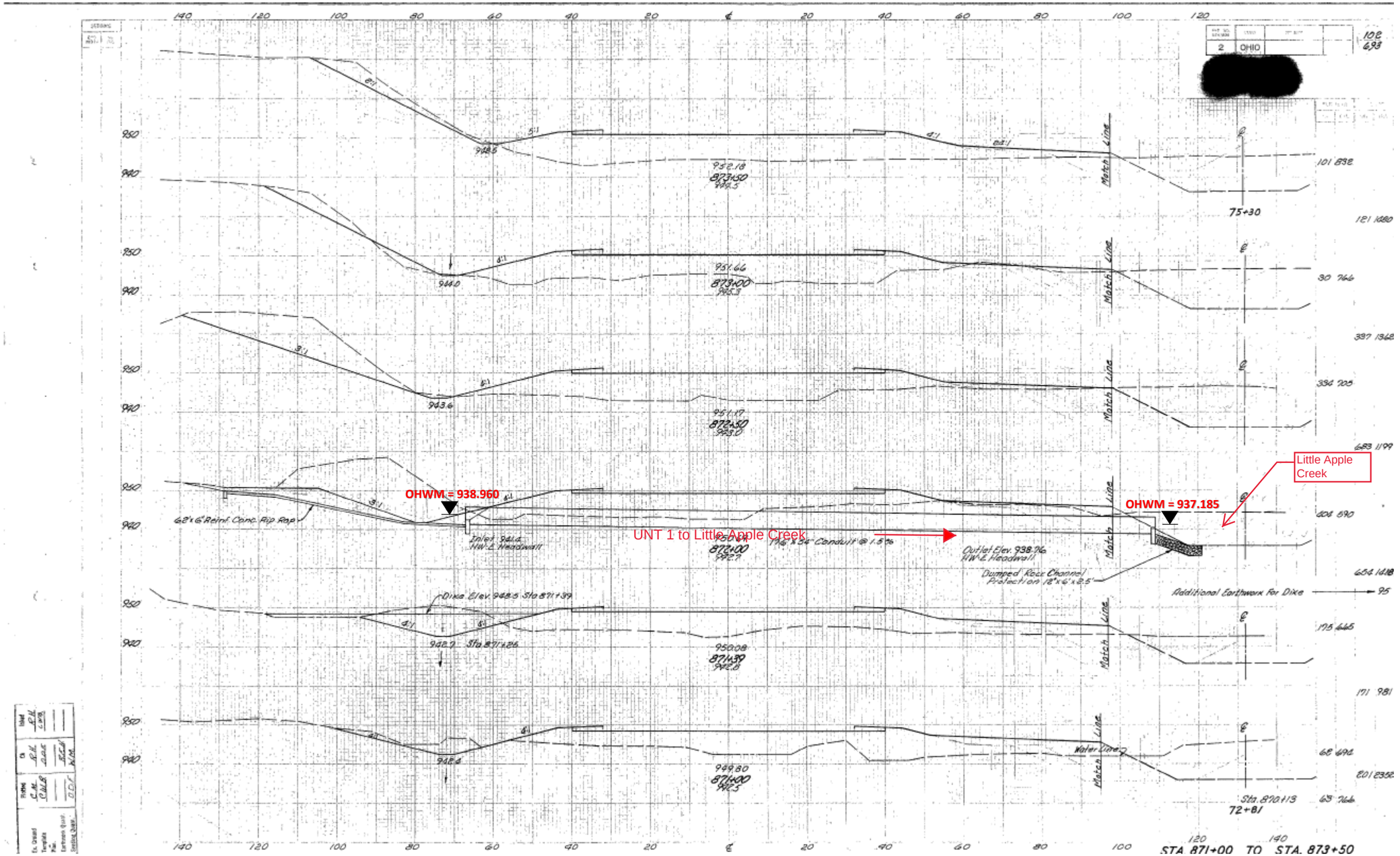
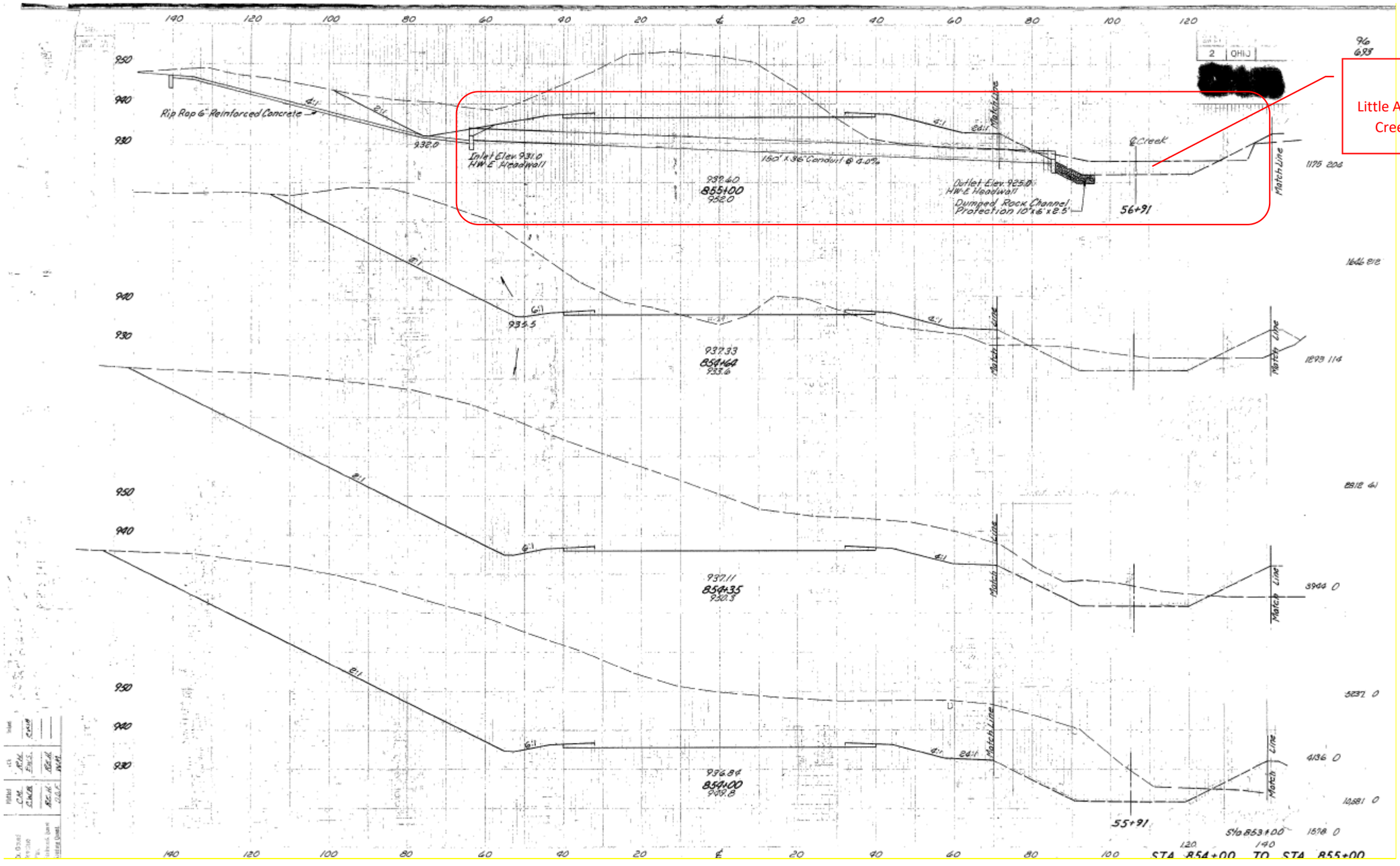
WAY-3-16.485


OHWM = 938.960
OHWM = 937.185
Little Apple Creek
UNT 1 to Little Apple Creek
Outlet Elev. 938.76
Dumped Rock Channel Protection 18'x6'x2.5'
Additional Earthwork For Dike
Dike Elev. 948.5 Sta 871+39
Sta 871+26
Match Line
75+30
72+81
STA 871+00 TO STA. 873+50

WAY-3-16.157


Little Apple Creek
Rip Rap 6" Reinforced Concrete
Inlet Elev. 931.0
HW E Headwall
150' X 96" Conduit @ 4.0%
Outlet Elev. 925.0
HW E Headwall
Dumped Rock Channel Protection 10'x6'x2.5'
℄ Creek
Match Line
938.40
855+00
932.0
933.5
937.33
854+60
933.6
937.11
854+35
930.3
936.84
854+00
929.8
56+91
55+91
STA 854+00 TO STA 855+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

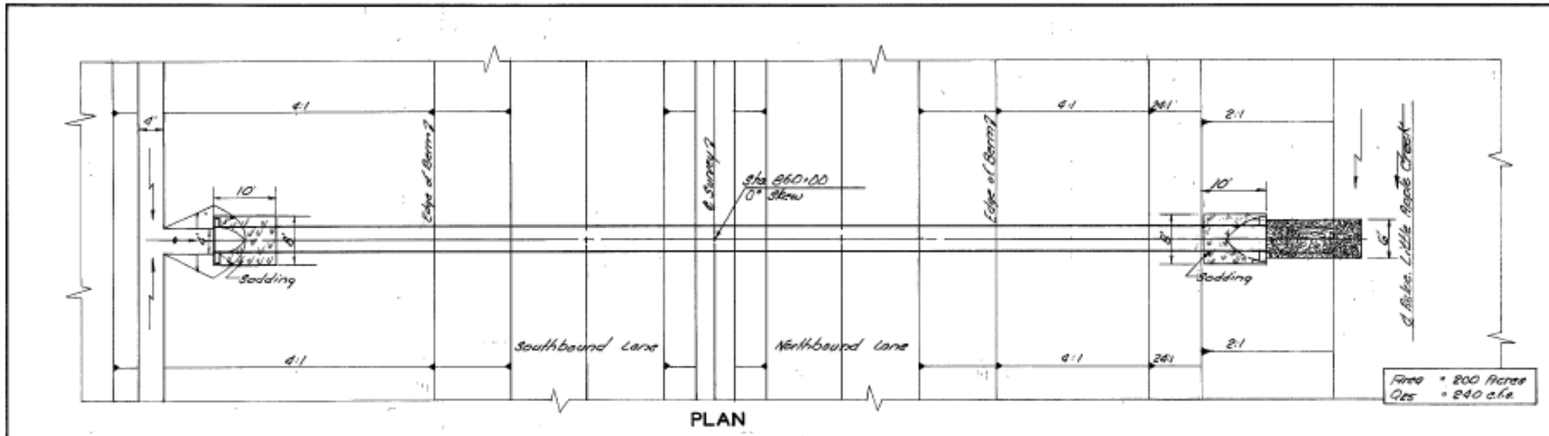
WAY - 3 - 14.72
WAY - 76 - 12.04

CULVERT DATA

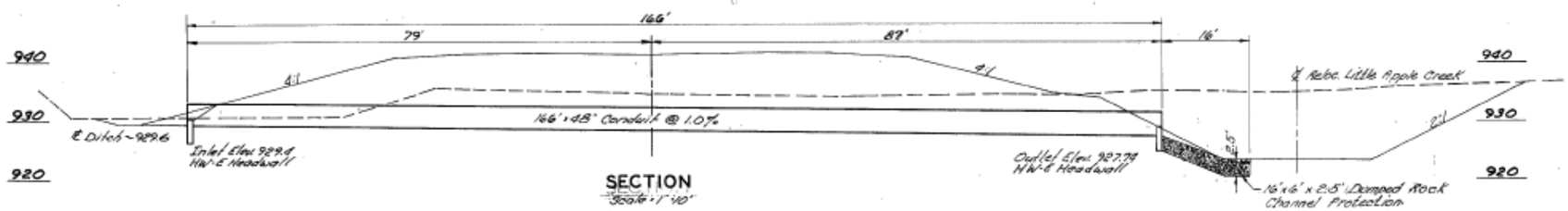
TYPE: Conduit
SIZE: 166'-48" Conduit
WORK REQUIRED: Construct Pipe Culvert with HW-E Headwall (1 @ Rt. Excavate Inlet & Outlet Channels & Place Dumped Rock Channel Protection as shown. Place Sodding Around Headwalls as shown.
STANDARD DRAWING - HW-E Headwall

ESTIMATED QUANTITIES

603-48" Conduit, Type A, 706.02 Cl. "B" Bedding	166 Lin. Ft.
608-Concrete Masonry	1.72 Cu. Yds.
601-Dumped Rock Channel Protection	8.9 Cu. Yds.
209-Excavation (Channel)	3.0 Cu. Yds.
660-Sodding	18.0 Sq. Yds.

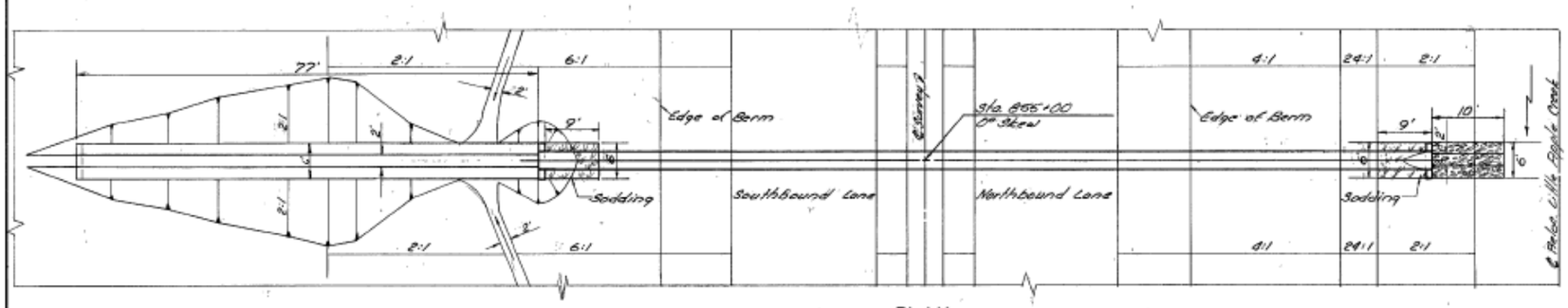


PLAN



SECTION
Scale: 1" = 10'

STA. 860+00



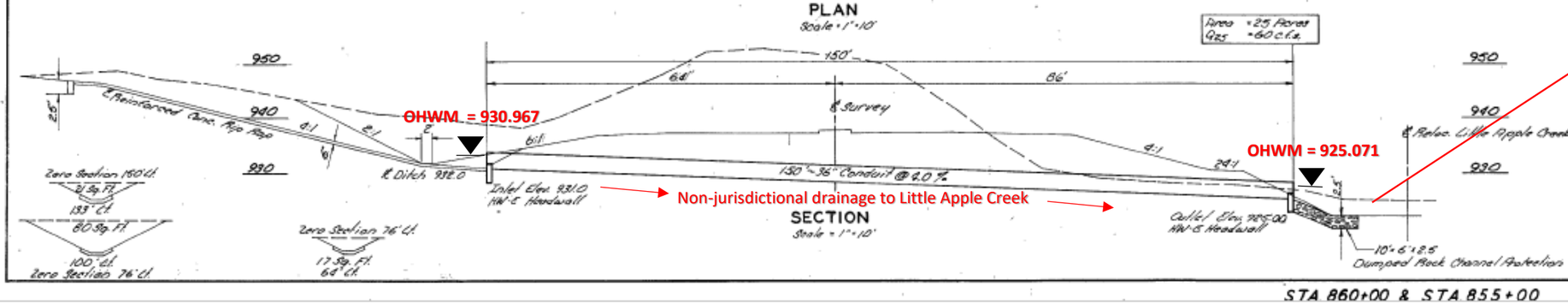
PLAN
Scale: 1" = 10'

CULVERT DATA

TYPE: Conduit
SIZE: 150'-36" Conduit
WORK REQUIRED: Construct Pipe Culvert with HW-E Headwalls (1 @ Rt.) Excavate Inlet & Outlet Channels, Place Dumped Rock Channel Protection & Sodding as shown.
STANDARD DRAWING: HW-E

ESTIMATED QUANTITIES

603-36" Conduit, Type A, 706.02 or 706.08 Cl. "B" Bedding	150 Lin. Ft.
608-Concrete Masonry	1.18 Cu. Yds.
601-Dumped Rock Channel Protection	5.6 Cu. Yds.
209-Excavation (Channel)	111 Cu. Yds.
660-Sodding	12 Sq. Yds.
601-Reinforced Conc. Rip Rap	314 Sq. Yds.

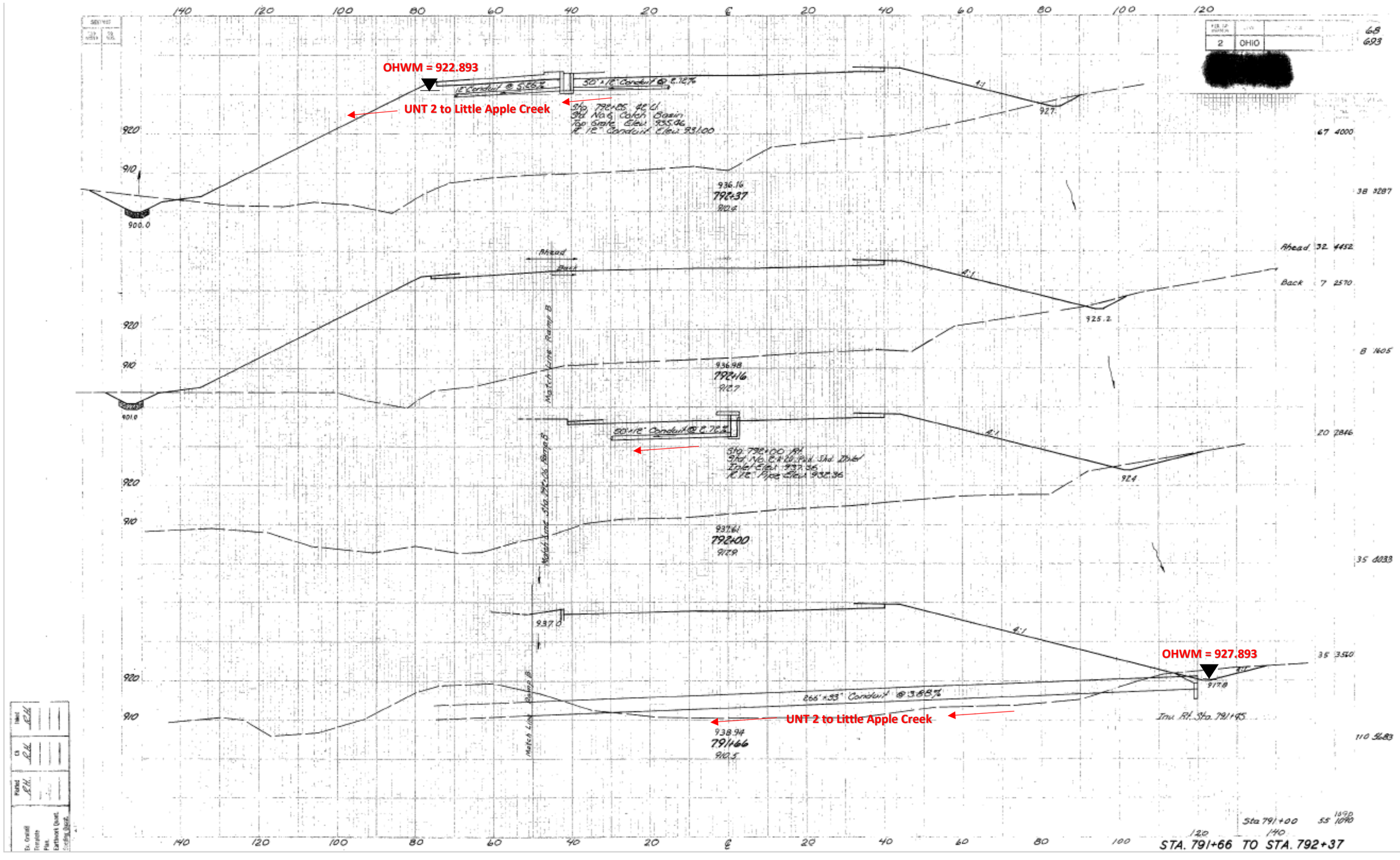


SECTION
Scale: 1" = 10'

STA. 855+00

STA 860+00 & STA 855+00 PIPE CULVERT DETAILS

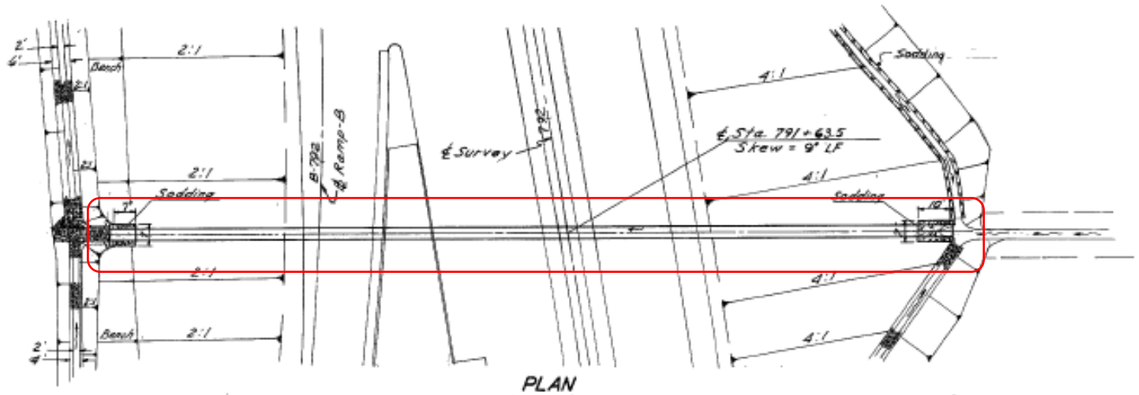
WAY-83-11.23


OHWM = 922.893
UNT 2 to Little Apple Creek
OHWM = 927.893
UNT 2 to Little Apple Creek
STA. 791+66 TO STA. 792+37

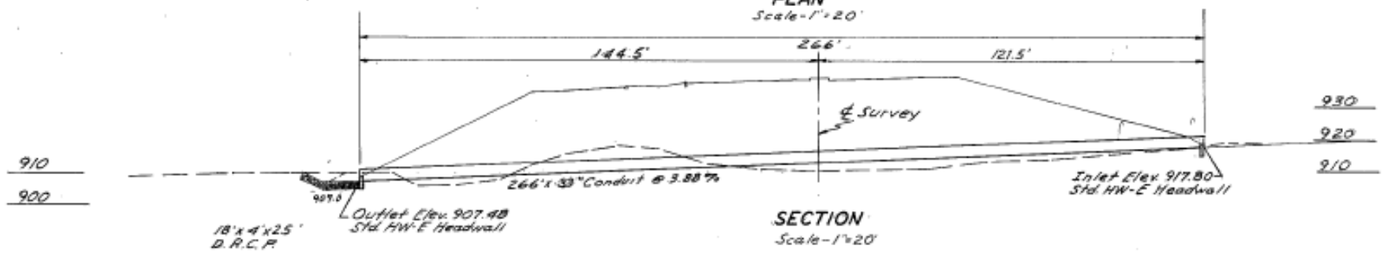
WAY-83-11.23

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	[redacted]	

445
693



PLAN
Scale-1"=20'



SECTION
Scale-1"=20'

CULVERT DATA

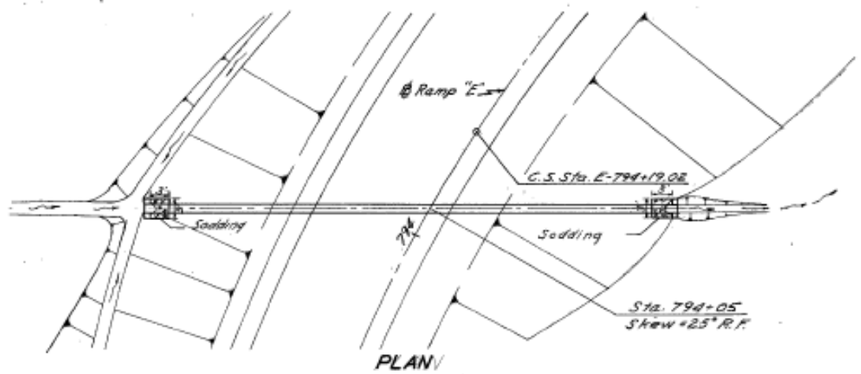
Type: Conduit
Size: 266'x33"
WORK REQUIRED: Construct Culvert With HW-E Headwalls Lt & Rt.
Excavate Inlet & Outlet Channels. Place Sodding & Dumped Rock Channel Protection as Shown
STANDARD DRAWING: HW-E

ESTIMATED QUANTITIES

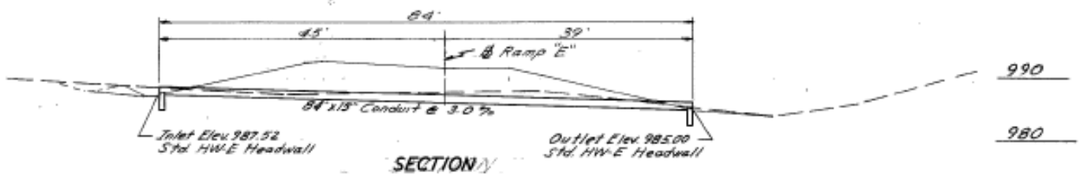
603 - 33" Conduit, Type-A, 706.02 Class II "B" Bedding	266 Lin. Ft.
602 - Concrete Masonry	1.10 Cu. Yds.
203 - Excavation (Channel)	5.0 Cu. Yds.
601 - Dumped Rock Channel Protection	7.1 Cu. Yds.
660 - Sodding	13.0 Sq. Yds.

Area = 2.3 Acres
Qss = 58 c.f.s.

STA. 791+63.5 ℄ SURVEY S.R. 3



PLAN
Scale: 1"=10'



SECTION
Scale: 1"=10'

CULVERT DATA

Type: Conduit
Size: 84"x15"
WORK REQUIRED: Construct Culvert With HW-E Headwalls Lt & Rt.
Excavate Inlet & Outlet Channels. Place Sodding As Shown
STANDARD DRAWING: HW-E

ESTIMATED QUANTITIES

603 - 15" Conduit Type-"A" 706.02 or 706.08 Class "B" Bedding	84' Lin. Ft.
602 - Concrete Masonry	0.52 Cu. Yds.
203 - Excavation (Channel)	5.0 Cu. Yds.
660 - Sodding	2.0 Sq. Yds.

Area = 2 Acres
Qss = 7.6 c.f.s.

STA. 794+05 RAMP "E"

STA. 791+63.5 & STA. E 794+05 PIPE CULVERT DETAILS

Public Notice

U S Army Corps
of Engineers
Huntington District

In reply refer to Public Notice No. 2008-00689-2
Issuance Date: October 24, 2019
Stream: N/A
Closing Date: October 24, 2024

Please address all comments and inquiries to:
U.S. Army Corps of Engineers, Huntington District
ATTN: CELRH-RD-S-OT Public Notice No. (*reference above*)
502 Eighth Street
Huntington, West Virginia 25701-2070
Phone: (304) 399-5710

REGIONAL GENERAL PERMIT FOR THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION (ODOT)

To Whom It May Concern: On February 15, 2019, in accordance with Title 33 CFR 325.5(c)(1) as published on November 13, 1986, in the Federal Register, Volume 51, Number 219, the District Engineer of the Huntington District U.S. Army Corps of Engineers, issued a public notice under Department of Army (DA) number LRH-2008-00689, proposing a Regional General Permit (RGP) for the Ohio Department of Transportation that would authorize certain linear transportation projects pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (CWA).

As of the date of this public notice, the RGP is effective and authorizes activities in waters of the United States (U.S.) including work, structures, and filling (both temporary and permanent) associated with linear transportation projects and the maintenance of existing transportation infrastructure conducted by the Ohio Department of Transportation in the State of Ohio. Categories of activities authorized under the RGP would include (A) certain linear transportation projects, (B) certain maintenance projects, and (C) certain bank stabilization activities. This RGP authorizes activities in such waters except those excluded by the attached general permit conditions.

The Ohio Department of Transportation is responsible for ensuring that projects are in full compliance with all conditions of the permit. The permittee's authorization could be suspended, modified or revoked in accordance with 33 CFR 325.7 if a determination is made by the Corps of Engineers (Corps) that the permittee's request was inaccurate, incomplete, or made in bad faith. Enforcement action may be initiated if such a determination is made.

An integral part of the Corps' regulatory program is the concept of general permits for minor activities. RGPs are activity specific and are designed to relieve some of the administrative burdens associated with permit processing for both the applicant and the Federal government. This RGP is issued by the District Engineer of the Huntington District U.S. Army Corps of Engineers and is intended to apply to the Ohio Department of Transportation throughout the State of Ohio.

Conditions and limitations for the activities authorized by this regional general permit are attached. The permit remains in effect for a period of five years unless modified or rescinded. At the end of five years, a complete re-evaluation will be performed according to regulations governing the use of regional permits.

RGPs are not valid until the appropriate state agency certifies the discharge does not violate state water quality standards. In response to the February 15, 2019 public notice, the Ohio Environmental Protection Agency (Ohio EPA) granted Section 401 Water Quality Certification (WQC) with general and special limitations and conditions for this RGP on October 4, 2019. In addition, by letter dated May 28, 2019, the Ohio Department of Natural Resources-Office of Coastal Management provided conditional concurrence with the Federal Consistency Determination. This conditional concurrence determination is located under the RGP General Condition 34 of the RGP.

If you have any questions concerning this Public Notice or the RGP, please contact Peter Clingan of the South/Transportation Branch by telephone at (614) 692-4659 or by email at peter.m.clingan@usace.army.mil.

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Categories of Activities Covered by the Regional General Permit (RGP): This RGP authorizes activities in waters of the United States (U.S.) including work, structures, and the discharge of fill (both temporary and permanent) associated with linear transportation projects and the maintenance of existing transportation infrastructure conducted by the Ohio Department of Transportation (ODOT) in the State of Ohio. Authorized activities would include the following categories of activities, referred to as RGP A, RGP B, and RGP C.

RGP A - Linear Transportation Projects: Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads and highways) in waters of the U.S. The discharge cannot cause the loss of greater than 1/2 acre of waters of the U.S. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project. Such modifications must be in the immediate vicinity of the project.

Examples of authorized activities include the discharge of fill material or structures into waters of the U.S. associated with new roadway alignments, roadway realignments, construction of roadway embankments and bridge abutments, installation of additional traffic lanes to existing roadways, intersection improvements, new bridges, bike paths, and roadway and railway grade separations.

RGP A also authorizes discharges of fill material into waters of the U.S. associated with temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work and discharges into waters of the U.S., including cofferdams, are necessary for construction activities, access fill, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate. See General Conditions 6 and 13.

Notification: The ODOT must submit a Pre-Construction Notification (PCN) to the District Engineer (DE) prior to commencing the activity:

(1) if the loss of waters of the U.S. exceeds 1/10 acre;

(2) if there is a discharge in a special aquatic site, including wetlands;

(3) if the activity involves the discharge of greater than 25 cubic yards of dredged and/or fill material below the ordinary high water mark of a Section 10 water;

(4) when the total combined discharge of fill material into streams, including temporary discharges, is greater than 300 linear feet for combined ephemeral, intermittent and perennial streams for any single and complete project;

Note 1: The discharge of fill shall be measured linearly from upstream to downstream, including the length of permanent or temporary stream impoundments, when calculating the total length of stream affected.

Note 2: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of RGP authorization.

Note 3: For RGP A activities that require a PCN, the PCN must include any other RGP(s), NWP(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require a PCN. The DE will evaluate the PCN in accordance the DE's Decision section below. The DE may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects.

Note 4: RGP A cannot be used to authorize regulated activities associated with the construction or modification of non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, and construction of staging, borrow, and disposal sites.

RGP B - Maintenance: RGP B authorizes the maintenance of existing transportation infrastructure conducted by the ODOT as follows:

(a) RGP B authorizes the discharge of fill material into waters of the U.S. associated with the repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This RGP also authorizes the removal of previously authorized structures or fill. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. This RGP authorizes the repair, rehabilitation, or replacement of those structures or fill destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes, or tornadoes, this two-year limit may be waived by the DE, provided the ODOT can demonstrate funding, contract, or other similar delays.

(b) Excavation of accumulated sediments and debris does not require authorization from the Corps if there is no subsequent discharge of the dredged material into a water of the U.S., unless

the dredging activity occurs in a Section 10 water. RGP B authorizes the removal of accumulated sediments and debris from Section 10 waters in the vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.). The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend more than 200 feet in any direction from the structure. All dredged or excavated materials must be deposited and retained in an area that has no waters of the U.S. unless otherwise specifically approved by the DE under separate authorization.

(c) The placement of new or additional riprap into waters of the U.S. for maintenance activities must be the minimum necessary to protect the structure or to ensure the safety of the structure. New or additional riprap cannot exceed a total of 600 feet from the structure in either direction (e.g. 100 feet upstream plus 500 feet downstream from the structure). Any bank stabilization measures not directly associated with the structure will require a separate authorization from the DE.

(d) RGP B also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills within waters of the U.S. must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After conducting the maintenance activity, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate. See General Conditions 6 and 13. Bridge demolition debris may be used for temporary work/access pads provided it is composed of suitable material.

(e) This RGP does not authorize new stream channelization or stream relocation projects.

Note: This RGP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

Notification: The ODOT must submit a PCN to the DE prior to commencing if:

(1) the activity involves the discharge of greater than 25 cubic yards of dredged and/or fill material below the ordinary high water mark of a Section 10 water;

(2) the activity is authorized by paragraph (b) of RGP B. The PCN must include information regarding the original design of the structure and approximate dimensions when built;

(3) the activity requires the use of vertical sheet piling and closed structures in the special habitat waters of Lake Erie (See General Condition 22 - Designated Critical Resource Waters.);

(4) the maximum length of temporary discharges of fill material into perennial and intermittent streams as measured upstream to downstream exceeds 300 feet.

RGP C – Bank Stabilization: Bank stabilization activities necessary for erosion control or prevention, such as vegetative stabilization, bioengineering, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of bank stabilization techniques, provided the activity meets all of the following criteria:

(a) No material is placed in excess of the minimum needed for erosion protection;

(b) The activity is no more than 500 feet in length along the bank, unless the DE waives this criterion by making a written determination concluding that the discharge will result in no more than minimal adverse environmental effects (an exception is for bulkheads – the DE cannot issue a waiver for a bulkhead that is greater than 1,000 feet in length along the bank);

(c) The activity will not exceed an average of one cubic yard per running foot, as measured along the length of the treated bank, below the plane of the ordinary high water mark or the high tide line, unless the DE waives this criterion by making a written determination concluding that the discharge will result in no more than minimal adverse environmental effects;

(d) The activity does not involve discharges of dredged or fill material into special aquatic sites, unless the DE waives this criterion by making a written determination concluding that the discharge will result in no more than minimal adverse environmental effects;

(e) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S.;

(f) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas);

(g) Native plants appropriate for current site conditions must be used for bioengineering or vegetative bank stabilization;

(h) The activity is not a stream channelization activity; and

(i) The activity must be properly maintained, which may require repairing it after severe storms or erosion events. This RGP authorizes those maintenance and repair activities if they require authorization.

RGP C also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the bank stabilization activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows.

After construction, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. See General Conditions 6 and 13, and Note 3 below.

Notification: The ODOT must submit a PCN to the DE prior to commencing if:

(1) the activity involves discharges into special aquatic sites;

(2) the activity is in excess of 500 feet in length;

(3) the activity will involve the discharge of greater than an average of one cubic yard per running foot as measured along the length of the treated bank, below the plane of the ordinary high water mark or the high tide line;

(4) the activity involves the discharge of greater than 25 cubic yards of dredged and/or fill material below the ordinary high water mark of a Section 10 water;

(5) the activity is located in Lake Erie, Sandusky Bay, or Maumee Bay and involves the discharge of greater than 10 cubic yards of dredge and/or fill material below the ordinary high water mark;

(6) the activity involves the use of any permanent vertical bulkhead in Lake Erie, Sandusky Bay, and Maumee Bay. [A vertical bulkhead is defined as any structure, or fill, with a vertical face. It may be constructed of timber, steel, concrete, etc.];

(7) if the activity is located in Lake Erie, Sandusky Bay, and Maumee Bay and a waiver of the criteria in Note 2 is being requested.

Note 1: For projects located along the shorelines of Lake Erie, Sandusky Bay, and Maumee Bay, all sand and gravel located below the proposed project, both below and above Ordinary High Water (OHW) mark (573.4 feet IGLD 1985), will be excavated down to clay or bedrock, and side cast into the nearshore area either immediately waterward or downdrift of the project area. Verification of the placement of the excavated material within the nearshore area shall be documented through the submittal of dated photographs and an accompanying photo location map to the DE within 30 days of commencement of the work within these resources.

Note 2: For projects located along the shorelines of Lake Erie, a one-time sand prefill of two (2) cubic yards of sand per linear foot of shoreline stabilized shall be placed at an approved location in the nearshore area in less than three feet of water within 30 days of project commencement, unless the DE waives this requirement by making a written determination. Verification of the placement of the sand prefill material within the nearshore area shall be documented through the submittal of contractor's receipts, including the volume of sand prefill, dated photographs, and accompanying photo location map to the DE. The sand shall be from an upland source or other approved source and shall be similar in composition to the sand at the project site, free from organic material; limestone sand and top soil are excluded.

Note 3: For bank stabilization projects located in Lake Erie, Sandusky Bay, and Maumee Bay, broken concrete shall not be used as suitable material, unless it is contained within a structure.

Note 4: Proper installation is required for the use of this RGP. This RGP does not authorize material that is dumped from the top of bank resulting in uncontrolled spilling of material over the bank into the waterway.

RGP General Conditions: To qualify for authorization under the RGP, the ODOT must comply with the following General Conditions, as appropriate, in addition to case-specific conditions imposed by the DE for a specific project.

1 . Navigation.
(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the ODOT's expense on authorized facilities in navigable waters of the U.S.

(c) The ODOT understands and agrees that, if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the ODOT will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S.. No claim shall be made against the U.S. on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the U.S. that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged into waters of the U.S. must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Bridge demolition debris may be used for temporary work/access pads provided it is free of exposed re-bar or other steel, and stabilized to prevent erosion.

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows.

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark must be permanently stabilized at the earliest practicable date. The ODOT is encouraged to perform work within waters of the U.S. during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable RGP general conditions, as well as any activity-specific conditions added by the DE to a specific RGP authorization.

15. Single and Complete Project. The activity must be a single and complete project as defined in the definition section of this RGP. RGP A, RGP B, or RGP C cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS)).

A PCN is required for work in components of the National Wild and Scenic River System. The following are components of the **National Wild and Scenic River System:**

Big and Little Darby Creeks (National Wild and Scenic River System):

- Big Darby Creek from Champaign-Union County line downstream to the Conrail railroad trestle and from the confluence with the Little Darby Creek downstream to the Scioto River.
- Little Darby Creek from the Lafayette-Plain City Road bridge downstream to within 0.8 mile from the confluence with Big Darby Creek.
- Total designation is approximately 82 miles

Little Beaver Creek (National Wild and Scenic River System):

- Little Beaver Creek main stem, from the confluence of West Fork with Middle Fork near Williamsport to mouth.
- North Fork from confluence of Brush Run and North Fork to confluence of North Fork with main stem at Fredericktown.
- Middle Fork from vicinity of Co. Rd. 901 (Elkton Road) bridge crossing to confluence of Middle Fork with West Fork near Williamsport.
- West Fork from vicinity of Co. Rd. 914 (Y-Camp Road) bridge crossing east to confluence of West Fork with Middle Fork near Williamsport.
- Total designation is 33 miles

Little Miami (National Wild and Scenic River System)

- Little Miami River - St. Rt. 72 at Clifton to the Ohio River
- Caesar Creek: lower two miles of Caesars Creek.
- Total designation is 94 miles

(b) If a proposed RGP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the ODOT must submit a PCN (see General Condition 28. The DE will coordinate the PCN with the Federal agency with direct management responsibility for that river. The ODOT shall not begin the RGP activity until notified by the DE that the Federal agency with direct management responsibility for that river has determined in writing that the proposed RGP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., NPS, USFS, BLM, USFWS). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No RGP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any RGP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species or a habitat proposed for such designation. No activity is authorized under any RGP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the RGP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the RGP activity and are later in time, but still are reasonably certain to occur.

For most projects authorized under this RGP, it is expected the Federal Highways Administration (FHWA) or the ODOT will act as the lead Federal agency responsible for compliance with Section 7 of the ESA. However, there may also be cases (for State-funded projects) where the Corps may be the lead Federal agency responsible for ESA compliance. Conditions have been included below for either scenario.

(b) *Conditions when FHWA is the Lead Federal Agency:* The FHWA, or the ODOT when administering projects that have been duly assigned under the Memorandum of Understanding (MOU) between FHWA and the ODOT concerning the State of Ohio's participation in the Project Delivery Program pursuant to 23 USC 327 (NEPA Assignment MOU), may be the lead Federal agency with ultimate responsibility to ensure compliance with Section 7 of the ESA. FHWA, or the ODOT acting on behalf of FHWA under the NEPA Assignment MOU, should follow their own procedures for complying with the requirements of Section 7 of the ESA.

PCN requirements when FHWA or the ODOT (under the NEPA Assignment MOU) is the Lead Federal Agency:

i. No PCN is required under General Condition 18 if the lead agency has followed their own procedures to fulfill their obligations under Section 7 of the ESA provided:
    a. the scope of the project has not changed since the determination was made, and
    b. no new species or critical habitat have been federally listed since the determination was made, and
    c. the ODOT complies with conditions and/or commitments resulting from programmatic and/or project-specific ESA consultation.

    In the event the project scope or species listing has changed, the lead agency would be responsible for Section 7 ESA consultation.

ii. If PCN is required under other conditions of this RGP (see Note 1 below), in the PCN the ODOT must provide the DE with the appropriate documentation to demonstrate compliance with the requirements of the ESA. The DE will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA Section 7 consultation may be necessary for the activity. The lead agency is responsible for fulfilling its obligation under Section 7 of the ESA.

(c) *Conditions when the Corps is the Lead Federal Agency*: If the Corps is the lead Federal agency responsible for compliance with the requirements of the ESA:

i. PCN is not required under General Condition 18 (see Note 1 below), provided all of the following conditions apply:
   a. the project has been evaluated under the terms of the *Memorandum of Agreement Among the United States and Wildlife Service, The Ohio Department of Transportation, and the United States Army Corps of Engineers Regarding Implementation of the Transportation Program in Ohio* (MOA), and
   b. the scope of the project has not changed since the evaluation under the MOA, and
   c. no new species or critical habitat have been federally listed since the evaluation under the MOA, and
   d. the ODOT complies with any conditions and/or commitments resulting from the evaluation under the MOA.

ii. PCN Required:
   a. If the project is not evaluated under the MOA described above, or if the project does not qualify for evaluation under the MOA, the ODOT must submit a PCN to the DE if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the DE that the requirements of the ESA have been satisfied and that the activity is authorized.

   For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The DE will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the ODOT of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the ODOT has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the ODOT shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA Section 7 consultation has been completed. If the ODOT has not heard back from the Corps within 45 days, the ODOT must still wait for notification from the Corps.

(d) As a result of consultation with the USFWS, the DE may add species-specific conditions to a specific RGP verification.

(e) Authorization of an activity by an RGP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS, the ESA prohibits any person subject to the jurisdiction of the U.S. to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the ODOT has a valid ESA Section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed RGP activity, the ODOT must provide a copy of that ESA Section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this General Condition. The DE will coordinate with the agency that issued the ESA Section 10(a)(1)(B) permit to determine whether the proposed RGP activity and the associated incidental take were considered in the internal ESA Section 7 consultation conducted for the ESA Section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed RGP activity and the associated incidental take were considered in the internal ESA Section 7 consultation for the ESA Section 10(a)(1)(B) permit, the DE does not need to conduct a separate ESA Section 7 consultation for the proposed RGP activity. The DE will notify the ODOT within 45 days of receipt of a complete PCN whether the ESA Section 10(a)(1)(B) permit covers the proposed RGP activity or whether additional ESA Section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the office of the USFWS or their web page at http://www.fws.gov/ or http://www.fws.gov/ipac .

Note 1: While PCN may not be required under General Condition 18, PCN may be required under other conditions of the RGP. In cases where PCN is required under other conditions of the RGP, the PCN must include the documentation described in General Condition 28.

19. Migratory Birds and Bald and Golden Eagles. The ODOT is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The ODOT is responsible for contacting the appropriate local office of the USFWS to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the DE determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) The FHWA, or the ODOT when administering projects that have been duly assigned under the NEPA Assignment MOU, may be the lead agency with ultimate responsibility to ensure

compliance with Section 106 of the NHPA (Section 106). FHWA, or the ODOT acting on behalf of FHWA under the NEPA Assignment MOU, should follow their own procedures for complying with the requirements of Section 106. If FHWA or the ODOT (under the NEPA Assignment MOU) is the lead Federal agency and if a PCN is required under other conditions of this RGP (see Note 1 below), the PCN must include documentation demonstrating compliance with Section 106. The DE will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under Section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with Section 106.

(c) If FHWA or the ODOT (under the NEPA Assignment MOU) is not the lead Federal agency, the ODOT must submit a PCN to the DE if the RGP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the NRHP, including previously unidentified properties. For such activities, the PCN must state which historic properties might have the potential to be affected by the proposed RGP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing PCNs, the DE will comply with the current procedures for addressing the requirements of Section 106. The DE shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the DE shall determine whether the proposed RGP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the DE determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the DE determines that the activity has the potential to cause effects on historic properties. The DE will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of Section 106: no historic properties affected, no adverse effect, or adverse effect. Where the ODOT has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the ODOT shall not begin the activity until notified by the DE either that the activity has no potential to cause effects to historic properties or that Section 106 consultation has been completed.

(d) If FHWA or the ODOT (under the NEPA Assignment MOU) is not the lead federal agency, the DE will notify the ODOT within 45 days of receipt of a complete PCN whether Section 106 consultation is required. If NHPA section 106 consultation is required, the DE will notify the ODOT that he or she cannot begin the activity until Section 106 consultation is completed. If the ODOT has not heard back from the Corps within 45 days, the ODOT must still wait for notification from the Corps.

(e) The ODOT should be aware that Section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the

requirements of Section 106, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

Note 1: While PCN may not be required under General Condition 20, PCN may be required under other conditions of the RGP. In cases where PCN is required under other conditions of the RGP, the PCN must include the documentation described in General Condition 28.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the DE of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed.

(a) If the FHWA or the ODOT is the lead Federal agency, the ODOT must immediately contact the Corps and the FHWA. The FHWA will be responsible for the Federal, state, and tribal coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the NRHP.

(b) If the Corps is the lead Federal agency, the ODOT must immediately contact the DE. The DE will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the NRHP.

22. Designated Critical Resource Waters.
(a) A PCN is required for any activity proposed in designated critical resource water, including wetlands adjacent to those waters. Discharges of dredged or fill material into waters of the U.S. under RGP A are not authorized for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. The DE may authorize activities under RGP B and RGP C only after it is determined that the impacts to the critical resource waters will be no more than minimal.

(b) Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The DE may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The DE may also designate additional critical resource waters after notice and opportunity for public comment.

A PCN is required for all work in Critical Resource Waters. The following are designated as **Critical Resource Waters**:

- Special habitat waters of Lake Erie including the shoreline, off shore islands, rock outcrops, and adjacent waters within the boundaries defined as 82° 22' 30" West Longitude, 83° 07' 30" West Longitude, 41° 33' 00" North Latitude, and 42°00'00" North Latitude.
- In Ohio, two areas have been designated critical habitat for the piping plover (*Charadrius melodus*) and are defined as areas 0.62 miles inland from normal high water line of a designated water of the U.S. Unit OH-1 extends from the mouth of Sawmill Creek to the western property boundary of Sheldon Marsh State Natural Area, Erie County, encompassing approximately 2.0 miles. Unit OH-2 extends from the eastern boundary line of Headland Dunes Nature Preserve to the western boundary of the Nature Preserve and Headland Dunes State Park, Lake County, encompassing approximately 0.5 mile.
- In Ohio, three areas have been designated critical habitat for the rabbitsfoot mussel (*Quadrula cylindrica cylindrica*). Unit RF26 includes 17.5 rkm (10.9 rmi) of the Walhonding River from the convergence of the Kokosing and Mohican Rivers downstream to Ohio Highway 60 near Warsaw, Coshocton County, Ohio. Unit RF27 includes 33.3 rkm (20.7 rmi) of Little Darby Creek from Ohio Highway 161 near Chuckery, Union County, Ohio, downstream to U.S. Highway 40 near West Jefferson, Madison County, Ohio. Unit RF29 includes 7.7 rkm (4.8 rmi) of Fish Creek from the Indiana and Ohio State line northwest of Edgerton, Ohio, downstream to its confluence with the St. Joseph's River north of Edgerton, Williams County, Ohio.

23. Mitigation. The DE will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation sequencing (avoidance, minimization, compensation for loss of waters of the U.S. and associated functions) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require PCN, unless the DE determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require PCN, the DE may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require PCN, the DE may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if

practicable, through stream rehabilitation, enhancement, or preservation since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for RGP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the DE may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the DE will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the DE may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

1. The ODOT is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the RGPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the DE, the DE may approve the use of permittee-responsible mitigation.

2. The amount of compensatory mitigation required by the DE must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

3. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

4. If permittee-responsible mitigation is the proposed option, the ODOT is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the DE to make the decision on the RGP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the DE before the ODOT begins work in waters of the U.S., unless the DE determines that prior approval of the final mitigation plan is not practicable or not

necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

5. If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

6. Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the RGP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the RGPs. For example, if an RGP has an acreage limit of 1/2-acre, it cannot be used to authorize any RGP activity resulting in the loss of greater than 1/2-acre of waters of the U.S., even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an RGP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the RGPs.

(h) The ODOT may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the ODOT must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the ODOT. For permittee-responsible mitigation, the special conditions of the RGP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the U.S. are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the U.S. that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Case-By-Case Conditions. The activity must comply with any conditions that may have been added by the Division Engineer and with any case specific conditions added by the Corps, by the state in its Section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

25. Use of Multiple Permits. The use of more than one RGP category for a single and complete project is prohibited, except when the acreage loss of waters of the U.S. authorized by the RGPs does not exceed the acreage limit of the RGP category with the highest specified acreage limit. For example, if a road crossing is constructed under RGP A, with associated bank stabilization

authorized by RGP C, the maximum acreage loss of waters of the U.S. for the total project cannot exceed 1/2-acre.

26. Compliance Certification. If the ODOT receives a RGP verification letter from the Corps, the ODOT must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the DE. The Corps will provide the ODOT the certification document with the RGP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the RGP verification, including any general or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the ODOT secured the appropriate number and resource type of credits; and

(c) The signature of the ODOT certifying the completion of the activity and mitigation.

27. Activities Affecting Structures or Works Built by the U.S. If an RGP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the ODOT must submit a PCN (see paragraph (b)(9) of General Condition 28). An activity that requires Section 408 permission is not authorized by an RGP until the appropriate Corps office issues the Section 408 permission to alter, occupy, or use the USACE project, and the DE issues a written RGP verification.

28. Pre-Construction Notification (PCN).
(a) Timing. Where required by the terms of the RGP, the ODOT must notify the DE by submitting a PCN as early as possible. The DE must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the ODOT within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information required to make the PCN complete. As a general rule, the DE will request additional information necessary to make the PCN complete only once. However, if the ODOT does not provide all of the requested information, then the DE will notify the ODOT that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the DE. The ODOT shall not begin the activity until either:

1. The ODOT is notified in writing by the DE that the activity may proceed under the RGP with any special conditions imposed by the DE; or

2. 45 calendar days have passed from the DE's receipt of the complete PCN and the ODOT has not received written notice from the DE. However, if the ODOT was required to

notify the Corps pursuant to General Condition 18 or to notify the Corps pursuant to General Condition 20 the ODOT cannot begin the activity until receiving written notification from the Corps that any consultation required under Section 7 of the ESA (see 33 CFR 330.4(f)) and/or Section 106 of the NHPA (see 33 CFR 330.4(g)) has been completed. If the DE notifies the ODOT in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the ODOT cannot begin the activity until an individual permit has been obtained. Subsequently, the ODOT's right to proceed under the RGP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 325.7.

(b) Contents of PCN: The PCN must be in writing and include the following information:

1. Location of the proposed activity;

2. Identify the specific RGP or RGP(s) the ODOT proposes to use to authorize the proposed activity;

3. A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the RGP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require PCN. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the DE to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the RGP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

4. The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The ODOT may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate.

5. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the ODOT must submit a statement describing how the mitigation requirement will be satisfied or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the ODOT may submit a conceptual or detailed mitigation plan;

6. If any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. See General Condition 18.

a) If FHWA or the ODOT (NEPA Assignment MOU) is the lead Federal agency and a PCN is required, the PCN must provide documentation demonstrating compliance with the ESA;
b) If FHWA/ODOT is not the lead Federal agency, the PCN must include the name(s) of those federally listed endangered or threatened species that might be affected by the proposed RGP activity or utilize the designated critical habitat that may be affected by the proposed RGP activity;

7. If the RGP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. See General Condition 20.

a) If FHWA/ODOT (NEPA Assignment MOU) is the lead federal agency, they have ultimate responsibility to ensure compliance with Section 106 of the NHPA. In such cases where a PCN is required, the ODOT must provide the DE with the appropriate documentation to demonstrate compliance with the requirements of Section 106 of the NHPA.
b) If FHWA/ODOT is not the lead Federal agency, the PCN must state which historic property might be affected by the proposed RGP activity or include a vicinity map indicating the location of the historic property;

8. For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16);

9. For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the PCN must include a statement confirming that the ODOT has submitted a written request for Section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of PCN: The standard individual permit application form or Nationwide Permit PCN form may be used, but the completed application form must clearly indicate that it is an RGP

PCN and must include all of the applicable information required in paragraphs (b)(1) through (9) of this General Condition. A letter containing the required information may also be used. The ODOT may provide electronic files of PCNs and supporting materials.

