**ODOT – LPA LOCAL LET**

**DESIGN BUILD**

**SCOPE OF SERVICES**

Use of red text in this template designates language providing general direction for required information. Information in red text should not be considered fully *comprehensive* guidance for all project-specific issues. This is general information to assist the writer. Language shall be removed once final scope is developed.

Use of blue text in this template designates optional language for specific sections which may be used at the discretion of the project manager. Language shall be removed once final scope is developed.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PID:** | | [Insert Text] | | | **Project Number:** | | [Insert Text] | |
| **County:** | [Insert Text] | | **Route:** | [Insert Text] | | **Section:** | | [Insert Text] |

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# PROJECT IDENTIFICATION & GENERAL INFORMATION

Table ‑: Project Identification

The LPA Design Build Scope of Service is for (Insert Local Name) hereinafter called “LPA”

|  |  |
| --- | --- |
| PID | [Insert text] |
| County-Route-Section | [Insert text] |
| Local Route Name (if applicable) | [Insert text] |
| Highway Functional Classification & Federal Aid System | [Insert text] |

## Design Designation

A design designation table shall be prepared for all roadways anticipated to include pavement work or geometric modifications.

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

Table ‑: Design Designation

|  |  |
| --- | --- |
| Location: | [Insert text] |
| Current ADT: | [Insert text] |
| Design Year ADT: | [Insert text] |
| Design Hourly Volume: | [Insert text] |
| Directional Distribution: | [Insert text] |
| Trucks: | [Insert text] |
| Design Speed: | [Insert text] |
| Legal Speed: | [Insert text] |
| Design Functional Classification: | [Insert text] |
| NHS Project: | [Yes/No] |

## 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 LPA 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 LPA 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:

[List the available existing plans]

The plans identified in the Document Inventory are notas-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 SharePoint site, FTP site, etc.

[LPA selects the platform for which the Document Inventory will be posted]

*[Insert Document Inventory site address]*

List all appendices provided on the Document Inventory site address site in Table 1-3. Each document should be designated as a Contractual Appendix or a Reference Document. When a document is designated as a Reference Document, the DBT is NOT contractually obligated to perform the work in accordance with the document and cannot rely on the information within the document. When a document is designated as a Contractual Appendix, the Offerors can rely upon the information/recommendations (e.g. accuracy, completeness, etc.) when developing their Bid. Claims may result if the information in a Contractual Appendices is determined to be inaccurate or incomplete. Therefore, use discretion when assigning the designation.

Table ‑: Document Inventory

|  |  |  |
| --- | --- | --- |
| Appendix # | Appendix Title | Contractual/Reference Designation |
| [Insert text] | [Insert text] | [Contractual Appendix or Reference Document] |
|  |  |  |

## Railroad Coordination

If railroad coordination is not required, state “not applicable” in this section. Otherwise include all rail agreements as Contract Documents by appendix (as per Location and Design Manual, Volume 3). The involved railroad/railway must be contacted to determine their maximum review time for technical review and approval of projects that affect their rail lines.

Necessary agreements with the railroads include “Preliminary Engineering Agreements” and “Standard Railroad Construction Agreements”. These agreements are issued and executed by the LPA. For projects with rail involvement, the LPA must be notified early in project scope development.

The applicable railroad’s Special Provisions for construction are to be included in the Scope. These Special Provisions may be obtained from the LPA.

The LPA will be responsible for processing and executing Railroad Agreements. Additionally, unless otherwise specified in the Contract Documents, the LPA Manager will be responsible for managing technical coordination regarding Railroad Agreements.

The DBT shall:

1. Coordinate with the LPA 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. Direct questions regarding requests by the railroad(s) for future track accommodations within railroad Right-of-Way to the LPA.
3. 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.
4. Provide a monthly railroad coordination report to the LPA and the railroad(s), including anticipated dates and milestones for the following items:
5. Railroad Buildable Unit Plan Submittal (see Section 18);
6. Construction submittals requiring railroad review and approval prior to beginning construction (in accordance with the Railroad Agreement);
7. Construction start and end dates for work that may create an impact to the railroad facility/operations;
8. Anticipated dates for flaggers;
9. Anticipated dates for potential outage request; and
10. Any other milestones that may impact railroad facilities or operations.

[Include reference to Railroad Agreement, if required for the Project]

## Airway/Highway Clearance

The DBT shall prepare and submit the Airway/Highway Clearance Analysis in accordance with Location and Design Manual Volume 3, Section 1407.1. The DBT shall convey all relevant documentation to the LPA and coordinate with the LPA to obtain all necessary approvals. 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 LPA.

The following airway facilities are within the vicinity of the Project:

[List nearby airports, helipads, and distance.]

If airway/highway clearance is not required, state “not applicable” in this section.