(d) Agency Coordination: The DE will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the RGPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

For all RGP activities requiring PCN that result in the loss of greater than 1/2-acre of waters of the U.S. and/or when a waiver of any RGP criteria is being requested, the DE will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (USFWS, Ohio Department of Natural Resources (ODNR), Ohio Environmental Protection Agency (OEPA), U.S. Environmental Protection Agency, SHPO). The agencies will then have 10 calendar days from the date the material is transmitted to notify the DE that they intend to provide substantive, site-specific comments. If so contacted by an agency, the DE will wait an additional 15 calendar days before making a decision on the PCN. The DE will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the RGPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The DE will provide no response to the resource agency, except as provided below. The DE will indicate in the administrative record associated with each PCN that the resource agencies' concerns were considered.

29. Fens and Bogs: RGPs shall not authorize any activity which negatively impacts bogs and/or fens.

30. ODNR In-Water Work Exclusion Dates: No work under this RGP may take place during the restricted period of the ODNR, Division of Wildlife Statewide In-Water Work Restrictions unless a waiver is granted by ODNR and the ODOT notifies the DE:

Location	**Restricted Period**
Percid streams a	3/15 - 6/30
Salmonid streams b	9/15 - 6/30
Other streams c	4/15 – 6/30

(a) **Great Miami River** (dam south of New Baltimore to mouth), **Hocking River** (falls at White's Mill to mouth), **Little Miami River** (dam at Waynesville to mouth), **Maumee River** (split dam at Grand Rapids to mouth), **Maumee Bay**, **Muskingum River** (Devola Dam No.2 north of Marietta to mouth), **Ohio Brush Creek** (S.R. 32 bridge to mouth), **Ohio River** (entire reach), **Portage River** (entire reach), **Sandusky River** (first dam to mouth), **Sandusky Bay**, **Scioto River** (S.R. 207 bridge north of Chillicothe to mouth), **Toussaint River** (entire reach).

(b) **Arcola Creek** (entire reach), **Ashtabula River** (Hadlock Rd. to mouth), **Ashtabula**

Harbor, **Aurora Branch** (Chagrin River (RM 0.38 to mouth)), **Big Creek** (Grand River (Girdled Road to mouth)), **Black River** (entire reach), **Chagrin River** (Chagrin Falls to mouth), **Cold Creek** (entire reach), **Conneaut Creek** (entire reach), **Conneaut Harbor**, **Corporation Creek** (Chagrin River (entire reach)), **Cowles Creek** (entire reach), **Ellison Creek** (Grand River (entire reach)), **Euclid Creek** (entire reach), **Grand River** (dam at Harpersfield Covered Bridge Park to mouth), **Fairport Harbor**, **Gulley Brook** (Chagrin River (entire reach)), **Huron River** (East Branch-West Branch confluence to mouth) **Indian Creek** (entire reach), **Kellogg Creek** (Grand River (entire reach)), **Mill Creek** (Grand River (entire reach)), **Paine Creek** (Grand River (Paine Falls to mouth)), **Rocky River** (East Branch-West Branch confluence to mouth), **Smokey Run** (Conneaut Creek (entire reach)), **Turkey Creek** (entire reach), **Vermilion River** (dam at Wakeman upstream of the US 20 & SR 60 bridge to mouth), **Ward Creek** (Chagrin River (entire reach)), **Wheeler Creek** (entire reach), **Whitman Creek** (entire reach).

(c) **Exceptional Warmwater Habitat, Cold Water Habitat, Warmwater Habitat,** or streams with known occurrences of threatened and/or endangered (T&E) species. Includes **Lake Erie & bays** not listed above. Special conditions (such as occurrence of T &E species) may mandate local variation of restrictions.

Note 1: To determine the defined Aquatic Life Habitat designation for a stream and project segment, refer to: www.epa.ohio.gov/dsw/rules/3745_1.aspx

Note 2: This condition does not apply to the ODOT projects that are covered under the "Memorandum of Agreement Between The Ohio Department of Transportation, The Ohio Department of Natural Resources, and The U.S. Fish and Wildlife Service For Interagency Coordination For Projects Which Require Consultation Under the Endangered Species Act, Impact State Listed Species, and/or Modify Jurisdictional Waters 2016 Agreement Number: 19394"

31. Waters of Special Concern: PCN is required for activities in the following resources:

(a) **Category 3 Wetlands**: PCN is required for all temporary or permanent discharges of fill material into Category 3 wetlands as determined through use of the latest approved version of Ohio EPA's Ohio Rapid Assessment Method (ORAM) for wetland evaluation **long form.**

(b) **Ohio Stream Designations**: PCN is required for all temporary or permanent discharges of fill material into Exceptional Warmwater Habitat, Cold Water Habitat, Seasonal Salmonid, or any equivalent designation; or water bodies with an antidegradation category of Superior High Quality Water, Outstanding National Resource Water, or Outstanding State Waters as determined by Ohio EPA, except for activities performed under RGP B. The current list of these streams can be found on the Ohio EPA web-site at: http://www.epa.ohio.gov/dsw/rules/3745_1.aspx. These designations can be found under the aquatic life use of the stream within its basin and under the "Anti-deg Rule #05."

(c) **State Wild and Scenic Rivers**: A PCN is required for all activities in State Wild and Scenic Rivers, which can be found at the following: http://watercraft.ohiodnr.gov/scenicriversmap

32. Oak Openings: A PCN is required for all wetland activities conducted in the Oak Openings Region of Northwest Ohio located in Lucas, Henry, and Fulton counties. For a map of the Oak Openings Region, please contact the ODNR.

33. Water Quality. If the OEPA has not previously certified compliance of an RGP with Section 401 of the Clean Water Act, individual 401 Water Quality Certification (WQC) must be obtained, a Director's Authorization is required from the OEPA or OEPA must state 401 WQC has been waived (see 33 CFR 330.4(c)). The DE or State may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality

34. Ohio Coastal Management Program Federal Consistency Conditions:
(a) This permit shall not authorize any activity within the territory of Lake Erie, including Maumee Bay and Sandusky Bay, as defined in Ohio Revised Code §1506.11(A) or along or near the Ohio shoreline of Lake Erie unless a project-specific Federal Consistency concurrence pursuant to the Coastal Zone Management Act of 1972, as amended, has been issued by the Ohio Department of Natural Resources.

(b) The DE or the ODNR may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

(c) Construction and/or demolition debris and clean hard fill associated with any project authorized under this permit shall not be placed along or near the shoreline of Lake Erie or within the territory of Lake Erie unless authorized by a Shore Structure Permit pursuant to Ohio Revised Code §1506.40.

DE's Decision:

1. In reviewing the PCN for the proposed activity, the DE will determine whether the activity authorized by the RGP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. When the ODOT requests authorization by a specific RGP category, the DE should issue the RGP verification for that activity if it meets the terms and conditions of that RGP category, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse environmental effects and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the RGP(s), as well as the cumulative effects caused by all of the crossings authorized by the RGP and other permits. If the ODOT requests a waiver of any RGP criteria, the DE will only grant the waiver upon a written determination that the RGP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal effects determinations the DE will consider the direct and indirect effects caused by the RGP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by the RGP and other permits whether those cumulative adverse environmental effects are no more than minimal. He or she will also consider site specific factors, such as the environmental setting in the vicinity of the RGP activity, the type of resource that will be affected by the RGP activity, the functions provided by the aquatic resources that will be affected by the RGP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the RGP activity (e.g., partial or complete loss), the duration of the adverse environmental effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the DE. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the DE to assist in the minimal adverse environmental effects determination. The DE may add case-specific special conditions to the RGP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, and/or a loss of 300 linear feet of stream, it is recommended the ODOT submit a mitigation proposal with the PCN. The ODOT may also propose compensatory mitigation for RGP activities projects with smaller impacts, or for impacts to other types of waters (e.g., ditches, ponds, lakes). The DE will consider any proposed compensatory mitigation or other mitigation measures the ODOT has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the DE determines that the activity complies with the terms and conditions of the RGP and that the adverse environmental effects on the aquatic environment are no more than minimal, after considering mitigation, the DE will notify the ODOT and include any activity-specific conditions in the RGP verification the DE deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The DE must approve the final mitigation plan before the ODOT commences work in waters of the U.S., unless the DE determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the ODOT elects to submit a compensatory mitigation plan with the PCN, the DE will expeditiously review the proposed compensatory mitigation plan. The DE must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the RGP activity results in no more than minimal adverse effects environmental effects on the aquatic environment. If the net adverse environmental effects of the RGP activity project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the DE to be no more than minimal, the DE will provide a timely written response to the ODOT. The response will state that the RGP activity project can proceed under the terms and conditions of the RGP, including any activity-specific conditions added to the RGP authorization by the DE.

4. If the DE determines that the adverse environmental effects of the proposed activity work are more than minimal, then the DE will notify the ODOT either: (a) That the activity

project does not qualify for authorization under the RGP and instruct the ODOT on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the RGP subject to the ODOT's submission of a mitigation plan that would reduce the adverse environmental effects on the aquatic environment to the so that they are not more than minimal level; or (c) that the activity project is authorized under the RGP with specific modifications or conditions. Where the DE determines that mitigation is required to ensure no more than minimal adverse environmental effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with General Conditions 18, 20, 27, and/or 34), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the ODOT submit a mitigation plan that would reduce the adverse environmental effects on the aquatic environment to the so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the U.S. may occur until the DE has approved a specific mitigation plan.

Further Information:

A. Congressional Authorities: Proposed activities under this RGP would be authorized under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

B. Limits of this authorization:

(1) DEs have authority to determine if an activity complies with the terms and conditions of an RGP.
(2) This RGP does not obviate the need to obtain other Federal, state, or local authorizations required by law
(3) This RGP does not grant any property rights or exclusive privileges.
(4) This RGP does not authorize any injury to the property or rights of others.
(5) This RGP does not authorize interference with any existing or proposed Federal project (see General Condition 27).

C. Limits of Federal Liability: In issuing this RGP, the Federal Government does not assume any liability for the following:

(1) Damages to the permitted project or uses hereof as a result of other permitted or unpermitted activities or from natural causes.
(2) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest.
(3) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
(4) Design or construction deficiencies associated with the permitted work.
(5) Damage claims associated with any future modification, suspension, or revocation of this permit.

D. Reevaluation of Permit Decision: Should circumstances warrant, this office may reevaluate its decision on the RGP. Circumstances that could require reevaluation include but are not limited to the following:

(1) Failure to comply with the terms and conditions of this RGP.
(2) If information provided in support of the project description is false, incomplete, or inaccurate.
(3) Significant new information surfaces which was not considered in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring compliance with the terms and conditions of the permit and for the initiation of legal action where appropriate. The ODOT would be required to pay for any corrective measures ordered by this office, and for failure to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contact or otherwise and bill the ODOT for the costs. In addition, unpermitted work or violation of permit conditions may result in civil, criminal or administrative penalties (33 U.S.C. 1319 c, d, and g.).

Definitions:

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the U.S.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the U.S.: Waters of the U.S. that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the U.S. is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an RGP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the U.S. temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the U.S. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the U.S.

Navigable waters: Waters subject to Section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the RGP, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark (OHWM): An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by the RGP. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. PCN may be required by the terms and conditions of an RGP, or by regional conditions. A PCN may be voluntarily submitted in cases where PCN is not required and the project proponent wants confirmation that the activity is authorized by an RGP.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Protected tribal resources: Those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See General Condition 23.)

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of RGP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in the RGP authorization.

Special Aquatic Sites: Those sites identified in 40 CFR Part 230, subpart E.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the U.S.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Suitable Material: Clean, non-erodible materials including hard fill that is free of toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Trash, debris, car bodies, and asphalt are examples of unsuitable material. However, bridge demolition debris may be used for temporary work/access pads provided it is composed of suitable material, free of exposed re-bar or other steel, and stabilized to prevent erosion.

Temporary: A finite period of time limited to the duration of the construction or maintenance of a transportation project, but never to exceed 2 years.

Tribal lands: Any lands title to which is either: 1) held in trust by the U.S. for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the U.S. against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have

rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the RGP, a waterbody is a jurisdictional water of the U.S. If a wetland is adjacent to a waterbody determined to be a water of the U.S., that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

Certified Mail

Re: ODOT-RGP 2019
Permit - Intermediate
Approval
401 Wetlands
Statewide
DSW401196196

October 4, 2019

Sam Wilson Date: 10/4/19

The Chief of Engineers
HQUSACE
Attn: CECW-OR
Washington, D.C.20314-1000

Re : All Counties, Cities, and Townships in Ohio
Grant of 401 Water Quality Certification for Regional General Permit (RGP) for Ohio Department of Transportation (ODOT)
Authorization of discharge of dredged or fill material to various waters of the State for the Regional General Permit
Ohio EPA ID No. 196196

Dear Stakeholders:

Pursuant to Section 401 of the Federal Water Pollution Control Act, 33 U.S.C. section 1341; Ohio Revised Code chapters 119 and 6111; and Ohio Administrative Code chapters 3745-1, 3745-32 and 3745-49, I hereby certify that the RGP described herein will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act. This certification is specifically limited to section 401 water quality certifications with respect to water pollution and do not relieve ODOT of further certifications or permits as may be necessary under applicable state and federal laws and/or local ordinances.

I have determined that any lowering of water quality in various waters of the state as authorized by these certifications is necessary. I have considered the technical, social and economic factors concerning these applications and their impact on waters of the state. These certifications are issued for impacts to waters of the state that may occur pursuant to activities authorized by the RGP, Sections A and B, as listed below, provided the specified certification conditions are satisfied.

RGP Sections:
Section A, Linear Transportation Projects
Section B, Maintenance
Section C, Bank Stabilization

PART ONE: GENERAL LIMITATIONS AND CONDITIONS FOR THE ODOT RGP

A. CULVERTS

For intermittent and perennial streams:

1. When practicable, bottomless or buried culverts are required when culvert size is greater than 36" in diameter. This condition does not apply if the culverts have a gradient of greater than 1% grade or installed on bedrock. A buried culvert means that the bottom 10% by dimension shall be buried below the existing stream bed elevation.

2. The culvert shall be designed and sized to accommodate bankfull discharge and match the existing depth of flow to facilitate the passage of aquatic organisms.

3. When practicable, culverts shall be installed at the existing streambed slope, to allow for the natural movement of bedload and aquatic organisms.

B. BEST MANAGEMENT PRACTICES

1. Unless subject to a more specific storm water National Pollutant Discharge Elimination System (NPDES) permit, all best management practices for storm water management shall be designed and implemented in accordance with the most current edition of the NPDES construction general permit available at: http://www.epa.ohio.gov/dsw/storm/index.aspx, or any watershed specific construction general permit.

2. Sediment and erosion control measures and best management practices must be designed, installed, and maintained in effective operating condition at all times during construction activities as required by applicable NPDES permits. Proper maintenance ensures corrective measures will be implemented for failed controls within 72 hours of discovery.

3. For perennial and intermittent streams, in-stream sediment control measures shall not be utilized, with the exception of turbidity curtains , for the purpose of sediment collection. All sediment and erosion control measures shall be entirely removed and the natural grade of the site restored once construction is completed.

4. All avoided water resources and associated buffers/riparian areas shall be demarcated in the field and protected with suitable materials (e.g., silt fencing, snow fencing, signage, etc.) prior to site disturbance. These materials shall remain in place and be maintained throughout the construction process and shall be entirely removed once construction is completed.

5. Disturbance and removal of vegetation from the project construction area is to be avoided where possible and minimized to the maximum extent practicable. Entry to surface waters shall be through a single point of access to the maximum extent practicable to minimize disturbance to riparian habitat. Unavoidable temporary impacts to forested riparian habitat shall be restored as soon as practicable after in-water work is complete using tree and shrub species native to the specific ecoregion where the project is located.

6. All dredged material placed at an upland site shall be controlled so that sediment runoff to adjacent surface waters is minimized to the maximum extent practicable.

7. Straw bales shall not be used as a form of sediment control unless used in conjunction with another structural control such as silt fencing. Straw bales may be utilized for purposes of erosion control such as ditch checks.

8. Heavy equipment shall not be placed below the ordinary high water mark of any surface water, except when no other alternative is practicable.

9. Temporary fill for purposes of access or staging shall consist of suitable non-erodible material and shall be maintained to minimize erosion.

10. Chromated copper arsenate (CCA) and creosote treated lumber shall not be used in structures that come into contact with waters of the state.

11. All dewatering activities must be conducted in such a manner that does NOT result in a violation of water quality standards.

12. All areas of final grade must be protected from erosion within seven days. All areas of final grade within 50 feet of a surface water of the state must be protected from erosion within two days.

13. All disturbed areas which remain dormant in excess of fourteen days must be protected from erosion within seven days from the last earth disturbing activity. All areas within 50 feet of a surface water of the state must be protected from erosion within two days.

14. In the event of authorized in-stream activities, provisions must be established to redirect the stream flow around or through active areas of construction in a stabilized, non-erosive manner to the maximum extent practicable.

C. MITIGATION

1. Compensatory mitigation is required for the discharge of dredged or fill material into wetlands for permanent impacts exceeding 0.1 acres. Impacts to Category 3 wetlands are not considered temporary.

2. When required, compensatory mitigation shall be provided in accordance with chapters 3745-1 and 3745-32 of the Ohio Administrative Code.

3. When compensatory mitigation will be provided wholly or in part at a mitigation bank, credit purchase shall only be authorized at those banks approved by the interagency review team and having an active instrument signed by the director of Ohio EPA.

4. Compensatory mitigation projects for stream impacts shall result in the preservation, restoration, or enhancement of stream habitat and/or biological functions.

D. DIRECTOR'S AUTHORIZATION

1. In accordance with the procedures outlined in Appendix A, Ohio EPA may grant coverage under this certification for any project that does not meet one or more of the terms and conditions for eligibility of this certification or where the district engineer has been granted authority to waive certain requirements. Coverage may be granted when Ohio EPA determines, consistent with the special limitations and conditions for each certification, and after considering comments received on the requested director's authorization, that a project will have such a minimal impact on water quality that an individual 401 WQC is not necessary provided all other terms and conditions of this certification have been met. If a director's authorization is not granted, an individual 401 WQC must be obtained. In no case may a director's authorization issued under this certification exceed an impact threshold authorized by the Corps' Regional General Permit.

E. MISCELLANEOUS

1. RGP sections cannot be combined to increase any of the special or general limitations and conditions of this certification.

2. Any waiver granted by the district engineer will require individual state water quality certification from Ohio EPA.

3. Authorization under this certification does not relieve the permittee from the responsibility of obtaining any other federal, state or local permits, approvals or authorizations.

4. In the event that the issuance of an RGP by the Corps requires individual state water quality certification for an activity that constitutes an emergency as defined in 33 CFR 325.2(e)(4), the limitation and/or condition requiring the individual water quality certification is not applicable and the project may proceed upon approval by the Corps provided all other terms of this certification, including mitigation, have been met.

5. Representatives from Ohio EPA, Division of Surface Water will be allowed to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of this certification. This includes, but is not limited to, access to and copies of any records that must be kept under the conditions of this certification; and, authorization to sample and/or monitor any discharge activity or mitigation site. Ohio EPA will make a reasonable attempt to notify the applicant of its intention to inspect the site in advance of that inspection.

6. Impacts as referenced in this certification consist of waters of the state directly impacted by the placement of fill or dredged material.

7. Unless otherwise specifically addressed in a general certification, an applicant proposing to impact a stream that does not have an aquatic life use designation pursuant to Admin. Code Chapter 3745-1 shall perform a qualitative assessment of the physical and biological characteristics of the stream necessary to determine its existing use to demonstrate eligibility for coverage under the specific Ohio certification requested.

8. In accordance with the procedures outlined in Appendix B, and where specifically required in the special limitations and conditions of this certification, an applicant proposing to impact a wetland shall perform a wetland characterization analysis consistent with the Ohio Rapid Assessment Method (ORAM) to demonstrate wetland category for all projects requiring a PCN to the Corps.

PART TWO: SPECIAL LIMITATIONS AND CONDITIONS FOR THE ODOT RGP

A. Section A (Linear transportation projects)

1. Ohio state certification general limitations and conditions apply to this RGP section.

2. Temporary or permanent impacts as a result of stream crossings shall not exceed a total of three per stream mile per stream.

3. For an individual stream, while the repair or replacement of an existing culvert of any length is not limited by this certification, any culvert extension shall not exceed 300 linear feet.

4. Individual state water quality certification is required for use of this RGP section when temporary or permanent impacts are proposed on or in the following waters:

   a. category 1 and category 2 wetlands when impacts exceed 0.5 acres per crossing;

   b. streams that meet or have an aquatic life use designation of exceptional warmwater habitat, cold water habitat or seasonal salmonid;

   c. streams with an antidegradation category of superior high quality water, outstanding national resource water or outstanding state water;

   d. state wild and scenic rivers;

   e. national wild and scenic rivers; and

   f. general high quality water bodies which harbor federally and state listed threatened or endangered aquatic species.

5. Temporary or permanent impacts to category 3 wetlands are limited to less than 0.1 acres for activities involving the repair, maintenance, replacement, or safety upgrades to existing infrastructure that meets the definition of public need. Ohio EPA will make the determination if a project meets public need during the ORAM verification process.

B. Section B (Maintenance)

1. Ohio state certification general limitations and conditions apply to this RGP section.

2. Temporary or permanent impacts to category 3 wetlands are limited to less than 0.1 acres for activities involving the repair, maintenance, replacement, or safety upgrades to existing infrastructure that meets the definition of public need. Ohio EPA will make the determination if a project meets public need during the ORAM verification process.

3. Temporary or permanent impacts to category 1 and category 2 wetlands are limited to 0.5 acres.

4. This certification does not authorize the replacement of existing structures that are open to the flow of water with structures that are not open to the flow of water.

5. For an individual stream, while the repair or replacement of an existing culvert of any length is not limited by this certification, any culvert extension shall not exceed 300 linear feet.

6. Replacement vertical bulkheads shall not be placed more than one foot waterward of the ordinary high water mark of the water body. For vertical bulkheads on Lake Erie, toe stone shall be placed at the base of the vertical bulkhead except in areas where the original shoreline is composed of bedrock and slopes are predominantly greater than 75 percent or where the placement of toe stone will interfere with shipping activity. When required, toe stone shall be placed at an average rate of one-third the total height of the exposed face of the vertical bulkhead at a 2:1 slope.

7. Removal of accumulated sediment shall occur only once per year and shall be limited to low-flow conditions, except in cases of emergency situations that threaten life or property.

8. For projects which involve temporary impacts to wetlands: upon the cessation of earth moving activities, any hydric topsoil removed from a wetland shall be separated and saved for later placement as the topmost backfill layer when the wetland is restored to grade.

C. (Bank Stabilization)

1. Ohio state certification general limitations and conditions apply to this regional general permit.

2. Individual 401 WQC is required for use of this regional general permit when temporary or permanent impacts are proposed on or in any of the following waters:

   a. category 3 wetlands;

   b. category 1 and category 2 wetlands when impacts exceed 0.50 acres;

   c. streams that meet or have an aquatic life use designation of exceptional warmwater habitat, cold water habitat or seasonal salmonid

   d. streams with an antidegradation category of superior high quality water, outstanding national resource water or outstanding state water.

   e. state wild and scenic rivers;

   f. national wild and scenic rivers; and

   g. general high quality water bodies which harbor federally and state listed threatened or endangered aquatic species.

   h. all other streams and lake shorelines when the activity exceeds 500 linear feet along the bank or shoreline.

3. Bioengineering techniques shall be utilized when practicable.

4. Material used for bank stabilization shall be free from toxic contaminants in other than trace quantities, free of exposed rebar, and free of asphalt, tires, and debris.

5. Material used for bank stabilization may consist of rock, stone, vegetative erosion control measures, broken concrete rubble, and clean soil.

6. Vertical bulkheads shall not be placed more than one foot waterward of the ordinary high water mark of the water body. For vertical bulkheads on Lake Erie, toe stone shall be placed at the base of the vertical bulkhead except in areas where the original shoreline is composed of bedrock and slopes are predominantly greater than 75 percent or where the placement of toe stone will interfere with shipping activity. When required, toe stone shall be placed at an average rate of one-third the total height of the exposed face of the vertical bulkhead at a 2:1 slope.

You are hereby notified that this action of the director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within 30 days after notice of the director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the director within three days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, Ohio 43215

Sincerely,

Laurie A. Stevenson
Director

ec: Mark Scalabrino, Mark.W.Scalabrino@usace.army.mil, Department of the Army, Buffalo District, Corps of Engineers
Susan Porter, Susan.A.Porter@usace.army.mil, Department of the Army, Huntington District, Corps of Engineers
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Tyler Bintrim, Tyler.J.Bintrim@usace.army.mil, Department of the Army, Pittsburgh District, Corps of Engineers
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Brandon Beck, Brandon.Beck@epa.ohio.gov, Ohio EPA, DSW, Section 401/IWP

Appendix A
Director's Authorization Process

1. To apply for a director's authorization for coverage under this certification, the applicant must provide to Ohio EPA the following:

   a. A completed Director's Authorization Request Form available on the "Director's Authorization" tab located at: http://www.epa.ohio.gov/dsw/401/permitting.aspx;

   b. A copy of the pre-construction notification submitted to the Corps including all attachments;

   c. A copy of the provisional RGP authorization letter issued by the Corps including all attachments and special conditions, if any;

   d. A copy of the mitigation plan as approved by the Corps, if applicable;

   e. A detailed description of the conditions within this certification that are not being met;

   f. A detailed description of any RGP terms and conditions, including impact limits that the Corps district engineer has waived for the project, if applicable;

   g. A rationale of how the applicant believes the project will minimally impact water quality for those impacts to resources that do not meet one or more of the terms and conditions within this certification, including reason(s) why the resources are unable to be avoided;

   h. Comments received from the Ohio Department of Natural Resources and United States Fish and Wildlife Service regarding threatened and endangered species or comments from an applicant that has been authorized by these entities to make threatened and endangered species determinations;

   i. A detailed description of how the project meets public need, as defined in OAC 3745-1-50, for impacts to category 3 wetlands;

   j. Documentation as required under Appendix B and General Condition E.6;

   k. Any other documentation as may be required under this certification.

2. Upon receipt of the director's authorization request containing items a. through k. outlined above, excluding item c., the director will post the materials on the Ohio EPA, DSW webpage and invite public comment on the request for 15 days. The director will review and consider the comments received during the public comment period before making a decision on the director's authorization.

Appendix B
ORAM Verification Process

The ORAM results shall be included with the pre-construction notification (PCN).

For each wetland proposed for impact the applicant must provide the following information for review in accordance with the ORAM verification procedure:

a. Complete ORAM forms prepared in accordance with the current ORAM manual;

b. Wetland delineation prepared in accordance with the current method required by the Corps;

c. A minimum of four high resolution color photographs taken while facing each of the four cardinal directions of each wetland proposed for impact. Photographs must accurately depict the quality of the wetland and may not include a majority of dying or dead vegetation or excessive cover due to seasonal conditions that vegetation and substrates cannot be observed, such as leaf litter, snow, or ice. Photographs deemed to be insufficient of representing the wetland will be required to be retaken once seasonal conditions are appropriate. Photographs shall be clearly labeled with the wetland name, direction, and date;

d. USGS topographical map, National Wetlands Inventory map, Soil Survey map and aerial images (both historical and current) which clearly outline the entire wetland boundary;

e. Coordination letter from the Ohio Department of Natural Resources (ODNR), Natural Heritage Database indicating the presence or absence of state listed threatened or endangered species or comments from an applicant that has been authorized by ODNR to make threatened and endangered species determinations; and

f. A detailed description of how the project meets public need, as defined in OAC 3745-1-50, for impacts to category 3 wetlands.

Attachments: Response to Comments

Ohio EPA has developed a customer service survey to get feedback from regulated entities that have contacted Ohio EPA for regulatory assistance, or worked with the Agency to obtain a permit, license or other authorization. Ohio EPA's goal is to provide our customers with the best possible customer service, and your feedback is important to us in meeting this goal. Please take a few minutes to complete this survey and share your experience with us at http://www.surveymonkey.com/s/ohioepacustomersurvey.

ATTACHMENT 1
ODOT Regional General Permit
Ohio EPA Project #196196
Response to Comments

Ohio Environmental Protection Agency

Division of Surface Water
Response to Comments

Project: ODOT 2019 Regional General Permit State Water Quality Certification Reissuance
Ohio EPA ID #: 196196

Agency Contacts for this Project

Division Contact: Brandon Beck, Division of Surface Water, (614) 644-2259, Brandon.Beck@epa.ohio.gov

Public Involvement Coordinator: Jessica Johnson, Public Interest Center, (614) 644-2160, Jessica.Johnson@epa.ohio.gov

Ohio EPA held a public comment period and hosted a public hearing on June 12, 2019, regarding the reissuance of the statewide Regional General Permit (RGP) for the Ohio Department of Transportation (ODOT). This document summarizes the comments and questions received during the associated comment period, which ended on June 19, 2019.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, questions are grouped by topic and organized in a consistent format.

Written comments were received from the Friends of the Lower Olentangy Watershed (FLOW). It should be noted that many of the comments were directed towards conditions listed in the U.S. Army Corps of Engineers' (USACE) RGP and may be best addressed by the USACE.

General Comments

Comment 1: **It appears that this RGP would bypass the watershed ineligibility GIS analysis required by Ohio EPA in the already authorized Nationwide Permit 14.**

Response 1: It was determined that the stream eligibility process would not be part of the RGP, which is consistent with the 2014 RGP. Streams will be regulated by aquatic life use designations and antidegradation categories.

Comment 2: **This RGP would allow more than 3 temporary or permanent stream crossings per stream mile. It would also allow culvert extensions that exceed 300 feet. The RGP also does not protect state-listed threatened and endangered species.**

Response 2: Consistent with the 2017 Nationwides, Ohio EPA has imposed a condition on Linear Transportation projects that limits the number of stream crossings per stream mile to three. Culvert extensions are limited to no more than 300 linear feet for Linear Transportation and Maintenance projects. Ohio EPA has imposed a condition on RGP A – Linear Transportation and RGP C – Bank Stabilization projects requiring an Individual 401 Water Quality Certification (WQC) for projects that impact general high quality water bodies which harbor federally and state-listed threatened or endangered aquatic species. ODOT coordinates projects that have the potential to impact state-listed species with the Ohio Department of Natural Resources (ODNR).

RGP A – Linear Transportation Projects

Comment 3: **Doesn't the Corps have a written procedure on how to size material for the range of flows that they will likely experience in the river?**

Response 3: The comment is specific to the USACE condition and would best be addressed by the USACE.

Comment 4: **Why is mining equipment needed?**

Response 4: No mining will take place under the RGP.

Comment 5: **FLOW objects to the language that states the "District Engineer may require mitigation to ensure that the authorized activity results in minimal individual and cumulative adverse environmental effects". FLOW requests that the language be changed to "shall require".**

Response 5: The USACE will determine when mitigation is necessary. RGP General Condition 23 lists the factors that the USACE considers when determining when mitigation is necessary. Ohio EPA requires that mitigation, when necessary, be provided in accordance with chapters 3745-1 and 3745-32 of the Ohio Administrative Code (OAC).

Comment 6: **For non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, construction of staging, borrow, and disposal sites, how is the evaluation of these projects covered?**

Response 6: Non-linear features, including but not limited to parking lots and staging areas, are not covered under the RGP. They would require a separate permit application and permitting mechanism. This is typically the responsibility of the contractor to secure the appropriate authorization.

RGP B – Maintenance Projects

Comment 7: **FLOW is concerned about the dredging of an unlimited amount of material and its deposition in "an area that has no waters of the United States". In light of the federal proposal to eliminate the protection of ephemeral streams and the fact that this does not prevent placement in isolated wetlands, which are not considered waters of the United States, FLOW requests that this language be eliminated.**

Response 7: The placement of dredge or fill material into waters of the state, which include non-jurisdictional wetlands and ephemeral streams, is regulated by Ohio EPA and would require a separate permit authorization. Dredging activities are beyond the scope of Ohio EPA's regulatory authority under Ohio Revised Code (ORC) section 6111.30 and OAC sections 3745-1-05 and 3745-32-05.

Comment 8: **FLOW is especially concerned about maintenance permits due to the extensive work that ODOT has done along State Route 315 in the Olentangy River, which is an Exceptional Warmwater Habitat stream in some reaches. Another maintenance project to install plug pile walls is proposed. This project proposes the clearing of**

over 1,500 feet of mature riparian trees without mitigation.

Response 8: While Ohio EPA has the authority to require mitigation for certain impacts to aquatic resources, we do not have the authority to require mitigation for the clearing of upland forested areas. Ohio EPA has imposed a condition on the RGP that requires temporarily impacted forested riparian areas to be restored as soon as practicable after in-water work has been completed using native tree and shrub species.

Comment 9: **The maximum length of temporary discharge into perennial and intermittent streams is 300 feet before a pre-construction notification (PCN) to the USACE is required. This width of cofferdams or crossings seems extensive.**

Response 9: This USACE condition is referring to the upstream to downstream length of temporary discharge into perennial and intermittent streams, not the width.

RGP C – Bank Stabilization

Comment 10: **Doesn't the USACE have a process to evaluate how much material is needed for erosion protection?**

Response 10: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 11: **FLOW requests an example of an evaluation that the District Engineer has done to justify waiving certain criterion.**

Response 11: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 12: **Is there a USACE evaluation that discerns when bank riprap is appropriate, as opposed to streams barbs or vanes?**

Response 12: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 13: **FLOW requests an engineering example of how the USACE evaluates what amount of fill per running foot does not exceed one cubic yard.**

Response 13: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 14: **The language requiring repair after severe storms is vague. It would be helpful if there was an engineering requirement that addresses flow. This same paragraph refers to temporary material being placed in a manner that will not be eroded by expected high flows. FLOW requests that clear engineering requirement language be included.**

Response 14: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 15: **FLOW is concerned with the vague language that says, "The affected areas will be revegetated as appropriate". FLOW requests that this language be expanded to provide clear expectations regarding the percentage of vegetation needed. What is the timeline for revegetation?**

Response 15: Ohio EPA has imposed a condition on the RGP that requires all areas of final grade to be protected from erosion within seven days. All disturbed areas which will remain dormant for more than fourteen days must be protected from erosion within seven days from the last earth disturbing activity. All areas within 50 feet of a surface water of the state must be protected from erosion within two days. These conditions are consistent with Ohio EPA's construction general permit.

Comment 16: **FLOW requests that a PCN to the USACE for use of RGP C be required when the activity involves discharges into special aquatic sites, designated critical resource waters, fens and bogs, waters of special concern, oak openings, and Lake Erie per the Ohio Coastal Management Program Federal Consistency Conditions**

Response 16: The comment is specific to the USACE's condition and would best be addressed by the USACE. USACE conditions for the listed waters are cited in the RGP.

Comment 17: **What engineering determination is made that would allow the District Engineer to waive the requirement of two cubic yards of sand prefill per linear foot of shoreline? Other than upland sand, please clarify what "other approved sources" of sand for Lake Erie prefill exists.**

Response 17: The comment is specific to the USACE's condition and would best be addressed by the USACE.

RGP General Conditions

Comment 18: **The language stating that "No activity may cause more than a minimal adverse effect on navigation" is vague. How is this determined? Does this also apply to recreational navigation?**

Response 18: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 19: **RGP General Condition 3 (Spawning Areas) should make reference to General Condition 30 (ODNR In-Water Work Exclusion Dates).**

Response 19: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 20: **RGP General Condition 4 (Migratory Bird Breeding Areas) and General Condition 5 (Shellfish Beds) should be expanded to clarify the source of where these areas are or how they are determined.**

Response 20: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 21: **RGP General Condition 7 (Water Supply Intakes). This language is vague. How far does work have to be removed from a public water intake before it can be authorized under this permit?**

Response 21: No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization. The RGP, as proposed by the USACE, was coordinated with Ohio EPA's Division of Drinking and Ground Waters (DDAGW) for their review.

DDAGW evaluates the proposed activity, the anticipated impacts, and the waterbody being impacted in determining when continued coordination is warranted. ODOT is aware of the locations of water supply intakes and takes their locations into account during the project planning process.

Comment 22: **RGP General Condition 8 (Impoundments). This language is too vague and implies cost is taken into account by the use of the word "practicable". FLOW requests that some engineering language be used to set the standard for expectations.**

Response 22: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 23: **RGP General Condition 9 (Management of Water Flows). FLOW objects to the language "to the maximum extent practicable", since this implies cost is considered in the decision. Also, the use of the term "high flows" is vague. FLOW requests the addition of a specific percentage above normal flow or reference to some level of storm event.**

Response 23: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 24: **RGP General Condition 11 (Equipment). Please clarify some of the "other measures" that the USACE will consider in lieu of wetland mats? If the answer is the use of trees, FLOW objects to the additional impacts to the environment and wetland hydrology from the loss of woody vegetation.**

Response 24: The comment is specific to the USACE's condition and would best be addressed by the USACE. Ohio EPA considers the use of timber mats to be a temporary impact and is not an adequate form of wetland avoidance.

Comment 25: **RGP General Condition 12 (Soil Erosion and Sediment Controls). FLOW objects to the language "The ODOT is encouraged to perform work within waters of the United States during periods of low-flow or no-flow." It is vague, wishful thinking, but unclear. FLOW requests specific measurable language that can be put into ODOT contracts so that vendors and watershed groups know what is expected. We request that for large projects that**

rainfall or stream data be required and that limits of slope steepness, cubic feet per second percent increase, and rainfall be used. Are there any repercussions for working during high flows?

Response 25: The comment is specific to the USACE's condition and would best be addressed by the USACE. If work were to be performed during a period of high-flow, and unauthorized fill were to be placed within waters of the state, Ohio EPA will issue violations as necessary. It is also in the contractor's best interest to work during periods of low-flow to reduce the cost of necessary materials.

Comment 26: **RGP General Condition 13 (Removal of Temporary Fills). Please accept our comments regarding the construction of the Lane Avenue Bridge as an indication that additional language is needed. One option is to require documentation of the number of gravel-filled trucks post-construction must equal the number of cubic yards of gravel installed.**

Response 26: Ohio EPA regularly conducts post-construction site visits to ensure compliance with issued permits. If a project is found to be non-compliant with the conditions of an authorization or permit, Ohio EPA will work with ODOT and their contractors to get the project back into compliance and will issue violations, as necessary.

Comment 27: **RGP General Condition 15 (Single and Complete Project). FLOW objects to the use of the concept of a single and complete project to cover multiple stream and wetlands crossings. This is contrary to the concept of "minor impact". FLOW also objects to allowing the stacking of a RGP A, RGP B, and RGP C. This stacking of regional general permits is a way for ODOT to circumvent the intent of the Clean Water Act to public notice individual permit projects and solicit public comments.**

Response 27: Ohio EPA has imposed a condition in the RGP that states that RGP sections cannot be combined to increase any of the special or general limitation and conditions of the 401 WQC. Ohio EPA will follow the USACE interpretation of what constitutes a single and complete project. There are certain situations where a portion of a project can be permitted

under the RGP and other portions require an Individual 404 and Individual 401 WQC.

Comment 28: **RGP General Condition 16 (Wild and Scenic Rivers). FLOW objects to the exclusion of state wild and scenic rivers. This circumvents the ability of the public to be aware of and comment on projects that impact these resources. We request that either this whole RGP be eliminated or that state wild and scenic rivers receive protection.**

Response 28: Consistent with the 2017 Nationwides, Ohio EPA has imposed conditions on RGP A and C that require ODOT to apply for an Individual 401 WQC for projects that propose to impact national and state wild and scenic rivers.

Comment 29: **RGP General Condition 22 (Critical Resource Waters). FLOW requests clarification on the process of how impacts to a designated critical resource water are determined to be minimal. What expertise does a District Engineer need to make this decision? FLOW recommends that the federal law requiring this assessment triggered by the Clean Water Act 404 process be included. What criteria does the District Engineer use to determine if they should designate additional critical resource areas?**

Response 29: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 30: **RGP General Condition 23 (Mitigation). FLOW strongly objects to the consideration by the District Engineer for appropriate and practicable mitigation. In light of the USACE preference for mitigation banks or in-lieu fee mitigation, there is no reasonable explanation for why mitigation should not be provided. The term "practicable mitigation" should only be considered for on-site mitigation. FLOW argues that the lack of mitigation exacerbates the environmental impact of the RGP. The proposed mitigation language should refer to the language required by Ohio EPA. Please use the language in OAC 3745-1-54(E)(4).**

Response 30: Ohio EPA has imposed a general limitation and condition on the RGP that requires mitigation for permanent wetland impacts exceeding 0.1 acres. Ohio EPA considers all

impacts to Category 3 wetlands to be permanent. When required, mitigation will be performed in accordance with chapters 3745-1 and 3745-32 of the OAC.

Comment 31: **FLOW objects to the language found in RGP General Condition 23 (Mitigation), Paragraph (d) that says "for losses of streams or other open waters the require PCN, the District Engineer may require compensatory mitigation". FLOW requests that the following language be inserted: "For losses of streams, regardless of whether a PCN is required, the District Engineer shall require compensatory mitigation".**

Response 31: The comment is specific to the USACE's condition and would best be addressed by the USACE. Ohio EPA has the authority to require mitigation for stream impacts for projects that do not meet the conditions of the RGP and require an Individual 401 WQC.

Comment 32: **FLOW requests a written example of what process the District Engineer uses to determine the appropriate mitigation based on what is best for the aquatic environment on a watershed basis. The District Engineer should use the information found in Ohio EPA's 305(b) reports, Total Maximum Daily Load Assessments, and Watershed Action Plans.**

Response 32: The comment is specific to the USACE's condition and would best be addressed by the USACE.

Comment 33: **Since this is the only opportunity for public comment, FLOW strongly suggests that mitigation be required for all projects. If ODOT wants a detailed evaluation of the environmental impacts and compensatory mitigation, they can go through the 401 process.**

Response 33: See response 30. If an Individual 401 WQC is required, the project is required to be public noticed for a minimum of 30 days. If a Director's Authorization is applied for, Ohio EPA will post the application on our webpage for 15 days.

Comment 34: **Delays in providing mitigation should result in increased ratios to reflect temporary and permanent losses of water quality.**

Response 34: Ohio EPA is required to adhere to the mitigation ratios specified in Table E-1 of OAC 3745-1-54.

Comment 35: **This document is silent on temporary impacts to streams and wetlands. The public will bear the brunt of the decreasing water quality and the increased cost to treat it for drinking water.**

Response 35: Conditions and limitations related to temporary impacts to wetlands and streams are addressed by both the USACE and Ohio EPA. Temporary fill must consist of suitable non-erodible material and must be maintained to minimize erosion. Temporary fills must also be removed in their entirety and the affected areas returned to pre-construction elevations. Areas effected by temporary fills must be revegetated. The USACE defines temporary as "a finite period of time limited to the duration of the construction or maintenance of a transportation project, but never to exceed two years". See response 21 as it relates to drinking water.

Comment 36: **FLOW requests data on the amount of aquatic resources impacts that were authorized by the Nationwide Permit for the I-71 expansion project. How many single and complete projects were authorized?**

Response 36: This comment would best be addressed by the USACE, as they are the agency that issues Nationwide permits. Ohio EPA issued an Individual 401 WQC on November 5, 2018, for a project to improve I-71 between the Franklin/Pickaway County line and the State Route 665 interchange. This project included 2,619 linear feet of stream impacts and 0.068 acres of wetland impacts. Mitigation was required for all impacts.

Comment 37: **Does the RGP owner change when a linear transportation project crosses an ODOT district boundary?**

Response 37: Permits and certifications are issued to ODOT as an agency, not to specific ODOT districts.

Comment 38: **There is no mention of the requirement for submittal of Ohio Rapid Assessment for Wetlands (ORAM), Qualitative Habitat Evaluation Index (QHEI), or Headwater Habitat Evaluation Index (HHEI).**

Response 38: Ohio EPA has imposed a condition requiring ODOT to submit ORAMs for projects that propose to impact wetlands when a Pre-Construction Notification (PCN) is required to the USACE. Appendix B of the 401 WQC details the ORAM verification process. Ohio EPA has also imposed a condition that states "an applicant proposing to impact a stream that does not have an aquatic life use designation pursuant to Admin. Code Chapter 3745-1 shall perform a qualitative assessment of the physical and biological characteristics of the stream necessary to determine its existing use to demonstrate eligibility for coverage under the specific Ohio certification requested." A QHEI or HHEI would satisfy this condition.

Comment 39: **FLOW understands that the full engineering plans may not yet be developed but how can they possibly estimate the amount of impacts if they are only required to submit a sketch?**

Response 39: **Ohio EPA has seen that** ODOT typically errs on the side of caution when estimating impacts. In situations where actual impacts exceed estimated or permitted impacts, a modification to the permit may be required and additional mitigation is provided as necessary.

Comment 40: **FLOW would like to know how often a PCN and mitigation were required under the RGP for the previous five years. We would like to know the amount of temporary and permanent wetland and stream impacts and what the amount of unmitigated streams and wetlands is.**

Response 40: This comment would best be addressed by the USACE, as they are the agency responsible for administering and authorizing RGP permits. There are certain projects that could be permitted under an RGP that do not require ODOT to submit a PCN to the USACE or require ODOT to coordinate the project with Ohio EPA.

Comment 41: **RGP General Condition 28 (PCN). FLOW requests that the language in this paragraph be changed to include a PCN being required to the USACE for state endangered and threatened species.**

Response 41: While Ohio EPA does not have the authority to require ODOT to submit a PCN to the USACE, Ohio EPA has

imposed a condition on Linear Transportation and Bank Stabilization projects requiring an Individual 401 WQC for projects that impact general high quality water bodies which harbor federally and state-listed threatened or endangered aquatic species. ODOT coordinates projects that have the potential to impact state-listed species with ODNR.

Comment 42: **RGP General Condition 30 (ODNR In-Water Work Exclusion Dates). FLOW requests that state endangered and threatened species be included.**

Response 42: In-water work dates are set by ODNR. State-listed endangered and threatened species are also regulated by ODNR. This condition includes state-listed threatened and endangered species.

Comment 43: **FLOW requests a copy of the guidance used by the District Engineer and a written example documenting the cumulative impact assessment of a proposed project. Does the USACE utilize GIS to evaluate and track impacts to assess cumulative impacts on a watershed? How does the USACE evaluate the cumulative effects of all the crossings authorized by the RGP and other permits? Does the District Engineer assign quantifiable direct and indirect impacts to each type of project that considers the duration of the adverse effect?**

Response 43: This comment would best be addressed by the USACE.

Comment 44: **Does the USACE evaluate the indirect and cumulative effects of maintenance projects? Does the USACE evaluate the cumulative permits authorized, without mitigation, within a watershed prior to processing additional permits?**

Response 44: This comment would best be addressed by the USACE.

Comment 45: **FLOW questions whether 45 days is enough time for the USACE to review and approve a project. Changing the language to 45 working days seems more reasonable.**

Response 45: This comment would best be addressed by the USACE.

Comment 46: **Under what circumstances does the USACE authorize stream channelization?**

Response 46: This comment would best be addressed by the USACE.

Comment 47: **FLOW is aware of the increasing demand on ODOT for increasing roads to minimize drive time for the increasing number of people in Central Ohio. We do not wish to be confrontational about this issue. Our mission to protect the Olentangy watershed for future generations pushes us to speak out and ask for the least impacts and the best management practices, including mitigation, that are possible**

Response 47: Ohio EPA notes and appreciates FLOW's concerns.

End of Response to Comments

APPENDIX F

GEOTECHNICAL INFORMATION

B-043-0-18
B-044-0-18
B-045-0-18
B-039-0-18
US-30 EB
B-040-0-18
B-047-0-18
B-005-0-18
SR-3/83 SB
SR-3/83 NB
B-003-0-18
B-001-0-18
B-002-0-18
B-004-0-18
B-041-0-18
US-30 WB
B-046-0-18
B-042-0-18

WAY-83-10.81; PID:91095 Soil Borings						
Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
Mainline						
B-001	2131194.765	412289.408				
B-002	2131203.932	412671.489				
B-003	2131119.708	412703.866				
B-004	2131182.054	413404.477				
B-005	2130986.881	414155.931				
Ramps						
B-039	2130821.894	411853.988				
B-040	2130978.711	412155.438				
B-041	2131429.756	412494.872				
B-042	2131646.497	412600.960				
B-043	2130515.329	412751.764				
B-044	2130555.389	413083.815				
B-045	2130631.067	413456.756				
B-046	2131581.582	413682.678				
B-047	2130883.824	413775.584				

N

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED NRF
CHECKED KCK

SOIL BORING LOCATIONS
BORING LOCATIONS FOR WAY-83

WAY-83-10.81

1
7

I:\ProjectData\91095\Design\Geotechnical\Sheets\91095_BP001.dgn

WAY-83-10.81; PID:91095 Soil Borings						
Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
Mainline						
B-006	2130800.094	414847.582				
B-007	2130510.519	415653.202				
B-008	2130182.815	416371.176				
B-009	2130068.079	416709.536				
B-010	2129914.405	417341.788				
B-011	2129791.609	417432.633				
Ramps						
B-048	2129909.115	416260.528				
B-049	2129641.780	416552.387				
B-050	2130386.103	416972.644				
B-051	2129730.505	417004.330				
B-052	2130267.677	417371.566				
B-053	2130156.965	417645.926				
B-054	2129837.363	417795.449				

N

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED NRF
CHECKED KCK

SOIL BORING LOCATIONS
BORING LOCATIONS FOR WAY-83

WAY-83-10.81

2
7

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WAY-83-10.81; PID:91095 Soil Borings						
Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
Mainline						
B-012	2129649.297	418114.345				
B-013	2129339.069	418879.022				
B-014	2129127.198	419644.426				
B-015	2128888.707	420415.974				

N

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED NRF
CHECKED KCK

SOIL BORING LOCATIONS
BORLING LOCATIONS FOR WAY-83

WAY-83-10.81

3
7

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B-016-0-18

B-017-0-18

B-018-0-18

B-019-0-18

B-020-0-18

SR-3/83 SB

SR-3/83 NB

SR-3/83 SB

SR-3/83 NB

PORTAGE RD.

WAY-83-10.81; PID:91095 Soil Borings						
Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
Mainline						
B-016	2128713.620	421181.258				
B-017	2128507.292	421972.006				
B-018	2128381.039	422753.353				
B-019	2128226.886	423135.753				
B-020	2128047.670	423495.569				

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED NRF
CHECKED KCK

SOIL BORING LOCATIONS
BORING LOCATIONS FOR WAY-83

WAY-83-10.81

4
7

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WAY-83-10.81; PID:91095 Soil Borings						
Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
Mainline						
B-021	2128191.913	423939.153				
B-022	2127747.596	424237.337				
B-023	2128149.264	424732.405				
B-024	2127484.082	424994.120				
B-025	2127719.101	425405.000				
B-026	2127270.642	425766.523				
B-027	2127350.283	426111.879				
B-028	2127082.415	426598.673				

0 50 100 200
HORIZONTAL SCALE IN FEET

CALCULATED NRF
CHECKED KCK

SOIL BORING LOCATIONS
BORING LOCATIONS FOR WAY-83

WAY-83-10.81

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WAY-83-10.81; PID:91095 Soil Borings						
Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
Mainline						
B-029	2126819.881	426939.207				
B-030	2126542.587	427209.769				
B-031	2126174.911	427381.468				
B-032	2125683.576	427668.155				
B-033	2125322.212	427905.334				
B-034	2124581.548	428210.836				
Ramps						
B-055	2126833.723	427190.678				
B-056	2126431.849	427022.141				
B-057	2126312.546	426956.547				
B-058	2126438.464	427489.404				
B-059	2125979.225	426943.620				
B-060	2125824.804	427298.543				

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED NRF
CHECKED KCK

SOIL BORING LOCATIONS
BORING LOCATIONS FOR WAY-83

WAY-83-10.81

6
7

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WAY-83-10.81; PID:91095 Soil Borings

Boring ID	Easting	Northing	Elevation	Latitude	Longitude	Comments
			Mainline			
B-035	2123850.955	428531.228				
B-036	2123568.670	428457.355				
B-037	2123512.856	428771.712				
B-038	2123163.974	428757.298				

7/7	WAY-83-10.81	SOIL BORING LOCATIONS BORING LOCATIONS FOR WAY-83	CALCULATED NRF CHECKED KCK	0 100 50 200 HORIZONTAL SCALE IN FEET

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-001-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 976.1 (MSL) EOB: 5.0 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.796822, -81.912364		

MATERIAL DESCRIPTION AND NOTES	ELEV. 976.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	974.6	1																	
VERY DENSE, BROWN AND GRAY, **COARSE AND FINE SAND**, LITTLE STONE FRAGMENTS, LITTLE SILT, LITTLE CLAY, DAMP	973.1	2	10 12 38	73	89	SS-1	-	18	9	45	16	12	NP	NP	NP	10	A-3a (0)	<100	
VERY DENSE, BROWN AND GRAY, **SANDY SILT**, LITTLE STONE FRAGMENTS, LITTLE CLAY, DAMP		3	50	-	83	SS-2	-	18	12	32	22	16	NP	NP	NP	10	A-4a (1)	<100	
	971.1	4																	
	EOB	5	50	-	83	SS-3	-	-	-	-	-	-	-	-	-	8	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-002-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 976.2 (MSL) EOB: 5.5 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.797870, -81.912323		

MATERIAL DESCRIPTION AND NOTES	ELEV. 976.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	974.7	1																	
VERY DENSE, GRAY AND BROWN, **STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	973.2	2	17 9 45	78	89	SS-1	-	51	7	25	10	7	NP	NP	NP	11	A-1-b (0)	<100	
VERY DENSE, BROWN AND YELLOWISH BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	971.7	3 4	8 50	-	83	SS-2	-	21	7	42	18	12	NP	NP	NP	11	A-2-4 (0)	<100	
VERY DENSE, GRAY AND REDDISH BROWN, **COARSE AND FINE SAND**, LITTLE GRAVEL AND STONE FRAGMENTS, LITTLE SILT, LITTLE CLAY, DAMP	970.7	EOB 5	22 50	-	83	SS-3	-	19	7	45	17	12	NP	NP	NP	10	A-3a (0)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-003-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 974.6 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/18/18 END: 10/18/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.797923, -81.912614		

MATERIAL DESCRIPTION AND NOTES	ELEV. 974.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (10") & BASE (8")	973.1	1																	
MEDIUM DENSE, BROWN GRAY MOTTLED, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		2	9 10 10	29	100	SS-1	-	20	13	34	19	14	20	17	3	12	A-2-4 (0)	<100	
@3.0'; DENSE		3	8 10 13	33	100	SS-2	-	18	9	40	19	14	NP	NP	NP	12	A-2-4 (0)	<100	
@4.5'; VERY DENSE		4	24 30 38	99	100	SS-3	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	-	
	967.1	5	21 19 30	71	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	-	
		6																	
		7 EOB																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-004-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 964.2 (MSL) EOB: 5.0 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.799883, -81.912383		

MATERIAL DESCRIPTION AND NOTES	ELEV. 964.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (1") & BASE (17")	962.7	1																	
MEDIUM DENSE, REDDISH BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	961.2	2	7 4 6	15	56	SS-1	1.50	46	10	21	13	10	NP	NP	NP	9	A-1-b (0)	<100	
SANDSTONE, GRAY, HIGHLY WEATHERED, VERY WEAK.	959.2	3	7 40 40	116	67	SS-2	-	-	-	-	-	-	-	-	-	10	Rock (V)	-	
		EOB 4 5	60	-	100	SS-3	-	-	-	-	-	-	-	-	-	8	Rock (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-005-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 934.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.801955, -81.913065		

MATERIAL DESCRIPTION AND NOTES	ELEV. 934.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	932.7	1																	
HARD, GRAYISH BROWN, **SANDY SILT**, SOME GRAVEL ANDFRAGMENTS, LITTLE CLAY, DAMP		2	7 16 19	51	100	SS-1	4.50	20	8	23	30	19	22	15	7	10	A-4a (3)	110	
@3.0'; BROWN		3	13 15 14	42	100	SS-2	4.50	24	7	28	23	18	23	15	8	10	A-4a (1)	<100	
@4.5'; VERY STIFF, BROWN AND GRAY, SOME CLAY, LITTLE GRAVEL AND STONE FRAGMENTS, SLIGHTLY ORGANIC (LOI = 2.7%), MOIST		4	9 5 4	13	100	SS-3	2.50	17	4	26	32	21	22	15	7	16	A-4a (4)	-	
		5	5 5 8	19	100	SS-4	2.00	-	-	-	-	-	-	-	-	16	A-4a (V)	-	
	926.7	6 EOB																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-006-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 912.6 (MSL) EOB: 7.0 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.803847, -81.913735		

MATERIAL DESCRIPTION AND NOTES	ELEV. 912.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	911.1	1																	
MEDIUM DENSE, BROWN AND GRAY MOTTLED, **STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP	909.6	2	9 7 9	23	100	SS-1	-	46	8	19	18	9	21	16	5	13	A-2-4 (0)	<100	
HARD, BROWN AND GRAY MOTTLED, **SANDY SILT**, SOME ROCK FRAGMENTS, DAMP @4.5'; VERY STIFF		3	6 8 33	59	100	SS-2	4.50	25	6	25	29	15	20	16	4	12	A-4a (2)	110	
		4																	
		5	9 9 24	48	100	SS-3	3.00	-	-	-	-	-	-	-	-	10	A-4a (V)	-	
	905.6	6	31 35	-	133	SS-4	3.00	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
		EOB 7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

STANDARD ODOT LOG W/ SULFATE (8.5 X 11) - OH DOT GDT - 12/7/18 11:45 - X:\GINT\PROJECTS\2018 COMPLETE\600572.GPJ

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 901.8 (MSL) EOB: 7.5 ft.
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.806070, -81.914739

EXPLORATION ID B-007-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 901.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (10")	900.1	1																	
VERY STIFF, GRAY, **SANDY SILT**, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP	898.8	2	7 3 6	13	89	SS-1	3.00	36	8	19	21	16	23	16	7	14	A-4a (0)	100	
VERY DENSE, BROWN AND GRAY MOTTLED, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		3	12 24 28	75	100	SS-2	-	32	10	24	21	13	20	17	3	10	A-2-4 (0)	<100	
@6.0'; DENSE		4	23 20 26	67	100	SS-3	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	-	
	894.3	5	20 12 13	36	100	SS-4	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
		EOB 6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-008-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 907.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.807996, -81.915884		

MATERIAL DESCRIPTION AND NOTES	ELEV. 907.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	906.0	1																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP	904.5	2	6 5 4	13	78	SS-1	-	45	10	18	18	9	20	17	3	11	A-2-4 (0)	<100	
VERY STIFF, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP TO MOIST		3	5 8 3	16	100	SS-2	3.50	26	10	25	26	13	19	16	3	15	A-4a (1)	<100	
		4	4 4 4	12	100	SS-3	3.00	23	10	19	31	17	25	16	9	16	A-4a (3)	-	
@6.0'; STIFF	900.0	5 6 7 EOB	2 3 4	10	67	SS-4	2.00	-	-	-	-	-	-	-	-	16	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 910.4 (MSL) EOB: 7.5 ft.
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.808974, -81.916327

EXPLORATION ID B-009-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 910.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (9") & BASE (9")	908.9	1																	
HARD, BROWN, **SANDY SILT**, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP		2	7 15 15	44	100	SS-1	4.50	31	10	15	29	15	22	17	5	11	A-4a (2)	140	
@3.0'; GRAY, SOME CLAY	905.9	3 4	17 21 21	61	78	SS-2	4.50	30	7	11	28	24	29	19	10	16	A-4a (3)	200	
VERY DENSE, GRAY AND BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP		5	22 34 26	87	100	SS-3	-	39	9	27	15	10	NP	NP	NP	11	A-2-4 (0)	-	
@6.0'; MEDIUM DENSE	902.9	6 7 EOB	16 12 9	30	100	SS-4	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-010-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 915.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.810714, -81.916867		

MATERIAL DESCRIPTION AND NOTES	ELEV. 915.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	913.7	1																	
VERY STIFF, BROWN AND GRAY, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, DAMP		2	5 5 11	23	72	SS-1	4.00	24	8	18	31	19	23	17	6	15	A-4a (3)	160	
@3.0'; OLIVE BROWN		3	6 8 8	23	78	SS-2	3.00	26	9	17	31	17	20	18	2	13	A-4a (3)	<100	
		4	6 9 6	22	78	SS-3	3.00	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
		5	12 12 14	38	89	SS-4	2.50	-	-	-	-	-	-	-	-	12	A-4a (V)	-	
	907.7	6 EOB																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-011-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 916.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.810965, -81.917309		

MATERIAL DESCRIPTION AND NOTES	ELEV. 916.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	914.7	1																	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		2	3 7 3	15	89	SS-1	-	35	10	20	23	12	22	16	6	13	A-2-4 (0)	270	
@3.0'; VERY DENSE		3	4 33 38	103	67	SS-2	-	34	10	23	19	14	20	15	5	14	A-2-4 (0)	230	
@4.5'; MEDIUM DENSE		4	22 10 8	26	67	SS-3	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
@6.0'; VERY DENSE	908.7	5	14 22 29	74	89	SS-4	-	40	6	19	24	11	NP	NP	NP	12	A-2-4 (0)	-	
		6																	
		7 EOB																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-012-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 921.3 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.812837, -81.917808		

MATERIAL DESCRIPTION AND NOTES	ELEV. 921.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	919.8	1																	
VERY STIFF, BROWN AND GRAY, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP	918.3	2	5 9 3	17	100	SS-1	3.50	24	8	19	31	18	21	17	4	11	A-4a (3)	<100	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		3	6 13 8	30	89	SS-2	-	39	7	25	18	11	NP	NP	NP	11	A-2-4 (0)	100	
@4.5'; GRAYISH BROWN		4	11 9 7	23	100	SS-3	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	-	
	913.8	5	4 10 8	26	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	-	
		EOB 6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 927.9 (MSL) EOB: 7.5 ft.
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.814941, -81.918918

EXPLORATION ID B-013-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 927.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	926.4	1																	
STIFF, BROWN, **SILT AND CLAY**, SOME SAND, SOME GRAVEL, MOIST	924.9	2	2 2 3	7	89	SS-1	1.50	20	4	19	36	21	28	17	11	19	A-6a (5)	280	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		3	2 4 4	12	89	SS-2	-	30	10	28	20	12	NP	NP	NP	16	A-2-4 (0)	<100	
		4	5 4 5	13	89	SS-3	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	-	
	920.4	5	4 4 5	13	89	SS-4	-	44	11	17	17	11	28	20	8	18	A-2-4 (0)	-	
	EOB	6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-014-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 933.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.817051, -81.919639		

MATERIAL DESCRIPTION AND NOTES	ELEV. 933.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	932.4	1																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	930.9	2	3 5 5	15	100	SS-1	-	46	11	16	16	11	27	17	10	14	A-2-4 (0)	<100	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY**, DAMP	929.4	3 4	9 11 8	28	100	SS-2	-	36	17	15	18	14	31	17	14	14	A-2-6 (1)	120	
MEDIUM DENSE, BROWN, **SANDY SILT**, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP	926.4	5 6	5 8 12	29	100	SS-3	-	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
EOB		7	10 11 10	30	100	SS-4	-	26	11	27	25	11	NP	NP	NP	13	A-4a (0)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 940.0 (MSL) EOB: 7.5 ft.
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.819170, -81.920502

EXPLORATION ID B-015-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 940.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	938.5	1																	
VERY STIFF, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		2	6 4 2	9	50	SS-1	4.00	-	-	-	-	-	-	-	-	15	A-4a (V)	-	
	935.5	3	2 2 9	16	83	SS-2	2.00	30	9	16	30	15	21	17	4	13	A-4a (2)	160	
DENSE TO VERY DENSE, GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		4	30 46 28	107	100	SS-3	-	41	8	17	22	12	19	18	1	10	A-2-4 (0)	150	
	932.5	5	12 13 15	41	89	SS-4	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	-	
	EOB	6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-016-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83	
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 945.7 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.821271, -81.921109	

MATERIAL DESCRIPTION AND NOTES	ELEV. 945.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	944.2	1																	
VERY DENSE, GRAY AND BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP	942.7	2	8 19 23	61	78	SS-1	-	45	10	16	19	10	NP	NP	NP	12	A-2-4 (0)	170	
VERY DENSE, BROWNISH GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	941.2	3 4	16 24 22	67	78	SS-2	-	49	14	14	15	8	NP	NP	NP	9	A-1-b (0)	<100	
DENSE, BROWNISH GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	938.2	5	9 12 11	33	78	SS-3	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
EOB		6 7	10 12 12	35	78	SS-4	-	39	11	15	23	12	NP	NP	NP	11	A-2-4 (0)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 953.2 (MSL) EOB: 7.5 ft.
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.823446, -81.921845

EXPLORATION ID B-017-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	953.2																		
	951.7	1																	
DENSE, GRAYISH BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP	950.2	2	5 9 18	39	89	SS-1	-	32	9	18	29	12	NP	NP	NP	12	A-4a (1)	210	
HARD, GREENISH, **SANDY SILT**, "AND" GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		3	24 50 50	145	100	SS-2	4.50	41	9	14	24	12	19	16	3	7	A-4a (0)	350	
		4																	
		5	37 24 25	71	100	SS-3	4.50	-	-	-	-	-	-	-	-	7	A-4a (V)	-	
		6	18 17 18	51	100	SS-4	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
	945.7	7 EOB																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 962.4 (MSL) EOB: 7.5 ft.
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.825593, -81.922285

EXPLORATION ID B-018-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 962.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	960.9	1																	
DENSE TO VERY DENSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP		2	11 17 24	59	78	SS-1	-	56	9	13	15	7	17	16	1	9	A-1-b (0)	140	
	957.9	3	20 14 10	35	50	SS-2	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	-	
HARD, BROWN AND GRAY, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		4	6 7 22	42	89	SS-3	4.50	34	11	17	24	14	20	17	3	11	A-4a (1)	<100	
@6.0'; GRAY, MODERATELY ORGANIC (LOI = 4.0%)	954.9	5	20 16 17	48	89	SS-4	4.50	24	9	19	30	18	24	20	4	18	A-4a (3)	-	
		6																	
		7 EOB																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 965.8 (MSL) EOB: 7.5 ft.
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.826594, -81.922804

EXPLORATION ID B-019-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 965.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	964.3	1																	
DENSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP		2	12 18 15	48	100	SS-1	-	38	12	18	22	10	NP	NP	NP	10	A-2-4 (0)	220	
		3	9 11 14	36	100	SS-2	-	40	14	16	20	10	NP	NP	NP	10	A-2-4 (0)	280	
		4																	
		5	14 16 15	45	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
		6																	
	958.3	7 EOB	11 11 17	41	100	SS-4	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	

NOTES: LAT/LONG CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. ELEV FROM OSIP DEM. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-020-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 970.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.827641, -81.923448		

MATERIAL DESCRIPTION AND NOTES	ELEV. 970.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	969.0	1																	
MEDIUM DENSE, BROWN WITH GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP		2	6 10 5	22	100	SS-1	-	35	14	20	22	9	NP	NP	NP	11	A-2-4 (0)	270	
@3.0'; LOOSE, GRAY, LIGHT GRAY, SLIGHTLY ORGANIC		3 4	3 3 4	10	100	SS-2	-	36	10	20	23	11	NP	NP	NP	16	A-2-4 (0)	450	
		5	4 2 2	6	33	SS-3	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	-	
@6.0'; MEDIUM DENSE, BROWN AND GRAY	963.0	6 7 EOB	3 8 9	25	100	SS-4	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-021-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 968.3 (MSL) EOB: 5.0 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.828853, -81.922931		

MATERIAL DESCRIPTION AND NOTES	ELEV. 968.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	966.8	1																	
VERY DENSE, GRAY, **GRAVEL WITH SAND AND SILT**, LITTLE CLAY, DAMP	965.3	2	10 18 22	58	67	SS-1	-	39	10	17	23	11	NP	NP	NP	7	A-2-4 (0)	240	
VERY DENSE, GRAY, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, DAMP	963.8	3 4	19 32 40	104	78	SS-2	-	33	12	18	25	12	NP	NP	NP	7	A-4a (0)	270	
SANDSTONE, GRAY, HIGHLY WEATHERED.	963.3	EOB 5	53	-	100	SS-3	-	-	-	-	-	-	-	-	-	4	Rock (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-022-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 986.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/15/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.829676, -81.924539		

MATERIAL DESCRIPTION AND NOTES	ELEV. 986.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	985.4																		
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	983.9	1	3 4 5	13	78	SS-1	-	54	10	11	17	8	23	19	4	14	A-1-b (0)	230	
LOOSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP	982.4	2	2 2 2	6	67	SS-2	-	47	12	13	20	8	NP	NP	NP	17	A-2-4 (0)	160	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP		3 4 5 6	2 6 6	17	67	SS-3	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	-	
	979.4	7 EOB	4 4 4	12	89	SS-4	-	50	13	13	14	10	24	20	4	14	A-1-b (0)	-	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-023-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 981.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/9/18 END: 10/9/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.831030, -81.923069		

MATERIAL DESCRIPTION AND NOTES	ELEV. 981.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	980.0																		
MEDIUM DENSE, GRAY AND BLACK, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, SLIGHTLY ORGANIC (LOI = 2.8%), DAMP	978.5	1–3	6 6 4	15	78	SS-1	-	44	11	19	18	8	22	19	3	14	A-2-4 (0)	220	
STIFF TO VERY STIFF, GRAY AND BLACK, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, SLIGHTLY ORGANIC (LOI = 3.2%), DAMP	975.5	3–5	6 9 7	23	83	SS-2	1.50	34	10	18	25	13	24	20	4	13	A-4a (1)	250	
			4 5 11	23	83	SS-3	3.00	-	-	-	-	-	-	-	-	19	A-4a (V)	-	
DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, SLIGHTLY ORGANIC (LOI = 2.8%), DAMP	974.0	6–7	10 19 12	45	89	SS-4	-	42	8	22	19	9	22	21	1	14	A-2-4 (0)	-	
		EOB																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-024-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 994.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.831760, -81.925470		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	994.9																		
	993.4																		
VERY STIFF, GRAYISH BROWN, **SANDY SILT**, "AND" GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		1																	
@3.0'; STIFF, MOIST		2	2 4 3	10	83	SS-1	3.50	37	7	15	27	14	24	17	7	14	A-4a (1)	100	
		3	2 1 2	4	39	SS-2	1.50	29	8	17	31	15	22	17	5	17	A-4a (2)	<100	
@4.5'; BROWN		4																	
		5	2 3 3	9	50	SS-3	2.00	-	-	-	-	-	-	-	-	19	A-4a (V)	-	
		6																	
	987.4	7 EOB	3 4 5	13	89	SS-4	2.00	-	-	-	-	-	-	-	-	17	A-4a (V)	-	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-025-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83	
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 990.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.832884, -81.924610	

MATERIAL DESCRIPTION AND NOTES	ELEV. 990.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	989.0	1																	
VERY STIFF TO HARD, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		2	6 6 11	25	33	SS-1	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
@3.0'; BROWN AND GRAY		3	11 12 6	26	89	SS-2	4.50	31	9	17	29	14	21	16	5	13	A-4a (2)	<100	
@4.5'; SLIGHTLY ORGANIC (LOI = 3.2%)		4	7 7 7	20	89	SS-3	4.00	22	7	19	35	17	23	19	4	16	A-4a (3)	<100	
@6.0'; SLIGHTLY ORGANIC WITH ROOTS, DAMP	983.0	5	5 5 6	16	89	SS-4	4.00	-	-	-	-	-	-	-	-	18	A-4a (V)	-	
		6																	
	EOB	7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 998.4 (MSL) EOB: 7.5 ft.
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.833885, -81.926218

EXPLORATION ID B-026-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 998.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	996.9	1																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND AND SILT**, LITTLE CLAY, DAMP	995.4	2	4 6 5	16	89	SS-1	-	40	16	15	17	12	28	18	10	14	A-2-4 (0)	<100	
DENSE, BROWN AND GRAY, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		3	8 10 12	32	83	SS-2	-	32	7	21	27	13	NP	NP	NP	11	A-4a (1)	140	
@4.5'; MEDIUM DENSE		4 5	6 6 5	16	100	SS-3	-	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
@6.0'; LOOSE, GRAY, MOIST	990.9	6 7 EOB	3 3 3	9	100	SS-4	-	22	8	24	31	15	NP	NP	NP	13	A-4a (2)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-027-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1003.7 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.834833, -81.925924		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1003.7																		
	1002.2	1																	
DENSE, BROWN AND GRAY, **SANDY SILT**, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP	1000.7	2	7 9 17	38	89	SS-1	-	32	11	18	26	13	NP	NP	NP	11	A-4a (1)	<100	
HARD, BROWN AND GRAY, **SANDY SILT**, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP		3	18 16 17	48	78	SS-2	4.50	24	8	17	34	17	21	17	4	11	A-4a (3)	<100	
@4.5'; VERY STIFF, BROWN		4																	
		5	12 7 5	17	89	SS-3	4.00	-	-	-	-	-	-	-	-	12	A-4a (V)	-	
		6																	
	996.2	7 EOB	3 3 3	9	61	SS-4	2.50	-	-	-	-	-	-	-	-	14	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1023.0 (MSL) EOB: 7.5 ft.
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.836174, -81.926872

EXPLORATION ID B-028-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (8") & BASE (10")	1023.0																		
	1021.5																		
DENSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		1																	
@3.0'; MEDIUM DENSE		2	6 9 15	35	78	SS-1	-	50	12	12	14	12	NP	NP	NP	12	A-2-4 (0)	160	
		3																	
		4	10 12 6	26	100	SS-2	-	39	12	15	23	11	NP	NP	NP	11	A-2-4 (0)	240	
@4.5'; LOOSE, BROWN AND GRAY MOTTLED		5	3 2 4	9	100	SS-3	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	-	
		6																	
@6.0'; MEDIUM DENSE			6 6 10	23	100	SS-4	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	-	
	1015.5	7 EOB																	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-029-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1037.4 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.837113, -81.927819		

MATERIAL DESCRIPTION AND NOTES	ELEV. 1037.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1035.9	1																	
DENSE, REDDISH BROWN, **SANDY SILT**, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP	1034.4	2	2 12 12	35	78	SS-1	-	37	6	20	25	12	NP	NP	NP	13	A-4a (0)	<100	
VERY DENSE, BROWN AND GRAY MOTTLED, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP		3 4	15 21 21	61	100	SS-2	-	37	13	19	21	10	NP	NP	NP	8	A-2-4 (0)	240	
		5	25 31 37	99	100	SS-3	-	37	13	19	22	9	NP	NP	NP	8	A-2-4 (0)	-	
	1029.9	6 7 EOB	16 15 20	51	100	SS-4	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-030-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1054.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.837853, -81.928788		

MATERIAL DESCRIPTION AND NOTES	ELEV. 1054.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (1") & BASE (17")	1053.4	1																	
MEDIUM DENSE, BROWNISH GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	1051.9	2	5 4 7	16	44	SS-1	-	54	9	13	17	7	NP	NP	NP	11	A-1-b (0)	190	
LOOSE, GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP TO MOIST		3	6 3 3	9	83	SS-2	-	41	14	16	20	9	NP	NP	NP	13	A-2-4 (0)	210	
@4.5'; MEDIUM DENSE		4																	
		5	6 9 12	30	89	SS-3	-	43	10	17	20	10	NP	NP	NP	11	A-2-4 (0)	-	
@6.0'; DENSE	1047.4	6																	
EOB		7	12 23 22	65	78	SS-4	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-031-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1069.7 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.838338, -81.930140		

MATERIAL DESCRIPTION AND NOTES	ELEV. 1069.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (1") & BASE (17")	1068.2	1																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	1066.7	2	3 4 4	12	67	SS-1	-	41	11	14	22	12	21	18	3	12	A-2-4 (0)	<100	
VERY STIFF, BROWNISH GRAY, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP		3	3 3 3	9	78	SS-2	3.00	11	5	16	42	26	24	18	6	17	A-4a (7)	120	
		4	4 6 4	15	100	SS-3	4.00	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
	1062.2	5	2 3 5	12	89	SS-4	4.00	-	-	-	-	-	-	-	-	16	A-4a (V)	-	
		EOB 6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-032-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1091.0 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/15/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.839133, -81.931907		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	1091.0																		
	1089.5																		
HARD, BROWN AND GRAY MOTTLED, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP @3.0'; VERY STIFF		1 2 3 4	6 6 8	20	78	SS-1	4.50	30	13	16	27	14	23	19	4	14	A-4a (1)	<100	
			5 9 21	44	100	SS-2	3.50	31	12	13	29	15	25	19	6	15	A-4a (2)	420	
@4.5'; GRAYISH BROWN		5 6 7	8 8 10	26	100	SS-3	3.50	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
	1083.5	EOB	5 6 10	23	100	SS-4	4.00	-	-	-	-	-	-	-	-	18	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-033-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1107.4 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/11/18 END: 10/11/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.839791, -81.933209		

MATERIAL DESCRIPTION AND NOTES	ELEV. 1107.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1105.9	1																	
HARD, BROWN MOTTLED WITH GRAY, **SANDY SILT**, SOME STONE FRAGMENTS, SOME CLAY, DAMP		2	5 6 7	19	67	SS-1	4.50	30	8	13	29	20	24	16	8	13	A-4a (3)	170	
@3.0'; VERY STIFF		3	6 6 8	20	100	SS-2	2.50	25	9	15	30	21	26	18	8	16	A-4a (3)	<100	
	1101.4	4 5	10 9 7	23	89	SS-3	2.50	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
VERY DENSE, BROWN MOTTLED WITH GRAY, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP	1099.9	6 7 EOB	8 20 15	51	100	SS-4	-	29	4	24	29	14	NP	NP	NP	14	A-4a (2)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-034-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1138.3 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/15/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.840645, -81.935879		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (8") & BASE (10")	1138.3																		
	1136.8	1																	
VERY STIFF, BROWN, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL AND STONE FRAGMENTS, MOIST	1135.3	2	4 3 4	10	89	SS-1	2.50	12	4	16	40	28	29	17	12	20	A-6a (7)	220	
VERY STIFF, BROWN, **SILT**, SOME CLAY, LITTLE SAND, TRACE GRAVEL AND STONE FRAGMENTS, DAMP TO MOIST	1133.8	3	4 6 9	22	100	SS-2	2.50	6	4	10	52	28	28	19	9	19	A-4b (8)	160	
HARD, BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL AND STONE FRAGMENTS, DAMP		4	9 9 12	30	100	SS-3	4.50	9	8	18	40	25	27	18	9	15	A-4a (6)	-	
	1130.8	5	10 9 9	26	100	SS-4	4.50	-	-	-	-	-	-	-	-	15	A-4a (V)	-	
		EOB 6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

STANDARD ODOT LOG W/ SULFATE (8.5 X 11) - OH DOT GDT - 12/7/18 11:46 - X:\GINT\PROJECTS\2018 COMPLETE\600572.GPJ

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-035-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1165.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/11/18 END: 10/11/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.841529, -81.938511		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1165.2																		
	1163.7	1																	
VERY STIFF, BROWN AND GRAY, **SILTY CLAY**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE SAND, MOIST	1162.2	2	4 4 5	13	78	SS-1	3.50	21	3	12	37	27	35	17	18	19	A-6b (9)	<100	
VERY STIFF, BROWN, **SANDY SILT**, SOME CLAY, SOME GRAVEL AND STONE FRAGMENTS, DAMP @4.5'; HARD		3	5 8 9	25	44	SS-2	3.50	27	7	11	32	23	27	17	10	15	A-4a (4)	<100	
		4																	
		5	8 8 8	23	100	SS-3	4.50	-	-	-	-	-	-	-	-	16	A-4a (V)	-	
		6	6 6 8	20	100	SS-4	4.50	-	-	-	-	-	-	-	-	16	A-4a (V)	-	
	1157.7	7 EOB																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1168.7 (MSL) EOB: 7.5 ft.
START: 10/11/18 END: 10/11/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.841334, -81.939519

EXPLORATION ID B-036-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 1168.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (5") & BASE (13")	1167.2	1																	
MEDIUM DENSE, BROWN, **STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, DAMP		2	5 5 6	16	78	SS-1	-	64	5	15	10	6	NP	NP	NP	12	A-1-b (0)	170	
@3.0'; LOOSE		3 4	3 3 3	9	67	SS-2	-	66	4	15	9	6	23	20	3	11	A-1-b (0)	120	
		5	3 3 3	9	67	SS-3	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	-	
@6.0'; MEDIUM DENSE	1161.2 EOB	6 7	2 4 5	13	50	SS-4	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	-	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAGS HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-037-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83	
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1168.6 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 10/11/18 END: 10/11/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.842201, -81.939728	

MATERIAL DESCRIPTION AND NOTES	ELEV. 1168.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1167.1	1																	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, (BASE), DAMP	1166.1	2	16 10 6	23	100	SS-1A	2.50	57	13	10	14	6	NP	NP	NP	5	A-1-b (0)	<100	
						SS-1B	2.50	32	7	16	30	15	25	18	7	17	A-4a (2)	270	
STIFF TO VERY STIFF, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, TRACE CLAY, DAMP	1164.1	3	3 3 3	9	100	SS-2	1.50	40	6	14	13	27	26	20	6	16	A-4a (1)	260	
@3.0'; "AND" GRAVEL AND STONE FRAGMENTS, LITTLE CLAY		5	13 14 10	35	100	SS-3	-	50	4	27	11	8	NP	NP	NP	13	A-1-b (0)	-	
MEDIUM DENSE TO DENSE, BROWN AND GRAY, **STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	1161.1	7 EOB	12 10 10	29	100	SS-4	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-038-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83	
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1172.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 10/11/18 END: 10/11/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.842167, -81.940989	

MATERIAL DESCRIPTION AND NOTES	ELEV. 1172.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1170.7	1																	
HARD, BROWNISH GRAY, **SANDY SILT**, SOME CLAY, TRACE GRAVEL AND STONE FRAGMENTS, DAMP	1169.2	2	4 7 8	22	100	SS-1	4.50	3	4	16	43	34	23	17	6	14	A-4a (8)	170	
HARD, BROWN, **SILT AND CLAY**, SOME SAND, SOME GRAVEL AND STONE FRAGMENTS, DAMP	1167.7	3 4	6 8 20	41	100	SS-2	4.50	26	6	22	26	20	29	17	12	16	A-6a (3)	<100	
DENSE TO VERY DENSE, BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	1164.7	5	26 17 13	44	100	SS-3	-	35	7	27	18	13	NP	NP	NP	13	A-2-4 (0)	-	
	EOB	6 7	8 15 20	51	100	SS-4	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-039-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 976.6 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/18/18 END: 10/18/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.795634, -81.913723		

MATERIAL DESCRIPTION AND NOTES	ELEV. 976.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (1") & BASE (17")	975.1																		
VERY STIFF TO HARD, GRAY AND BROWN, **SANDY SILT**, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP		1	4 6 6	17	89	SS-1	3.50	40	6	8	30	16	26	17	9	12	A-4a (2)	120	
@3.0'; BROWN, LITTLE GRAVEL AND STONE FRAGMENTS		2 3 4	6 7 14	30	100	SS-2	4.50	14	8	18	43	17	21	17	4	14	A-4a (5)	<100	
@4.5'; GRAY		5	10 9 9	26	100	SS-3	3.50	16	8	18	40	18	19	13	6	10	A-4a (5)	-	
	969.1	6 7 EOB	6 5	-	100	SS-4	3.00	-	-	-	-	-	-	-	-	12	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 973.1 (MSL) EOB: 7.5 ft.
START: 10/18/18 END: 10/18/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.796459, -81.913132

EXPLORATION ID B-040-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 973.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	971.6																		
DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE SILT, TRACE CLAY, DAMP		1	9 15 15	44	100	SS-1	-	24	9	45	14	8	NP	NP	NP	10	A-3a (0)	<100	
@3.0'; VERY DENSE		2 3 4	18 26 27	77	100	SS-2	-	26	6	50	11	7	NP	NP	NP	15	A-3a (0)	<100	
@4.5'; DENSE		5	15 17 12	42	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-3a (V)	-	
@6.0'; MEDIUM DENSE, YELLOWISH BROWN, TRACE SILT, TRACE GRAVEL AND STONE FRAGMENTS, WET	965.6	6 7 EOB	8 8 9	25	100	SS-4	-	8	8	66	9	9	NP	NP	NP	23	A-3a (0)	-	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-041-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 972.4 (MSL) EOB: 5.5 ft.	PAGE 1 OF 1	
START: 10/18/18 END: 10/18/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.797380, -81.911512		

MATERIAL DESCRIPTION AND NOTES	ELEV. 972.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (10")	970.7	1																	
VERY DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	969.4	2	7 22 44	96	89	SS-1	-	24	6	43	14	13	NP	NP	NP	12	A-2-4 (0)	<100	
SANDSTONE, GRAYISH BROWN, SEVERELY WEATHERED, VERY WEAK, FINE GRAINED.		3	18 50	-	100	SS-2	-	-	-	-	-	-	-	-	-	8	Rock (V)	-	
@4.5'; YELLOWISH BROWN, HIGHLY WEATHERED.	966.9	4																	
EOB		5	50 35	-	75	SS-3	-	-	-	-	-	-	-	-	-	10	Rock (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

STANDARD ODOT LOG W/ SULFATE (8.5 X 11) - OH DOT GDT - 12/7/18 11:46 - X:\GINT\PROJECTS\2018 COMPLETE\600572.GPJ

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-042-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 966.4 (MSL) EOB: 4.9 ft.	PAGE 1 OF 1	
START: 10/18/18 END: 10/18/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.797668, -81.910724		

MATERIAL DESCRIPTION AND NOTES	ELEV. 966.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	964.9	1																	
LOOSE, BROWN, **GRAVEL**, SOME SAND, TRACE SILT, TRACE CLAY, DAMP TO MOIST	963.4	2	6 5 1	9	61	SS-1	-	67	14	7	8	4	NP	NP	NP	10	A-1-a (0)	<100	
SANDSTONE, YELLOWISH BROWN, SEVERELY WEATHERED, VERY WEAK, MEDIUM GRAINED.		3	13 35 42	112	78	SS-2	-	-	-	-	-	-	-	-	-	14	Rock (V)	-	
@4.5'; GRAY, HIGHLY WEATHERED.	961.5	4 EOB	50/5"	-	100	SS-3	-	-	-	-	-	-	-	-	-	11	Rock (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

STANDARD ODOT LOG W/ SULFATE (8.5 X 11) - OH DOT.GDT - 12/7/18 11:46 - X:\GINT\PROJECTS\2018 COMPLETE\600572.GPJ

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-043-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 981.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.798104, -81.914801		

MATERIAL DESCRIPTION AND NOTES	ELEV. 981.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	980.4	1																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	978.9	2	16 14 6	29	50	SS-1	-	36	7	22	23	12	NP	NP	NP	12	A-2-4 (0)	130	
MEDIUM DENSE TO DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	975.9	3 4 5	5 14 15	42	89	SS-2	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	-	
			10 10 10	29	100	SS-3	-	55	5	16	15	9	NP	NP	NP	13	A-1-b (0)	<100	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	974.4	6 7 EOB	8 10 10	29	100	SS-4	-	43	6	20	20	11	22	20	2	12	A-2-4 (0)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-044-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 977.3 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.799014, -81.914650		

MATERIAL DESCRIPTION AND NOTES	ELEV. 977.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	975.8	1																	
DENSE, BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	974.3	2	9 10 14	35	89	SS-1	-	41	8	20	18	13	22	16	6	12	A-2-4 (0)	160	
HARD, BROWN, **SANDY SILT**, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP		3	10 12 12	35	100	SS-2	4.50	37	5	17	27	14	23	17	6	13	A-4a (1)	<100	
@4.5'; VERY STIFF		4																	
		5	10 7 7	20	100	SS-3	2.50	-	-	-	-	-	-	-	-	16	A-4a (V)	-	
		6																	
	969.8	7	11 7 14	30	61	SS-4	3.00	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
		EOB																	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-045-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 962.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.800033, -81.914367		

MATERIAL DESCRIPTION AND NOTES	ELEV. 962.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	961.0	1																	
MEDIUM DENSE, BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP	959.5	2	8 11 4	22	78	SS-1	-	54	6	10	20	10	25	18	7	12	A-2-4 (0)	<100	
STIFF, REDDISH BROWN, **SANDY SILT**, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP		3	5 4 4	12	100	SS-2	2.00	30	5	11	37	17	26	19	7	17	A-4a (4)	210	
@4.5'; VERY STIFF		4																	
		5	5 6 7	19	100	SS-3	3.00	-	-	-	-	-	-	-	-	15	A-4a (V)	-	
	955.0	6	5 4 4	12	100	SS-4	2.50	22	11	15	32	20	25	16	9	16	A-4a (3)	-	
	EOB	7																	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 977.0 (MSL) EOB: 7.5 ft.
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.800639, -81.910933

EXPLORATION ID B-046-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 977.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (14") & BASE (4")	975.5	1																	
VERY STIFF, BROWN, **SANDY SILT**, "AND" GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP	974.0	2	8 5 4	13	100	SS-1	3.00	43	7	13	25	12	20	17	3	13	A-4a (0)	120	
VERY STIFF, BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL AND STONE FRAGMENTS, MOIST		3 4 5	2 4 6	15	100	SS-2	4.00	2	2	14	50	32	32	15	17	22	A-6b (11)	320	
	971.0		8 10 10	29	100	SS-3	2.50	-	-	-	-	-	-	-	-	17	A-6b (V)	-	
MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL AND STONE FRAGMENTS, DAMP	969.5	6 7 EOB	9 7 5	17	100	SS-4	-	9	8	22	46	15	NP	NP	NP	18	A-4a (5)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 946.3 (MSL) EOB: 7.5 ft.
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.800905, -81.913446

EXPLORATION ID B-047-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	946.3																		
	944.8	1																	
HARD, BROWN, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP TO MOIST		2	3 3 4	10	83	SS-1	4.50	10	7	17	44	22	24	16	8	15	A-4a (6)	<100	
@3.0'; VERY STIFF, TRACE CLAY		3	2 2 2	6	100	SS-2	2.50	19	7	20	49	5	24	16	8	17	A-4a (4)	<100	
	940.3	4	3 2 2	6	33	SS-3	2.50	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
MEDIUM DENSE, BROWN AND YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, LITTLE GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP TO MOIST	938.8	5 EOB	3 5 11	23	78	SS-4	-	18	3	47	20	12	NP	NP	NP	13	A-3a (0)	-	
		6																	
		7																	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-048-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 924.6 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.807753, -81.916929		

MATERIAL DESCRIPTION AND NOTES	ELEV. 924.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	923.1	1																	
VERY STIFF, BROWN AND GRAY, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, DAMP		2	4 6 8	20	89	SS-1	4.00	24	10	17	33	16	20	17	3	14	A-4a (3)	<100	
@3.0'; "AND" GRAVEL AND STONE FRAGMENTS		3 4	5 10 9	28	100	SS-2	4.00	38	9	15	24	14	25	17	8	13	A-4a (1)	240	
@4.5' - 6.0'; HARD		5	12 8 6	20	100	SS-3	4.50	43	5	14	23	15	24	17	7	11	A-4a (1)	-	
	917.1	6 7 EOB	6 4 4	12	100	SS-4	3.00	-	-	-	-	-	-	-	-	10	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-049-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 920.3 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.808553, -81.917863		

MATERIAL DESCRIPTION AND NOTES	ELEV. 920.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (9") & BASE (9")	918.8	1																	
LOOSE, DARK GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, SLIGHTLY ORGANIC (LOI = 3.0%), MOIST TO WET	917.3	2	5 3 4	10	89	SS-1	-	42	10	15	23	10	NP	NP	NP	20	A-2-4 (0)	240	
VERY STIFF, BROWN AND GRAY, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, MOIST		3	2 6 8	20	100	SS-2	3.00	25	8	24	27	16	21	15	6	19	A-4a (2)	180	
@4.5'; "AND" STONE FRAGMENTS, DAMP		4 5 6	5 5 6	16	100	SS-3	4.00	43	5	13	25	14	24	15	9	11	A-4a (1)	-	
	912.8	7 EOB	11 10 5	22	100	SS-4	4.00	-	-	-	-	-	-	-	-	10	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-050-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 953.0 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/17/18 END: 10/17/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.809695, -81.915167		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
	953.0																		
CONCRETE (10") & BASE (8")	951.5	1																	
VERY STIFF, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP TO MOIST		2	2 6 5	16	100	SS-1	3.50	25	9	13	35	18	24	17	7	17	A-4a (4)	<100	
@3.0' - 4.5'; STIFF		3	2 2 2	6	100	SS-2	1.50	34	11	11	29	15	26	16	10	16	A-4a (2)	250	
@4.5'; GRAY AND BROWN		4 5	2 2 2	6	83	SS-3	2.50	-	-	-	-	-	-	-	-	18	A-4a (V)	-	
	945.5	6 7 EOB	2 4 7	16	100	SS-4	3.50	-	-	-	-	-	-	-	-	14	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-051-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 912.1 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.809736, -81.917555		

MATERIAL DESCRIPTION AND NOTES	ELEV. 912.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	910.6	1																	
VERY STIFF, GRAY AND BROWN MOTTLED, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, MODERATELY ORGANIC (LOI = 4.1%), DAMP TO MOIST @3.0'; GRAY AND BROWN, SLIGHTLY ORGANIC WITH ROOTS		2 3 4	3 6 7	19	89	SS-1	3.50	30	8	17	30	15	22	15	7	13	A-4a (2)	120	
			3 3 3	9	100	SS-2	2.50	24	9	16	34	17	29	20	9	25	A-4a (3)	110	
		5	3 4 7	16	100	SS-3	2.00	-	-	-	-	-	-	-	-	22	A-4a (V)	-	
@6.0'; STIFF	904.6	6 7 EOB	6 5 2	10	100	SS-4	2.00	-	-	-	-	-	-	-	-	18	A-4a (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-052-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 939.4 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.810788, -81.915586		

MATERIAL DESCRIPTION AND NOTES	ELEV. 939.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	937.9	1																	
VERY STIFF, BROWN AND GRAY MOTTLED, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP	936.4	2	4 8 10	26	89	SS-1	4.00	24	7	20	33	16	20	15	5	12	A-4a (3)	170	
MEDIUM DENSE, BROWN AND GRAY MOTTLED, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		3	9 8 12	29	78	SS-2	-	38	10	20	19	13	22	15	7	11	A-2-4 (0)	360	
		4																	
		5	13 6 3	13	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	-	
@6.0'; MOIST		6																	
	931.9	7 EOB	4 5 9	20	78	SS-4	-	-	-	-	-	-	-	-	-	17	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-053-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 929.1 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.811547, -81.915981		

MATERIAL DESCRIPTION AND NOTES	ELEV. 929.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	927.6	1																	
VERY STIFF, BROWN AND GRAY MOTTLED, **SILT AND CLAY**, SOME SAND, SOME GRAVEL AND STONE FRAGMENTS, DAMP	926.1	2	2 5 7	17	89	SS-1	3.50	22	8	21	28	21	27	16	11	15	A-6a (3)	150	
DENSE, BROWN AND GRAY MOTTLED, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		3	8 11 14	36	100	SS-2	-	22	6	42	15	15	NP	NP	NP	13	A-2-4 (0)	<100	
@4.5'; VERY DENSE		4	14 34 26	87	100	SS-3	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	-	
@6.0'; MEDIUM DENSE		5	10 10 10	29	100	SS-4	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	-	
	921.6 EOB	6																	
		7																	

NOTES: LAT/LONG/ELEV CALCULATED FROM DISTRICT SURVEY DATA AND OPERATOR'S MEASUREMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-054-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 4/2/18	ELEVATION: 919.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/16/18 END: 10/16/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.811962, -81.917133		

MATERIAL DESCRIPTION AND NOTES	ELEV. 919.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (11") & BASE (7")	917.7	1																	
VERY STIFF, BROWN, **SANDY SILT**, SOME CLAY, SOME GRAVEL, DAMP		2	6 6 4	15	78	SS-1	3.50	23	7	14	34	22	25	16	9	16	A-4a (4)	130	
@3.0'; GRAYISH BROWN, LITTLE GRAVEL AND STONE FRAGMENTS		3	2 9 9	26	100	SS-2	3.50	14	7	28	30	21	22	16	6	15	A-4a (3)	<100	
@4.5'; BROWN AND GRAY		4	9 11 14	36	89	SS-3	3.00	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
@6.0'; GRAY, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP	911.7	5 6 7 EOB	6 4 4	12	100	SS-4	2.50	43	8	11	22	16	25	17	8	11	A-4a (1)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-055-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1041.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.837802, -81.927766		

MATERIAL DESCRIPTION AND NOTES	ELEV. 1041.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1040.4	1																	
HARD, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP	1038.9	2	4 12 11	33	72	SS-1	4.50	30	12	18	21	19	23	16	7	12	A-4a (1)	170	
VERY STIFF, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		3	11 15 13	41	100	SS-2	-	42	8	16	23	11	21	18	3	12	A-2-4 (0)	250	
		4	11 15 11	38	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
	1034.4	5	10 12 11	33	89	SS-4	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
		EOB 6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1044.4 (MSL) EOB: 7.5 ft.
START: 10/15/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.837345, -81.929201

EXPLORATION ID B-056-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 1044.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (8") & BASE (10")	1042.9	1																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		2	7 4 8	17	100	SS-1	-	37	10	20	23	10	18	16	2	10	A-2-4 (0)	230	
		3	5 10 7	25	100	SS-2	-	38	12	17	23	10	NP	NP	NP	11	A-2-4 (0)	230	
	1038.4	4	7 4 4	12	100	SS-3	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	-	
STIFF, BROWN, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, MOIST	1036.9	5	3 3 3	9	100	SS-4	2.00	25	7	12	38	18	25	18	7	20	A-4a (4)	-	
		EOB 6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1043.5 (MSL) EOB: 7.5 ft.
START: 10/15/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.837169, -81.929652

EXPLORATION ID B-057-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	1043.5																		
	1042.0	1																	
MEDIUM DENSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, SLIGHTLY ORGANIC (LOI = 2.2%), DAMP @3.0' - 4.5'; SLIGHTLY ORGANIC (LOI = 2.7%)		2	7 8 7	22	83	SS-1	-	38	14	14	21	13	24	19	5	10	A-2-4 (0)	430	
		3																	
		4	6 8 7	22	100	SS-2	-	35	16	22	15	12	25	20	5	18	A-2-4 (0)	290	
	1037.5	5	8 10 11	30	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	-	
HARD, BROWN AND GRAYISH BROWN, **SANDY SILT**, "AND" CLAY, LITTLE CLAY, DAMP	1036.0	6	9 16 11	39	100	SS-4	4.50	43	6	14	27	10	23	19	4	14	A-4a (0)	-	
		EOB 7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1037.4 (MSL) EOB: 7.5 ft.
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.838629, -81.929184

EXPLORATION ID B-058-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 1037.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (11") & BASE (7")	1035.9	1																	
VERY STIFF, GRAY, **SANDY SILT**, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP		2	3 8 7	22	78	SS-1	4.00	31	9	16	30	14	22	17	5	13	A-4a (2)	170	
@3.0'; BROWN AND GRAY MOTTLED	1032.9	3 4	9 10 12	32	83	SS-2	4.00	29	12	18	22	19	22	17	5	13	A-4a (1)	110	
VERY DENSE, BROWNISH GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP		5	15 26 27	77	100	SS-3	-	41	14	17	19	9	NP	NP	NP	8	A-2-4 (0)	-	
@6.0'; MEDIUM DENSE	1029.9	6 EOB 7	16 10 6	23	56	SS-4	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-059-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1049.3 (MSL) EOB: 4.0 ft.	PAGE 1 OF 1	
START: 10/10/18 END: 10/10/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.837139, -81.930857		

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
CONCRETE (1") & BASE (17")	1049.3																		
	1047.8	1																	
VERY DENSE, YELLOWISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	1046.3	2	17 26 31	83	78	SS-1	-	48	14	14	17	7	NP	NP	NP	9	A-1-b (0)	300	
VERY DENSE, YELLOWISH BROWN, **SANDY SILT**, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP	1045.3	3	28 60	-	100	SS-2	-	27	18	18	25	12	NP	NP	NP	9	A-4a (0)	<100	
		EOB 4																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS

PROJECT: WAY-83-10.81	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET:	EXPLORATION ID B-060-0-18	
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: ODOT / BRODIE	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR83		
PID: 91095 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 4/2/18	ELEVATION: 1069.7 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1	
START: 10/15/18 END: 10/15/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.838119, -81.931399		

MATERIAL DESCRIPTION AND NOTES	ELEV. 1069.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	HOLE SEALED
CONCRETE (10") & BASE (8")	1068.2	1																	
VERY STIFF, GRAY AND BROWN MOTTLED, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, DAMP		2	3 5 9	20	78	SS-1	4.00	20	8	18	35	19	25	18	7	14	A-4a (4)	<100	
@3.0'; BROWN		3	5 4 7	16	100	SS-2	3.00	35	11	18	24	12	23	19	4	15	A-4a (0)	<100	
@4.5'; STIFF	1063.7	4	6 4 5	13	100	SS-3	2.00	-	-	-	-	-	-	-	-	18	A-4a (V)	-	
MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE STONE FRAGMENTS, LITTLE CLAY, DAMP	1062.2	5	4 4 5	13	100	SS-4	2.00	19	8	23	34	16	NP	NP	NP	17	A-4a (3)	-	
	EOB	6																	
		7																	

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. HOLE DRY UPON COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 5 LB. HOLE PLUG

OHIO DEPARTMENT OF TRANSPORTATION

DETERMINING SULFATE CONTENT IN SOILS **SUPPLEMENT 1122**

Project C-R-S: WAY-83-10.81

PID No: 91095

Report Date: 11/29/18

Consultant:

Technician: A. Willis

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates	Elevation	Soaking Time (hr)	Dilution Ratio	Replicate Sample Readings			Average Reading	Sulfate Content (ppm)
							1	2	3		
B-001-0-18, 017-155					16.9	1:20	1.57	1.673	2.078	1.77	35
B-001-0-18, 017-156					17.2	1:20	3.578			3.58	72
B-002-0-18, 017-158					17.3	1:20	3.749			3.75	75
B-002-0-18, 017-159					17.6	1:20	2.463			2.46	49
B-003-0-18, 018-071					17.8	1:20	4.128	4.253	5.051	4.48	90
B-003-0-18, 018-072					18.7	1:20	2.181			2.18	44
B-004-0-18, 017-161					17.4	1:20	3.388			3.39	68
B-005-0-18, 018-075					22.9	1:20	5.591			5.59	112
B-005-0-18, 018-076					23.1	1:20	4.251			4.25	85
B-006-0-18, 018-079					22.5	1:20	4.946			4.95	99
B-006-0-18, 018-080					17.6	1:20	5.531			5.53	111
B-007-0-18, 018-083					17.8	1:20	5.135			5.14	103
B-007-0-18, 018-084					18.3	1:20	3.194	4.069	3.874	3.71	74
B-008-0-18, 018-087					18.8	1:20	4.074			4.07	81
B-008-0-18, 018-088					18.9	1:20	4.241			4.24	85
B-009-0-18, 018-091					19.3	1:20	7.005			7.01	140
B-009-0-18, 018-092					19.8	1:20	9.791			9.79	196
B-010-0-18, 017-164					17.4	1:20	8.028			8.03	161
B-010-0-18, 017-165					17.8	1:20	4.175			4.18	84
B-011-0-18, 018-095					20.1	1:20	13.58			13.58	272
B-011-0-18, 018-096					20.4	1:20	11.29			11.29	226
B-012-0-18, 018-099					20.7	1:20	3.412			3.41	68
B-012-0-18, 018-100					20.9	1:20	4.042			4.04	81
B-013-0-18, 018-103					21.4	1:20	13.94			13.94	279
B-013-0-18, 018-104					22.3	1:20	3.298			3.30	66
B-014-0-18, 018-107					22.8	1:20	3.928	3.814	3.854	3.87	77
B-014-0-18, 018-108					23.4	1:20	5.755			5.76	115
B-015-0-18, 018-112					18.3	1:20	8.023			8.02	160
B-015-0-18, 018-113					18.6	1:20	7.374			7.37	147
B-016-0-18, 017-168					18.1	1:20	8.597			8.60	172
B-016-0-18, 017-169					18.4	1:20	2.871			2.87	57
B-017-0-18, 018-115					19.3	1:20	10.57			10.57	211
B-017-0-18, 018-116					19.7	1:20	17.45			17.45	349
B-018-0-18, 017-172					19.5	1:20	6.979			6.98	140
B-018-0-18, 017-174					19.9	1:20	5.433	3.101	3.24	3.92	78
B-019-0-18, 018-119					20.2	1:20	11.07			11.07	221
B-019-0-18, 018-120					20.5	1:20	13.83			13.83	277
B-020-0-18, 018-123					21.3	1:20	13.33			13.33	267
B-020-0-18, 018-124					21.8	1:20	23.82	20.41	23.73	22.65	453
B-021-0-18, 017-176					21.7	1:20	12.01			12.01	240
B-021-0-18, 017-177					22	1:20	13.32			13.32	266
B-022-0-18, 018-127					22	1:20	11.61			11.61	232
B-022-0-18, 018-128					22.1	1:20	7.826			7.83	157
B-023-0-18, 017-179					18.9	1:20	11.01			11.01	220
B-023-0-18, 017-180					19	1:20	12.24			12.24	245
B-024-0-18, 017-183					19.3	1:20	5.022			5.02	100
B-024-0-18, 017-184					19.5	1:20	4.234			4.23	85
B-025-0-18, 017-188					19.7	1:20	4.454			4.45	89
B-025-0-18, 017-189					20	1:20	3.595			3.60	72
B-026-0-18, 017-191					20.3	1:20	4.184			4.18	84
B-026-0-18, 017-192					20.7	1:20	6.925			6.93	139
B-027-0-18, 018-012					21.9	1:20	3.259	2.576	3.966	3.27	65
B-027-0-18, 018-013					22.5	1:20	2.083			2.08	42
B-028-0-18, 018-131					22.4	1:20	8.191			8.19	164
B-028-0-18, 018-132					22.8	1:20	12.04			12.04	241
B-029-0-18, 018-016					22.7	1:20	3.955			3.96	79
B-029-0-18, 018-017					22.9	1:20	11.76			11.76	235
190					23.1	1:20	9.504			9.50	190
B-030-0-18, 018-021					23.3	1:20	10.6			10.60	212
B-031-0-18, 018-024					17.5	1:20	4.282			4.28	86
B-031-0-18, 018-025					18.3	1:20	5.538	6.756	5.774	6.02	120

OHIO DEPARTMENT OF TRANSPORTATION

DETERMINING SULFATE CONTENT IN SOILS **SUPPLEMENT 1122**

Project C-R-S: WAY-83-10.81

PID No: 91095

Report Date: 11/29/18

Consultant:

Technician: A. Willis

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Dilution Ratio	Replicate Sample Readings			Average Reading	Sulfate Content (ppm)
								1	2	3		
B-032-0-18, 018-135						23.2	1:20	2.842			2.84	57
B-032-0-18, 018-136						23.7	1:20	20.87			20.87	417
B-033-0-18, 018-028						18.9	1:20	8.581			8.58	172
B-033-0-18, 018-029						18.9	1:20	3.943			3.94	79
B-034-0-18, 018-139						16.7	1:20	11.06			11.06	221
B-034-0-18, 018-140						16.9	1:20	6.723	8.596	8.207	7.84	157
B-035-0-18, 018-032						19.8	1:20	4.247			4.25	85
B-035-0-18, 018-033						20.1	1:20	4.378			4.38	88
B-036-0-18, 018-036						20.4	1:20	8.581			8.58	172
B-036-0-18, 018-037						16.8	1:20	6.208			6.21	124
B-037-0-18, 018-040						20.7	1:20	4.77			4.77	95
B-037-0-18, 018-041						16.6	1:20	13.54			13.54	271
B-037-0-18, 018-042						20.9	1:20	13.19			13.19	264
B-038-0-18, 018-045						21.4	1:20	8.514			8.51	170
B-038-0-18, 018-046						22.6	1:20	4.547	4.036	5.607	4.73	95
B-039-0-18, 018-143						17.1	1:20	5.961			5.96	119
B-039-0-18, 018-144						17.5	1:20	1.28			1.28	26
B-040-0-18, 018-147						17.9	1:20	1.451			1.45	29
B-040-0-18, 018-148						18.2	1:20	1.29			1.29	26
B-041-0-18, 018-151						18.5	1:20	3.231			3.23	65
B-042-0-18, 018-154						19.6	1:20	4.608			4.61	92
B-043-0-18, 018-157						20	1:20	6.579			6.58	132
B-043-0-18, 018-159						20.4	1:20	4.798			4.80	96
B-044-0-18, 018-161						21.7	1:20	8.145	8.225	8.081	8.15	163
B-044-0-18, 018-162						22.2	1:20	4.959			4.96	99
B-045-0-18, 018-165						22.3	1:20	3.451			3.45	69
B-045-0-18, 018-166						22.5	1:20	10.47			10.47	209
B-046-0-18, 018-169						22.8	1:20	5.759			5.76	115
B-046-0-18, 018-170						23	1:20	16.19			16.19	324
B-047-0-18, 018-173						17.9	1:20	1.699	1.553	1.537	1.60	32
B-047-0-18, 018-174						18.3	1:20	4.466			4.47	89
B-048-0-18, 018-177						18.5	1:20	4.925			4.93	99
B-048-0-18, 018-178						18.7	1:20	12.22			12.22	244
B-049-0-18, 018-181						18.8	1:20	11.84			11.84	237
B-049-0-18, 018-182						18.9	1:20	9.051			9.05	181
B-050-0-18, 018-185						19.2	1:20	4.806			4.81	96
B-050-0-18, 018-186						19.5	1:20	12.66			12.66	253
B-051-0-18, 018-189						19.8	1:20	5.759			5.76	115
B-051-0-18, 018-190						19.9	1:20	5.271			5.27	105
B-052-0-18, 018-193						20.5	1:20	10.1	7.475	7.892	8.49	170
B-052-0-18, 018-194						20.8	1:20	18.17			18.17	363
B-053-0-18, 018-197						22.2	1:20	7.321			7.32	146
B-053-0-18, 018-198						22.3	1:20	4.789			4.79	96
B-054-0-18, 019-001						22.5	1:20	6.535			6.54	131
B-054-0-18, 019-002						22.7	1:20	3.077			3.08	62
B-055-0-18, 018-049						23	1:20	8.32			8.32	166
B-055-0-18, 018-050						23.1	1:20	12.39			12.39	248
B-056-0-18, 019-005						17.5	1:20	11.76	11.9	10.65	11.44	229
B-056-0-18, 019-006						18.4	1:20	11.29			11.29	226
B-057-0-18, 019-009						18.7	1:20	21.37			21.37	427
B-057-0-18, 019-010						19.6	1:20	14.45			14.45	289
B-058-0-18, 018-053						23.3	1:20	8.4			8.40	168
B-058-0-18, 018-054						23.4	1:20	5.504			5.50	110
B-059-0-18, 018-057						23.6	1:20	14.89			14.89	298
B-059-0-18, 018-058						17	1:20	3.924	3.766	2.75	3.48	70
B-060-0-18, 019-013						20.1	1:20	3.515			3.52	70
B-060-0-18, 019-014						20.6	1:20	4.225			4.23	85

APPENDIX G
SURVEY CONTROL DATA

PROJECT: WAY-83-10.81 **PID: 91095**

PROJECT GROUND COORDINATES - US SURVEY FEET | PROJECT CONTROL POINTS | STATE PLANE GRID COORDINATES | MONUMENTS TO BE SET DURING CONSTRUCTION

Project coordinates (U.S. Survey Feet) are relative to State Plane Grid coordinates (meters) by a Project Adjustment Factor of: 3.28100775

Horiz. Datum: NAD83 (2011) Ohio State Plane, North Zone (3401) Vert. Datum: NAVD88

CP07 defined by GPS from CORS using Geoid 12b. All other elevations are established by leveling from CP07.

C/L of Right-of-Way SR 83- | WAY-3-14.72/WAY-76-12.04(1966) used for alignment

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE	DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)	ITEM 623.05 MONUMENT ASSEMBLY	ITEM 623.05 REFERENCE MONUMENT
701	562+29.42	143.72	LT	410980.897	2130868.224	985.50	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK FOUND	701	125260.5690	649455.4080	300.380	410959.0500	2130754.9509		
704	577+76.27	181.27	RT	412454.380	2131464.262	976.19	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK FOUND	704	125709.6636	649637.0710	297.543	412432.4547	2131350.9573		
706	590+36.16	142.99	RT	413732.528	2131363.954	966.68	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK FOUND	706	126099.2232	649606.4987	294.644	413710.5347	2131250.6546		
CP01	633+86.94	50.28	RT	417840.466	2129861.647	917.87	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP01	127351.2586	649148.6190	279.766	417818.2544	2129748.4274		
CP02	681+05.24	51.94	RT	422376.076	2128603.275	955.71	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP02	128733.6418	648765.0868	291.300	422353.6233	2128490.1223		
CP03	701+70.72	4.53	LT	424322.138	2127901.921	985.15	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP03	129326.7712	648551.3251	300.274	424299.5818	2127788.8056		
CP04	721+63.29	84.54	LT	426198.114	2127218.795	1009.09	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP04	129898.5394	648343.1189	307.570	426175.4581	2127105.7159		
CP05	741+09.02	50.27	LT	427532.944	2126015.123	1076.50	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP05	130305.3748	647976.2584	328.118	427510.2171	2125902.1079		
CP06	759+67.35	75.16	RT	428449.038	2124393.333	1157.98	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP06	130584.5860	647481.9621	352.953	428426.2624	2124280.4041		
CP07	773+07.96	79.16	LT	428811.068	2123075.647	1176.23	GOVCON	8" CONCRETE MONUMENT WI/3" ALUMINUM DISK SET	CP07	130694.9271	647080.3520	358.516	428788.2732	2122962.7882		
CP10	771+75.91	2808.38	LT	426398.748	2121770.412	1153.56	SMSS	SURVEY MARKER SPIKE SET	CP10	129959.6895	646682.5367	351.607	426376.0814	2121657.6226		
CP11	628+83.41	5150.07	LT	415541.272	2125167.621	1012.83	SMSS	SURVEY MARKER SPIKE SET	CP11	126650.5002	647717.9531	308.710	415519.1826	2125054.6510		
CP12	594+89.16	4852.63	RT	415241.177	2135874.994	925.60	SMSS	SURVEY MARKER SPIKE SET	CP12	126559.0359	650981.3934	282.124	415219.1035	2135761.4548		
CP13	690+63.12	4229.30	RT	424733.367	2132275.538	1147.71	SMSS	SURVEY MARKER SPIKE SET	CP13	129452.1074	649884.3353	349.822	424710.7889	2132162.1901		

EXISTING MONUMENTATION CENTERLINE OF RIGHT OF WAY STATE ROUTE 83- | EXISTING CENTERLINE CONTROL POINTS

Horiz. Datum: NAD83 (2011) Ohio State Plane, North Zone (3401) Vert. Datum: NAVD88

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE	DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)		
MN25006	OffChain	OffChain	RT	403059.945	2130887.077	1113.67	CMON	CONCRETE MONUMENT	MN25006	122846.3862	649461.1541	339.447	403038.519	2130773.803		
MN25005	OffChain	OffChain	RT	403650.910	2130890.398	1106.32	CMON	CONCRETE MONUMENT	MN25005	123026.5033	649462.1662	337.207	403629.453	2130777.124		
MN25004	494+89.30	0.00	RT	404241.588	2130869.211	1093.21	CMON	CONCRETE MONUMENT	MN25004	123206.5327	649455.7088	333.212	404220.099	2130755.938		
MN25003	504+89.85	0.06	LT	405241.491	2130833.292	1068.42	CMON	CONCRETE MONUMENT	MN25003	123511.2875	649444.7612	325.656	405219.949	2130720.021		
MN25002	514+89.93	0.04	LT	406240.932	2130797.465	1043.28	CMON	CONCRETE MONUMENT	MN25002	123815.9014	649433.8417	317.993	406219.337	2130684.196		
MN25001	524+89.85	0.00	LT	407240.211	2130761.665	1018.66	CMON	CONCRETE MONUMENT	MN25001	124120.4661	649422.9304	310.489	407218.563	2130648.398		
MN250124	534+89.84	0.06	LT	408239.559	2130725.765	994.16	CMON	CONCRETE MONUMENT	MN250124	124425.0518	649411.9887	303.019	408217.857	2130612.500		
MN250113	544+02.05	0.00	RT	409151.185	2130693.132	971.57	CMON	CONCRETE MONUMENT	MN250113	124702.9013	649402.0426	296.136	409129.435	2130579.868		
MN250110	556+30.98	0.00	LT	410366.028	2130841.493	962.86	CMON	CONCRETE MONUMENT	MN250110	125073.1666	649447.2608	293.480	410344.214	2130728.221		
MN250114	565+91.50	44.99	RT	411276.967	2131149.403	968.66	CMON	CONCRETE MONUMENT	MN250114	125350.8064	649541.1069	295.247	411255.104	2131036.115		
MN27	566+17.40	0.00	RT	411314.259	2131113.287	971.31	DRILLH	CONCRETE MONUMENT	MN27	125362.1724	649530.0993	296.056	411292.394	2131000.001		
MN26	580+40.77	0.00	RT	412721.696	2131279.268	979.35	CMON	DISK IN WALL	MN26	125791.1373	649580.6878	298.508	412699.756	2131165.973		
MN25	586+94.99	0.00	RT	413375.272	2131250.283	968.84	CMON	DISK IN WALL	MN25	125990.3370	649571.8536	295.302	413353.297	2131136.990		
MN24	593+60.71	0.08	RT	414035.609	2131170.897	945.28	CMON	DISK IN WALL	MN24	126191.5976	649547.6580	288.122	414013.600	2131057.608		
MN23	600+84.76	0.00	RT	414731.171	2130972.741	920.86	CMON	DISK IN WALL	MN23	126403.5941	649487.2631	280.677	414709.125	2130859.462		
MN22	615+66.36	0.01	LT	416118.250	2130452.013	909.44	CMON	DISK IN WALL	MN22	126826.3542	649328.5533	277.199	416096.130	2130338.762		
MN21	623+67.51	0.20	RT	416868.371	2130170.646	915.43	CMON	DISK IN WALL	MN21	127054.9794	649242.7971	279.024	416846.211	2130057.410		
MN20	630+67.06	0.00	RT	417523.219	2129924.598	920.72	CMON	DISK IN WALL	MN20	127254.5667	649167.8055	280.635	417501.024	2129811.375		
MN19	646+91.75	0.00	LT	419064.240	2129411.170	932.94	CMON	DISK IN WALL	MN19	127724.2460	649011.3206	284.361	419041.964	2129297.974		
MN18	656+66.86	0.15	LT	420000.324	2129138.069	940.43	CMON	DISK IN WALL	MN18	128009.5495	648928.0837	286.644	419977.997	2129024.888		
MN17	665+34.72	0.00	LT	420833.533	2128895.283	947.11	CMON	DISK IN WALL	MN17	128263.4988	648854.0863	288.679	420811.162	2128782.115		
MN16	672+33.67	0.00	RT	421511.822	2128727.392	952.38	CMON	DISK IN WALL	MN16	128470.2308	648802.9157	290.285	421489.416	2128614.233		
MN15	682+24.25	0.00	RT	422482.229	2128528.500	962.50	CMON	DISK IN WALL	MN15	128765.9957	648742.2966	293.370	422459.771	2128415.351		
MN14	691+55.91	0.00	RT	423375.724	2128268.203	967.78	IPIPE	1" PIPE BENT	MN14	129038.3189	648662.9621	294.981	423353.218	2128155.068		
MN13	698+47.24	0.01	RT	424021.564	2128021.568	976.51	CMON	CONCRETE MONUMENT	MN13	129235.1610	648587.7916	297.642	423999.024	2127908.446		
MN12	704+66.36	0.06	LT	424599.917	2127800.621	991.56	CMON	CONCRETE MONUMENT	MN12	129411.4339	648520.4504	302.227	424577.346	2127687.511		
MN11	710+54.32	0.00	RT	425149.205	2127590.910	994.99	CMON	CONCRETE MONUMENT	MN11	129578.8484	648456.5338	303.273	425126.605	2127477.811		
MN10	712+77.63	15.12	RT	425364.362	2127532.675	995.39	CMON	CONCRETE MONUMENT	MN10	129644.4249	648438.7846	303.397	425341.751	2127419.579		
MN09	718+59.58	10.73	RT	425926.907	2127385.413	1000.02	CMON	CONCRETE MONUMENT	MN09	129815.8798	648393.9015	304.807	425904.266	2127272.325		
MN08	718+74.43	10.66	RT	425941.290	2127381.719	1000.12	CMON	CONCRETE MONUMENT	MN08	129820.2635	648392.7756	304.837	425918.648	2127268.631		
MN07	724+27.14	5.03	RT	426475.864	2127241.137	1016.93	CMON	CONCRETE MONUMENT	MN07	129983.1932	648349.9284	309.961	426453.193	2127128.057		
MN06	724+37.04	4.97	RT	426485.475	2127238.597	1017.57	CMON	CONCRETE MONUMENT	MN06	129986.1226	648349.1542	310.157	426462.804	2127125.517		
MN05	726+99.34	0.18	RT	426729.411	2127141.877	1031.90	MAGS	SMALL MAG NAIL	MN05	130060.4706	648319.6755	314.524	426706.727	2127028.802		
MN04	726+99.61	0.56	RT	426729.818	2127142.103	1031.90	MAGS	BIG MAG NAIL	MN04	130060.5946	648319.7444	314.522	426707.134	2127029.028		
MN03	730+34.16	0.03	LT	426996.964	2126943.403	1044.69	CMON	DISK IN WALL	MN03	130142.0165	648259.1837	318.422	426974.266	2126830.339		
MN02	733+01.13	0.01	RT	427158.907	2126731.773	1051.71	RSPK	RSPK IN WALL	MN02	130191.3740	648194.6822	320.561	427136.200	2126618.720		
MN01	737+95.41	0.00	RT	427416.503	2126309.927	1072.22	CMON	DISK IN WALL	MN01	130269.8855	648066.1101	326.813	427393.783	2126196.896		

CENTERLINE OF RIGHT OF WAY & CONSTRUCTION STATE ROUTE 83- | CENTERLINE ALIGNMENT

Horiz. Datum: NAD83 (2011) Ohio State Plane, North Zone (3401) Vert. Datum: NAVD88

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE	DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)		
MN25004	494+89.30	0.00	RT	404241.588	2130869.211	1093.21	CMON		MN25004	123206.5327	649455.7088	333.212	404220.099	2130755.938		
CLRW01	544+01.74	0.00	RT	409150.877	2130693.143	0.00	CALPT	PC	CLRW01	124702.8073	649402.0460	0.000	409129.127	2130579.879		
CLRW03	544+01.74	3906.53	RT	409290.891	2134597.163	0.00	CALPT	CC	CLRW03	124745.4815	650591.9304	0.000	409269.134	2134483.692		
CLRW02	556+32.29	0.00	RT	410367.287	2130841.854	0.00	CALPT	PT	CLRW02	125073.5501	649447.3706	0.000	410345.472	2130728.582		
CLRW04	566+16.67	0.00	RT	411313.562	2131113.087	0.00	CALPT	PC	CLRW04	125361.9601	649530.0385	0.000	411291.697	2130999.801		
CLRW06	566+16.67	4404.20	LT	412527.077	2126879.370	0.00	CALPT	CC	CLRW06	125731.8206	648239.6676	0.000	412505.148	2126766.309		
CLRW05	580+41.29	0.00	RT	412722.209	2131279.246	0.00	CALPT	PT	CLRW05	125791.2936	649580.6809	0.000	412700.269	2131165.951		
CLRW07	586+95.35	0.00	RT	413375.627	2131250.267	0.00	CALPT	PC	CLRW07	125990.4453	649571.8487	0.000	413353.653	2131136.974		
CLRW09	586+95.35	4407.37	LT	413180.355	2126847.225	0.00	CALPT	CC	CLRW09	125930.9295	648229.8701	0.000	413158.391	2126734.166		
CLRW08	600+82.80	0.00	RT	414729.343	2130973.427	0.00	CALPT	PT	CLRW08	126403.0370	649487.4723	0.000	414707.297	2130860.149		
CLRW10	630+73.34	0.00	RT	417529.100	2129922.391	0.00	CALPT	PC	CLRW10	127256.3591	649167.1327	0.000	417506.905	2129809.168		
CLRW12	630+73.34	21485.92	RT	425080.415	2150037.619	0.00	CALPT	CC	CLRW12	129557.8820	655297.9406	0.000	425057.818	2149923.327		
CLRW11	646+93.63	0.00	RT	419066.047	2129410.643	0.00	CALPT	PT	CLRW11	127724.7965	649011.1599	0.000	419043.770	2129297.447		
CLRW31	653+09.72	9715.24	LT	416937.999	2119911.330	0.00	CALPT	CC	CLRW31	127076.2007	646115.9174	0.000	416915.835	2119798.639		
CLRW13	665+31.25	0.00	RT	420830.208	2128896.253	0.00	CALPT	PC	CLRW13	128262.4853	648854.3819	0.000	420807.837	2128783.084		
CLRW15	665+31.25	8594.37	RT	423235.955	2137147.042	0.00	CALPT	CC	CLRW15	128995.7194	651369.0938	0.000	423213.456	2137033.435		
CLRW14	672+32.17	0.00	RT	421510.353	2128727.693	0.00	CALPT	PT	CLRW14	128469.7829	648803.0074	0.000	421487.946	2128614.534		
CLRW16	682+24.14	0.00	RT	422482.125	2128528.522	0.00	CALPT	PC	CLRW16	128765.9638	648742.3032	0.000	422459.666	2128415.373		
CLRW18	682+24.14	5729.58	LT	421331.723	2122915.622	0.00	CALPT	CC	CLRW18	128415.3394	647031.5789	0.000	421309.326	2122802.772		

CLRW17	691+56.05	0.00	RT	423375.856	2128268.153	0.00	CALPT	PT	CLRW17	129038.3593	648662.9468	0.000	423353.350	2128155.018		
CLRW19	711+10.63	0.00	RT	425201.805	2127570.823	0.00	CALPT	PC	CLRW19	129594.8799	648450.4115	0.000	425179.202	2127457.725		
CLRW21	711+10.63	1909.86	RT	425883.182	2129355.000	0.00	CALPT	CC	CLRW21	129802.5532	648994.2008	0.000	425860.543	2129241.807		
CLRW20	713+35.75	0.00	RT	425416.356	2127503.072	0.00	CALPT	PT	CLRW20	129660.2719	648429.7621	0.000	425393.742	2127389.978		
CLRW28	723+22.09	1231.47	LT	426071.713	2126067.842	0.00	CALPT	CC	CLRW28	129860.0144	647992.3265	0.000	426049.064	2125954.824		
CLRW22	724+25.03	0.00	RT	426472.583	2127236.778	0.00	CALPT	PC	CLRW22	129982.1932	648348.5998	0.000	426449.912	2127123.698		
CLRW23	726+99.16	0.00	RT	426729.166	2127141.800	0.00	CALPT	PCC	CLRW23	130060.3957	648319.6519	0.000	426706.482	2127028.725		
CLRW26	726+99.16	954.93	LT	426303.412	2126287.033	0.00	CALPT	CC	CLRW26	129930.6326	648059.1325	0.000	426280.751	2126174.004		
CLRW25	730+34.35	0.00	RT	426997.114	2126943.287	0.00	CALPT	PCC	CLRW25	130142.0622	648259.1484	0.000	426974.416	2126830.223		
CLRW27	733+01.15	0.00	RT	427158.907	2126731.756	0.00	CALPT	PT	CLRW27	130191.3740	648194.6769	0.000	427136.200	2126618.702		
CLRW24	734+04.38	1232.06	LT	426161.209	2126001.538	0.00	CALPT	CC	CLRW24	129887.2913	647972.1181	0.000	426138.555	2125888.524		
CLRW29	737+95.40	0.00	RT	427416.496	2126309.939	0.00	CALPT	PC	CLRW29	130269.8833	648066.1138	0.000	427393.775	2126196.908		
CLRW38	767+46.51	1204.96	RT	429786.798	2123996.621	0.00	CALPT	CC	CLRW38	130992.3144	647361.0506	0.000	429763.952	2123883.714		
CLRW30	767+94.21	0.00	RT	428652.847	2123586.031	0.00	CALPT	PT	CLRW30	130646.7039	647235.9091	0.000	428630.061	2123473.145		
CLRW32	769+01.20	0.00	RT	428684.871	2123483.940	0.00	CALPT	PC	CLRW32	130656.4643	647204.7932	0.000	428662.083	2123371.059		
CLRW33	770+67.91	0.00	RT	428745.018	2123328.594	0.00	CALPT	PCC	CLRW33	130674.7962	647157.4463	0.000	428722.227	2123215.722		
CLRW36	770+67.91	954.93	RT	429611.073	2123730.889	0.00	CALPT	CC	CLRW36	130938.7561	647280.0594	0.000	429588.236	2123617.995		
CLRW35	775+94.71	0.00	RT	429084.344	2122934.367	0.00	CALPT	PCC	CLRW35	130778.2172	647037.2919	0.000	429061.534	2122821.515		
CLRW37	777+61.41	0.00	RT	429229.005	2122851.766	0.00	CALPT	PT	CLRW37	130822.3078	647012.1164	0.000	429206.188	2122738.919		
CLRW34	779+20.79	1204.86	RT	429900.003	2123865.101	0.00	CALPT	CC	CLRW34	131026.8173	647320.9651	0.000	429877.150	2123752.200		
CLRW39	782+67.50	0.00	RT	429683.968	2122630.100	0.00	CALPT	POT	CLRW39	130960.9735	646944.5562	0.000	429661.127	2122517.265		

Grid to Ground Multiplier (1/CSF) =	1.00005316	State Plane Grid to Project Ground (same units)	**Unitless Factor:**
Project Adjustment Factor (PAF) =	3.28100775	State Plane Grid (meters) to Project Ground (US Survey Feet)	The Grid to Ground Multiplier for the project was computed by taking the inverse of the TBC-generated combined scale factor for: CP01
English to metric conversion =	3.28083333	Meters to US Survey Foot conversion factor	**Primary Project Control:**
PROJECT coordinates are scaled from GRID coordinates about the Ohio North Zone grid point N=0, E=0 (N 39º 27' 01.76097", W 89º 28' 32.98476").			Horizontal control was positioned utilizing multiple 4+ hour static GPS sessions on both CP07 and 701. GPS observations for CP07 and 701 were sent to OPUS and then averaged for a final position. All other control positioned through differential GPS observation

APPENDIX H
DESIGN EXCEPTION STUDY

DESIGN EXCEPTION STUDY

WAY-83-10.81

PID 91095

SLM 10.81 to SLM 14.64

City of Wooster, Wooster Township, Wayne County

Submitted to *ODOT – District 3*
November 2020

Gannett Fleming

Excellence Delivered As Promised

Ohio Department of Transportation

WAY-83-10.81
PID 91095

Design Exceptions Study

Table of Contents

Section **Page**

Appendices

SECTION 1: INTRODUCTION

The WAY-83-10.81 project is programmed to be sold as a design/build project in 1st quarter FY 2022. This Design Exception Study is being prepared to assist the District with the development of any Design Exceptions required for the design and construction of the project.

The project includes the full replacement of the original concrete pavement on SR-3/SR-83 from SR-83 SLM 10.81 (600' south of US-30 at the pavement break between asphalt and concrete) and extends north to SR-83 SLM 14.64 (430' west of Friendsville Road at the pavement break between concrete and asphalt). The project also includes the interchange ramps B, G, E, and Y at US-30, all ramps at SR-585 (Akron Road), and all ramps at SR-3 (Cleveland Avenue). Only minor bridge repairs are expected. The total length of the project and this Design Exception Study is approximately 3.83 miles (see **Figure 1**).

The Design Exception Study includes the identification of current design criteria, an evaluation of the existing conditions, and an investigation into the areas of concern to develop design exception recommendations or design solutions to address substandard areas.

All design criteria was obtained from the current version of the ODOT Location and Design Manual Volume 1. The evaluation of the existing conditions included analysis of typical sections, horizontal and vertical geometry for the mainline and ramps, an analysis of the crash history along SR-83 and the interchanges, and verification of the horizontal and vertical clearances on/under the existing bridges.

The horizontal and vertical geometrics used for this study came from several plan sets: WAY-3-14.72/WAY-76-12.04 (1966), WAY-83-14.05 B (1994), WAY-3-14.72/WAY-83-13.79 (1996), and WAY-30-11.86, PID 16285 (2004). Relevant plan schematics and interchange geometrics are included in **Appendix A**.

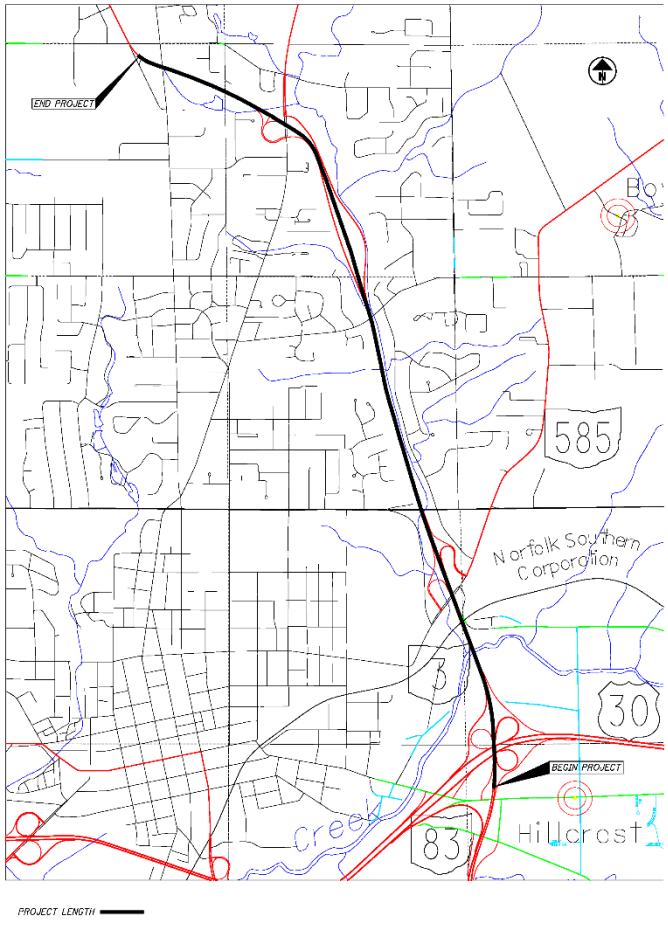


Figure 1 - Project Location Map

SECTION 2: MAINLINE

The design designation data for the project was provided by ODOT District 3 and is based on the SHIFT data that will be used in the project's Scope of Services. The design designation data is provided in **Table 2-1**. **Figure 2** illustrates the existing normal typical section.

Table 2-1: SR-83 Design Designation Data

ROADWAY DESIGNATION	WAY-83 SLM 10.81 (Sta 773+45±) to SLM 11.03 (Sta 781+30±)	WAY-3 SLM 14.73 (Sta 781+30±) to SLM 17.45 (Sta 922+00±)	WAY-83 SLM 13.73 (Sta 922+00±) to SLM 14.50 (Sta 962+65±)	WAY-83 SLM 14.50 (Sta 962+65±) to SLM 14.64 (Sta 968+80±)
Functional Classification	Freeways and Expressways	Freeways and Expressways	Freeways and Expressways	Principal Arterial
NHS	No	No	No	No
Design Year	2043	2043	2043	2043
Rural/Urban	Rural	Rural	Urban	Urban
Terrain	Level	Level	Level	Level
Opening Year ADT (2023)	6,800	23,000	15,500	15,500
Design Year ADT (2043)	7,200	28,500	17,500	17,500
Design Hourly Volume	650	2,600	1,600	1,600
Directional Distribution	56%	56%	51%	51%
Trucks (24 Hour B&C)	9%	5%	10%	10%
Design Speed (MPH)	55	55	55	50
Legal Speed (MPH)	55	55	55	45
Design Vehicle	WB-62	WB-62	WB-62	WB-62
Access Control	Limited Access	Limited Access	Limited Access	Limited Access

Note: This project is not part of the National Highway System

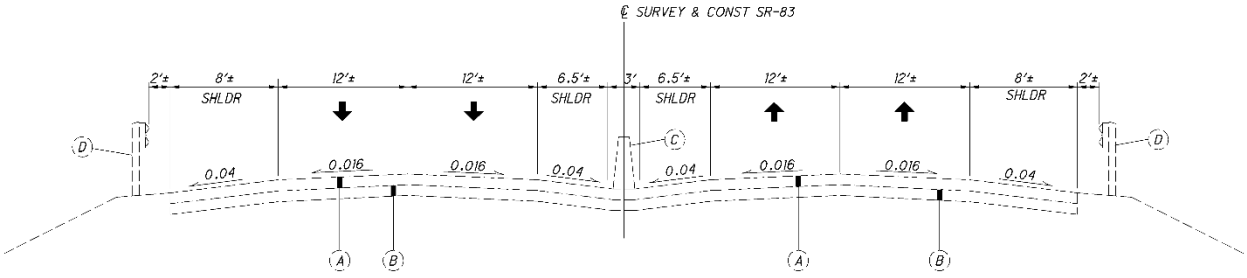


Figure 2 - Existing Normal Typical Section

Table 2-2 summarizes the criteria used to identify the need for design exceptions per L&D Volume 1, Section 105.2 and Figure 105-1. The study findings for the project have been documented on plans which can be found in **Appendix B**. The full criteria matrix for the comparison of standards versus existing conditions for mainline can be found in **Appendix C**.

Table 2-2: Mainline Design Criteria

Bold red text indicates that a design exception is required. *Red italic* text identified a deficiency which could be addressed in design.

SR-83 Mainline	Controlling Criteria for Design Exception Identification			
Controlling Criteria	Standard	Existing	Plan Reference (**Appendix B**)	Remarks
Lane Width	12’	12’		Two (2) lanes each direction south of SR-3, then two (2) lanes NB and one (1) lane SB
Shoulder Width (Outside) (Median)	10’ RT 4’ LT	**8’ RT** **1.5’ LT**	Sheets B-2 to B-17 Sheets B-14 and B-15	**Entire project length** **Sta 924+25 to 935+80±**
Design Loading Structural Capacity	N/A	N/A		
Horizontal Curve Radius	6°00’ (Rural) 5°30’ (Urban)	**C11 - 6°00’**	Sheets B-14 and B-15	*Urban segment - Can be corrected during design*
Maximum Grade	4%	3.96%		
Stopping Sight Distance	495’	**C6 – 444’** **C11 – 278’**	Sheets B-14 and B-15	*C6 - Can be corrected during design* **C11 - Median barrier is the obstruction**
Pavement Cross Slope	1.60%	1.60%		
Superelevation Rate	0.08	**0.083**		*Can be corrected during design*
Vertical Clearance	14.5’	15.1’ Min		

Based on the table above, there are **two required design exceptions**:

- Mainline shoulder width (both LT and RT shoulders) - Throughout the project length the outside treated shoulder is 8’ while the standard per L&D Volume 1, Figure 301-3 is 10’. The mainline median shoulder between Sta. 924+00 to Sta 935+63 is 1.5’. The standard median shoulder is 4’ paved. Bridge structures carrying SR-83 over and under other roadways and streams have been constructed with an approximate 9’ or greater outside barrier offset and 2’ or greater median offset. Since only minor bridge work is expected for this project the shoulder widths are not expected to change, therefore the design exception is expected.
- Stopping sight distance (SSD) - For curve C6, the SSD is 444’ because the outside guardrail is obstructing the view. The SSD for curve C6 can be corrected in design and will not require a design exception. The SSD for curve C11 is 278’ because the median barrier is obstructing the view. The SSD can be slightly improved during design but will not meet the required criteria of 495’, thus requiring a design exception.

The SR-83 mainline has two other potential design exceptions:

- Horizontal curve radius - Curve C11 does not meet the current standard for urban design. The maximum degree of curve for a 55 MPH Urban highway is 5°30'. The existing degree of curve for C11 is 6°00' with 400' spirals. The curve can be revised in design to have a 5°30' degree of curve with 400' spirals. This moves the curve approximately 3' towards the curve center and will require a layout change of the surrounding lanes and Ramp R. See **Appendix H**, sheets H-14 and H-15 for layout changes.
- An existing maximum superelevation rate of 0.083 was used for the original design. The maximum superelevation rate with the current standards is 0.08 (rural) and 0.06 (urban). The maximum superelevation rate can be corrected during design.

One final substandard criteria for the mainline which does not require a design exception is the barrier offset distance. The standard barrier offset is 12' but the existing condition is 10' from edge of pavement to face of guardrail. The bridge structures carrying SR-83 over and under other roadways and streams have been constructed with an approximate 9' or greater outside barrier offset and 2' or greater median offset. Since only minor bridge work is expected for this project the barrier offsets are not expected to change.

Crash data was obtained using GCAT and an analysis completed for all crashes along the length of the project and the interchange ramps for years 2017 to 2019. There was a total of 109 crashes identified. While a few of the crashes might have benefited from a wider median shoulder due to loss of control in bad weather (snow and ice), there was not a significant number of crashes which were related to the specific factors and/or locations identified for design exceptions. Crash diagrams for the project can be found in in A**ppendix G.**

Other items for discussion:

1. ODOT District 3 has proposed a modification to the northbound exit ramp to SR-3 (Cleveland Ave). The existing condition involves the two (2) northbound lanes splitting with the median lane becoming a two (2) lane SR-83 section and the outside lane signed as an exit only lane which widens out to a two (2) lane exit (see **Figure 3**). The proposed modification is to carry the two northbound lanes through and develop a single lane exit ramp according to L&D standards. The lane configuration revision will allow the mainline geometry to be improved removing the need for the horizontal curve radius design exception and will allow for an improvement in the SSD of C11, while maintaining the overall existing pavement footprint. See **Appendix H**, sheets H-14 and H-15 for the proposed layout.

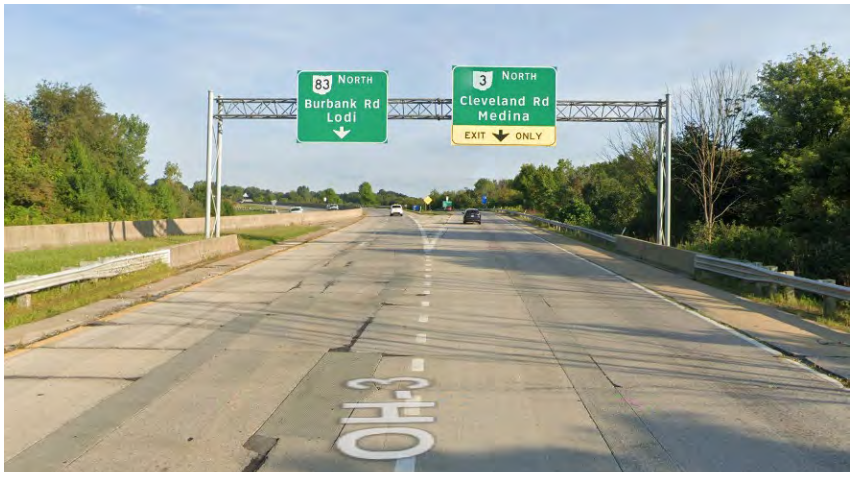


Figure 3 - Google Street View Image of SR-3 northbound Exit Signage

2. A shift in the alignment of northbound and southbound SR-83 from Portage Road overpass north to SR-3. A slight shift in the alignment of SR-83 northbound towards the median a minimum of 6’ will improve the graded shoulder width along Apple Creek and provide additional horizontal clearance between the roadway and creek bank. See **Appendix H**, sheets H-11 to H-14 for a proposed layout of the horizontal shift. The minimum graded shoulder width measured along this stretch was 15’ to the top of slope.

SECTION 3: US-30 INTERCHANGE

Table 3-1 summarizes the criteria used to identify the need for design exceptions per L&D Volume 1, Section 105.2 and Figure 105-1. The full criteria matrix evaluated for the comparison of standards versus existing conditions for the US-30 interchange can be found in **Appendix D**.

Table 3-1: US 30 Ramp Design Criteria

Bold red text indicates that a design exception is required. *Red italic* text identified a deficiency which could be addressed in design.

US-30 Interchange Ramps	Controlling Criteria for Design Exception Identification			
Controlling Criteria	Standard	Existing	Plan Reference (**Appendix B**)	Remarks
Lane Width	16’	16’		
Shoulder Width	3’ LT/6’ RT	3’ LT/6’ RT		
Design Loading Structural Capacity	N/A	N/A		
Horizontal Curve Radius	31°15’	25°00’		
Maximum Grade	5.0%	4.04%		
Stopping Sight Distance	180’	>180’		
Pavement Cross Slope	1.60%	1.60%		
Superelevation Rate	0.08	**0.083**		*To be corrected in design where possible. Design Exception not required for 0.083 per L&D Section 202.4.1 which will be required for the Ramps E and G tie in.*
Vertical Clearance	N/A	N/A		

The only potential design exception is for superelevation rate which can be corrected during design to the standard 0.08 where possible or use 0.083 on Ramps E and G for the tie-in with the existing superelevation, which is allowed per L&D Section 202.4.1.

There are two (2) other design criteria elements that are deficient but do not required a design exception:

- The ramp entrance terminal taper rate at US-30 Ramp D (US-30 westbound to SR-83 northbound) requires a taper rate of 50:1 but only has a taper rate of 13.5:1 (see **Appendix B** sheets B-4). This taper could be improved to be 21:1 without impacting the Apple Creek Bridge but the improvement would impact the light tower at Station 801+08 RT (see **Appendix H** sheets H-4).
- The other substandard design criteria element is ramp spacing. Two sets of ramps at the US-30 interchange have substandard ramp terminal spacing (see **Appendix B** sheets B-2 and B-3). Entrance Ramp G (US-30 eastbound to SR-83 northbound) to Exit Ramp E (SR-83 northbound to US-30 westbound) has a weave length of 490’± which is less than the 1,600’ standard for system

to system interchanges per Figure 503-1a of the L&D Volume 1. Entrance Ramp C (US-30 westbound to SR-83 southbound) to Exit Ramp Y (SR-83 southbound to US-30A) has a weave length of 530'± which is about half of the specified 1000' for a system to service interchange per Figure 503-1a. There are no interchange improvement options available to improve the weave lengths without major improvements to the US-30 interchange.

SECTION 4: SR-585 (AKRON ROAD) INTERCHANGE

Table 4-1 summarizes the criteria used to identify the need for design exceptions per L&D Volume 1, Section 105.2 and Figure 105-1. The full criteria matrix evaluated for the comparison of standards versus existing conditions for the SR-585 interchange can be found in **Appendix E**.

Table 4-1: SR-585 Ramp Design Criteria

Bold red text indicates that a design exception is required. *Red italic* text identified a deficiency which could be addressed in design.

SR-585 Interchange Ramps	Controlling Criteria for Design Exception Identification			
Controlling Criteria	Standard	Existing	Plan Reference (**Appendix B**)	Remarks
Lane Width	16’	16’/18’		
Shoulder Width	3’ LT/6’ RT	**1’ LT**/6’ RT	Sheets B-5 and B-6	*Ramps H and I (SR-585)*
Design Loading Structural Capacity	N/A	N/A		
Horizontal Curve Radius	31°15’	25°^00’ *150’ (Ramp I, I-1, and I-2)*	Sheet B-6	*See Note.*
Maximum Grade	5.0%	3.60%		
Stopping Sight Distance	180’	**167’ – Ramp H** **167’ – Ramp H-2** **155’ – Ramp I** **155’ – Ramp I-2**	Sheet B-6	*Guardrail is the obstruction*
Pavement Cross Slope	1.60%	1.60%		
Superelevation Rate	0.08	**0.083**		*To be corrected in design where possible. Design Exception not required for 0.083 per L&D Section 202.4.1*
Vertical Clearance	N/A	N/A		

Note: 150’ R is acceptable per L&D, Vol 1, Section 503.2.2 for loop ramps

There are four (4) potential design exceptions for the SR-83 at SR-585 interchange:

- Shoulder Width - The left shoulder widths on Ramps H and I are substandard. The left shoulder on Ramps H and I are currently 1’. The standard per L&D Volume 1, Figure 303-1 is 3’. A design exception is required if the shoulder width cannot be corrected. See **Appendix H**, sheets H-14 and H-15 for the proposed layout of Ramps H and I with proposed shoulders that provide the 3’ width. Preliminary sections have also been prepared to show the limits of earthwork and estimated earthwork quantities (see **Appendix H**, sheets H-20 to H-23, Sections A-A to Section J-J).
- Horizontal curve radius - the horizontal curve radius on ramp I, I-1, and I-2 has a degree of curve of 38°11’50” which exceeds the design standard of 31°15’. The radius is 150’ and is acceptable for

loop ramps per the L&D volume 1 section 503.2.2. However, within the 2017 to 2019 crash reports there were three (3) rollover crashes which occurred within the limits of this 150' radius curve (one on the SR-83 exit ramp to SR-585, and two on SR-585 entrance ramp to SR-83 northbound). If an upgrade to the ramp alignment is not possible, install warning signs per OMUTCD recommendations. See **Appendix G**, sheet 5 for the crash diagram in this area.

- Stopping Sight Distance - The stopping sight distance is 167' along Ramps H and H-2 and is 155' along Ramps I and I-2. The standard stopping sight distance for the low range speed for these ramps is 180'. The guardrail along these ramps is creating the obstruction. If the guardrail offset is increased, the sight distance would increase accordingly (see **Appendix H**, sheet H-6 for proposed guardrail offsets). The increased guardrail offset would require slope grading, fill material for embankment and an extension of the culvert under ramp H-2. See **Appendix H**, sheets H-20 to H-23, Sections A-A to Section J-J for proposed sections and estimated earthwork quantities.
- Superelevation Rate - The superelevation rate is greater than the design standards with the existing maximum rate of 0.083 being used versus the current standard of 0.08. This change in rate can be addressed during design.

There is one (1) other design deficiency identified which does not require a design exception:

- The ramp entrance terminals for Ramps H-2 (SR-585 entrance to SR-83 southbound) and I-1 (SR-585 entrance to SR-83 northbound). Ramps H-2 and I-1 have taper rates of 34:1 and 40:1, respectively, which is less than the required 50:1 taper rate. The Ramp H-2 taper rate is expected to remain because of available width under the NSRR bridge. No work is planned for this bridge so the taper rate cannot be improved. The taper rate for Ramp I-1 can be improved to 50:1, but to avoid a culvert extension or raising the headwall, a Type D barrier could be placed along the edge of shoulder at the culvert to avoid additional slope and culvert impacts.

There are two (2) other items identified for possible correction:

- The portable concrete barrier at Ramp H is to remain unless it is replaced by permanent barrier or the graded shoulder is extended. The extension would require grading and fill for the embankment and could be addressed along with the Ramp H left shoulder deficiency.
- A slope erosion issue was identified between the Ramp H intersection and the SR-585 bridge along the north shoulder. The area is identified in **Appendix B**, sheet B-5. The barrier has created a slope erosion issue that needs to be corrected. Proper erosion control measures should be taken to correct the erosion and provide long term slope protection.

SECTION 5: SR-3 (CLEVELAND ROAD) INTERCHANGE

Table 5-1 summarizes the criteria used to identify the need for design exceptions per L&D Volume 1, Section 105.2 and Figure 105-1. The full criteria matrix evaluated for the comparison of standards versus existing conditions for the SR-3 interchange can be found in **Appendix F**.

Table 5-1: SR-3 Ramp Design Criteria

Bold red text indicates that a design exception is required. *Red italic* text identified a deficiency which could be addressed in design.

SR-3 Interchange Ramps	Controlling Criteria for Design Exception Identification			
Controlling Criteria	Standard	Existing	Plan Reference (**Appendix B**)	Remarks
Lane Width	16’	12’ (Ramp T) 16’		*The two (2) lane exit is to be revised to a standard single lane exit*
Shoulder Width	3’ LT/6’ RT	3’ LT/6’ RT		
Design Loading Structural Capacity	N/A	N/A		
Horizontal Curve Radius	31°15’	25°34’		
Maximum Grade	5.0%	4.68%		
Stopping Sight Distance	180’	>180’		
Pavement Cross Slope	1.60%	1.60%		
Superelevation Rate	0.06	**0.083**		*To be corrected in design where possible. Design Exception not required for 0.083 per L&D Section 202.4.1*
Vertical Clearance	N/A	N/A		

No design exceptions are required for the SR-3/SR-83 interchange. The only potential design exception is for the superelevation rate which is 0.083 existing and the standard is 0.06. This can be updated to match the current standards during design.

There are two (2) other item identified for possible correction:

- The existing taper rate for Ramp R (SR-3 to SR-83 southbound) is only 40:1 where the standard is 50:1 (see **Appendix H**, sheets H-14 and H-15). This taper can be revised to be 50:1 during design.
- An observation from the field at the left turn Ramp SB (SR-3 to SR-83 northbound) showed that cars can have trouble seeing other cars approaching from the south on SR-83 northbound due to the concrete median barrier. A crash analysis completed at this intersection identified four (4) crashes which were reported at this location over the past 3 years (one left turn with through vehicle heading northbound, two left turn with through vehicle headed southbound, and one

acceleration from stop and lost control) see **Appendix G**, sheet G-14 for the crash diagrams in this area. While the existing 32" concrete median barrier allows for adequate intersection sight distance and the crash history does not indicate a significant issue at this intersection, it is the only left turn allowed within the posted 55 MPH zone. Alternative solutions to remove the left turn movement would include the use of existing alternative routes such as SR-3 to Milltown Road (TR-184). More involved alternatives include the construction of a ramp from SR-3 to SR-83 northbound or a roadway connector to make a right turn only to SR-83 in the northeast quadrant of the interchange, however, both of these alternatives will require extensive slope modification and earthwork and will require new right of way which is beyond the scope of this study.

SECTION 6: CONCLUSIONS

The WAY-83-10.81 project involves the replacement of the original concrete pavement for a 3.83 mile segment of SR-83 in Wayne County. Based on the evaluation of the existing conditions against the current ODOT L&D Manual, Volume 1 for design criteria and the requirements in Section 105.1 for design exception controlling criteria, only two (2) mainline elements will require design exceptions as defined in **Table 6-1**.

Table 6-1: Design Exceptions

SR-83 Mainline	Controlling Criteria for Design Exception Identification			
Controlling Criteria	Standard	Existing	Plan Reference (Appendix B)	Design Exception Requirement
Shoulder Width (Outside) (Median)	10' RT 4' LT	**8' RT 1.5' LT**	Sheets B-2 to B-17 Sheets B-14 and B-15	**Entire project length Sta 924+25 to 935+80±**
Stopping Sight Distance	495'	**C11 – 278'**	Sheets B-14 and B-15	**C11 - Median barrier is the obstruction. Can be improved with the change to SR-83 NB exit ramp to SR-3, but will not meet the standard.**

A list of additional substandard design elements which could be eligible for a Design Exception, but can be addressed in design include:

- Superelevation rate for both mainline and all ramps
- Horizontal curve radius of mainline curve C11 (urban)
- Stopping Sight Distance for mainline horizontal curve C6, and SR-585 Ramps H, H-2, I, and I-2
- Shoulder width on SR-585 Ramps H and I. This design change should also address the portable barrier location or narrow graded shoulder located at the SR-585 Ramp H intersection and the identified slope erosion due to drainage.

The following substandard design elements have been identified which do not require a design exception. These items can be improved during design as noted:

- Revise US-30 Ramp D entrance terminal taper rate to the extent possible due to existing bridges
- Revise SR-585 Ramp I-1 and SR-3 Ramp R entrance terminal rate to 50:1

Other design changes to incorporate into the Design/Build Scope of work to improve this project:

- Revise the SR-83 northbound exit ramp to SR-3 from a two lane exit to a standard single lane exit.
- Shift northbound SR-83 a minimum of 6' towards the median between Portage Road and the SR-3 interchange.

The following items were identified as deficient but are beyond the scope and budget of the design/build project being programmed by the District at this time. These fixes are large, possibly stand-a-lone scale undertakings and if included would likely further delay the other needed improvements currently being scoped. These items do not require a Design Exception:

- Ramp spacing – the deficient weave lengths between US-30 entrance Ramp G and exit Ramp E, and US-30 entrance Ramp C and exit Ramp Y.
- Horizontal curve radius – the 150’ radius curves on SR-585 Ramps I, I-1, and I-2 meet the criteria for a loop ramp, but a crash history is associated with the curves.
- SR-585 Ramp H-2 entrance terminal taper rate due to the location of the NSRR bridge
- SR-3 Ramp SB left turn intersection

SECTION 7: FINAL RECOMMENDATIONS

This section discusses the recommended changes to be included in the Design/Build scope based on the report findings and coordination with District 3.

General:

- Correct the superelevation rates for mainline SR-83 and all interchange ramps.

For mainline SR-83 (Section 2):

- The Design Exception for the 8' outside paved shoulder for the length of the project, the 1.5' median shoulder between Station 924+25 and Station 935+80, and the northbound stopping sight distance deficiency at C11 has been accepted. The approved Design Exception is included in **Appendix I** for reference.
- Correct the horizontal curve radius of mainline curve C11 (urban). See **Appendix H**, sheets H-14 through H-15 for the preliminary layout.
- Correct the Stopping Sight Distance for mainline horizontal curve C6. See **Appendix H**, sheets H-11 through H-12 for the preliminary layout.
- Shift northbound SR-83 a minimum of 6' towards the median between Portage Road and the SR-3 interchange. See **Appendix H**, sheets H-11 through H-14 for the preliminary layout.
- Revise the SR-83 northbound exit ramp to SR-3 from a two lane exit to a standard single lane exit. See **Appendix H**, sheets H-14 through H-15 for the preliminary layout.

For the US-30 interchange (Section 3):

- Revise US-30 Ramp D entrance terminal taper rate to the extent possible due to existing northbound bridge. For the preliminary layout, see **Appendix H**, sheet H-4.

For the SR-585 interchange (Section 4):

- Increase the shoulder widths on SR-585 Ramps H and I. This design change should also address the portable barrier location or narrow graded shoulder located at the SR-585 Ramp H intersection and the identified slope erosion due to drainage. The work will also fix the substandard SSD at SR-585 Ramps H, H-2, I, and I-2 by increasing the guardrail offset. Preliminary layouts for this work can be seen in **Appendix H**, sheets H-5 through H-6.
- Revise SR-585 Ramp I-1 entrance terminal rate to 50:1. For the preliminary layout, see **Appendix H**, sheet H-7 through H-8.
- Add warning signs to the SR-585 loop ramps according to OMUTCD recommendations.

For the SR-3 interchange (Section 5):

- Revise the Ramp R entrance terminal rate to 50:1. For the preliminary layout, see **Appendix H**, sheets H-14 through H-15.

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX A

Existing Schematic and Interchange Geometric Plans

FHWA REGION	STATE	PROJECT	
5	OHIO		

2
224

SCHEMATIC PLAN

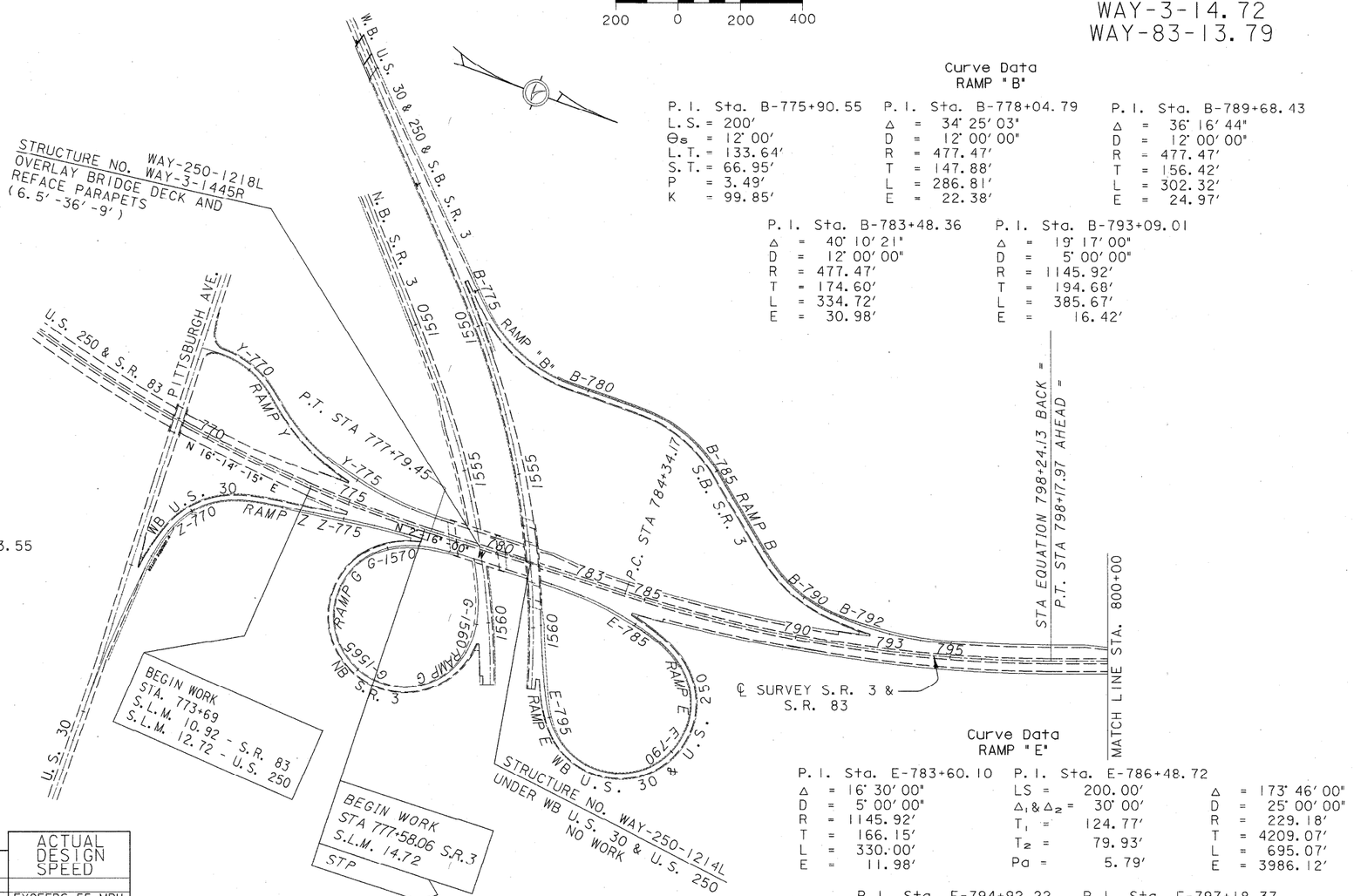
WAY-3-14.72
WAY-83-13.79

DESIGN EXCEPTIONS

APPROVED 11-3-94

	REQUIRED	AS DESIGNED
OUTSIDE GRADED SHOULDER WIDTH	15′	12′
WAY-3-1445R (WAY-250-1218L) LATERAL CLEARANCE FROM EDGE OF SPEED CHANGE LANE	10′	9′
WAY-83-1395B LATERAL CLEARANCE FROM INSIDE EDGE PAVEMENT TO MEDIAN SAFETY PARAPET	4′	1.5′
HORIZONTAL CLEARANCE FROM OUTSIDE EDGE OF PAVEMENT TO FACE OF SAFETY SHAPE PARAPET ON EXISTING RETAINING WALL AND RAILROAD ABUTMENT	15′	8′ S.B.L. 9′ N.B.L.
HORIZONTAL CLEARANCE FROM INSIDE EDGE OF PAVEMENT TO MEDIAN BARRIER ON S.R. 83	4′	1.5′
HORIZONTAL CLEARANCE FROM INSIDE EDGE OF PAVEMENT TO EXISTING CONCRETE MEDIAN ON RAMP H & I	3′	1′

SCALE
200 0 200 400



Curve Data RAMP "B"

P. I. Sta. B-775+90.55
L. S. = 200′
Θs = 12° 00′
L. T. = 133.64′
S. T. = 66.95′
P = 3.49′
K = 99.85′

P. I. Sta. B-778+04.79
Δ = 34° 25′ 03"
D = 12° 00′ 00"
R = 477.47′
T = 147.88′
L = 286.81′
E = 22.38′

P. I. Sta. B-789+68.43
Δ = 36° 16′ 44"
D = 12° 00′ 00"
R = 477.47′
T = 156.42′
L = 302.32′
E = 24.97′

P. I. Sta. B-783+48.36
Δ = 40° 10′ 21"
D = 12° 00′ 00"
R = 477.47′
T = 174.60′
L = 334.72′
E = 30.98′

P. I. Sta. B-793+09.01
Δ = 19° 17′ 00"
D = 5° 00′ 00"
R = 1145.92′
T = 194.68′
L = 385.67′
E = 16.42′

Curve Data RAMP "G"

P. I. Sta. G-1559+99.28
L. S. = 300′
Θs = 37° 30′ 00"
L. T. = 204.68′
S. T. = 104.27′
P = 16.11′
K = 147.89′

Δ = 220° 55′ 08"
D = 25° 00′ 00"
R = 229.15′
L = 883.68′

P. I. Sta. G-1570+83.55
L. S. = 300′
Θs = 37° 30′ 00"
L. T. = 204.68′
S. T. = 104.27′
P = 16.11′
K = 147.89′

Curve Data RAMP "E"

P. I. Sta. E-783+60.10
Δ = 16° 30′ 00"
D = 5° 00′ 00"
R = 1145.92′
T = 166.15′
L = 330.00′
E = 11.98′

P. I. Sta. E-786+48.72
LS = 200.00′
Δ1 & Δ2 = 30° 00′
T1 = 124.77′
T2 = 79.93′
Pa = 5.79′

Δ = 173° 46′ 00"
D = 25° 00′ 00"
R = 229.18′
T = 4209.07′
L = 695.07′
E = 3986.12′

P. I. Sta. E-794+92.22
LS = 200.00′
Δ1 & Δ2 = 27° 00′
T1 = 130.57′
T2 = 73.20′
Pa = 6.65′

P. I. Sta. E-797+18.37
Δ = 3° 58′ 20.5"
D = 2° 00′ 00"
R = 2864.79′
T = 99.35′
L = 198.62′
E = 1.72′

Curve Data

P. I. Sta. 770+74.00
Δ = 18° 30′ 15"
D = 1° 18′ 00"
R = 4407.37′
T = 717.95′
L = 1423.40′
E = 58.09′
SUPERELEVATION = .03 1/2%
EXCEEDS DESIGN SPEED

Curve Data

P. I. Sta. 791+34.97
Δ = 18° 04′ 10"
D = 1° 18′ 00"
R = 4407.37′
T = 700.80′
L = 1389.96′
E = 55.37′
SUPERELEVATION = .03 1/2%
EXCEEDS DESIGN SPEED

VERTICAL CURVE TABLE

	STA. PVI	L (FT)	G1 (%)	G2 (%)	SSD	ACTUAL DESIGN SPEED
	(MAINLINE)					
FREEWAY 55 MPH DESIGN	780+50	1600	+1.00	-3.92	>550	EXCEEDS 55 MPH
	794+33	400	-3.92	-2.86		
	804+50	600	-2.86	+0.76		
	872+00	400	+0.76	+1.10		
	894+75 TO 898+00 SB	GRAPHIC GRADE				
	901+00 SB	400	+2.72	+0.30		
	916+50 SB	800	+0.30	+3.80		
	928+00 SB	200	+3.80	+3.96		
	894+75 TO 898+00 NB	GRAPHIC GRADE				
	892+00 NB	400	-0.96	+1.44		
	918+78 NB	400	+1.44	+3.80		
ARTERIAL 45 MPH N.B.L. 55 MPH S.B.L.	931+00	200	+3.96	+3.72		
	937+00	200	+3.72	+3.80		
	960+50	400	+3.80	+0.92		
	973+00	800	+0.92	-1.48		
	980+00	300	-1.48	-0.48		

DESIGN FILE: $$$$$$.DGNFILESPECIFICATIONS$$$$$$
WORKSTATION: STERMINAL6 DATE: $$$$$DATE$$$$$

Ref: 576(1996)_WAY-003-14.72

FHWA REGION	STATE	PROJECT	
5	OHIO		

3
224

WAY-3-14.72
WAY-83-13.79

SCHEMATIC PLAN

SCALE
200 0 200 400

Curve Data
RAMP "H"

P. I. Sta. H-819+38.16
Δ = 54°05' 43"
D = 27°05' 31"
R = 211.49'
L = 199.67'
T = 107.98'
E = 25.97'

Curve Data
RAMP "H-1"

P. I. Sta. H-1-824+91.56
Δ = 26°16' 57"
D = 8°00' 00"
R = 716.20'
L = 328.53'
T = 167.21'
E = 19.26'

P. I. Sta. H-1-828+27.30
Δ = 13°53' 06"
D = 4°00' 00"
R = 1432.39'
L = 347.12'
T = 174.42'
E = 10.58'

Curve Data
RAMP "H-21"

P. I. Sta. H-2-820+25.82
L. S. = 150.00'
Θs = 22° 30' 00"
L. T. = 100.82'
S. T. = 50.57'
P = 4.88'
K = 74.62

P. I. Sta. H-2-823+75.45
Δ = 115°06' 49"
D = 30°00' 00"
R = 190.99'
L = 383.71'
T = 300.45'
E = 165.02'

AKRON RD. (S.R. 585)
CLASSIFICATION: URBAN ARTERIAL
LEGAL SPEED: 35 M.P.H.
DESIGN SPEED: 35 M.P,H.
ADT = 25500

6+00 BEGIN WORK
9 AKRON ROAD
10
℄ WAYNE AVENUE
20
25
STA 10+44.11 ℄ AKRON RD
STA 15+12.50 ℄ WAYNE AVENUE
STA 18+72.83 ℄ S.R. 585
STA 817+16.57 ℄ S.R. 3 & 83
STRUCTURE NO. WAY-3-1552 WR (BOX CULVERTS)
OVER LITTLE APPLE CREEK (NO WORK)
STRUCTURE NO. WAY-3-1554 WR
OVERLAY DECK AND NEW SAFETY PARAPETS
(3.5'-18'-5.5')
LITTLE APPLE CREEK
STRUCTURE NO. WAY-3-1585 (BOX CULVERT)
OVER LITTLE APPLE CREEK
NO WORK
℄ SURVEY S.R. 3 & S.R. 83
N 16°-00'-10" W
MATCH LINE STA. 860+00
STRUCTURE NO. WAY-3-1536
UNDER CONRAIL R.R. NO WORK
STA H-813+65.15 RAMP "H"
STA 14+54.70 S.R. 585
H-815
H-820
SB S.R. 585
15
H-1-825
H-2-820
I-2-825
830
835
840
845
850
855
STRUCTURE NO. WAY-3-1520
OVERLAY DECK AND
NEW SAFTEY PARAPETS
(7'-24'10")
LITTLE APPLE CREEK
CITY OF WOOSTER
CORP. LIMIT
WOOSTER TOWNSHIP
N 20°-20'-10" W
805
810
815
820
95
MATCH LINE STA. 800+00
℄ SURVEY S.R. 3 & S.R. 83
APPLE CREEK
WOOSTER CANAL RD.
STA 100+00 CANAL RD.
STA 21+50.00 S.R. 585
P.C. STA 827+99.62
NB S.R. 585
I-2-830
I-1-830
I-820
I-825
P.T. STA 844+24.62
LITTLE APPLE CREEK
STA 812+23.77
WAY-585-0000L
STRUCTURE NO. WAY-3-1547
UNDER S.R. 585 (AKRON ROAD)
OVERLAY DECKS AND REFACE PARAPETS LT
(4'-24'-1")
25 S.R. 585
30
℄ HIGHLAND PARK RD.
STA I-818+56.89 RAMP "I"
STA 24+25 ℄ S.R. 585
35
37+75
℄ END WORK
STA 27+25.68 ℄ HIGHLAND PK. RD.
STA 28+55.00 ℄ S.R. 585

Curve Data
P. I. Sta. 836+12.51
Δ = 4° 20' 00"
D = 0° 16' 00"
R = 21,485.92
T = 812.89'
L = 1,625.00'
E = 15.37'
SUPERELEVATION = N.C.
EXCEEDS DESIGN SPEED

STATION EQUATION
S.T. STA. 28+92.84 BK. RELOC. S.R. 585
STA. 34+33.37 AHD. EXIST. S.R. 585

Curve Data
RAMP "I"

P. I. Sta. I-821+70.05
Δ = 62°18' 08"
D = 20°00' 00"
R = 286.48'
L = 311.51'
T = 173.16'
E = 48.27'

P. I. Sta. I-826+12.99
Δ = 63°39' 02"
D = 33°36' 16"
R = 170.50'
L = 189.41'
T = 105.82'
E = 30.17'

Curve Data
RAMP "I-1"

P. I. Sta. I-1-831+76.83
Δ = 41°37' 48"
D = 16°00' 00"
R = 358.10'
Lc = 110.19'
Ls = 150.00'
Ts = 212.02'
Es = 25.19'
LT = 100.23'
ST = 50.21

P. I. Sta. I-2-823+89.27
Δ = 6°16' 19"
D = 1°30' 00"
R = 3819.72'
L = 418.13'
T = 209.27'
E = 5.73'

Curve Data
RAMP "I-2"

P. I. Sta. I-2-827+33.88
ΔS = 39°41' 50"
Δ1 = 1°30' 00"
Δ2 = 38°11' 50"
LS = 200.00'
D1 = 1°30' 00"
R1 = 3819.72'
D2 = 38°11' 50"
R2 = 150.00'
Θs = 36°41' 50"
Pa = 10.52'
T1 = 135.75'
T2 = 72.58'

P.I. Sta. I-2-829+55.19
Δ = 92°37' 58"
D = 38°11' 50"
R = 150.00'
L = 242.51'
T = 157.06'
E = 67.18'

DESIGN FILE: $$$$$$/DGNFILESPECIFICATIONS$$$$$$
WORKSTATION: $TERMINAL$ DATE: $$$$$DATE$$$$$

Ref: 576(1996)_WAY-003-14.72

SCHEMATIC PLAN

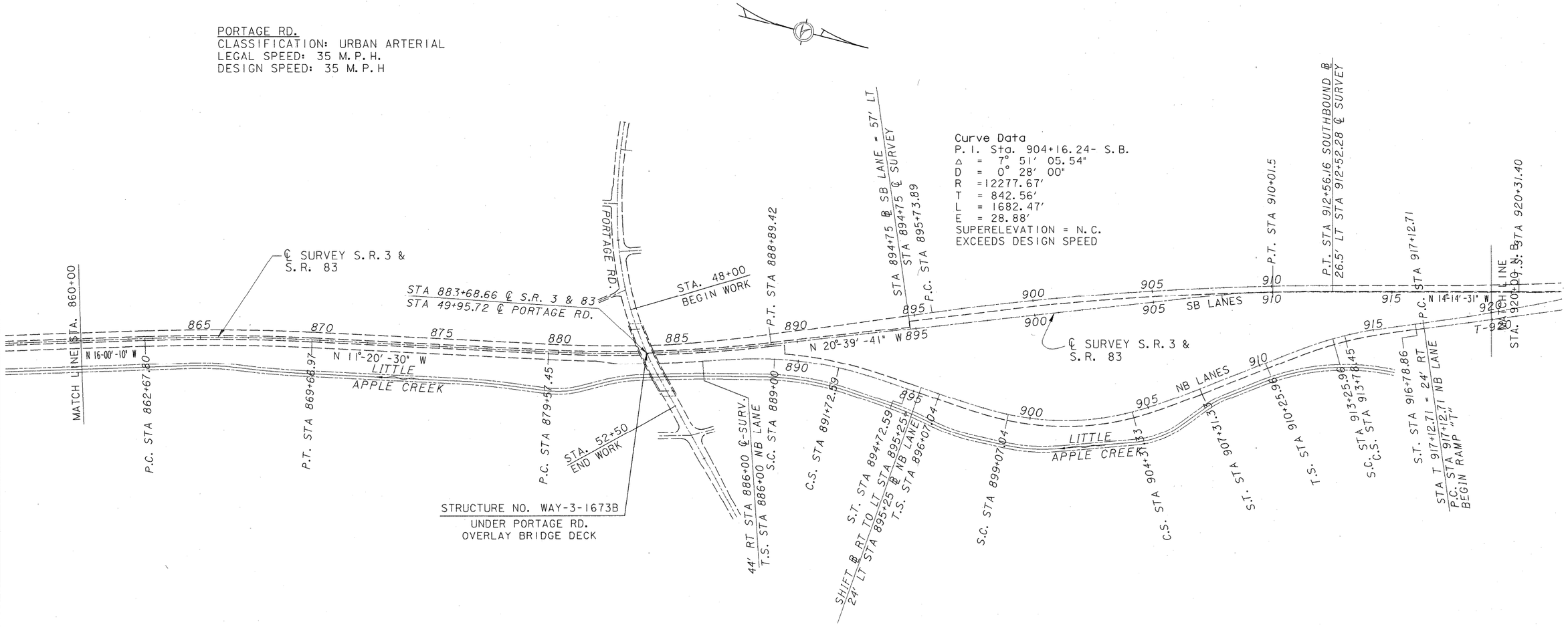
FHWA REGION	STATE	PROJECT	
5	OHIO		

4
224

WAY-3-14.72
WAY-83-13.79

SCALE
200 0 200 400

PORTAGE RD.
CLASSIFICATION: URBAN ARTERIAL
LEGAL SPEED: 35 M.P.H.
DESIGN SPEED: 35 M.P.H



Curve Data
P.I. Sta. 904+16.24- S.B.
Δ = 7° 51' 05.54"
D = 0° 28' 00"
R = 12277.67'
T = 842.56'
L = 1682.47'
E = 28.88'
SUPERELEVATION = N.C.
EXCEEDS DESIGN SPEED

Curve Data
P.I. Sta. 866+17.58
Δ = 4° 39' 40" RT.
D = 0° 40' 00"
R = 8594.37'
T = 349.78'
L = 699.17'
E = 7.11'
SUPERELEVATION = .016 MAX.
ACTUAL DESIGN SPEED

Curve Data
P.I. Sta. 884+24.47
Δ = 9° 19' 11"
D = 1° 00' 00"
R = 5729.58'
T = 467.02'
L = 931.97'
E = 19.00'
SUPERELEVATION = .024½
EXCEEDS DESIGN SPEED

Curve Data
P.I. Sta. 890+40.64 N.B.
Δ = 22° 54' 12.80"
D = 4° 00' 00"
R = 1432.39'
L_c = 272.59'
L_s = 300.00'
T_s = 440.64'
E_s = 31.76'
θ_s = 6° 00' 00"
LT = 200.12'
ST = 100.10'
X = 299.67'
Y = 10.46'
SUPERELEVATION = .083 MAX.
EXCEEDS DESIGN SPEED

Curve Data
P.I. Sta. 901+89.07 N.B.
Δ = 41° 12' 52.80"
D = 5° 00' 00"
R = 1145.92'
L_c = 524.29'
L_s = 300.00'
T_s = 582.03'
E_s = 81.83'
θ_s = 7° 30' 00"
SUPERELEVATION = .083 MAX.
EXCEEDS DESIGN SPEED

Curve Data
P.I. Sta. 913+53.38 N.B.
Δ = 14° 06' 00"
D = 4° 00' 00"
R = 1432.49'
L_c = 52.50
L_s = 300.00'
T_s = 327.91
E_s = 13.55'
θ_s = 6° 00' 00"
LT = 200.12'
ST = 100.10'
X = 299.67'
Y = 10.46'
SUPERELEVATION = .083 MAX.
EXCEEDS DESIGN SPEED

DESIGN FILE: $$$$$.DGN FILESPECIFICATION$$$$$$
WORKSTATION: STERMINAL$ DATE: $$$$$DATE$$$$$

Ref: 576(1996)_WAY-003-14.72

SCHEMATIC PLAN

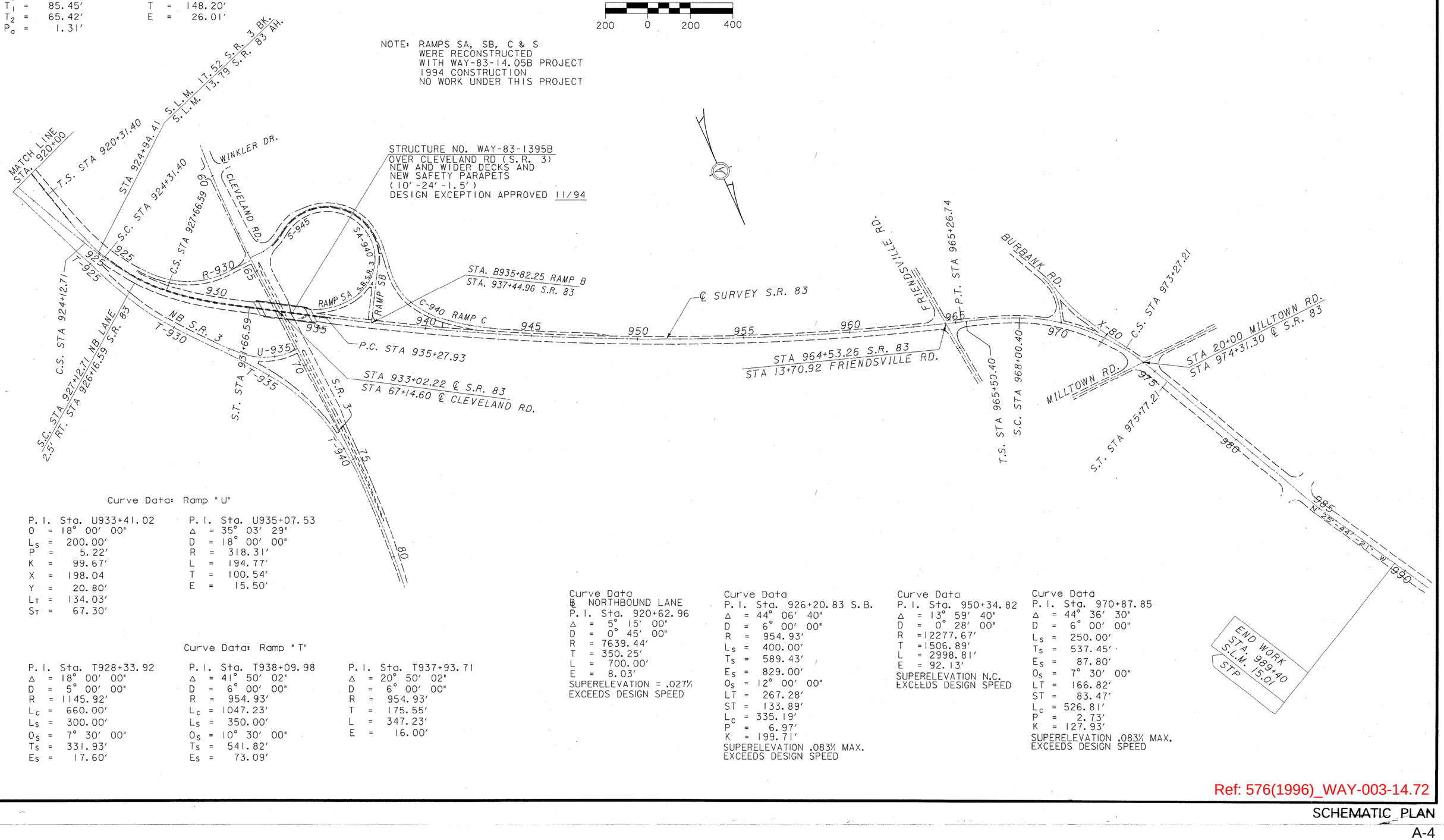
FHWA REGION	STATE	PROJECT	
5	OHIO		

5
224

WAY-3-14.72
WAY-83-13.79

SCALE
200 0 200 400

NOTE: RAMPS SA, SB, C & S
WERE RECONSTRUCTED
WITH WAY-83-14.05B PROJECT
1994 CONSTRUCTION
NO WORK UNDER THIS PROJECT



Curve Data: Ramp "R"

P. I. Sta. R926+85.45		P. I. Sta. R928+98.20	
Δ	= 15° 00′ 00"	Δ	= 39° 48′ 43.5"
O_S	= 6° 00′ 00"	D	= 14° 00′ 00"
$Δ_1$	= 4° 30′ 00"	R	= 409.26′
$Δ_2$	= 10° 30′ 00"	L	= 284.37′
T_1	= 85.45′	T	= 148.20′
T_2	= 65.42′	E	= 26.01′
P_a	= 1.31′		

Curve Data: Ramp "U"

P. I. Sta. U933+41.02		P. I. Sta. U935+07.53	
O	= 18° 00′ 00"	Δ	= 35° 03′ 29"
L_S	= 200.00′	D	= 18° 00′ 00"
P	= 5.22′	R	= 318.31′
K	= 99.67′	L	= 194.77′
X	= 198.04	T	= 100.54′
Y	= 20.80′	E	= 15.50′
L_T	= 134.03′		
S_T	= 67.30′		

Curve Data: Ramp "T"

P. I. Sta. T928+33.92		P. I. Sta. T938+09.98		P. I. Sta. T937+93.71	
Δ	= 18° 00′ 00"	Δ	= 41° 50′ 02"	Δ	= 20° 50′ 02"
D	= 5° 00′ 00"	D	= 6° 00′ 00"	D	= 6° 00′ 00"
R	= 1145.92′	R	= 954.93′	R	= 954.93′
L_C	= 660.00′	L_C	= 1047.23′	T	= 175.55′
L_S	= 300.00′	L_S	= 350.00′	L	= 347.23′
O_S	= 7° 30′ 00"	O_S	= 10° 30′ 00"	E	= 16.00′
T_S	= 331.93′	T_S	= 541.82′		
E_S	= 17.60′	E_S	= 73.09′		

STRUCTURE NO. WAY-83-1395B
OVER CLEVELAND RD (S.R. 3)
NEW AND WIDER DECKS AND
NEW SAFETY PARAPETS
(10′-24′-1.5′)
DESIGN EXCEPTION APPROVED 11/94

Curve Data
℄ NORTHBOUND LANE
P. I. Sta. 920+62.96
Δ = 5° 15′ 00"
D = 0° 45′ 00"
R = 7639.44′
T = 350.25′
L = 700.00′
E = 8.03′
SUPERELEVATION = .027%
EXCEEDS DESIGN SPEED

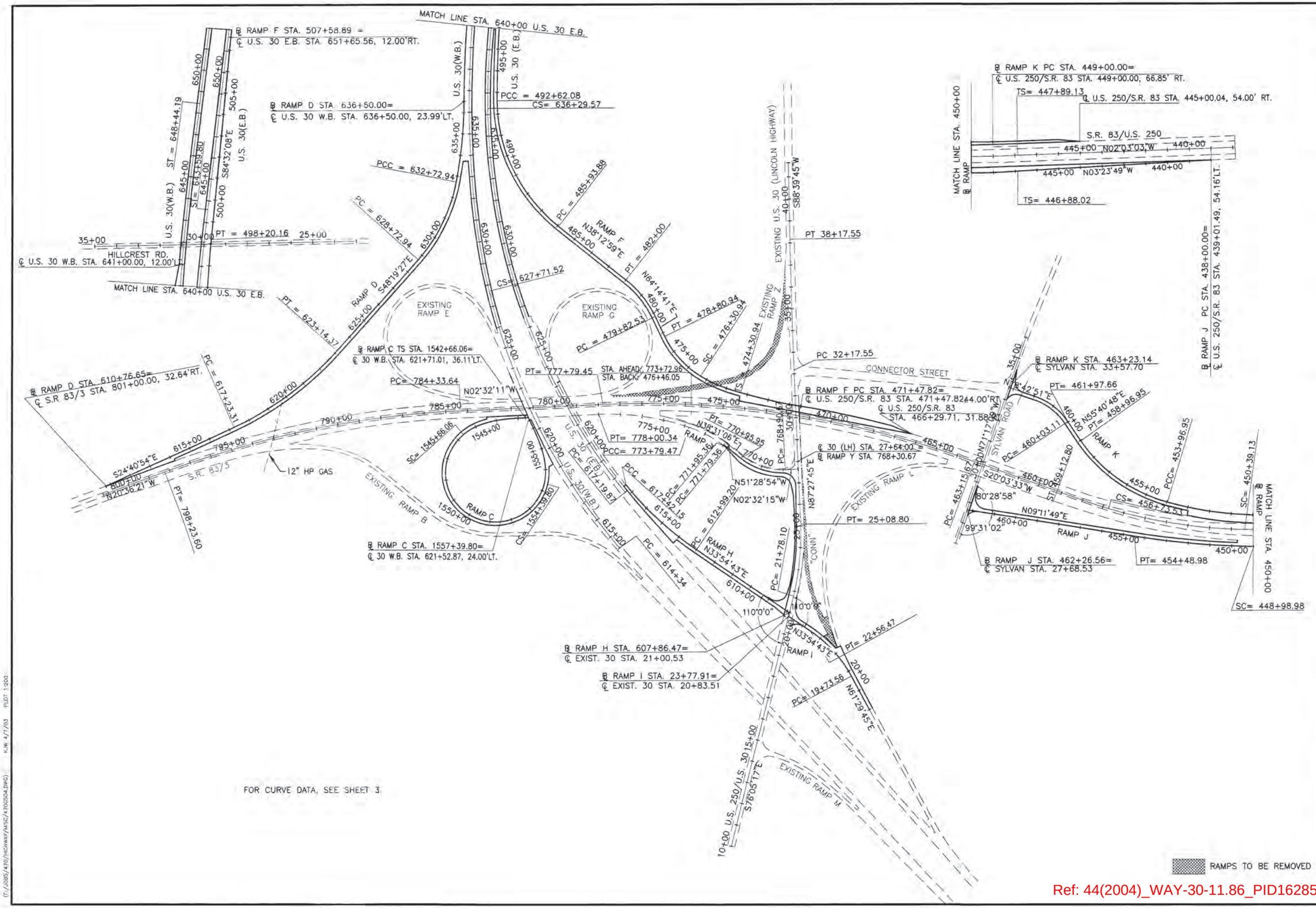
Curve Data
P. I. Sta. 926+20.83 S.B.
Δ = 44° 06′ 40"
D = 6° 00′ 00"
R = 954.93′
L_S = 400.00′
T_S = 589.43′
E_S = 829.00′
O_S = 12° 00′ 00"
LT = 267.28′
ST = 133.89′
L_C = 335.19′
P = 6.97′
K = 199.71′
SUPERELEVATION .083% MAX.
EXCEEDS DESIGN SPEED

Curve Data
P. I. Sta. 950+34.82
Δ = 13° 59′ 40"
D = 0° 28′ 00"
R = 12277.67′
T = 1506.89′
L = 2998.81′
E = 92.13′
SUPERELEVATION N.C.
EXCEEDS DESIGN SPEED

Curve Data
P. I. Sta. 970+87.85
Δ = 44° 36′ 30"
D = 6° 00′ 00"
L_S = 250.00′
T_S = 537.45′
E_S = 87.80′
O_S = 7° 30′ 00"
LT = 166.82′
ST = 83.47′
L_C = 526.81′
P = 2.73′
K = 127.93′
SUPERELEVATION .083% MAX.
EXCEEDS DESIGN SPEED

DESIGN FILE: $$$$$.DGNFILESPECIFICATIONS$$$$$$
WORKSTATION: $TERMINAL$ DATE: $$$$$DATE$$$$$

Ref: 576(1996)_WAY-003-14.72

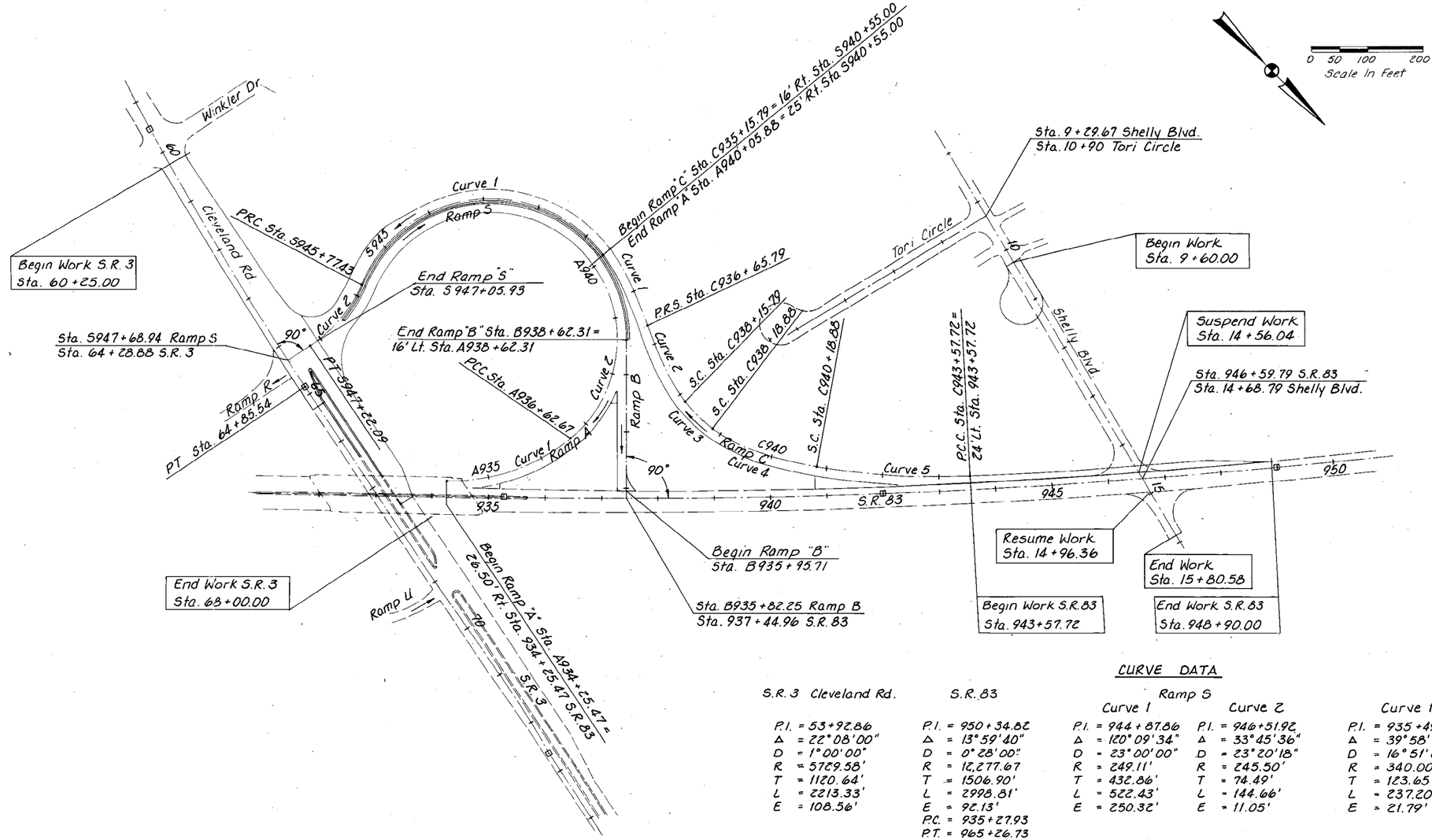


Ref: 44(2004)_WAY-30-11.86_PID16285

SCHEMATIC PLAN

CALC. BY DATE	WAY-83-14.05B	OHIO
CHKD. BY DATE		FHWA REGION

2 / 76



EXISTING MONUMENT ASSEMBLIES
S.R. 83
935+27.93
942+00.00
949+00.00
S.R. 3
59+50.00
64+85.54
72+60.80

CURVE DATA

S.R. 3 Cleveland Rd.

P.I.	= 53+92.86
Δ	= 22°08'00"
D	= 1°00'00"
R	= 5729.58'
T	= 1120.64'
L	= 2213.33'
E	= 108.56'

S.R. 83

P.I.	= 950+34.82
Δ	= 13°59'40"
D	= 0°28'00"
R	= 12,277.67
T	= 1506.90'
L	= 2998.81'
E	= 92.13'
P.C.	= 935+27.93
P.T.	= 965+26.73

Ramp S

Curve 1		Curve 2	
P.I.	= 944+87.86	P.I.	= 946+51.92
Δ	= 120°09'34"	Δ	= 33°45'36"
D	= 23°00'00"	D	= 23°20'18"
R	= 249.11'	R	= 245.50'
T	= 432.86'	T	= 74.49'
L	= 522.43'	L	= 144.66'
E	= 250.32'	E	= 11.05'

Ramp A

Curve 1		Curve 2	
P.I.	= 935+49.12	P.I.	= 938+78.13
Δ	= 39°58'17"	Δ	= 87°44'45"
D	= 16°51'06"	D	= 25°33'56"
R	= 340.00'	R	= 224.11'
T	= 123.65'	T	= 215.46'
L	= 237.20'	L	= 343.22'
E	= 21.79'	E	= 86.78'

Ramp C

Curve 1		Curve 2		Curve 3		Curve 4		Curve 5	
P.I.	= C935+66.17	P.I.	= C937+66.27	P.I.	= C938+49.03	P.I.	= C939+61.17	P.I.	= C942+20.34
θ_s	= 16°12'32"	θ_s	= 17°15'00"	Δ	= 15°12'05"	θ_s	= 27°30'00"	Δ	= 12°24'46"
Dc	= 21°36'43"	Dc	= 23°00'00"	D	= 23°00'00"	D1	= 04°30'00"	D	= 04°30'00"
Ls	= 150.00	Ls	= 150.00	R	= 249.11'	D2	= 23°00'00"	R	= 1273.24'
P	= 3.53	P	= 3.75	T	= 33.24'	Ls	= 200.00	T	= 138.46'
K	= 74.80	K	= 74.77	L	= 66.09'	P	= 5.35	L	= 275.84'
X	= 148.80	X	= 148.65	E	= 2.21'	K	= 123.30	E	= 7.51'
Y	= 14.06	Y	= 14.96			X	= 194.61		
L.T.	= 100.42	L.T.	= 100.48			Y	= 36.61		
S.T.	= 50.38	S.T.	= 50.44			L.T.	= 124.28		
						S.T.	= 79.29		

SCHEMATIC PLAN

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX B

Graphical Representation of the Deficient Design Elements

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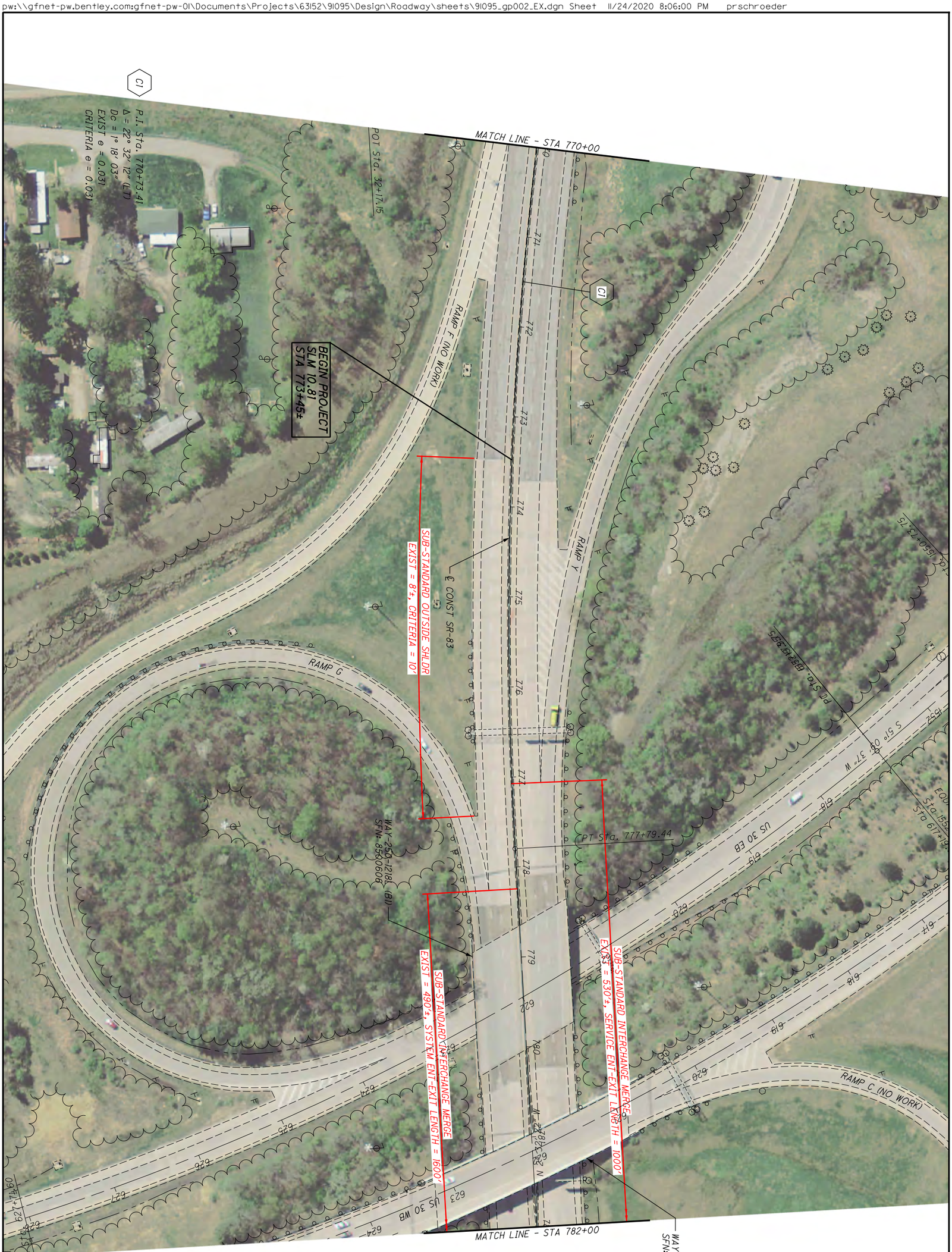
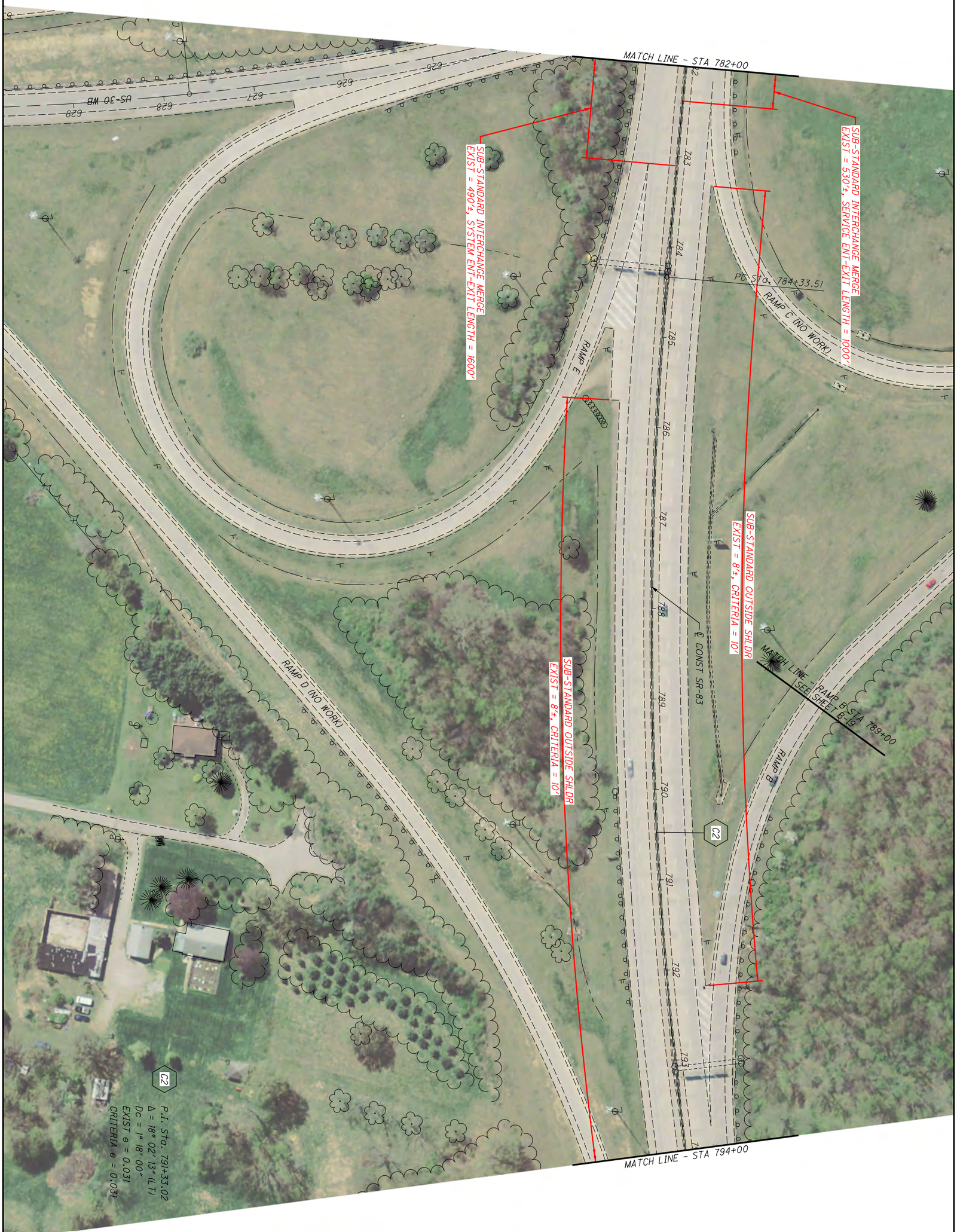
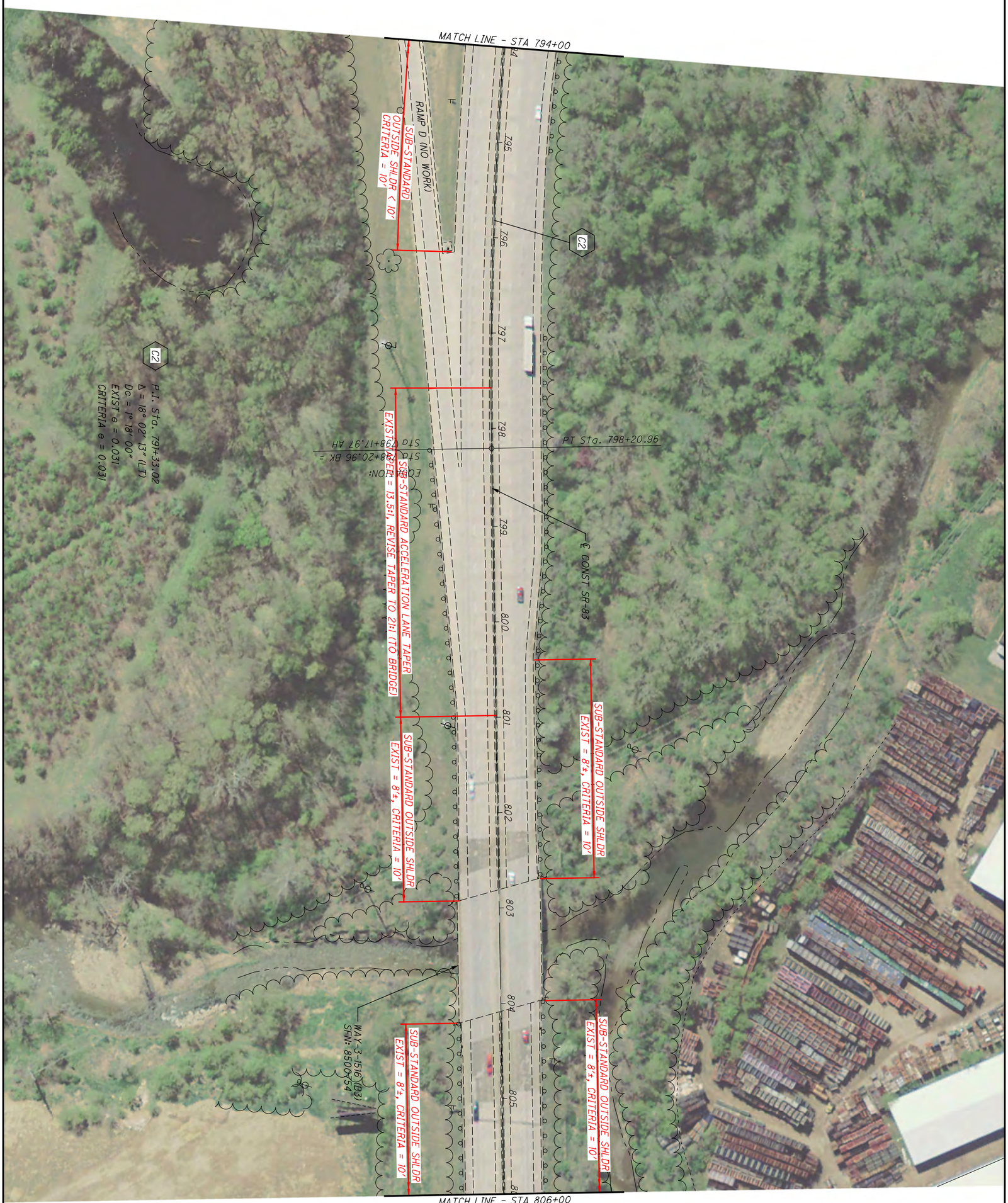
B-1 20	WAY-83-10.81	SR-83 STA 758+00 TO STA 770+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



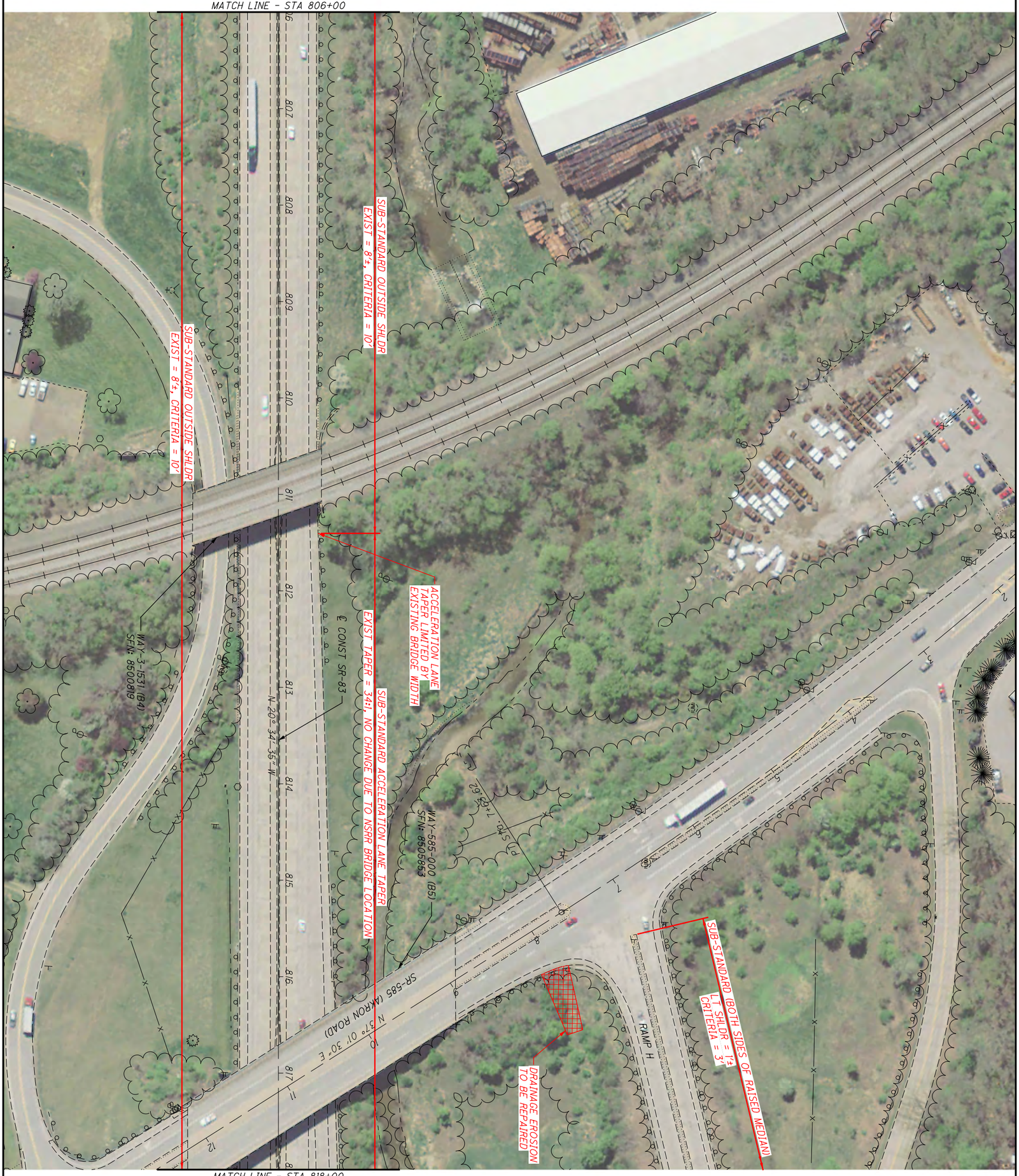
B-2 / 20	**WAY-83-10.81**	**SR-83** **STA 770+00 TO STA 782+00**	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



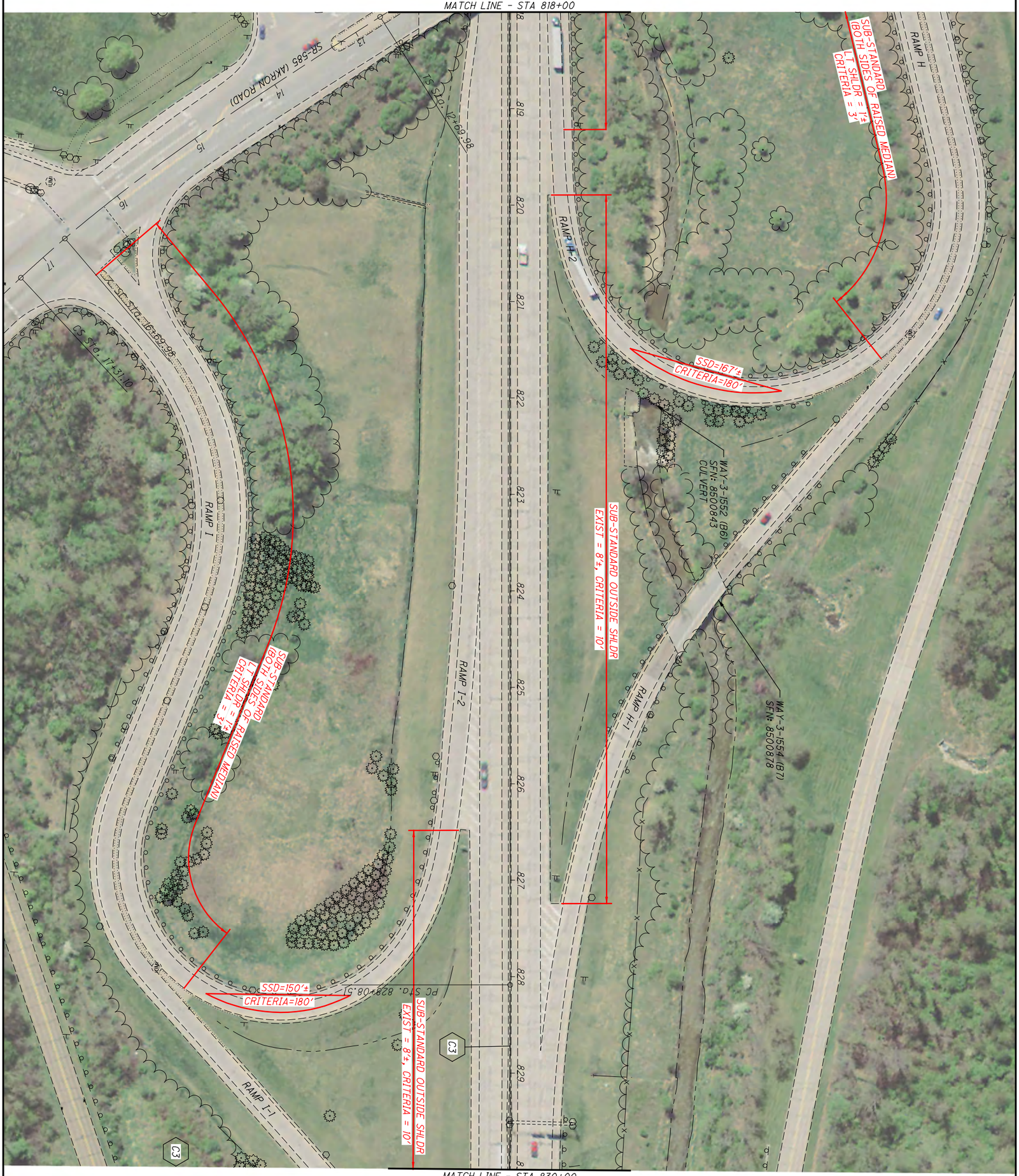
B-3 / 20	WAY-83-10.81	SR-83 STA 782+00 TO STA 794+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



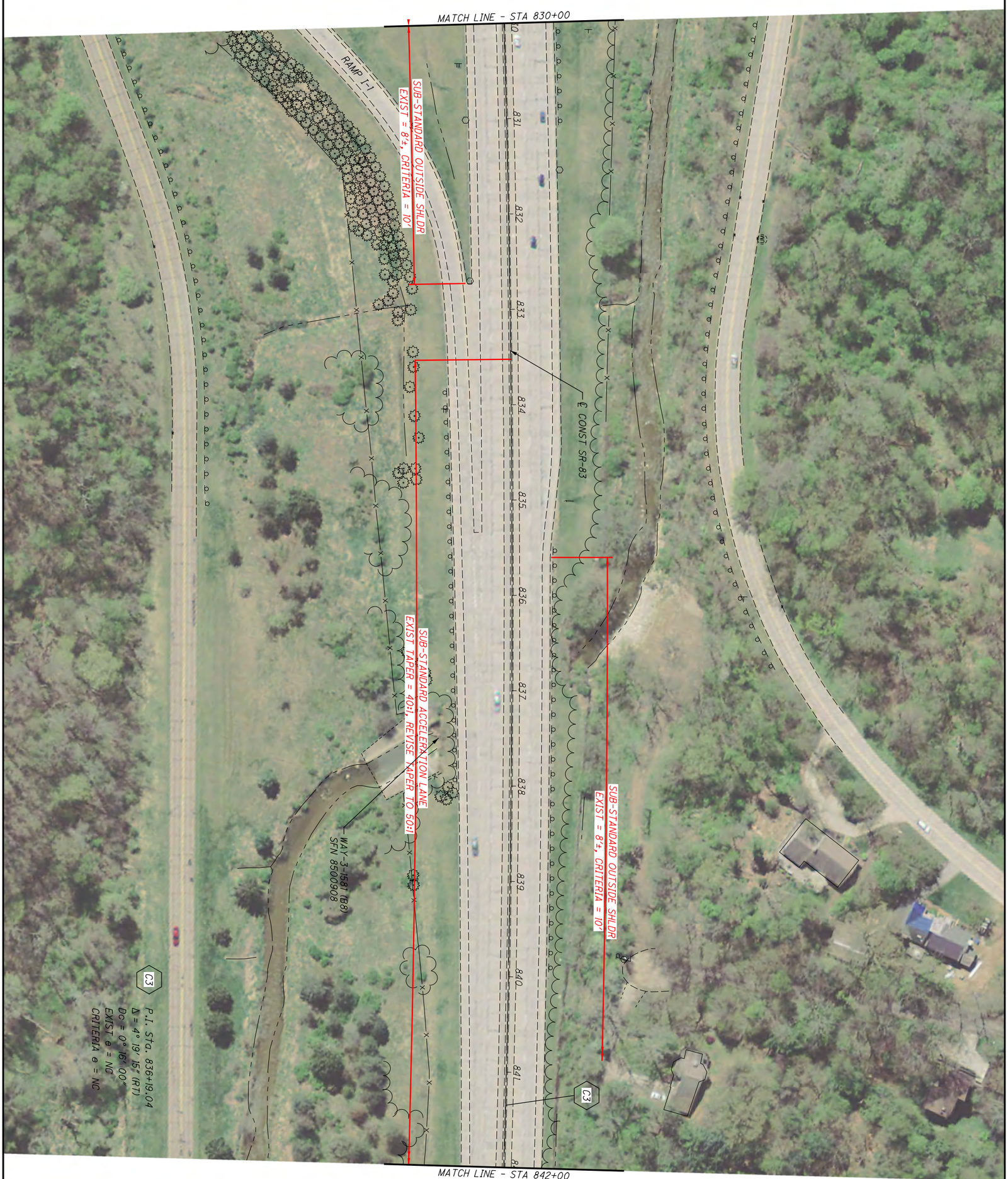
B-4 / 20	WAY-83-10.81	SR-83 STA 794+00 TO STA 806+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



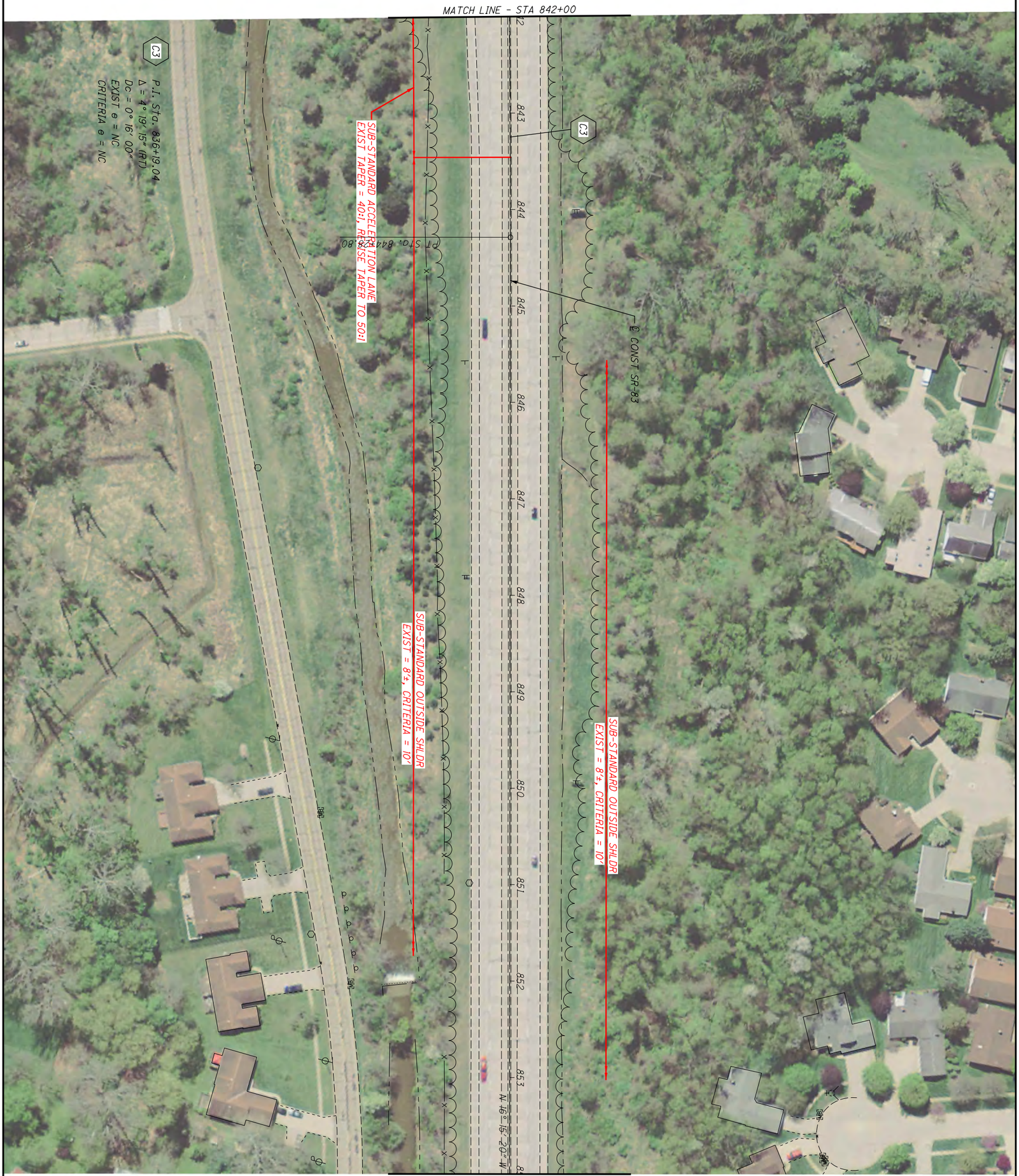
B-5 20	WAY-83-10.81	SR-83 STA 806+00 TO STA 818+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



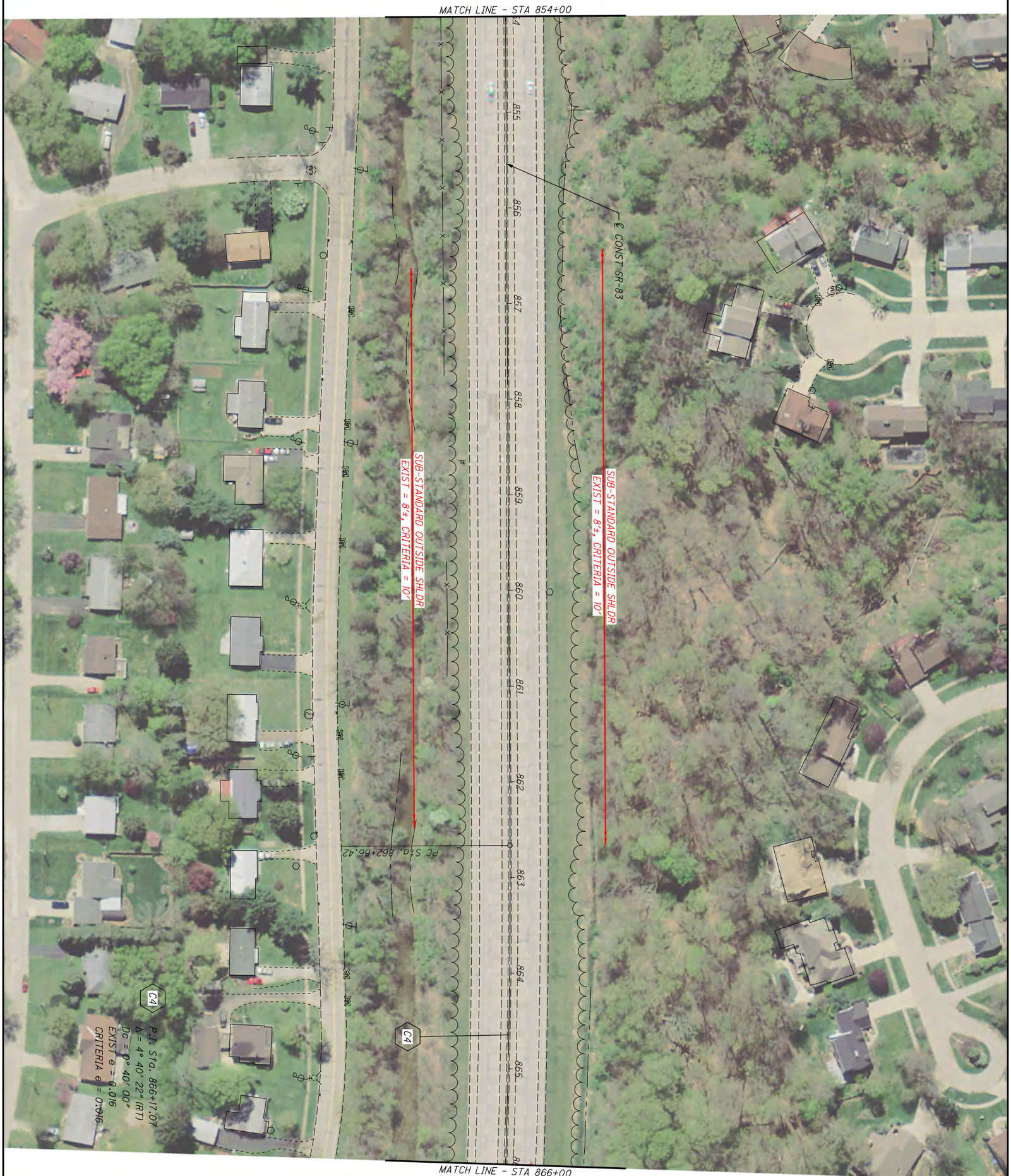
B-6 / 20	WAY-83-10.81	SR-83 STA 818+00 TO STA 830+00	CALCULATED PRS CHECKED CJM	0 50 25 10 HORIZONTAL SCALE IN FEET	N



B-7 / 20	WAY-83-10.81	SR-83 STA 830+00 TO STA 842+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

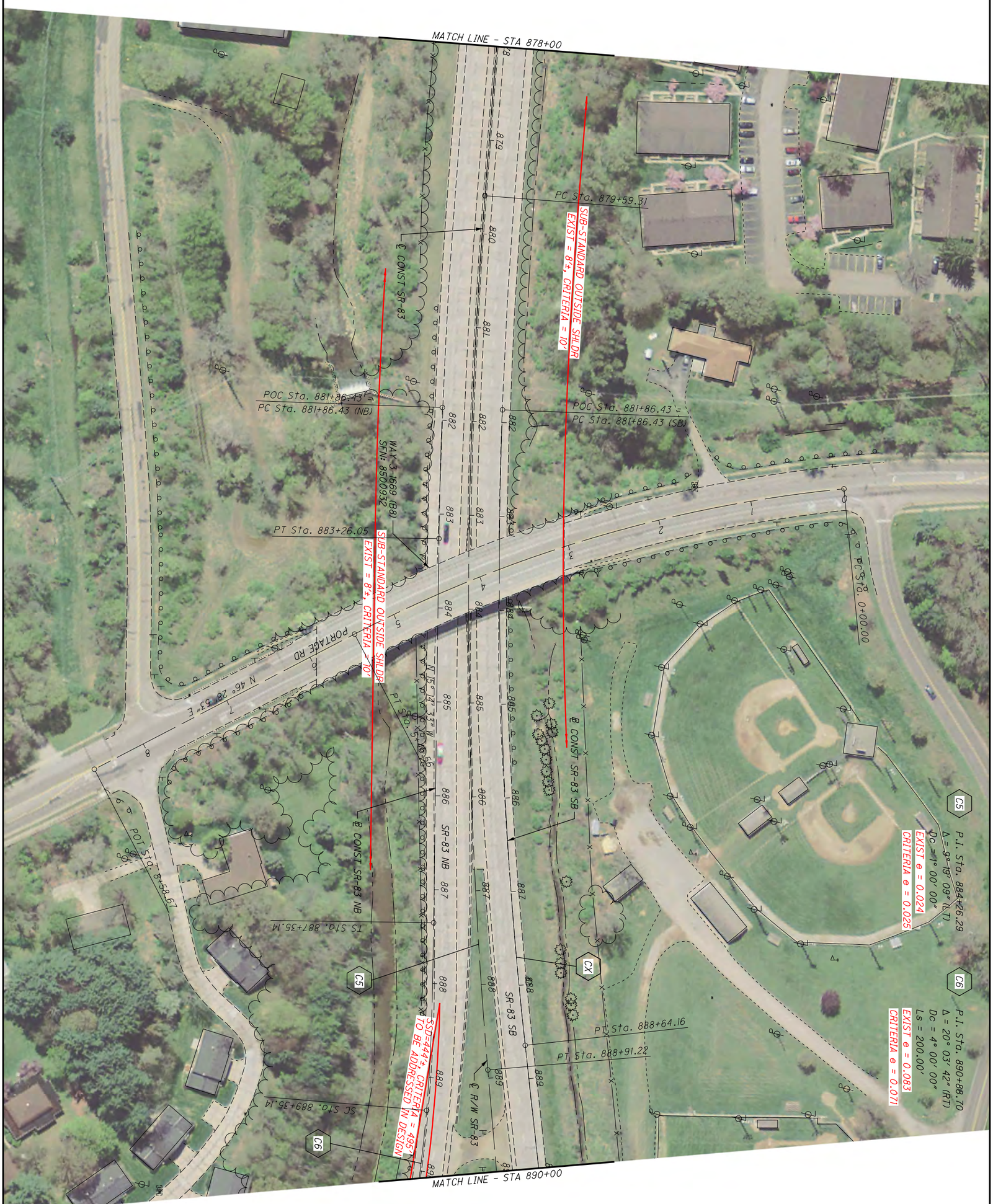


B-8 / 20	WAY-83-10.81	SR-83 STA 842+00 TO STA 854+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



B-9 / 20	WAY-83-10.81	SR-83 STA 854+00 TO STA 866+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

B-10 / 20	WAY-83-10.81	SR-83 STA 866+00 TO STA 878+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



B-11 / 20	**WAY-83-10.81**	**SR-83** **STA 878+00 TO STA 890+00**	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

B-12 / 20	WAY-83-10.81	SR-83 STA 890+00 TO STA 902+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

B-13 / 20	WAY-83-10.81	SR-83 STA 902+00 TO STA 914+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

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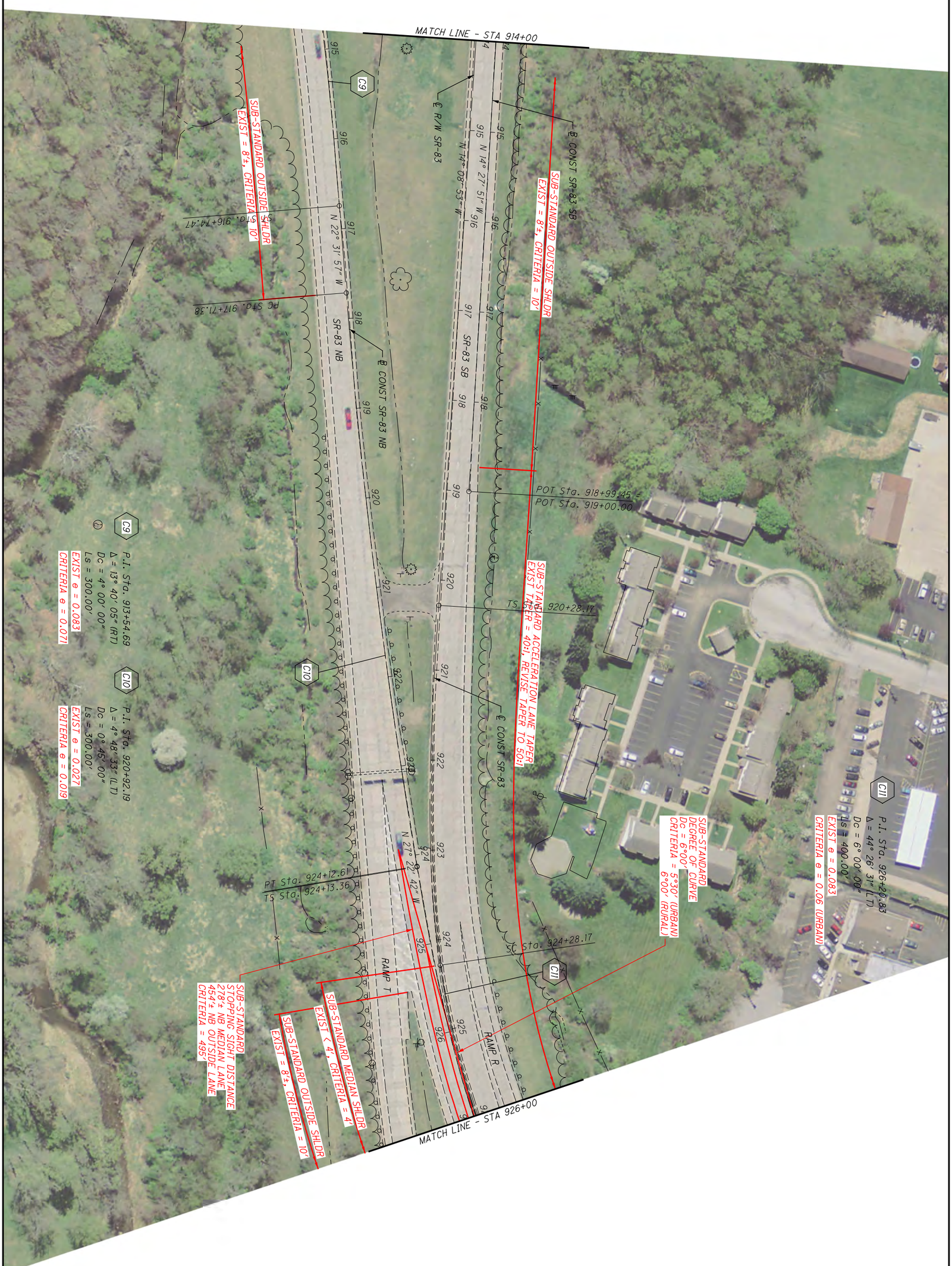
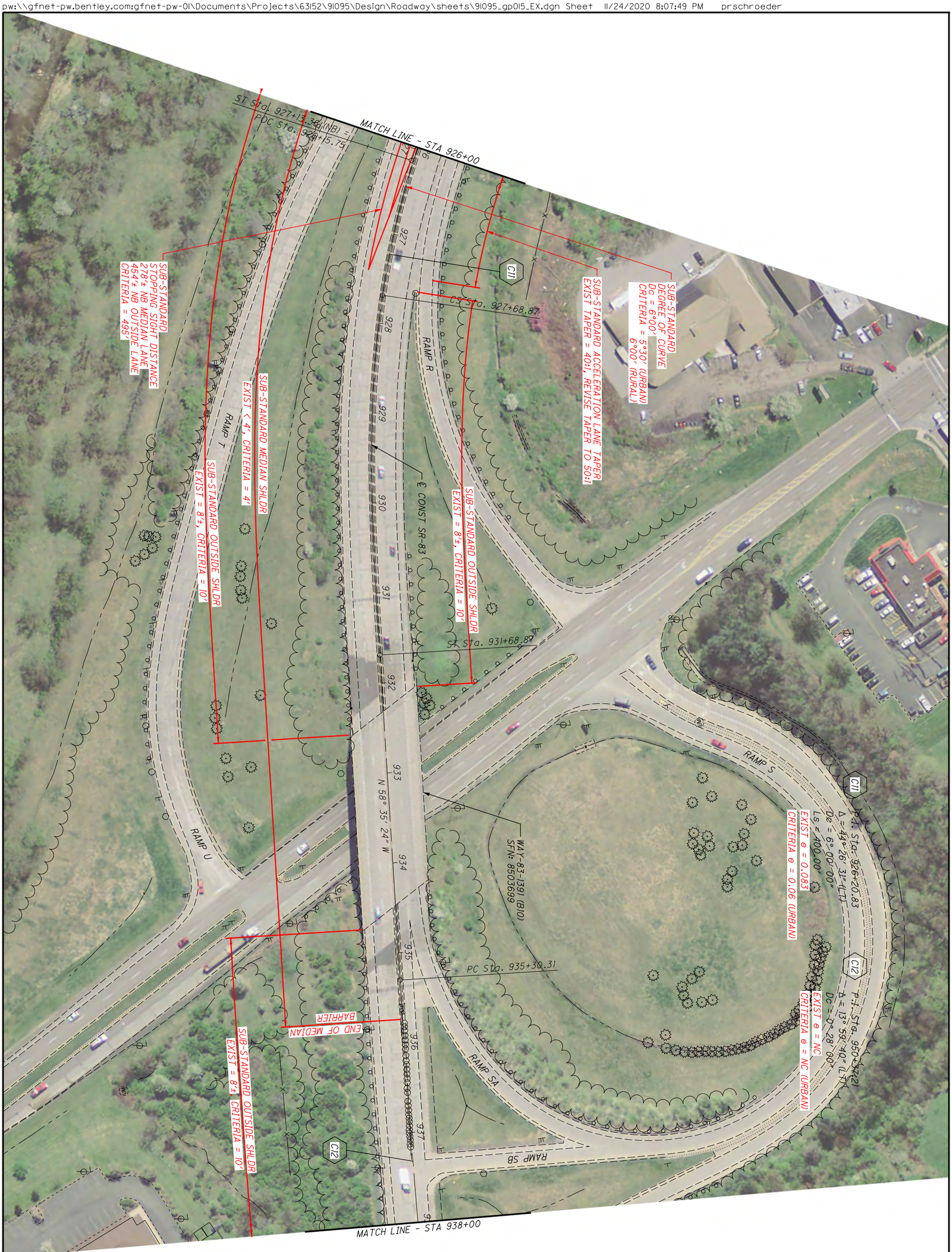
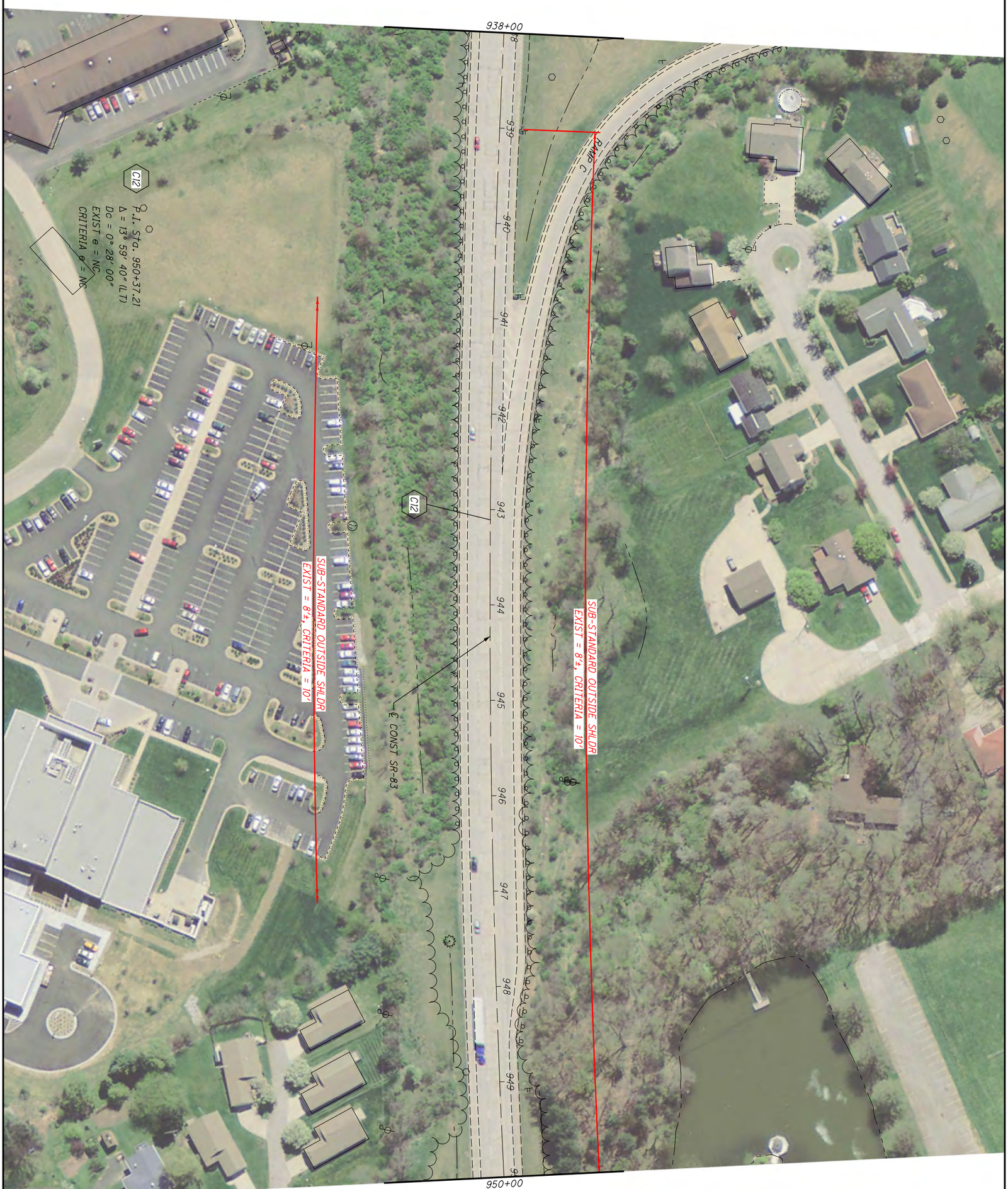


B-14 / 20	WAY-83-10.81	SR-83 STA 914+00 TO STA 926+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

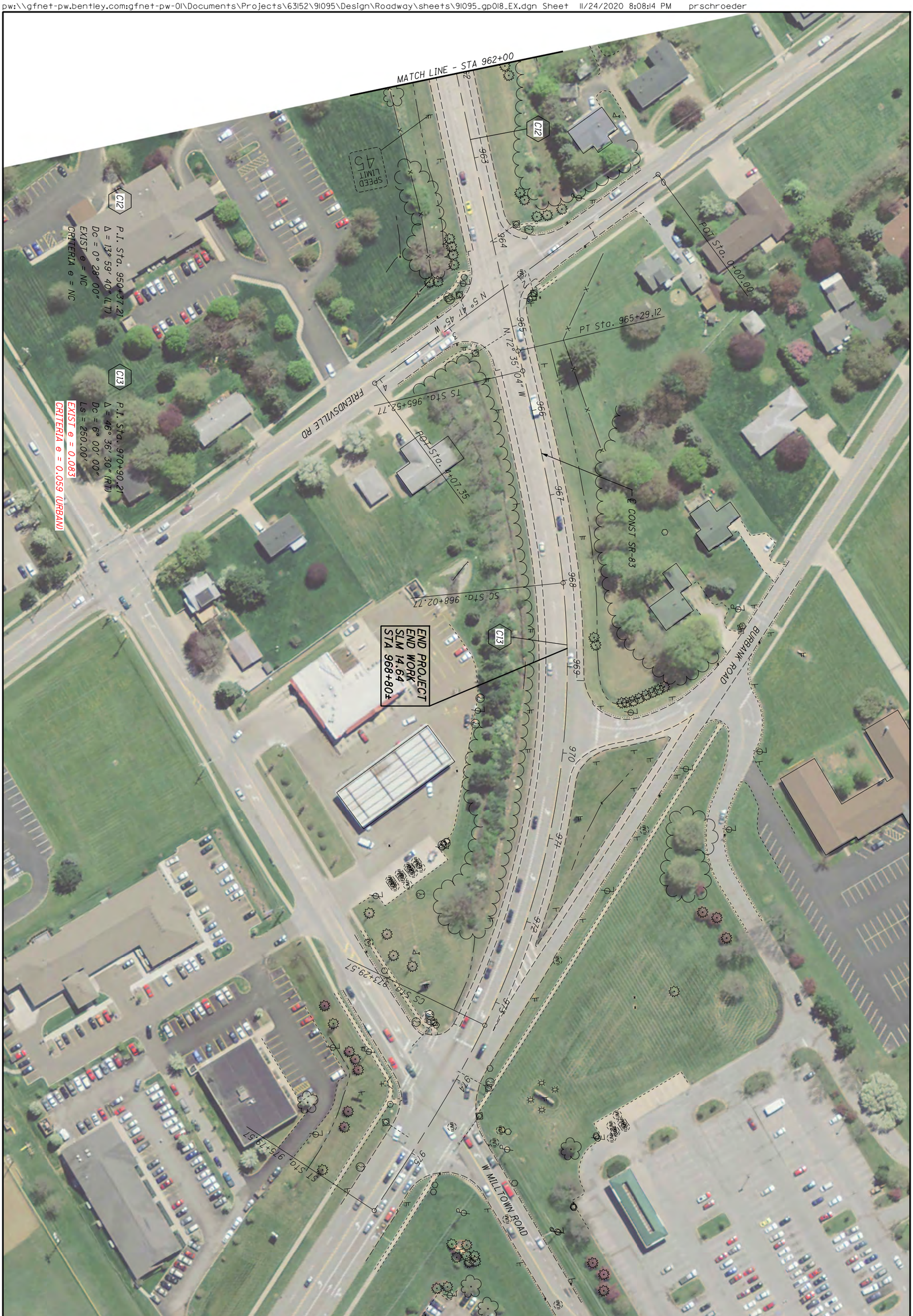


B-15 / 20	WAY-83-10.81	SR-83 STA 926+00 TO STA 938+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



B-16 / 20	WAY-83-10.81	SR-83 STA 938+00 TO STA 950+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET	N

B-17 20	WAY-83-10.81	SR-83 STA 950+00 TO STA 962+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET	N



20 B-18	WAY-83-10.81	SR-83 STA 962+00 TO STA 975+79	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

B-19 / 20	WAY-83-10.81	SR-83 - RAMP B STA 782+00 TO STA 794+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

WAY-83-10.81
PID No: 91095
GF Project: 63152 TO#3-7

Vertical and Horizontal Bridge Clearances

Bridge	Vert Clearance (NB/SB)*	Horizontal Clearance*			
		SB Outside	SB Median	NB Median	NB Outside
B1 – WAY-250-1218L (SR-83 over US-30 EB)		9’-4”	7’-2”	6’-10”	9’-4”
B2 – Way-83-1176L (US-30 WB over SR-83)	15’-1” (NB)	10’-2”	5’-9”	5’-8”	10’-0”
B3 – WAY-3-1516 (SR-83 over Apple Creek)		10’-4”	7’-3”	7’-5”	10’-1”
B4 – WAY-3-1531 (SR-83 under NSRR)	24.5’ (SB) from BR-191	8’-7”	5’-2”	5’-2”	9’-4”
B5 – WAY-585-0000 (SR-585 over SR-83)	15’-2” (SB)	10’-4”	5’-5”	5’-9”	10’-2”
B6 – WAY-83-1552 (Ramp H-2 to SR-83 SB)		Culvert			
B7 – WAY-83-1554 (Ramp H-1 from SR-83 SB)		5’-6” (RT)	3’-7” (LT)		
B8 – WAY-3-1581 (SR-83 over Apple Creek, just north of SR-585)		Culvert			
B9 – WAY-3-1669 (Portage Road over SR-83)	15’-7” (NB)	10’-7”	5’-4”	7’-9”	11’-3”
B10 – WAY-83-1391 (SR-83 over Cleveland Rd)		10’-10”	2’-0”	2’-0”	10’-0”

*All horizontal and vertical clearances measured in the field

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX C

Mainline Criteria Evaluation Matrix

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

= Meets current design criteria

= Does not meet design criteria, but can be modified in final design to meet criteria

= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION	WAY-83-10.81-11.03 (Standards)	WAY-83-10.81-11.03 (Existing Conditions)	WAY-3-14.73-17.71 (Standards)	WAY-3-14.73-17.71 (Existing Conditions)	WAY-83-13.73-14.50 (Standards)	WAY-83-13.73-14.50 (Existing Conditions)	WAY-83-14.50-14.64 (Standards)	WAY-83-14.50-14.64 (Existing Conditions)
	Sta 767+80 to Sta 781+30		Sta 781+30 to Sta 922+00		Sta 922+00 to Sta 962+65		Sta 962+65 to Sta 970+00	

GENERAL REQUIREMENTS	L & D Reference	55 MPH DESIGN SPEED	55 MPH DESIGN SPEED	55 MPH DESIGN SPEED	50 MPH DESIGN SPEED
FUNCTIONAL CLASSIFICATION	ODOT Office of Technical Services	Freeways and Expressways	Freeways and Expressways	Freeways and Expressways	Principal Arterial
NHS		No	No	No	No
DESIGN YEAR		2043	2043	2043	2043
RURAL/URBAN		**Rural**	**Rural**	**Urban**	**Urban**
TERRAIN		Level	Level	Level	Level
OPENING YEAR ADT (2023)		6,800	23,000	15,500	15,500
DESIGN YEAR ADT (2043)		7,200	28,500	17,500	17,500
DESIGN HOURLY VOLUME		650	2,600	1,600	1,600
DIRECTIONAL DISTRIBUTION		56%	56%	51%	51%
TRUCKS (24 HOUR B&C)		9%	5%	10%	10%
DESIGN SPEED (mph)		55	55	55	50
LEGAL SPEED (mph)		55	55	55	45
DESIGN VEHICLE	301.1.3	WB-62	WB-62	WB-62	WB-62
ACCESS CONTROL		Limited Access	Limited Access	Limited Access	Limited Access

CROSS-SECTION ELEMENTS	L & D Reference	55 MPH DESIGN SPEED						50 MPH DESIGN SPEED	
LANE WIDTH (ft)	**Figure 301-4**	12'	12'	12'	12'	12'	12'	12'	12'
NUMBER OF TRAFFIC LANES			4-lane Divided		4-lane Divided		3-lane Undivided (2-NB, 1-SB)		3-lane Undivided (2-NB, 1-SB)
NORMAL TRAVEL LANE CROSS SLOPE	**Figure 301-6**	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
PAVEMENT TRANSITION LENGTH	301.1.4		L = WS		L = WS		L = WS		L = WS

SHOULDERS	L & D Reference	55 MPH DESIGN SPEED						50 MPH DESIGN SPEED	
GRADED SHOULDER WIDTH, OUTSIDE (ft)	Figure 301-3 / 303-1	15' (with barrier or slope >6:1), 10' (no barrier or slopes <6:1)	12'	15' (with barrier or slope >6:1), 10' (no barrier or slopes <6:1)	12'	15' (with barrier or slope >6:1), 10' (no barrier or slopes <6:1)	12'	12' (with barrier or slope >6:1), 8' (no barrier or slopes <6:1)	12'
GRADED SHOULDER WIDTH, MEDIAN/LT (ft)	Figure 301-3 / 303-1	9' (with barrier or slope >6:1), 4' (no barrier or slopes <6:1)	N/A	9' (with barrier or slope >6:1), 4' (no barrier or slopes <6:1)	781+30 to 886+75; N/A 886+75 to 922+00; 10' NB 886+75 to 922+00; 10' SB	9' (with barrier or slope >6:1), 4' (no barrier or slopes <6:1)	922+00 to 922+97: 10' NB 922+00 to 922+97: 10' SB 922+97 to 962+65; N/A	N/A	N/A
TREATED SHOULDER WIDTH, RIGHT (ft), AND TYPE	**Figure 301-3 / 303-1**	10' Paved	8'	10' Paved	8'	10' Paved	8'	8' Paved	8'
TREATED SHOULDER WIDTH, LEFT (ft), AND TYPE	**Figure 301-3 / 303-1**	4' Paved	6.5'	4' Paved	781+30 to 881+86: 6.5' 881+86 to 886+77: 6.5'-14' NB 886+77 to 889+48: 14'-8' NB 889+48 to 922+00: 4' NB 881+86 to 884+40; 6.5' 884+40 to 886+75: 6.5'-15' SB 886+75 to 920+90: 4' SB 920+80 to 921+80: 4'-1.5' SB	4' Paved	922+00 to 923+94: 4' NB 923+94 to 926+45: 17'-1.5' NB 926+45 to 935+60: 1.5' NB 922+00 to 935+60: 1.5' SB 935+60 to 962+65: N/A	N/A	N/A
SHOULDER ROUNDING (ft)	Figure 301-3 / 303-1	10'		10'		10'		8'	
PAVED SHOULDER CROSS SLOPE	Figure 301-8	4%	4%	4%	4%	4%	4%	4%	4%

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

= Meets current design criteria

= Does not meet design criteria, but can be modified in final design to meet criteria

= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION		WAY-83-10.81-11.03 (Standards)	WAY-83-10.81-11.03 (Existing Conditions)	WAY-3-14.73-17.71 (Standards)	WAY-3-14.73-17.71 (Existing Conditions)	WAY-83-13.73-14.50 (Standards)	WAY-83-13.73-14.50 (Existing Conditions)	WAY-83-14.50-14.64 (Standards)	WAY-83-14.50-14.64 (Existing Conditions)
		Sta 767+80 to Sta 781+30		Sta 781+30 to Sta 922+00		Sta 922+00 to Sta 962+65		Sta 962+65 to Sta 970+00	
CLEAR ZONE	**L & D Reference**	**55 MPH DESIGN SPEED**						**50 MPH DESIGN SPEED**	
FORESLOPE 6:1 OR FLATTER (ft)	Figure 600-1	23' (55)							
FORESLOPE STEEPER THAN 6:1 TO 4:1 (ft)	Figure 600-1	29' (55)							
CLEARANCES	**L & D Reference**	**55 MPH DESIGN SPEED**						**50 MPH DESIGN SPEED**	
NORMAL BARRIER OFFSET (ft) FOR GUARDRAIL	Figure 301-3 / 303-1	12'	10'	12'	10'	12'	10'	10'	10'
LATERAL CLEARANCE ON BRIDGE, OUTSIDE (ft)	Figure 302-2	10' (SEE NOTE B)	B1 - WAY-250-1218L; 9.33' (NB)/9.33' (SB)	10' (SEE NOTE B)	B3 - WAY-3-1516; 10.08' (NB)/10.33' (SB)	10' (SEE NOTE B)	B10 - WAY-83-1391; 10.0' (NB)/10.83' (SB)		
LATERAL CLEARANCE ON BRIDGE, MEDIAN (ft)	Figure 302-2	3.5' (SEE NOTE B)	B1 - WAY-250-1218L; 6.83' (NB)/7.16' (SB)	3.5' (SEE NOTE B)	B3 - WAY-3-1516; 7.42' (NB)/7.25' (SB)	3.5' (SEE NOTE B)	B10 - WAY-83-1391; 2.0' (NB)/2.0' (SB)		
HORIZONTAL CLEARANCE UNDER BRIDGE (ft)	Figure 302-2	10' Outside 4' Median	B2 - WAY-83-1176L; 10.0' RT/5.67' LT (NB) - 10.16' RT/5.75' LT (SB)	10' Outside 4' Median	B4 - WAY-3-1531; 9.33' RT/5.16' LT (NB) - 8.58' RT/5.16' LT (SB) B5 - WAY-585-0000; 10.16' RT/5.75' LT (NB) - 10.33' RT/5.42' LT (SB) B9 - WAY-3-1669; 11.25' RT/7.75' LT (NB) - 10.58' RT/5.33' LT (SB)	10' Outside 4' Median		N/A	N/A
VERTICAL CLEARANCE UNDER BRIDGE (ft)	Figure 302-1 / 302-2	14.5' for existing bridges to remain	B2 - WAY-83-1176L; 15.0' NB	14.5' for existing bridges to remain	B4 - WAY-3-1531; 24.5' SB B5 - WAY-585-0000; 15.1' SB B9 - WAY-3-1669; 15.6' NB	14.5' for existing bridges to remain	N/A	14.5' for existing bridges to remain	N/A
SIGHT DISTANCE	**L & D Reference**	**55 MPH DESIGN SPEED**						**50 MPH DESIGN SPEED**	
STOPPING SIGHT DISTANCE (ft)	**Figure 201-1**	495'	> 495'	495'	C6 = 444'	495'	C11 = 278'	425'	> 425'
PASSING SIGHT DISTANCE (ft)	Figure 201-3	900'	N/A	900'	N/A	900'	N/A	800'	N/A
INTERSECTION SIGHT DISTANCE (ft)	Figure 201-5	N/A		N/A		SR-3 Ramp S-A 610' LT TURN 530' RT TURN	218' LT Turn w/32" barrier obstruction, > 610' over barrier > 530' RT Turn	555' LT TURN 480' RT TURN	N/A, FRIENDSVILLE RD SIGNALIZED
DECISION SIGHT DISTANCE (ft)	Figure 201-6	N/A		N/A		N/A		910' for Urban Stop	

PROJECT DESIGN CRITERIA
WAY-83-10.81
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GANNETT FLEMING JOB NO. 063152
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ROADWAY DESIGNATION	WAY-83-10.81-11.03 (Standards)	WAY-83-10.81-11.03 (Existing Conditions)	WAY-3-14.73-17.71 (Standards)	WAY-3-14.73-17.71 (Existing Conditions)	WAY-83-13.73-14.50 (Standards)	WAY-83-13.73-14.50 (Existing Conditions)	WAY-83-14.50-14.64 (Standards)	WAY-83-14.50-14.64 (Existing Conditions)
	Sta 767+80 to Sta 781+30		Sta 781+30 to Sta 922+00		Sta 922+00 to Sta 962+65		Sta 962+65 to Sta 970+00	

HORIZONTAL ALIGNMENT	L & D Reference	55 MPH DESIGN SPEED						50 MPH DESIGN SPEED	
MAXIMUM DEFLECTION WITHOUT HORIZONTAL CURVE	Figure 202-1	1°00'	N/A	1°00'	N/A	1°00'	N/A	1°05'	N/A
MAXIMUM DEGREE OF CURVE	**Figure 202-2**	6°00'	C1=1°18'	6°00'	C2=1°18' C3=0°16' C4=0°40' C5=1°00' C6 (NB)=4°00' C7 (NB)=5°00' C8 (SB)=0°28' C9 (NB)=4°00' C10 (NB)=0°45'	5°30'	C11=6°00' (5°30') C12=0°28'	6°45'	C13=6°00'
MAXIMUM SUPERELEVATION	**Figures 202-8, 202-10**	0.08	C1=0.031	0.08	C2=0.031 C3=NC C4=0.016 C5=0.024 (0.025) C6 (NB)=0.083 (0.071) C7 (NB)=0.083 (0.078) C8 (SB)=NC C9 (NB)=0.083 (0.071) C10 (NB)=0.027 (0.019)	0.06	C11=0.083 (0.06) C12=NC	0.06	C13=0.083 (0.059)
MAXIMUM DEGREE OF CURVE WITHOUT SUPERELEVATION	Figure 202-3	0°38'	N/A	0°38'	0°28'	0°39'	0°28'	0°47'	N/A

VERTICAL ALIGNMENT	L & D Reference	55 MPH DESIGN SPEED						50 MPH DESIGN SPEED	
MAXIMUM GRADE (%)	**Figures 203-1, 503-1**	4%	3.92%	4%	3.80%	4%	3.96%	6%	0.92%
MAXIMUM GRADE CHANGE WITHOUT VERTICAL CURVE (%)	Figure 203-2	0.40%	N/A	0.40%	N/A	0.40%	N/A	0.45%	N/A
CREST VERTICAL CURVE (K VALUE)	Figure 203-3	114	325	114	165 Min	114	833 Min	84	139
SAG VERTICAL CURVE (K VALUE)	Figure 203-6	115	N/A	115	166 Min	115	2500 Min	96	N/A
MAXIMUM CROSSROAD GRADE (%)	Figure 401-2							±5%	

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX D

US-30 Interchange Criteria Evaluation Matrix

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

SR-83 at US-30 Interchange (Rural)
No work on Ramps C, D, and F

= Meets current design criteria
= Does not meet design criteria, but can be modified in final design to meet criteria
= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION		Ramp (Standards)	Ramp Y	Ramp G	Ramp E	Ramp B	Ramp D
GENERAL REQUIREMENTS	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
FUNCTIONAL CLASSIFICATION	ODOT Office of Technical Services						
NHS							
DESIGN YEAR							
RURAL/URBAN							
TERRAIN							
OPENING YEAR ADT (2023)							
DESIGN YEAR ADT (2043)							
DESIGN HOURLY VOLUME							
DIRECTIONAL DISTRIBUTION							
TRUCKS (24 HOUR B&C)							
DESIGN SPEED (mph)							
LEGAL SPEED (mph)							
DESIGN VEHICLE	301.1.3						
ACCESS CONTROL							

CROSS-SECTION ELEMENTS	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
LANE WIDTH (ft)	**Figure 301-4**	16'	16'	16'	16'	16'	
NUMBER OF TRAFFIC LANES			1	1	1	1	
NORMAL TRAVEL LANE CROSS SLOPE	**Figure 301-6**	1.60%	1.60%	1.60%	1.60%	1.60%	
PAVEMENT TRANSITION LENGTH	301.1.4						

SHOULDERS	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
GRADED SHOULDER WIDTH, RIGHT (ft)	Figure 301-3 / 303-1	11' (with barrier or slope >6:1), 8' (no barrier or slopes <6:1)	10'	10'	10'	10'	
GRADED SHOULDER WIDTH, LEFT (ft)	Figure 301-3 / 303-1	9' (with barrier or slope >6:1), 6' (no barrier or slopes <6:1)	6'	6'	6'	6'	
TREATED SHOULDER WIDTH, RIGHT (ft), AND TYPE	**Figure 301-3 / 303-1**	6' Paved	6'	6'	6'	6'	
TREATED SHOULDER WIDTH, LEFT (ft), AND TYPE	**Figure 301-3 / 303-1**	3' Paved	3'	3'	3'	3'	
SHOULDER ROUNDING (ft)	Figure 301-3 / 303-1	10'					
PAVED SHOULDER CROSS SLOPE	Figure 301-8	4%	4%	4%	4%	4%	

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
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SR-83 at US-30 Interchange (Rural)
No work on Ramps C, D, and F

= Meets current design criteria
= Does not meet design criteria, but can be modified in final design to meet criteria
= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION		Ramp (Standards)	Ramp Y	Ramp G	Ramp E	Ramp B	Ramp D
CLEAR ZONE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
FORESLOPE 6:1 OR FLATTER (ft)	Figure 600-1						
FORESLOPE STEEPER THAN 6:1 TO 4:1 (ft)	Figure 600-1						
CLEARANCES	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
NORMAL BARRIER OFFSET (ft) FOR GUARDRAIL	Figure 301-3 / 303-1	6' (LT)/8' (RT)	4' (LT) / 8' (RT)	4' (LT) / 8' (RT)	4' (LT) / 8' (RT)	4' (LT) / 8' (RT)	
LATERAL CLEARANCE ON BRIDGE, OUTSIDE (ft)	Figure 302-1		N/A	N/A	N/A	N/A	
LATERAL CLEARANCE ON BRIDGE, MEDIAN (ft)	Figure 302-1		N/A	N/A	N/A	N/A	
SIGHT DISTANCE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
STOPPING SIGHT DISTANCE (ft)	**Figure 201-1**	180'	> 180'	> 180'	> 180'	> 180'	
PASSING SIGHT DISTANCE (ft)	Figure 201-3	N/A	N/A	N/A	N/A	N/A	
INTERSECTION SIGHT DISTANCE (ft)	Figure 201-5	Ramp Y (45mph) 500' LT Turn 430' RT Turn	> 500' LT Turn > 430' RT Turn	N/A	N/A	N/A	
DECISION SIGHT DISTANCE (ft)	Figure 201-6	N/A	N/A	N/A	N/A	N/A	

HORIZONTAL ALIGNMENT	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
MAXIMUM DEFLECTION WITHOUT HORIZONTAL CURVE	Figure 202-1	4°30'	N/A	N/A	N/A	N/A	
MAXIMUM DEGREE OF CURVE	**Figure 202-2**	31°15'	20°00'	25°00'	25°00'	12°00'	
MAXIMUM SUPERELEVATION	**Figures 202-8, 202-10**	0.08	0.083	0.083	0.083	0.083	
MAXIMUM DEGREE OF CURVE WITHOUT SUPERELEVATION	Figure 202-3	2°10'	N/A	N/A	N/A	N/A	

VERTICAL ALIGNMENT	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
MAXIMUM GRADE (%)	**Figures 203-1, 503-1**	5.0%	1.48%	2.56%	4.04%	3.92%	
MAXIMUM GRADE CHANGE WITHOUT VERTICAL CURVE (%)	Figure 203-2	1.52%	N/A	N/A	N/A	N/A	
CREST VERTICAL CURVE (K VALUE)	Figure 203-3	15	N/A	188	61	87	
SAG VERTICAL CURVE (K VALUE)	Figure 203-6	32	72	147	37	326	

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SR-83 at US-30 Interchange (Rural)
No work on Ramps C, D, and F

= Meets current design criteria
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ROADWAY DESIGNATION		Ramp (Standards)	Ramp Y	Ramp G	Ramp E	Ramp B	Ramp D
INTERCHANGE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
ENTRANCE TERMINAL DESIGN	Figure 503-2c	50:1 Taper	N/A - Exit	N/A - Auxillary Lane	N/A - Exit	N/A - Exit	13.5:1
EXIT TERMINAL DESIGN	Figures 503-3c / 505-2a	2°45'	5°00'	N/A - Entrance	5°00'	5°00'	N/A - Entrance
RAMP TERMINAL SPACING	Fig 503-1a	ENT-EX = 1600'	Approx. 530'	Approx. 490'			

* Where truck traffic exceeds 250 DDHV, additional shoulder width may be beneficial. If the treated shoulder width is increased then the graded shoulder width should be increased by the same amount.

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX E

SR-585 Interchange Criteria Evaluation Matrix

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

SR-83 at SR-585 (Akron Road) Interchange (Rural)

= Meets current design criteria

= Does not meet design criteria, but can be modified in final design to meet criteria

= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION		Ramp (Standards)	RAMP H	RAMP H-1	RAMP H-2	RAMP I	RAMP I-1	RAMP I-2
GENERAL REQUIREMENTS	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
FUNCTIONAL CLASSIFICATION	ODOT Office of Technical Services							
NHS								
DESIGN YEAR								
RURAL/URBAN								
TERRAIN								
OPENING YEAR ADT (2023)								
DESIGN YEAR ADT (2043)								
DESIGN HOURLY VOLUME								
DIRECTIONAL DISTRIBUTION								
TRUCKS (24 HOUR B&C)								
DESIGN SPEED (mph)								
LEGAL SPEED (mph)								
DESIGN VEHICLE	301.1.3							
ACCESS CONTROL								

CROSS-SECTION ELEMENTS	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
LANE WIDTH (ft)	**Figure 301-4**	16'	18'	18'	18'	18'	18'	18'
NUMBER OF TRAFFIC LANES			1	1	1	1	1	1
NORMAL TRAVEL LANE CROSS SLOPE	**Figure 301-6**	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
PAVEMENT TRANSITION LENGTH	301.1.4							

SHOULDERS	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
GRADED SHOULDER WIDTH, RIGHT (ft)	Figure 301-3 / 303-1	11' (with barrier or slope >6:1), 8' (no barrier or slopes <6:1)	10'	10'	10'	10'	10'	10'
GRADED SHOULDER WIDTH, LEFT (ft)	Figure 301-3 / 303-1	9' (with barrier or slope >6:1), 6' (no barrier or slopes <6:1)	N/A	6'	6'	N/A	6'	6'
TREATED SHOULDER WIDTH, RIGHT (ft), AND TYPE	**Figure 301-3 / 303-1**	6' Paved	8	6'	6'	8	6'	6'
TREATED SHOULDER WIDTH, LEFT (ft), AND TYPE	**Figure 301-3 / 303-1**	3' Paved	1'	3	3	1'	3	3
SHOULDER ROUNDING (ft)	Figure 301-3 / 303-1	10'						
PAVED SHOULDER CROSS SLOPE	Figure 301-8	4%	4%	4%	4%	4%	4%	4%

CLEAR ZONE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
FORESLOPE 6:1 OR FLATTER (ft)	Figure 600-1							
FORESLOPE STEEPER THAN 6:1 TO 4:1 (ft)	Figure 600-1							

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

SR-83 at SR-585 (Akron Road) Interchange (Rural)

= Meets current design criteria

= Does not meet design criteria, but can be modified in final design to meet criteria

= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION		Ramp (Standards)	RAMP H	RAMP H-1	RAMP H-2	RAMP I	RAMP I-1	RAMP I-2
CLEARANCES	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
NORMAL BARRIER OFFSET (ft) FOR GUARDRAIL	Figure 301-3 / 303-1	6' (LT)/8' (RT)	8' (RT)	4' (LT) / 8' (RT)	4' (LT) / 8' (RT)	8' (RT)	4' (LT) / 8' (RT)	4' (LT) / 8' (RT)
LATERAL CLEARANCE ON BRIDGE, OUTSIDE (ft)	Figure 302-1			B7 - WAY-83-1554; 5.5'				
LATERAL CLEARANCE ON BRIDGE, MEDIAN (ft)	Figure 302-1			B7 - WAY-83-1554; 3.58'				
SIGHT DISTANCE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
STOPPING SIGHT DISTANCE (ft)	**Figure 201-1**	180'	167'	> 180'	167'	155'	> 180'	155'
PASSING SIGHT DISTANCE (ft)	Figure 201-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INTERSECTION SIGHT DISTANCE (ft)	Figure 201-5	SR-585 (35mph) 390' LT Turn 335' RT Turn	< 390' LT Turn < 335'' RT Turn	N/A	N/A	N/A - Signalized Intersection	N/A	N/A
DECISION SIGHT DISTANCE (ft)	Figure 201-6	SR-585 (35mph) 590' Urban Stop	> 590'	N/A	N/A	N/A	N/A	N/A

HORIZONTAL ALIGNMENT	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
MAXIMUM DEFLECTION WITHOUT HORIZONTAL CURVE	Figure 202-1	4°30'	N/A	N/A	N/A	N/A	N/A	N/A
MAXIMUM DEGREE OF CURVE	**Figure 202-2**	31°15'	27°05'29"	8°00'	29°59'58"	38°11'50" (150' R)	16°00'	38°11'50" (150' R)
				A				
MAXIMUM SUPERELEVATION	**Figures 202-8, 202-10**	0.08	0.083	0.083	0.083	0.083	0.083	0.083
MAXIMUM DEGREE OF CURVE WITHOUT SUPERELEVATION	Figure 202-3	2°10'	N/A	N/A	N/A	N/A	N/A	N/A

VERTICAL ALIGNMENT	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
MAXIMUM GRADE (%)	**Figures 203-1, 503-1**	5.0%	1.64%	1.64%	1.64%	3.60%	3.60%	3.60%
MAXIMUM GRADE CHANGE WITHOUT VERTICAL CURVE (%)	Figure 203-2	1.52%	N/A	N/A	N/A	N/A	N/A	N/A
CREST VERTICAL CURVE (K VALUE)	Figure 203-3	15	37	N/A	N/A	59	N/A	N/A
SAG VERTICAL CURVE (K VALUE)	Figure 203-6	32	N/A	64	238	22 (at intersection)	65	67
MAXIMUM CROSSROAD GRADE (%)	Figure 401-2	N/A						

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

SR-83 at SR-585 (Akron Road) Interchange (Rural)

= Meets current design criteria

= Does not meet design criteria, but can be modified in final design to meet criteria

= Does not meet design criteria, a Design Exception is required

ROADWAY DESIGNATION		Ramp (Standards)	RAMP H	RAMP H-1	RAMP H-2	RAMP I	RAMP I-1	RAMP I-2
INTERCHANGE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
ENTRANCE TERMINAL DESIGN	Figure 503-2c	50:1 Taper	N/A	N/A	34:1 Taper	N/A	40:1 Taper	N/A
EXIT TERMINAL DESIGN	Figures 503-3c / 505-2a	2°45'	N/A	4°00'	N/A	N/A	N/A	1°30'

* Where truck traffic exceeds 250 DDHV, additional shoulder width may be beneficial. If the treated shoulder width is increased then the graded shoulder width should be increased by the same amount.

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX F

SR-3 Interchange Criteria Evaluation Matrix

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

SR-83 at SR-3 (Cleveland Road) Interchange (Urban)

= Meets current design criteria

= Does not meet design criteria, but can be modified in final design to meet criteria

= Does not meet design criteria, a Design Exception is required

* Ramp T to be changed to a single lane exit ramp in design, currently treated as mainline pavement

ROADWAY DESIGNATION		Ramp (Standards)	Ramp T	Ramp U	Ramp R	Ramp S	Ramp S-A	Ramp S-B	Ramp C
GENERAL REQUIREMENTS	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
FUNCTIONAL CLASSIFICATION	ODOT Office of Technical Services								
NHS									
DESIGN YEAR									
RURAL/URBAN									
TERRAIN									
OPENING YEAR ADT (2023)									
DESIGN YEAR ADT (2043)									
DESIGN HOURLY VOLUME									
DIRECTIONAL DISTRIBUTION									
TRUCKS (24 HOUR B&C)									
DESIGN SPEED (mph)									
LEGAL SPEED (mph)									
DESIGN VEHICLE	301.1.3								
ACCESS CONTROL									

CROSS-SECTION ELEMENTS	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
LANE WIDTH (ft)	**Figure 301-4**	16'	12' *	16'	16'	16'	16'	16'	16'
NUMBER OF TRAFFIC LANES			2 *	1	1	1	1	1	1
NORMAL TRAVEL LANE CROSS SLOPE	**Figure 301-6**	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
PAVEMENT TRANSITION LENGTH	301.1.4								

SHOULDERS	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
						Waiting for Plans to confirm orange highlighted items			
GRADED SHOULDER WIDTH, RIGHT (ft)	Figure 301-3 / 303-1	11' (with barrier or slope >6:1), 8' (no barrier or slopes <6:1)	12'	10'	10'	10'	10'	10'	10'
GRADED SHOULDER WIDTH, LEFT (ft)	Figure 301-3 / 303-1	9' (with barrier or slope >6:1), 6' (no barrier or slopes <6:1)	10'	6'	6'	8'	8'	8'	8'
TREATED SHOULDER WIDTH, RIGHT (ft), AND TYPE	**Figure 301-3 / 303-1**	6' Paved	8'	6'	6'	6'	6'	6'	6'
TREATED SHOULDER WIDTH, LEFT (ft), AND TYPE	**Figure 301-3 / 303-1**	3' Paved	4'	3'	3'	3'	3'	3'	3'
SHOULDER ROUNDING (ft)	Figure 301-3 / 303-1	10'							
PAVED SHOULDER CROSS SLOPE	Figure 301-8	4%	4%	4%	4%	4%	4%	4%	4%

CLEAR ZONE	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
FORESLOPE 6:1 OR FLATTER (ft)	Figure 600-1								
FORESLOPE STEEPER THAN 6:1 TO 4:1 (ft)	Figure 600-1								

PROJECT DESIGN CRITERIA
WAY-83-10.81
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= Meets current design criteria

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= Does not meet design criteria, a Design Exception is required

* Ramp T to be changed to a single lane exit ramp in design, currently treated as mainline pavement

ROADWAY DESIGNATION		Ramp (Standards)	Ramp T	Ramp U	Ramp R	Ramp S	Ramp S-A	Ramp S-B	Ramp C
CLEARANCES	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
NORMAL BARRIER OFFSET (ft) FOR GUARDRAIL	Figure 301-3 / 303-1	6' (LT)/8' (RT)	N/A (LT)/10' (RT)	N/A	4' (LT)/8' (RT)	N/A	8' (RT)	N/A	8' (RT)
LATERAL CLEARANCE ON BRIDGE, OUTSIDE (ft)	Figure 302-1		N/A	N/A	N/A				
LATERAL CLEARANCE ON BRIDGE, MEDIAN (ft)	Figure 302-1		N/A	N/A	N/A				
SIGHT DISTANCE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
STOPPING SIGHT DISTANCE (ft)	**Figure 201-1**	180'	> 180'	> 180'	> 180'	> 180'	180'	> 180'	> 180'
PASSING SIGHT DISTANCE (ft)	Figure 201-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INTERSECTION SIGHT DISTANCE (ft)	Figure 201-5	SR-3 Intersections (35mph) 390' LT Turn 335' RT Turn SR-3 Ramp S-A at SR-83 (55mph) 610' LT Turn 530' RT Turn	N/A	> 390' LT Turn > 335' RT Turn	N/A	< 390' LT Turn > 335'' RT Turn	N/A	218' LT Turn clear sight w/32'' median barrier, > 610' LT Turn over median barrier > 530' RT Turn	N/A
DECISION SIGHT DISTANCE (ft)	Figure 201-6	SR-3 Ramps (35mph) 590' Urban Stop SR-3 Ramp S-A (55mph) 1030' Urban Stop	N/A	> 590'	> 590'	> 590'	N/A		N/A

HORIZONTAL ALIGNMENT	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
MAXIMUM DEFLECTION WITHOUT HORIZONTAL CURVE	Figure 202-1	4°30'	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAXIMUM DEGREE OF CURVE	**Figure 202-2**	29°45'	6°00'	18°00'	14°00'	23°20'18"	25°33'56"	N/A	23°00'
MAXIMUM SUPERELEVATION	**Figures 202-8, 202-10**	0.06	0.059	0.059	0.083	0.083	0.083	0.083	0.083
MAXIMUM DEGREE OF CURVE WITHOUT SUPERELEVATION	Figure 202-3	22°14'	N/A	N/A	N/A	N/A	N/A	N/A	N/A

VERTICAL ALIGNMENT	L & D Reference	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph	48 mph, 40 mph, and 28 mph
MAXIMUM GRADE (%)	**Figures 203-1, 503-1**	5.0%	4.20%	3.32%	3.60%	4.00%	4.68%	4.00%	6.24% (acceptable for middle range Arterial at 40mph)
MAXIMUM GRADE CHANGE WITHOUT VERTICAL CURVE (%)	Figure 203-2	1.52%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CREST VERTICAL CURVE (K VALUE)	Figure 203-3	15	137	N/A	111	N/A	53	28	89
SAG VERTICAL CURVE (K VALUE)	Figure 203-6	32	N/A	31 (at intersection)	N/A	31 (near intersection)	N/A	N/A	80
MAXIMUM CROSSROAD GRADE (%)	Figure 401-2	N/A							

PROJECT DESIGN CRITERIA
WAY-83-10.81
ODOT PID NO. 91095
GANNETT FLEMING JOB NO. 063152
Prepared by: CJM Checked by: PRS

SR-83 at SR-3 (Cleveland Road) Interchange (Urban)

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= Does not meet design criteria, a Design Exception is required

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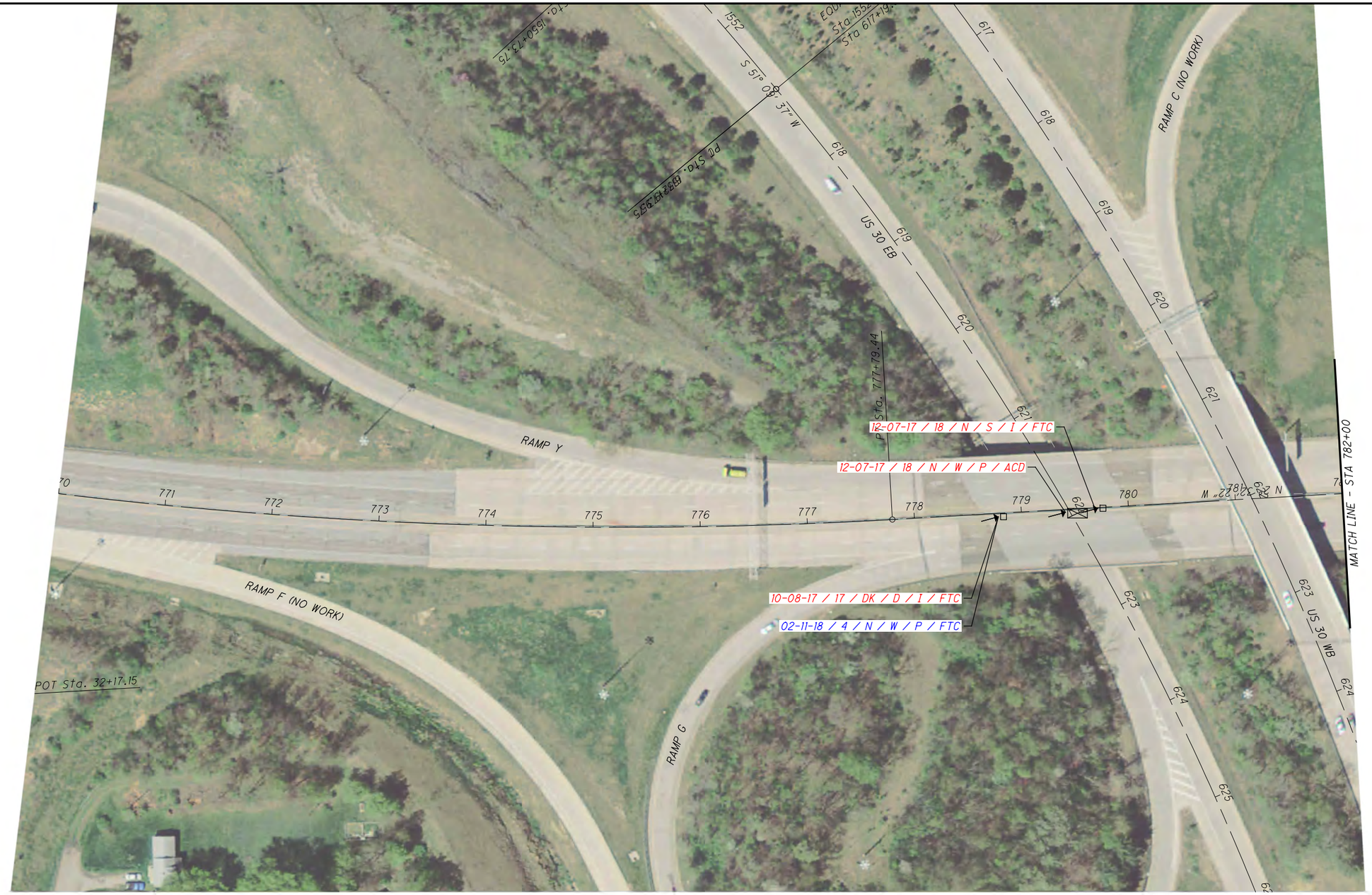
ROADWAY DESIGNATION		Ramp (Standards)	Ramp T	Ramp U	Ramp R	Ramp S	Ramp S-A	Ramp S-B	Ramp C
INTERCHANGE	**L & D Reference**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**	**48 mph, 40 mph, and 28 mph**
ENTRANCE TERMINAL DESIGN	Figure 503-2c	50:1 Taper	N/A	N/A	40:1 Taper	N/A	N/A (add lane)	N/A	N/A
EXIT TERMINAL DESIGN	Figures 503-3c / 505-2a	2°45'	Tangent Mainline on 0°45' curve	N/A	N/A	N/A	N/A	N/A	4°30'

* Where truck traffic exceeds 250 DDHV, additional shoulder width may be beneficial. If the treated shoulder width is increased then the graded shoulder width should be increased by the same amount.

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX G

SR-83 Crash Diagrams



ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

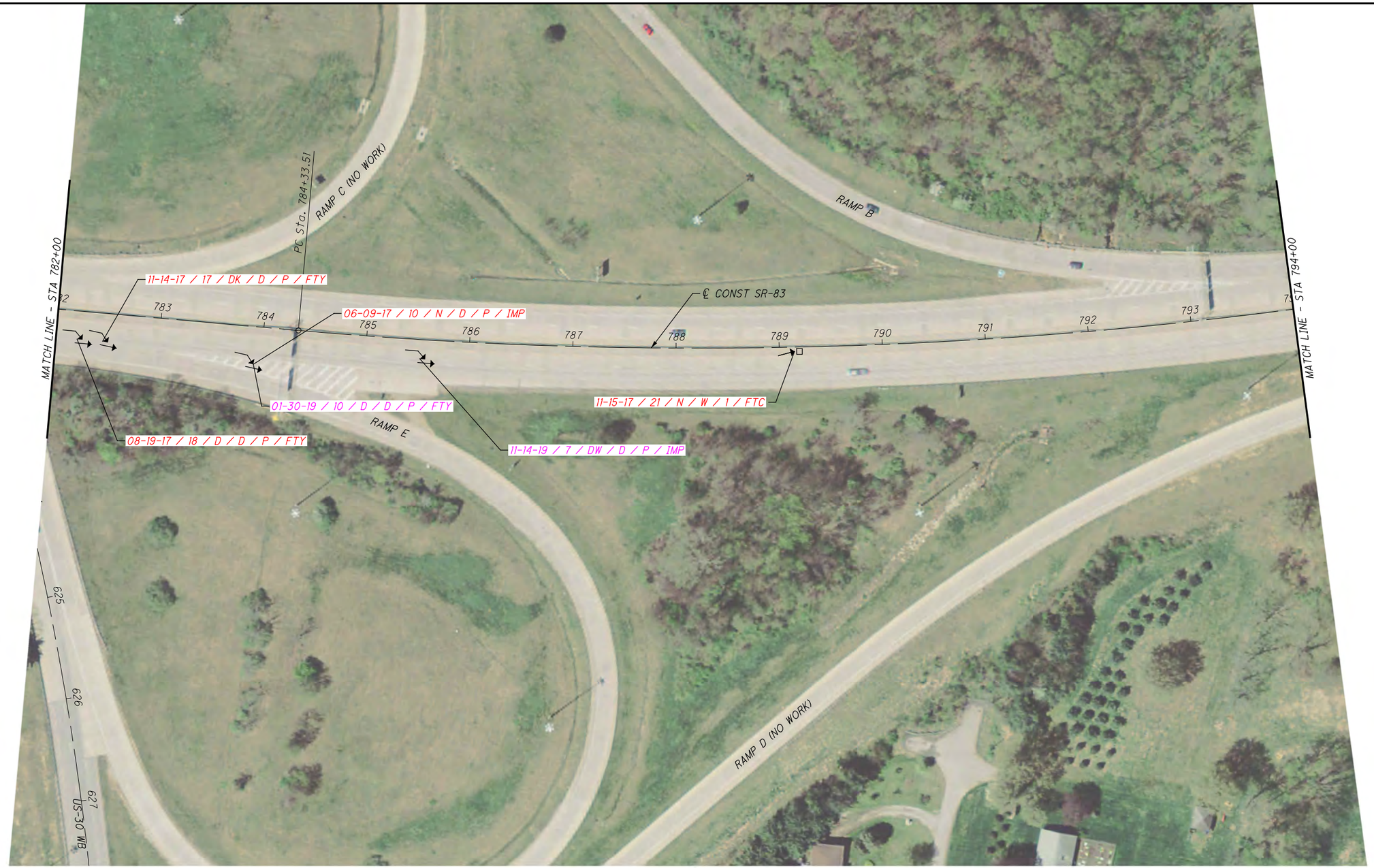
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 770+00 TO STA 782+00

WAY-83-10.81

G-1
17



ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 782+00 TO STA 794+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

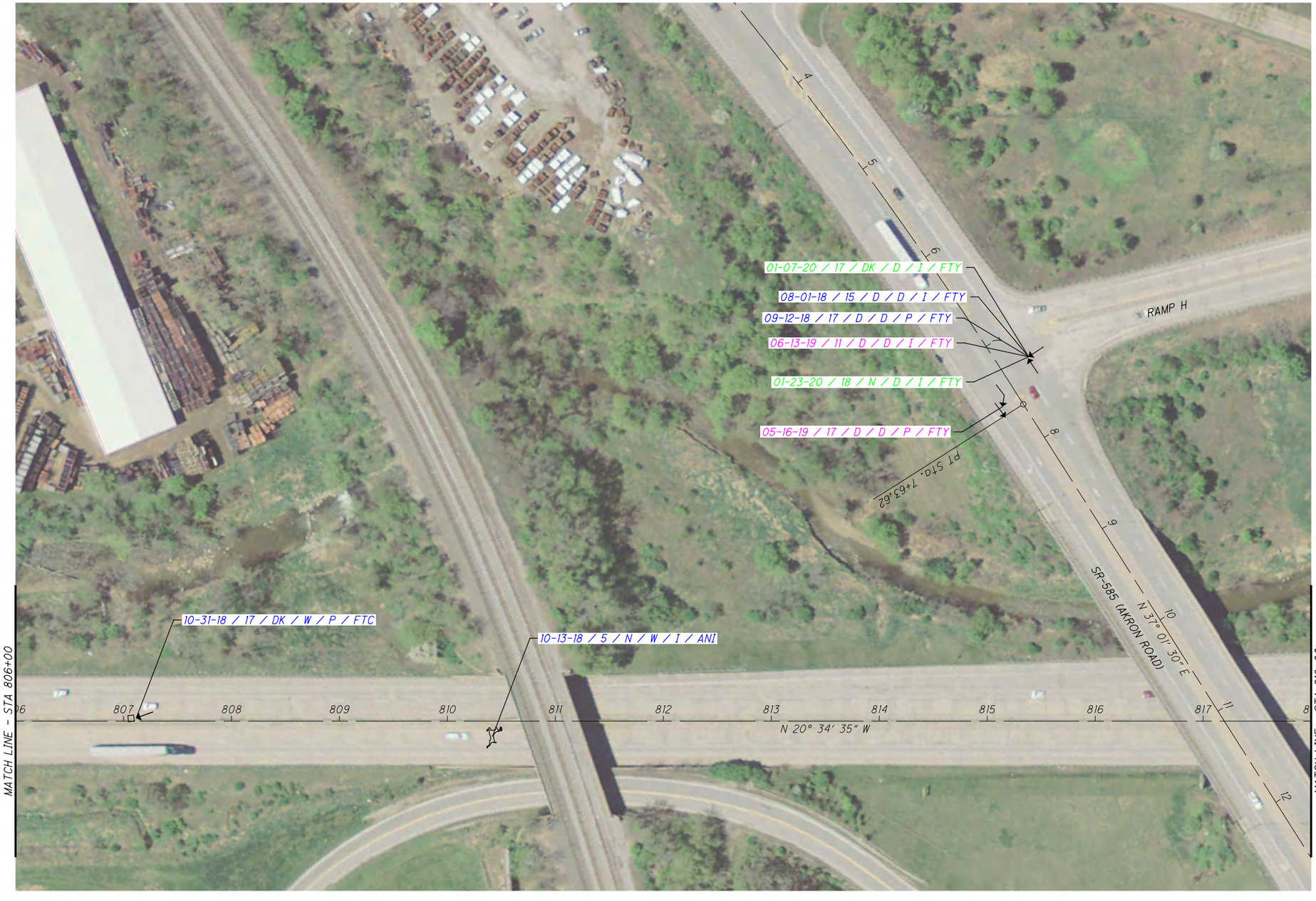
DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 794+00 TO STA 806+00

WAY-83-10.81



ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED PRS
CHECKED CJM

SR-83 CRASH DIAGRAMS
STA 806+00 TO STA 818+00

WAY-83-10.81

G-4
17

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

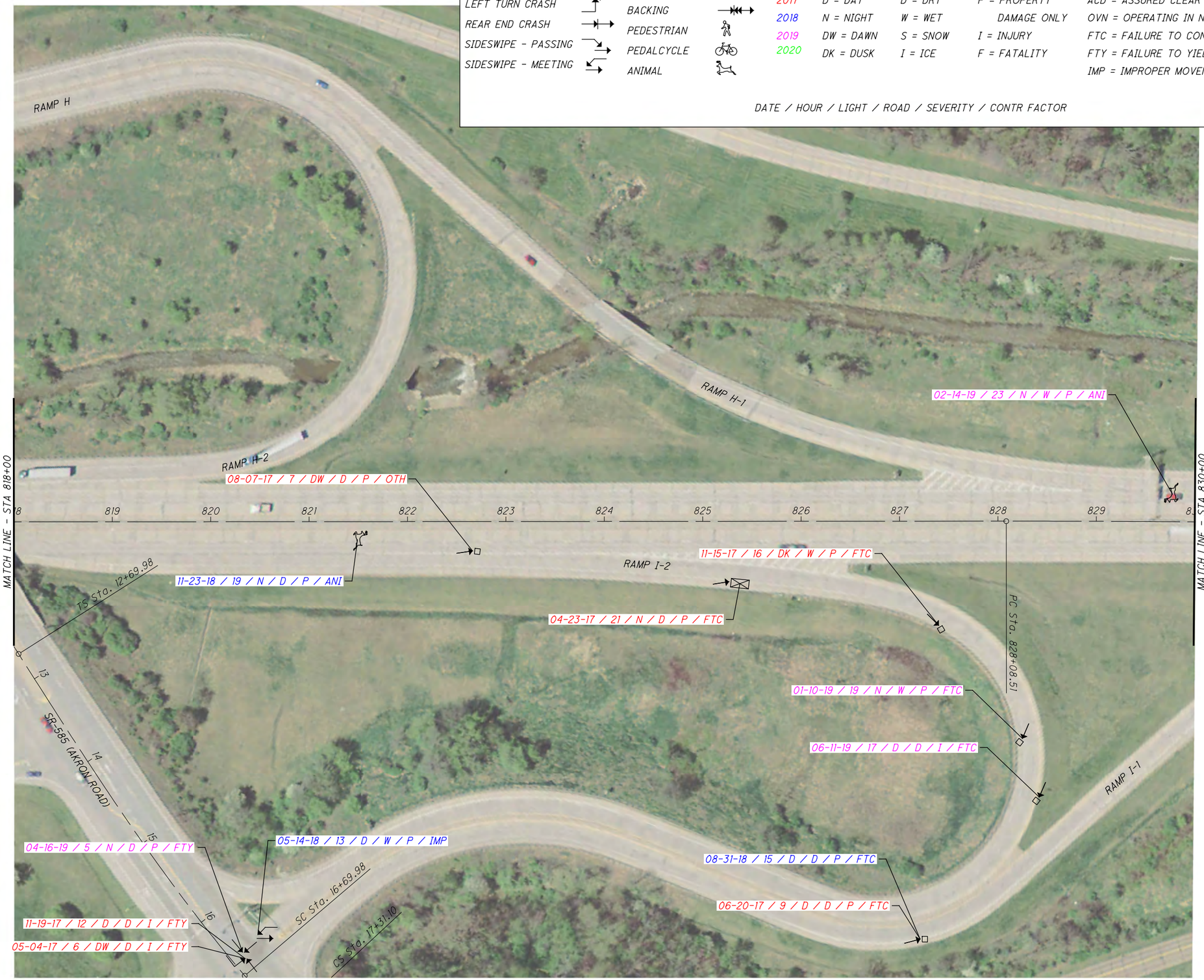
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE
OVN = OPERATING IN NEGLIGENT MANNER
FTC = FAILURE TO CONTROL
FTY = FAILURE TO YIELD
IMP = IMPROPER MOVEMENT
RRL = RAN RED LIGHT
RSS = RAN STOP SIGN
LOC = LEFT OF CENTER
ANI = ANIMAL
OTH = OTHER
UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR



HORIZONTAL SCALE IN FEET
0 25 50 10

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 818+00 TO STA 830+00

WAY-83-10.81

G-5
17

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 830+00 TO STA 842+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 842+00 TO STA 854+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 854+00 TO STA 866+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

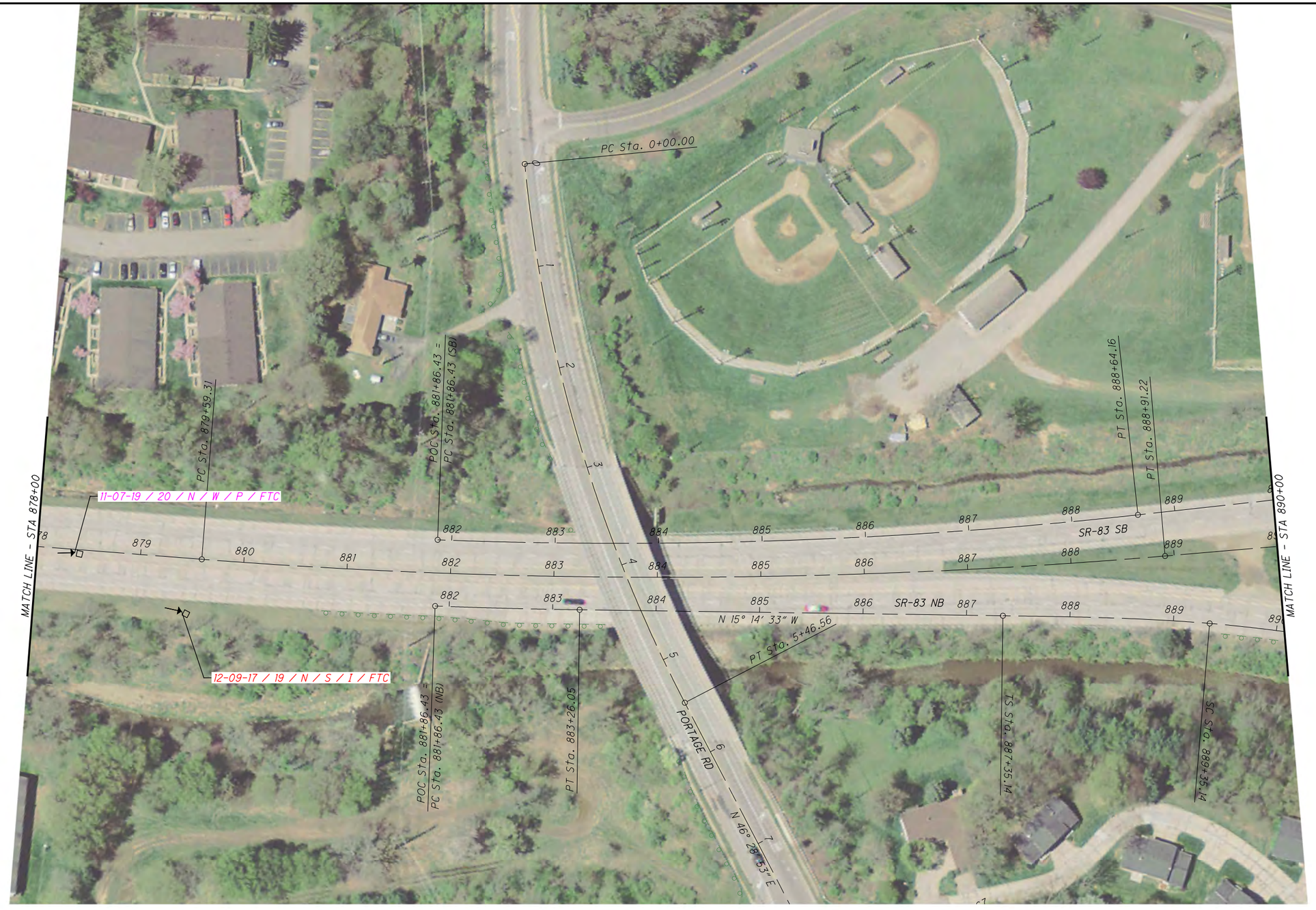
DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 866+00 TO STA 878+00

WAY-83-10.81



ANGLE CRASH		FIXED OBJECT/ PARKED VEHICLE		YEAR	LIGHT	ROADWAY	SEVERITY	CONTRIBUTING FACTOR	
LEFT TURN CRASH		BACKING		2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY	ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
REAR END CRASH		PEDESTRIAN		2018	N = NIGHT	W = WET	I = INJURY	OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
SIDESWIPE - PASSING		PEDALCYCLE		2019	DW = DAWN	S = SNOW	F = FATALITY	FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
SIDESWIPE - MEETING		ANIMAL		2020	DK = DUSK	I = ICE		FTY = FAILURE TO YIELD	ANI = ANIMAL
								IMP = IMPROPER MOVEMENT	OTH = OTHER
									UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 878+00 TO STA 890+00

WAY-83-10.81

G-10
17

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 890+00 TO STA 902+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR
2017
2018
2019
2020

LIGHT
D = DAY
N = NIGHT
DW = DAWN
DK = DUSK

ROADWAY
D = DRY
W = WET
S = SNOW
I = ICE

SEVERITY
P = PROPERTY DAMAGE ONLY
I = INJURY
F = FATALITY

CONTRIBUTING FACTOR
ACD = ASSURED CLEAR DISTANCE
OVN = OPERATING IN NEGLIGENT MANNER
FTC = FAILURE TO CONTROL
FTY = FAILURE TO YIELD
IMP = IMPROPER MOVEMENT
RRL = RAN RED LIGHT
RSS = RAN STOP SIGN
LOC = LEFT OF CENTER
ANI = ANIMAL
OTH = OTHER
UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

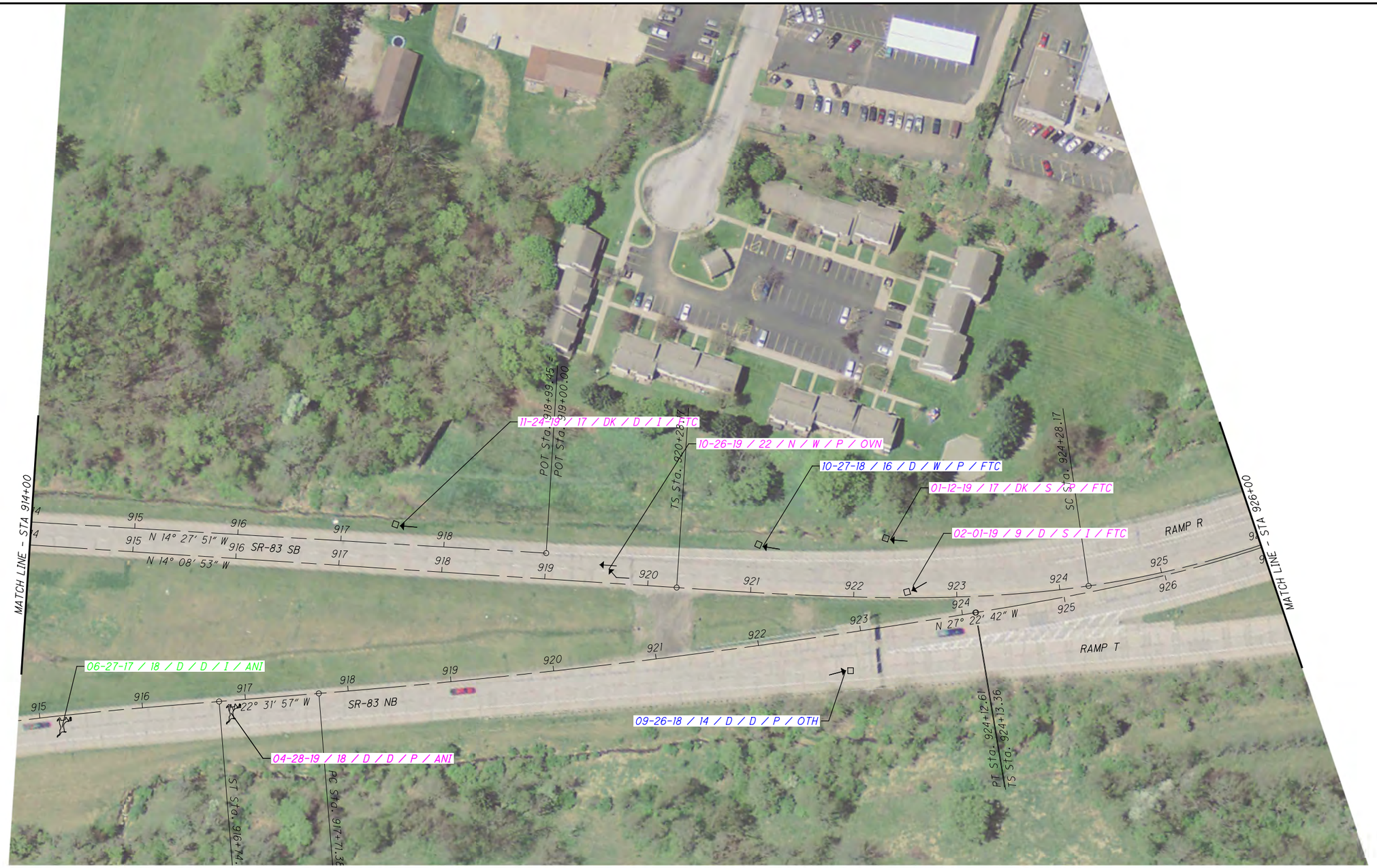
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 902+00 TO STA 914+00

WAY-83-10.81

G-12
17



ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

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ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
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FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

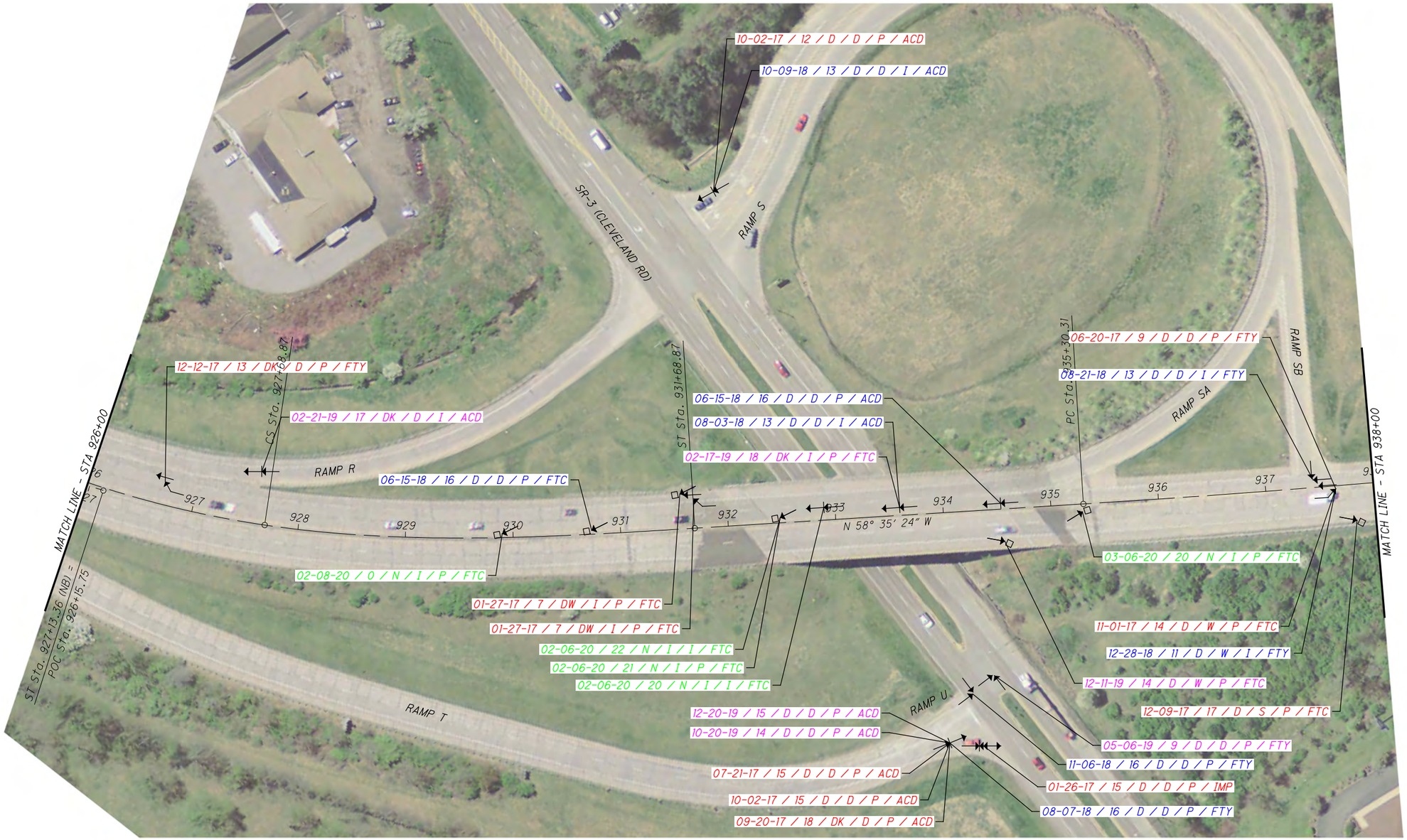
DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 914+00 TO STA 926+00

WAY-83-10.81



ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

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ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 926+00 TO STA 938+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

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ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 938+00 TO STA 950+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING

FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
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FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

SR-83 CRASH DIAGRAMS
STA 950+00 TO STA 962+00

WAY-83-10.81

ANGLE CRASH
LEFT TURN CRASH
REAR END CRASH
SIDESWIPE - PASSING
SIDESWIPE - MEETING
FIXED OBJECT/ PARKED VEHICLE
BACKING
PEDESTRIAN
PEDALCYCLE
ANIMAL

YEAR	LIGHT	ROADWAY	SEVERITY
2017	D = DAY	D = DRY	P = PROPERTY DAMAGE ONLY
2018	N = NIGHT	W = WET	I = INJURY
2019	DW = DAWN	S = SNOW	F = FATALITY
2020	DK = DUSK	I = ICE	

CONTRIBUTING FACTOR

ACD = ASSURED CLEAR DISTANCE	RRL = RAN RED LIGHT
OVN = OPERATING IN NEGLIGENT MANNER	RSS = RAN STOP SIGN
FTC = FAILURE TO CONTROL	LOC = LEFT OF CENTER
FTY = FAILURE TO YIELD	ANI = ANIMAL
IMP = IMPROPER MOVEMENT	OTH = OTHER
	UNK = UNKNOWN

DATE / HOUR / LIGHT / ROAD / SEVERITY / CONTR FACTOR

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED CJM
CHECKED PRS

CRASH DIAGRAMS
SR-83 CR 962+00 TO STA 975+79

WAY-83-10.81

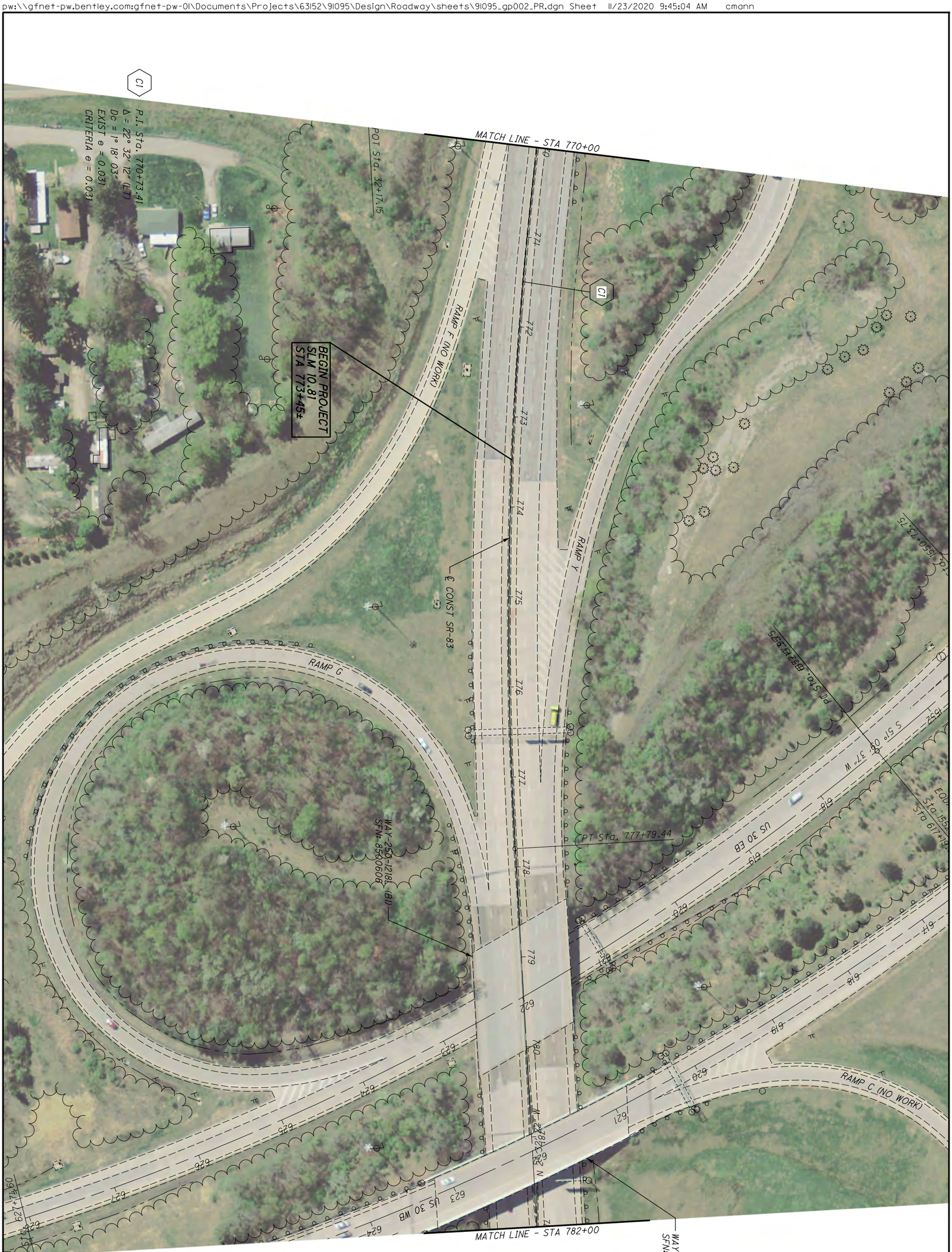
G-17
17

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX H

Proposed Alternatives to Improve Design Deficiencies

H-1 / 23	WAY-83-10.81	SR-83 STA 758+00 TO STA 770+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-2 23	WAY-83-10.81	SR-83 STA 770+00 TO STA 782+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET	N

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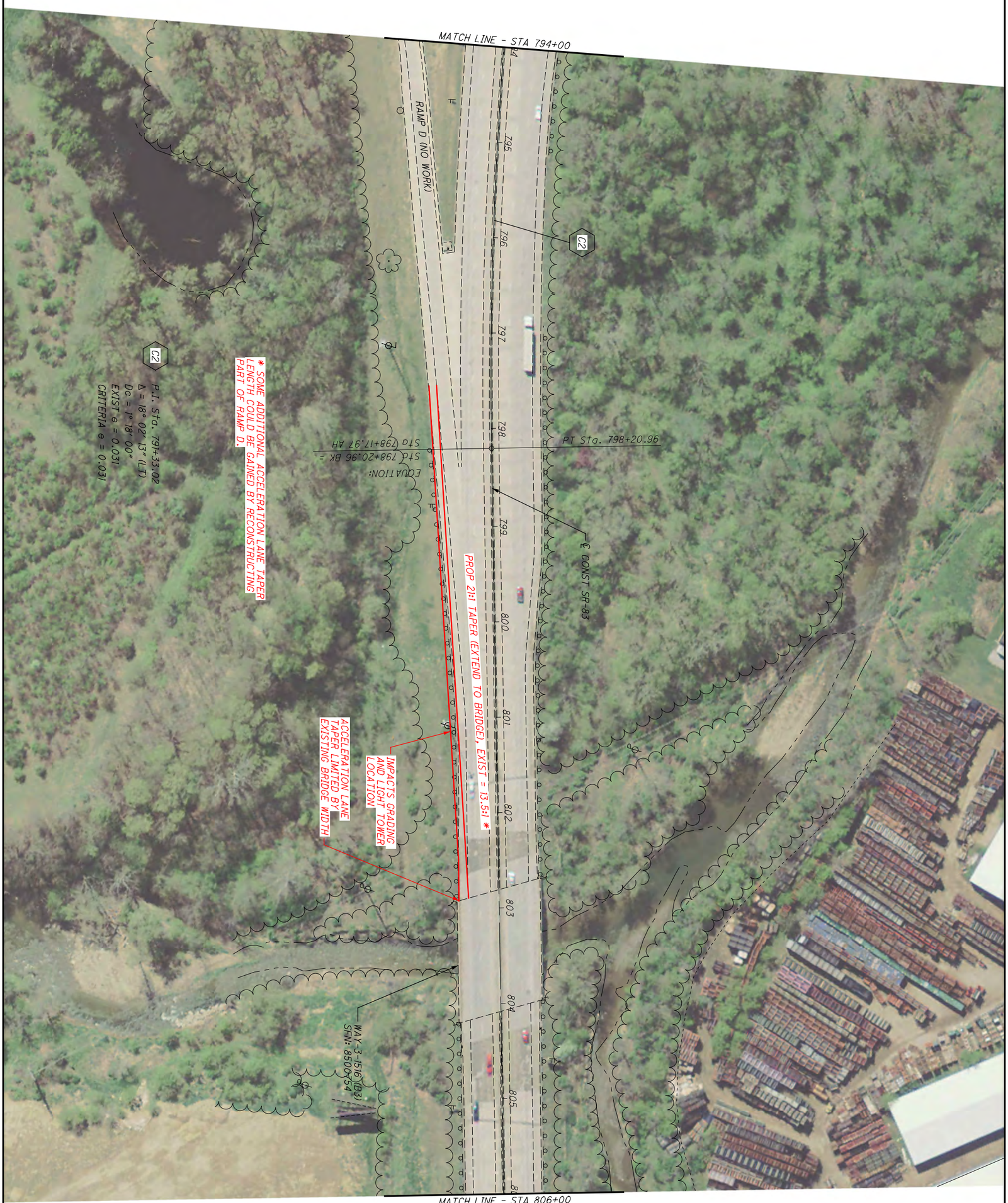
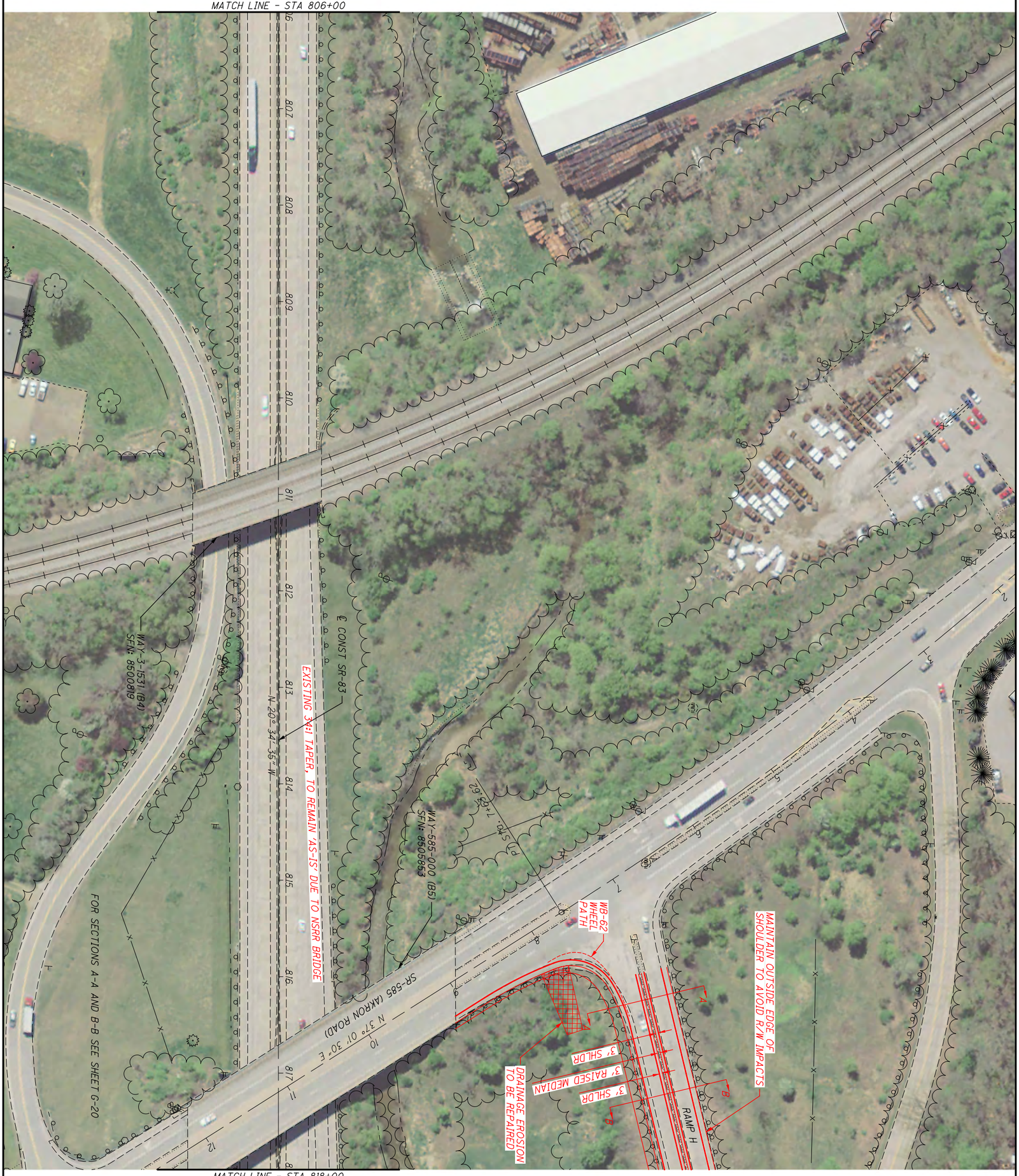
H-3 23	WAY-83-10.81	SR-83 STA 782+00 TO STA 794+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-4 / 23	WAY-83-10.81	SR-83 STA 794+00 TO STA 806+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-5 23	WAY-83-10.81	SR-83 STA 806+00 TO STA 818+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

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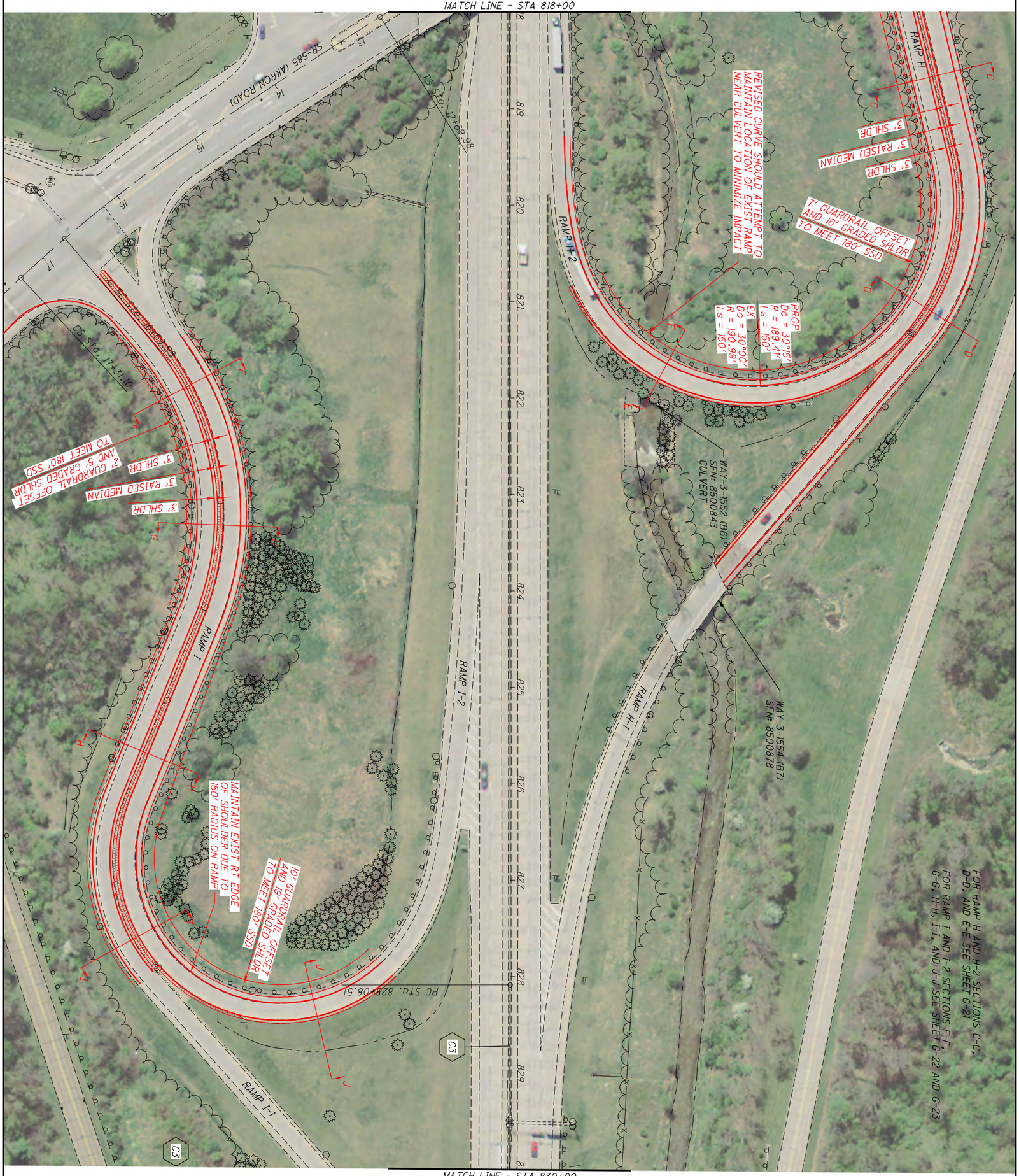
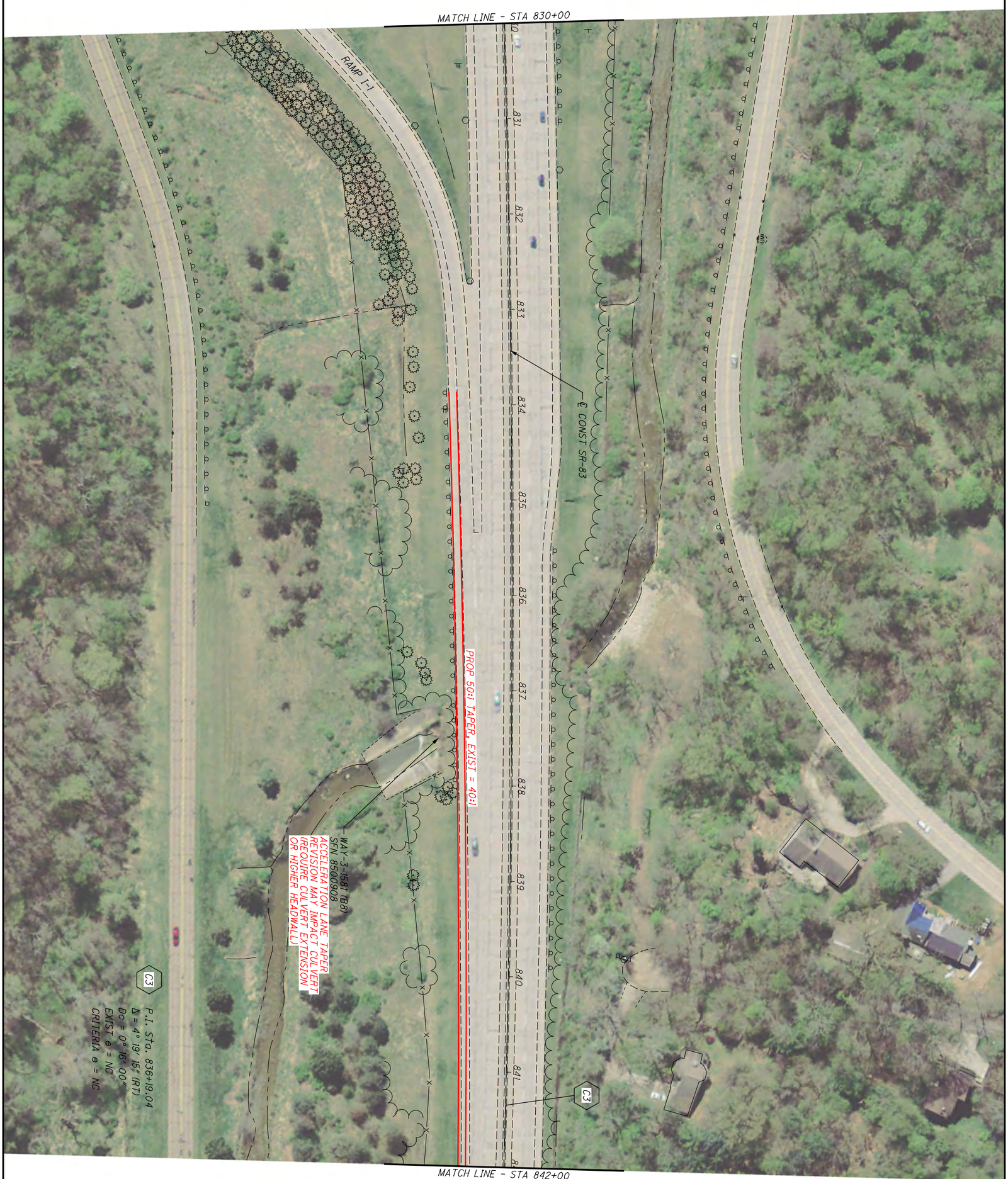
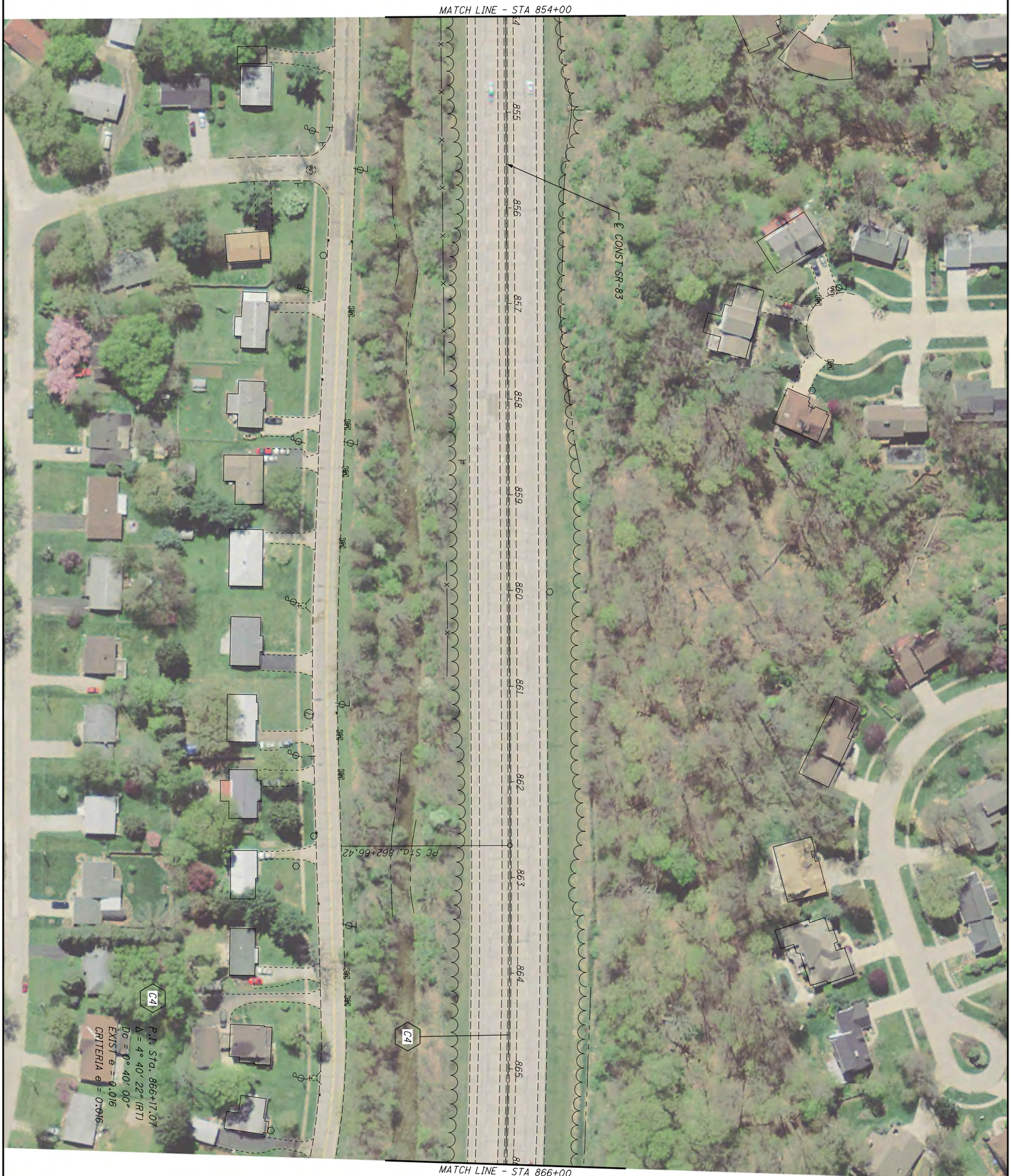


H-6 / 23	WAY-83-10.81	SR-83 STA 818+00 TO STA 830+00	CALCULATED PRS CHECKED CJM	0 50 25 10 HORIZONTAL SCALE IN FEET



H-7 / 23	WAY-83-10.81	SR-83 STA 830+00 TO STA 842+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

H-8 / 23	WAY-83-10.81	SR-83 STA 842+00 TO STA 854+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-9
23

WAY-83-10.81

SR-83
STA 854+00 TO STA 866+00

CALCULATED PRS
CHECKED CJM

0 25 50 100
HORIZONTAL SCALE IN FEET

N

H-10 / 23	WAY-83-10.81	SR-83 STA 866+00 TO STA 878+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

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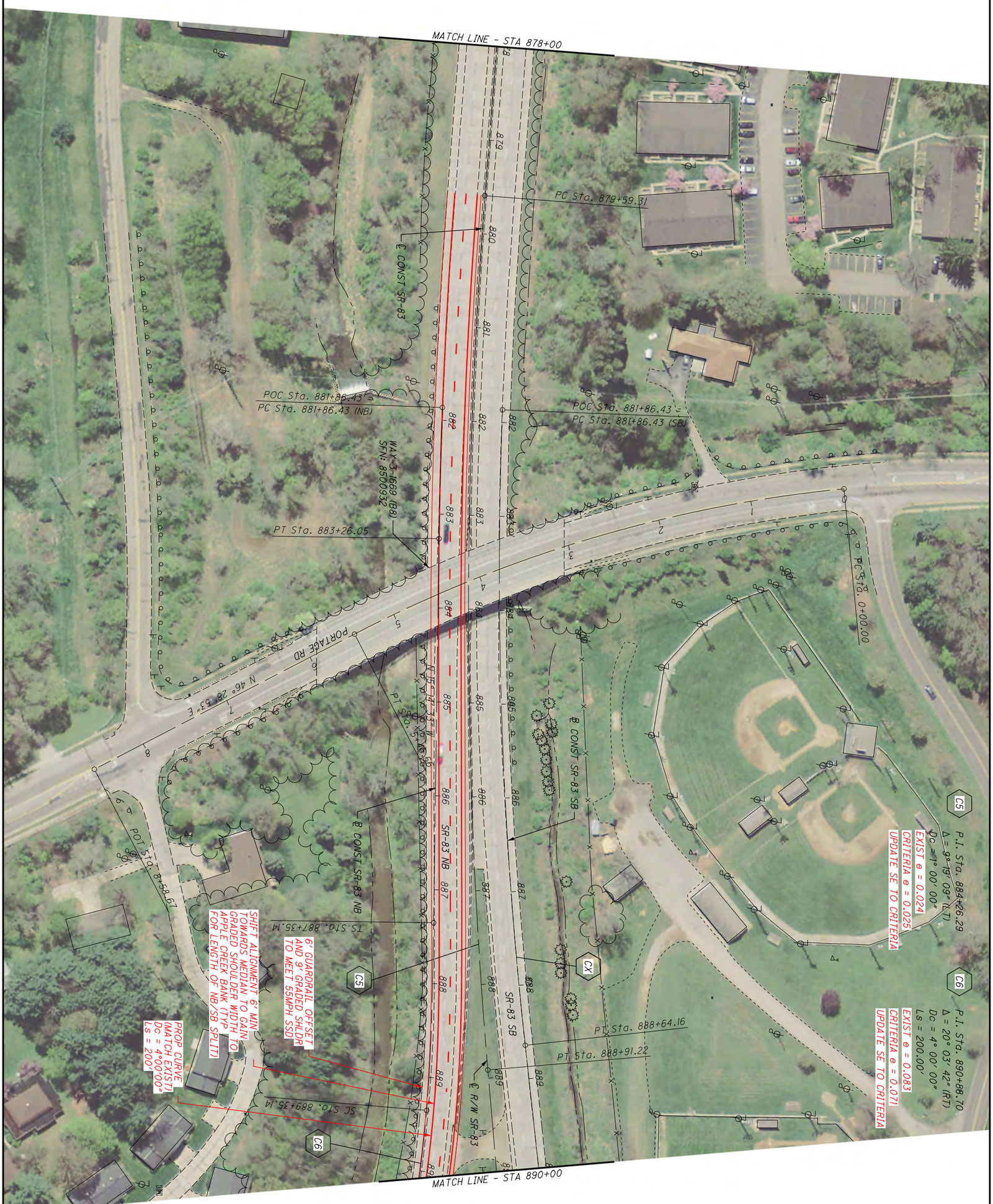

H-11 / 23	**WAY-83-10.81**	**SR-83** **STA 878+00 TO STA 890+00**	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

H-12 / 23	WAY-83-10.81	SR-83 STA 890+00 TO STA 902+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

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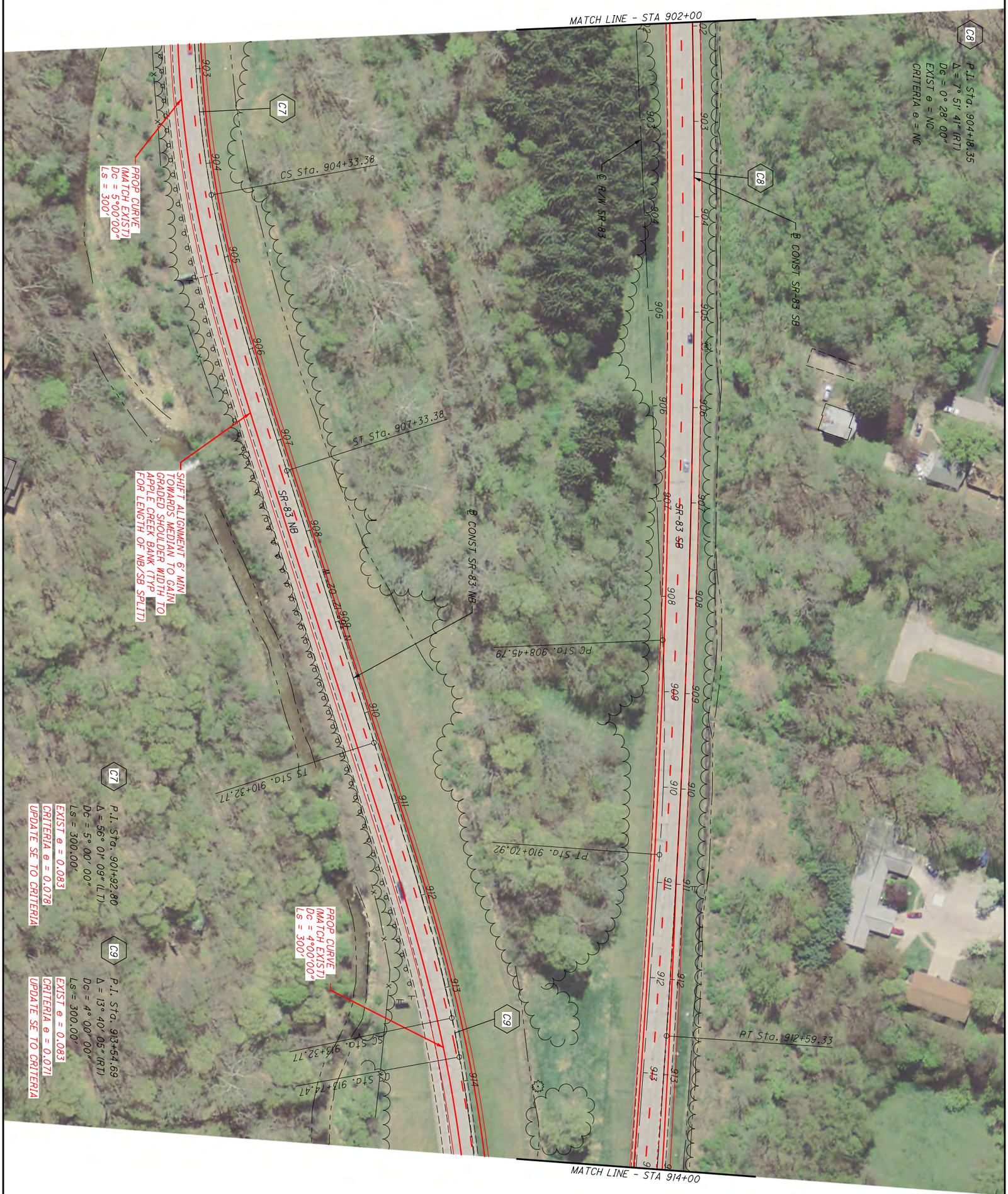
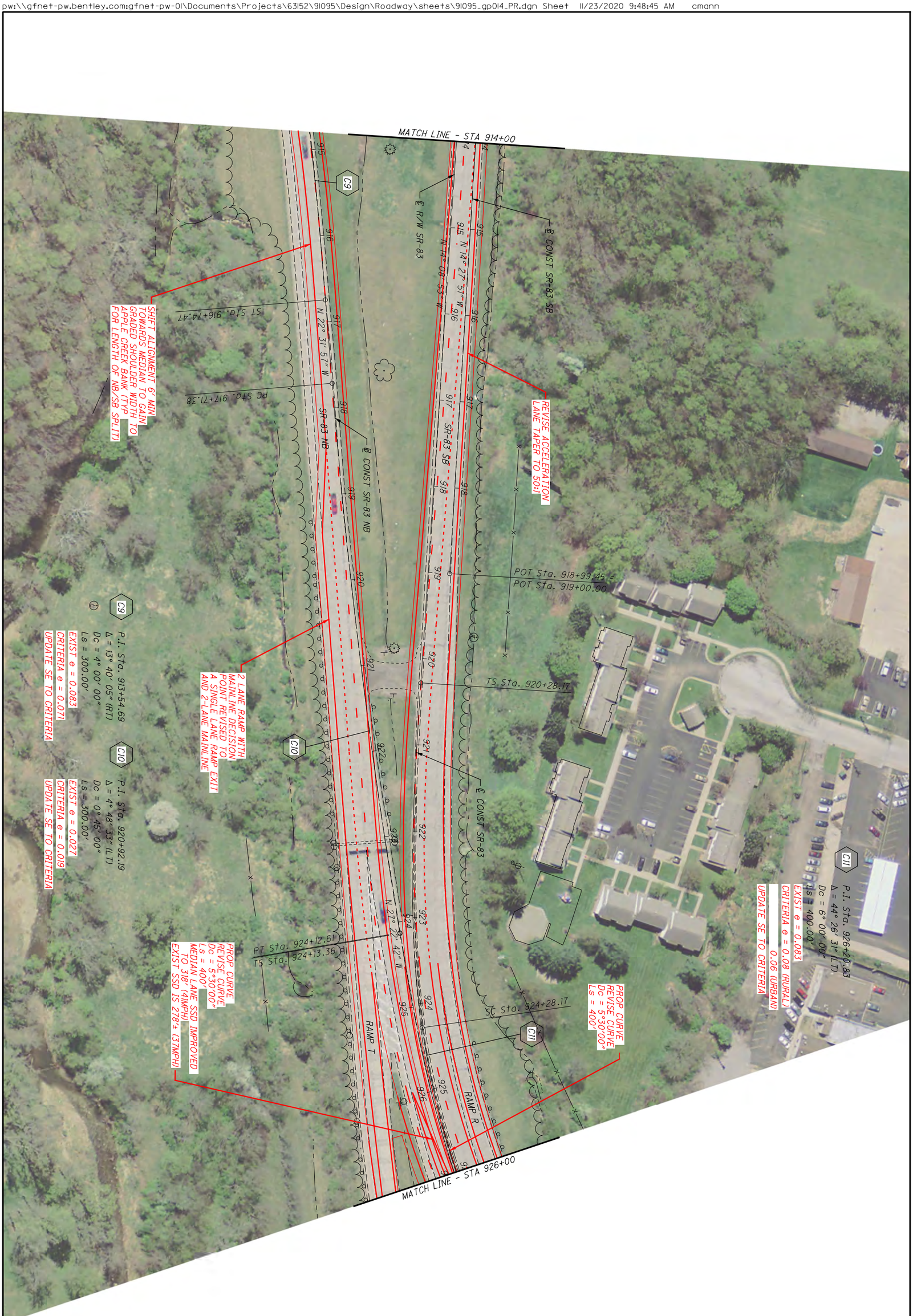
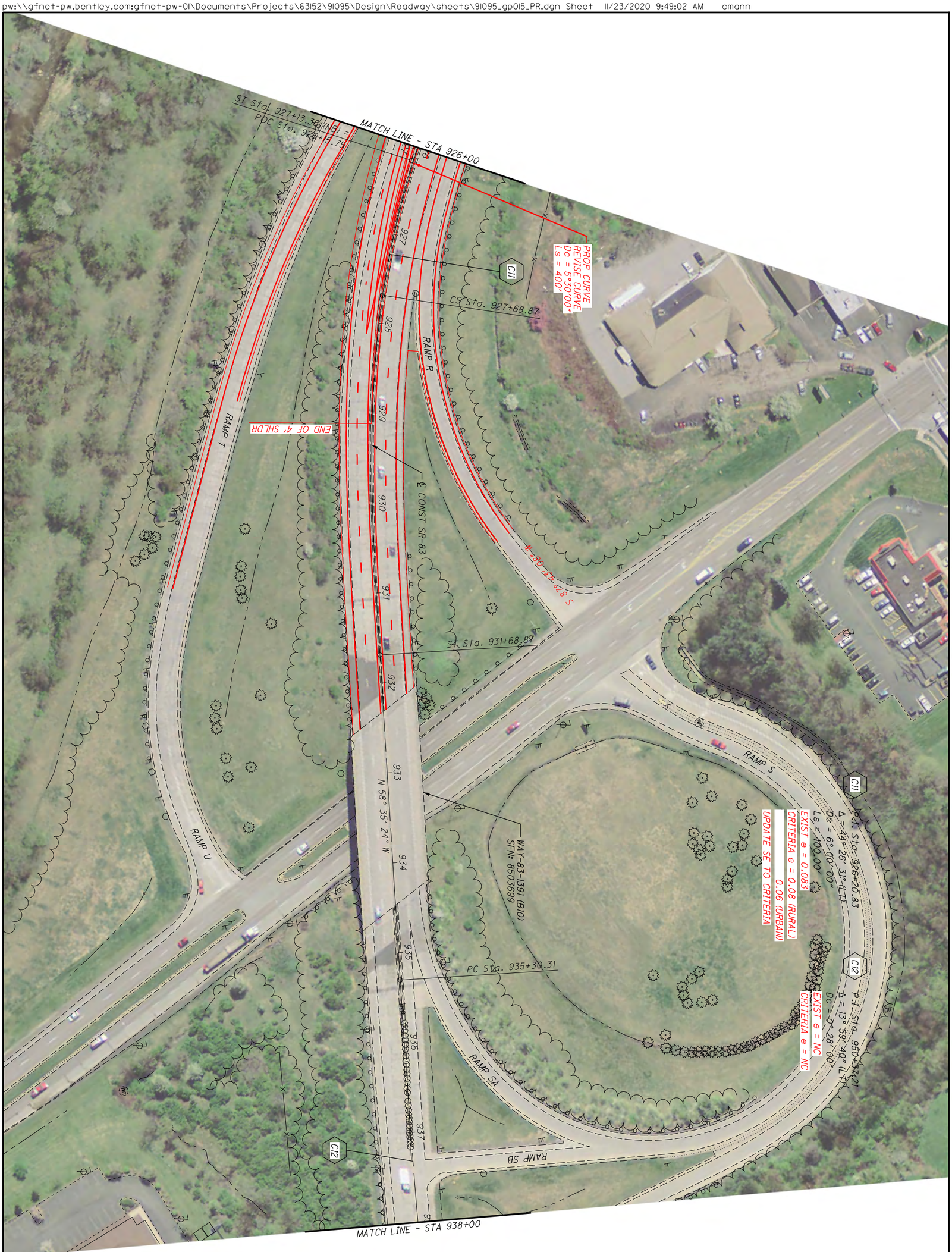


H-13 / 23	WAY-83-10.81	SR-83 STA 902+00 TO STA 914+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-14 (23)	WAY-83-10.81	SR-83 STA 914+00 TO STA 926+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-15 / 23	**WAY-83-10.81**	**SR-83** **STA 926+00 TO STA 938+00**	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

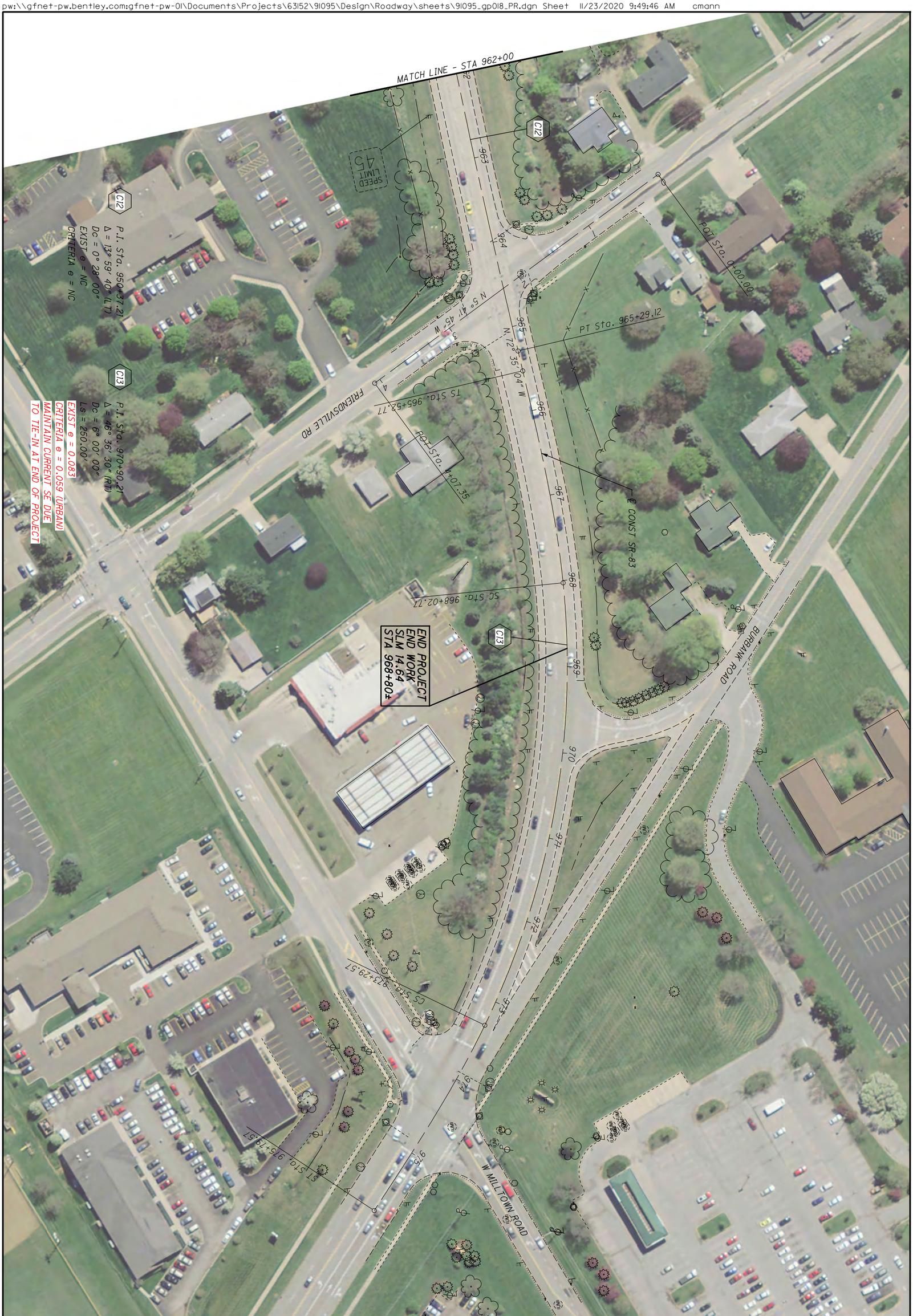
WAY-83-10.81

SR-83
STA 938+00 TO STA 950+00

CALCULATED PRS
CHECKED CJM

0 25 50 100
HORIZONTAL SCALE IN FEET

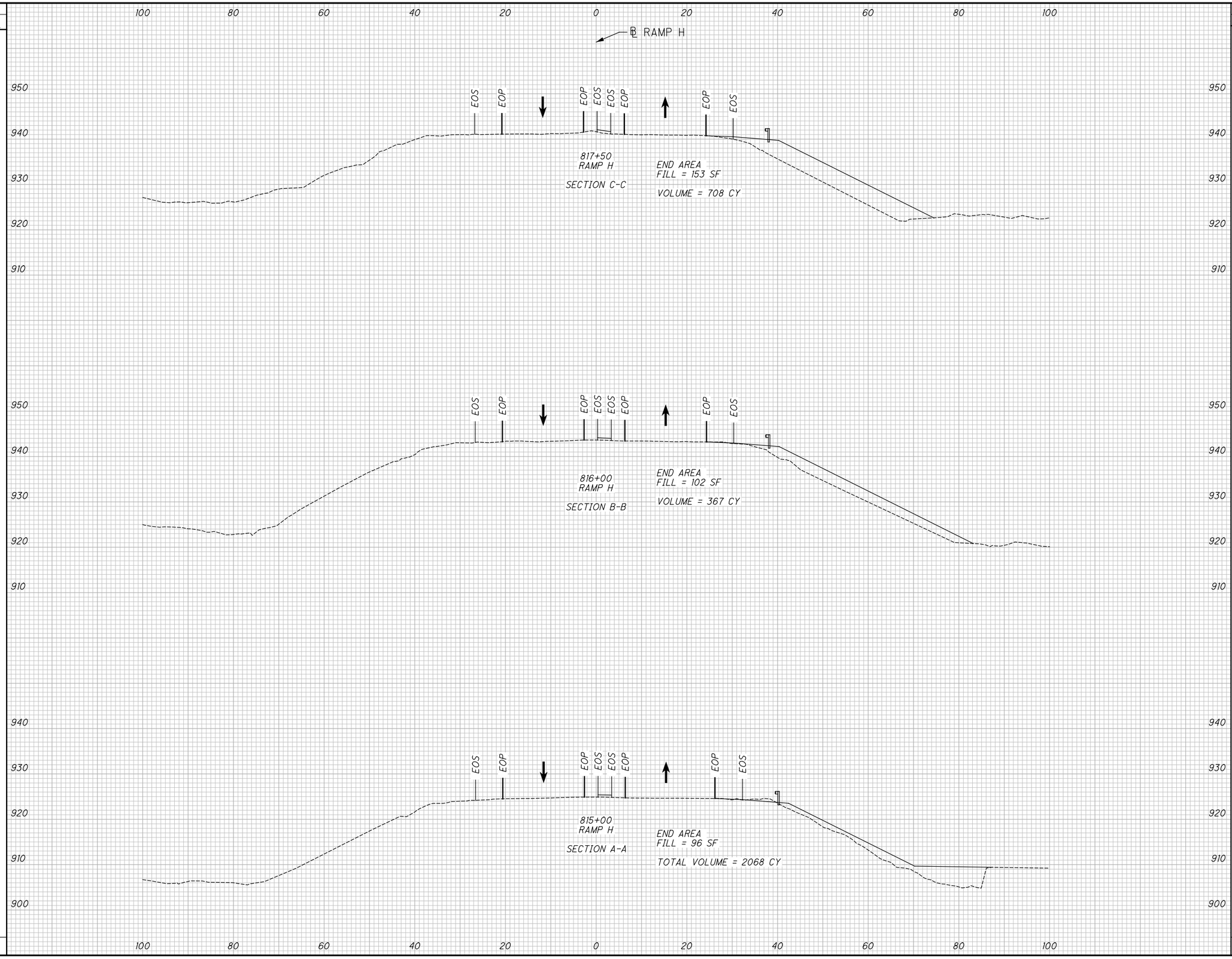
H-17 / 23	WAY-83-10.81	SR-83 STA 950+00 TO STA 962+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET



H-18 / 23	WAY-83-10.81	SR-83 STA 962+00 TO STA 975+79	CALCULATED PRS CHECKED CJM	0 25 50 100 HORIZONTAL SCALE IN FEET

H-19 / 23	WAY-83-10.81	SR-83 - RAMP B STA 782+00 TO STA 794+00	CALCULATED PRS CHECKED CJM	0 50 25 100 HORIZONTAL SCALE IN FEET

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED PRS
CHECKED CJM

CROSS SECTIONS
SR-585 RAMP H

WAY-83-10.81

H-20
23

SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED PRS
CHECKED CJM

100 80 60 40 20 0 20 40 60 80 100

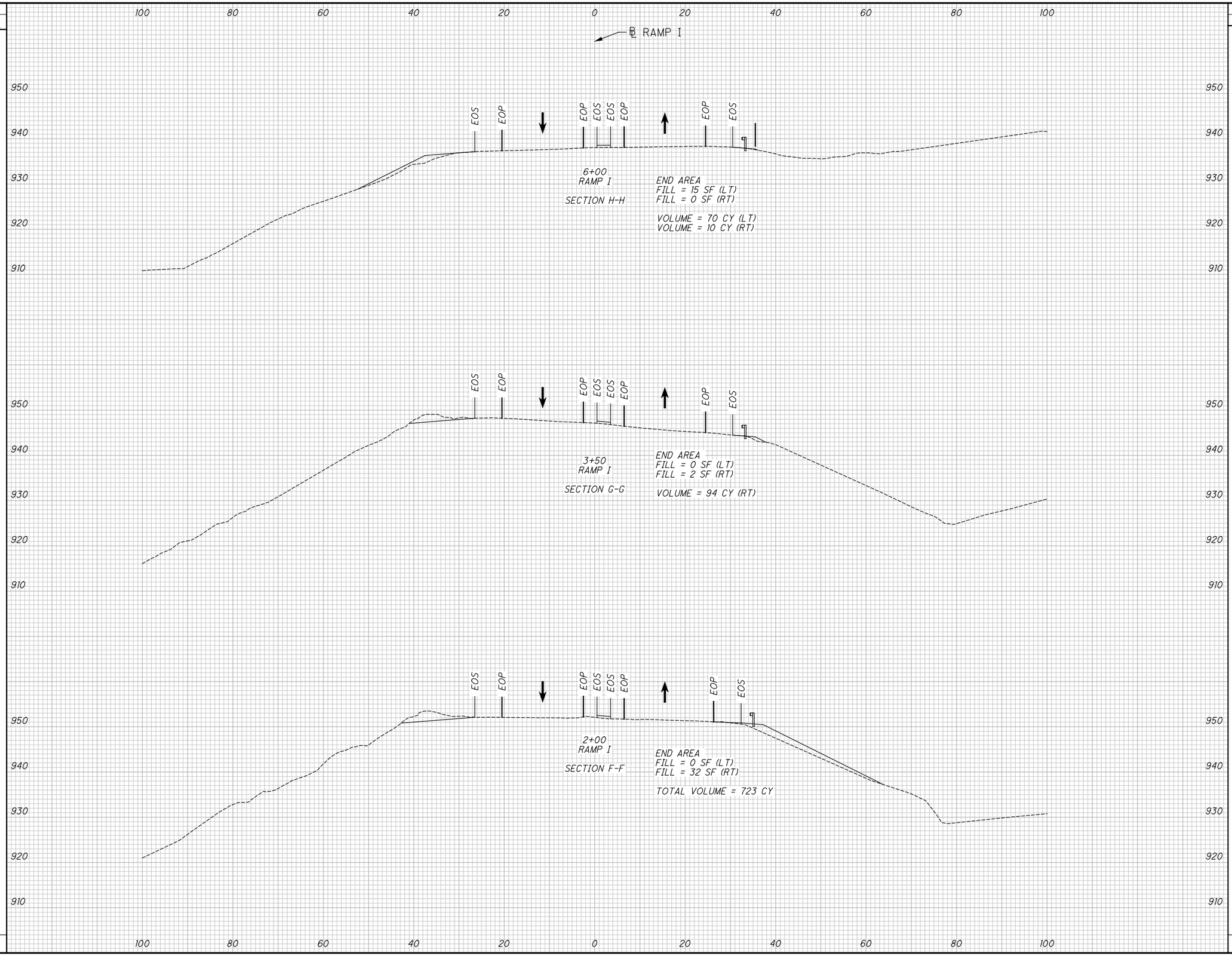
930
920
910
900
890

CROSS SECTIONS
SR-585 RAMP H AND H-2

WAY-83-10.81

H-21
23

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED	CHECKED
PRS	CJM

CROSS SECTIONS
SR-585 RAMP I

WAY-83-10.81

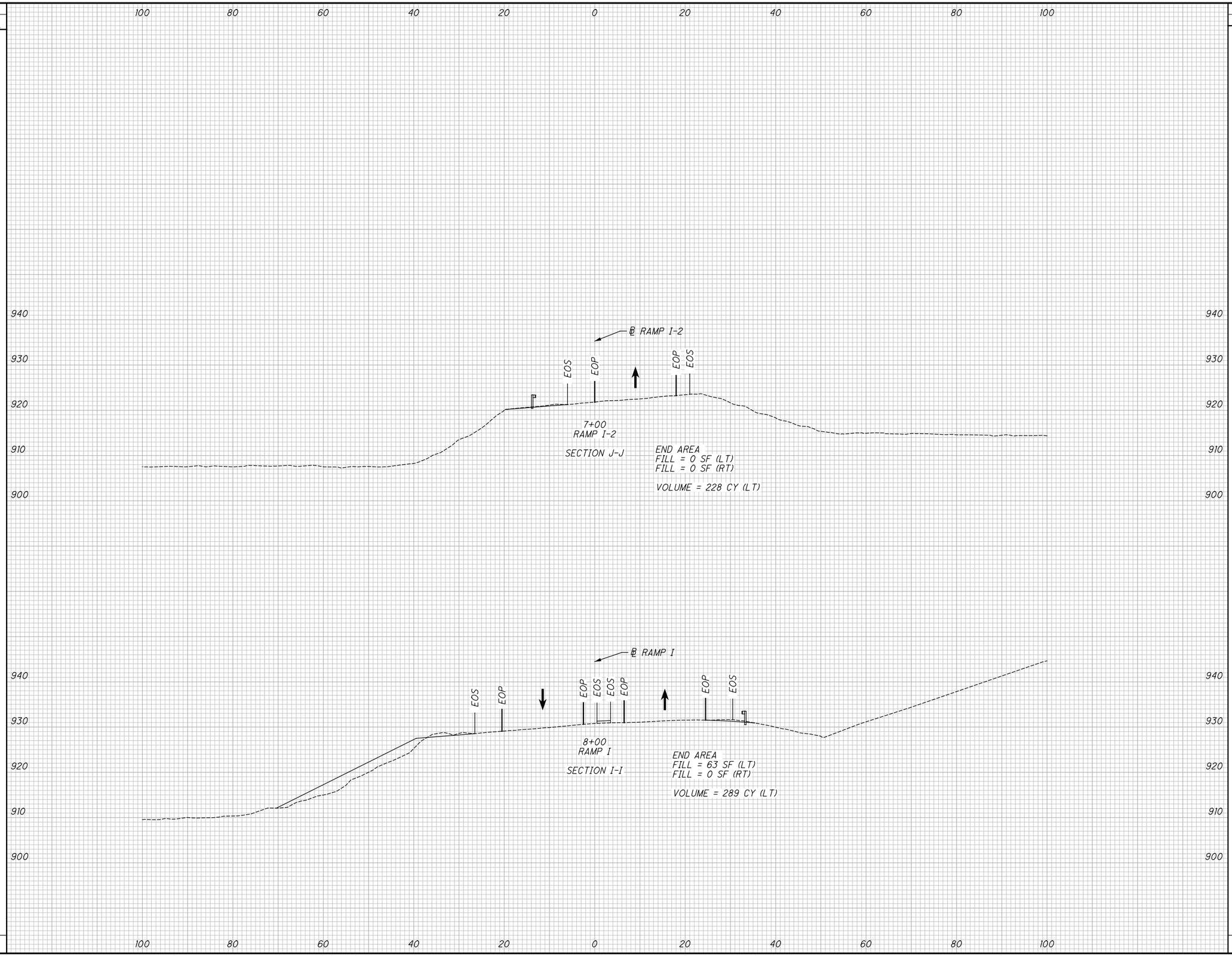
H-22
23

SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED PRS
CHECKED CJM



CROSS SECTIONS
SR-585 RAMP I AND I-2

WAY-83-10.81

H-23
23

OHIO DEPARTMENT OF TRANSPORTATION

APPENDIX I

WAY-83-10.66 (PID 91095) Design Exception

Design Exception Request

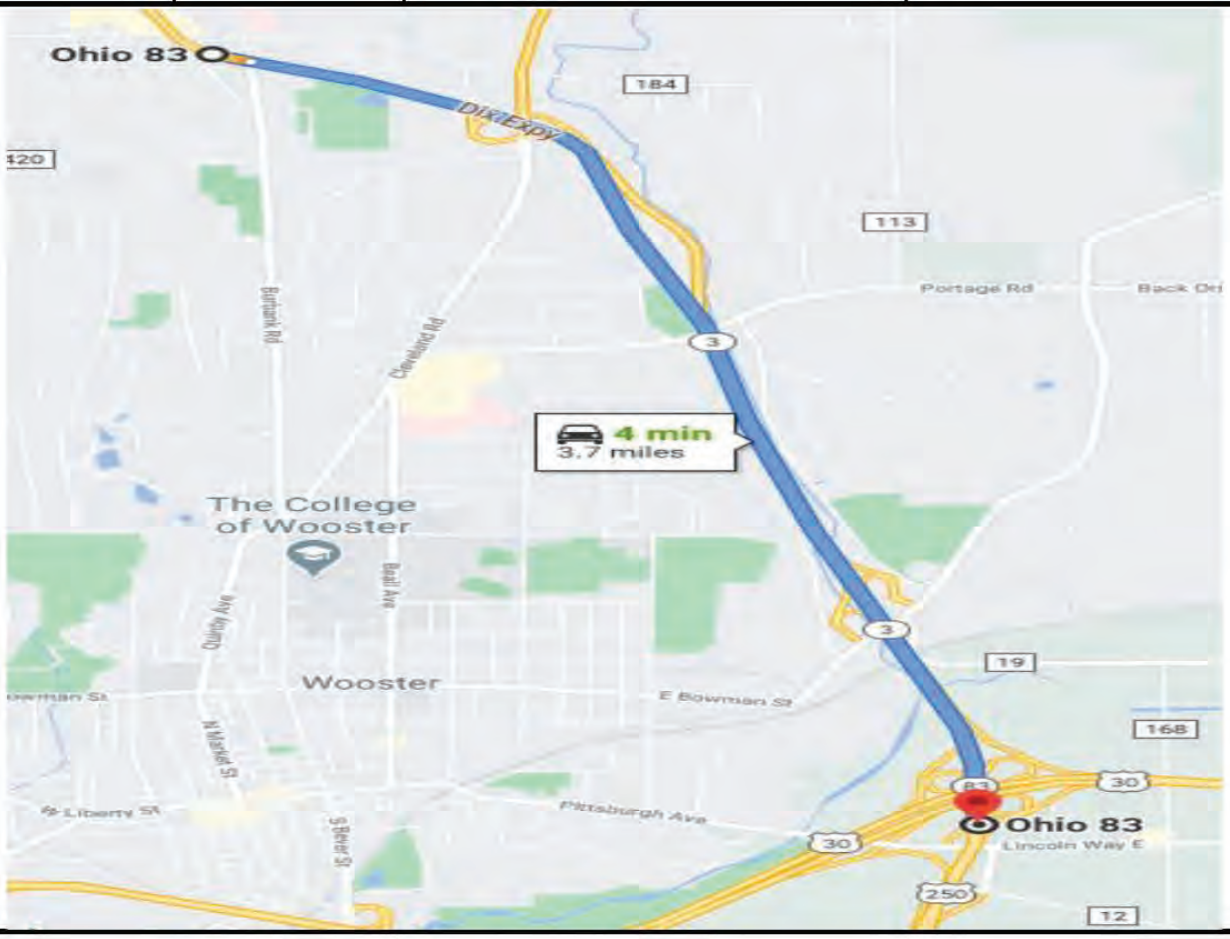
WAY-83-10.81

PID: 91095; Request 01

Letting Type: ODOT-Let

Design Designation

Current ADT (2023)	23,000	Td	0.03
Design Year ADT (2043)	28,500	Design Speed	55
Design Hourly Volume (2043)	2,600	Legal Speed	55
Directional Distribution	0.56	Design Functional Class	2 - Other Freeways or Expressways
Trucks (24hr B&C)	0.05	Functional Class Area Type	Rural
		NHS Project	No



Submitted By:

E-SIGNED by Philip Schroeder
on 2020-11-05 08:07:24 EST

Philip R. Schroeder
(Engineer of Record)

P.S.

Engineer of Record Seal

Approved by:

E-SIGNED by Brenton Bogard
on 2020-11-05 08:12:38 EST

Brenton Bogard

Approval Date: 10/28/2020

Design Exception Request

WAY-83-10.81

PID: 91095; Request 01

Controlling Criteria Identification			
Controlling Criteria	**Standard**	**Existing (a.)**	**Proposed**
Lane Width			
Shoulder Width	10′ RT and 4′ LT (Figure 301-3)	8′ RT, 6′ LT except for Sta. 924+00 to Sta. 935+63 which is 1.5′ LT	8′ RT, 6′ LT and 1.5′ LT (Sta 924+00 to Sta 935+63)
Horizontal Curve Radius			
Maximum Grade			
SSD (Horizontal & Crest Vertical)	495′ (Figure 201-1)	278′ barrier obstruction between Sta. 924+30 and Sta. 931+60	278′
Superelevation Rate			
Vertical Clearance			
Design Loading Structural Capacity			
(a.) "Existing" may be N/A (i.e. New alignment or new ramp)			

Project Description

The project includes the full removal and replacement of the original concrete pavement with new full-depth asphalt concrete pavement on SR-3/SR-83 from SR-83 SLM 10.81 (600′ south of US-30 at the pavement break between asphalt and concrete) and extends north to SR-83 SLM 14.64 (430′ west of Friendsville Road at the pavement break between concrete and asphalt) along the east side of Wooster, Ohio. The project also includes the interchange ramps B, G, E, and Y at US-30, all ramps at SR-585 (Akron Road), and all ramps at SR-3 (Cleveland Avenue). Guardrail will be updated. Minor grading, drainage, and bridge repairs are expected. The total mainline length of the project is approximately 3.83 miles.

Section Description

The project includes the full removal and replacement of the original concrete pavement with new full-depth asphalt concrete pavement on SR-3/SR-83 from SR-83 SLM 10.81 (600′ south of US-30 at the pavement break between asphalt and concrete) and extends north to SR-83 SLM 14.64 (430′ west of Friendsville Road at the pavement break between concrete and asphalt) along the east side of Wooster, Ohio. The project also includes the interchange ramps B, G, E, and Y at US-30, all ramps at SR-585 (Akron Road), and all ramps at SR-3 (Cleveland Avenue). Guardrail will be updated. Minor grading, drainage, and bridge repairs are expected. The total mainline length of the project is approximately 3.83 miles.

Proposed Mitigation
Shoulder Width: No mitigation is proposed for the shoulder width deficiency.

Stopping Sight Distance: The combination of the SR-83 alignment, narrow median shoulder, and median barrier are creating the northbound SSD deficiency.
No mitigation is proposed for this deficiency.

Support for Deviation (Benefit-cost, R/W, Environmental, Constructability, Coordination with Other Projects, Relationship between any crash patterns and proposed design exception, etc.):
A review of the latest information for the Highway Safety Improvement Program (HSIP) maps and published list for Wayne County and more specifically Wooster and Wayne Townships do not indicate any priority locations along this route.
Shoulder Width: For the length of the project the mainline existing shoulder widths are a consistent 8' width on the outside and for approximately 1000' (Sta 924+00 to Sta 935+63) the median shoulder narrows to 1.5'.

To accommodate the wider outside paved shoulders, earthwork along the length of the project would involve sliver fills and may require special benching and moving ditch lines. Both could have potential environmental impacts on the project where the intent to remove and replace the pavement would not involve extensive grading of the existing slopes.

Additionally, the following bridges would need to be modified to accept the wider outside shoulders:
- Two (2) mainline bridges (WAY-3-1516 and WAY-83-1391) would need to be widened to the outside to accommodate the widened outside shoulder.
- The Norfolk Southern Railway bridge (WAY-3-1531) over SR-3/83 would need to be lengthened in order to accommodate the wider outside shoulders.

Addressing the median shoulder width would require the SR-3 entrance and exit ramps to be reconfigured and mainline bridge (WAY-83-1391) widened to accommodate the standard median shoulder width.

Stopping Sight Distance (SSD): In order to correct the northbound SSD the median shoulder through the curve would need to be approximately 23' wide. This would require widening the northbound half of mainline bridge (WAY-83-1391) and reconfiguring the northbound exit ramp to SR-3 (Cleveland Road) to accommodate the wider shoulder. The additional roadway embankment and relocated drainage items may lead to potential environmental impacts when addressing the deficient northbound SSD.

Does the requested Design Exception location fall within a Safety Integrated Project (SIP) Map Location?
No

Does the crash analysis (GCAT and CAM Tool) show any patterns that would be adversely impacted by the proposed Design Exception?
No

Gannett Fleming

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Ohio Department of Transportation