# PRE-BID MEETING

Indicate whether the pre-bid meeting is mandatory or optional. If mandatory, Bids from firms that did not attend will not be considered. Complete the table with relevant information, as needed. Optional language is also offered when it is determined by the LPA that a pre-bid meeting is not needed.

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

|  |  |
| --- | --- |
| Location: | [Insert Text] |
| Date: | [Insert Text] |
| Time: | [Insert Text] |

The LPA has determined that a pre-bid meeting will not be offered for the Project.

# CONTRACTOR PRE-QUALIFICATION

It is required that the Bidder be a Contractor prequalified in accordance with Section 102.01 of PN [select the applicable ODOT PN modifying the 100 series (e.g. PN/126/136) associated with the form of DB procurement being used]. The Contractor 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 LPA may reject the bid.

# DESIGNER

Each Offeror shall name the Designer and all design sub-consultant(s):

[LPA must state the method to capture the Offeror and Design sub-consultants]

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 ODOT as found on the following listing:

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

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

[List Required Design Prequalification Categories]

In accordance with Section 104.011 of ODOT 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 LPA 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:

If applicable, list firms that have provided support to the LPA in the development of the preliminary engineering, the Scope of Services, and other activities which may constitute a conflict of interest. Questions regarding potential conflicts of interest may be directed to the Office of Consultant Services.

# SCOPE OF WORK

|  |  |
| --- | --- |
| Project Description: | *[Provide a project description addressing the primary purpose of the improvement. If a project is to have phases or segments (especially segments for which contract provisions are specified to speed construction), describe these here, with diagrams when appropriate.]* |
| Completion Date: | *[When developing the schedule expectations for the project, LPA staff need to allow sufficient time for the DBT to finish the project. LPA staff, more familiar with developing separate schedules for the design and the construction phases, need to account for the fact that this contract includes both design and construction, and that these phases will overlap.*  *List the ultimate completion date of the project and any interim completion dates for phases/segments, if applicable.]* |
| Warranties: | *[List all applicable supplemental specification numbers and titles for warranted items]* |

Project Limits shall be provided for each roadway with improvements to geometric elements or full-depth, full-width pavement. As defined in Section 101.03 of PN 126, Project Limits shall be provided are points on the mainline centerline of construction where the proposed improvement, as described in the project description on the Title Sheet (excluding incidental construction), begins and ends. Project limits are generally defined as the beginning/ending of proposed full-depth, full-width pavement and do not include “incidental construction”, including temporary traffic control devices. Work Limits include all temporary and incidental construction, so they are determined by the DBT.

The approximate Project Limits for each applicable roadway are provided in Table 5-1.

Table ‑: Approximate Project Limits

|  |  |  |
| --- | --- | --- |
| Roadway Name | Begin | End |
| [Insert Roadway Name] | [Insert Begin] | [Insert End] |

Work Limits shall be determined by the DBT.

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

The Contractor shall provide for 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.

# FIELD OFFICE

Field office Type [Identify **A, B, or C]** as required by Construction and Material Specification Item 619, shall be available and completely functional no later than 1 week prior to the start of construction work. The field office requirements are only applicable to the LPA’s personnel.

The below optional language may be included when the Project is complicated, and a high level of ongoing communication is required. Use of co-location shall be a strong consideration by the LPA.

Field Office Co-Location:

The DBT shall co‐locate with LPA personnel for the duration of design and construction of the Project. The DBT shall furnish the facility to be used for co-location. Co-location with the DBT’s Contractor is intended to facilitate regular and active communication between the LPA and the DBT during the Project.

Co-location requires the DBT and the LPA’s forces to be housed within the same office facility or building with direct internal access between connecting parties’ field offices. An area of the facility shall be designated for the LPA’s use and shall be separated in such a manner that all doors can be locked, and access can be securely controlled. The LPA’s facilities shall be contiguous.

Notwithstanding the above, if the DBT demonstrates to the LPA that the Project is in an area where sufficient office space is not otherwise available with direct internal access, the DBT and the LPA’s field offices shall in all cases be located, within walking distance (approximately 500 ft., door-to-door).

Field office co-location is in addition to the existing field office requirements.

If field office co-location is required, the Scope of Services may need to address other considerations (e.g., conference rooms, IT needs, distance from the Project, etc.).

# GENERAL PROVISIONS FOR THE WORK

## 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 LPA and ODOT applicable Manuals and Guidelines.

It will be the responsibility of the DBT to acquire and utilize the necessary LPA and 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 [identify version of documents current as of 1) prebid meeting (typical) or 2) date original advertisement], of the following LPA and 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

Volume One - Roadway Design

Volume Two - Drainage Design

Volume Three - Plan Preparation

Pavement Design & Rehabilitation Manual

Specifications for Geotechnical Explorations

Survey Manual

Construction and Material Specifications

Proposal Notes for Construction and Material Specifications

Supplemental Specifications for Construction and Material Specifications

Item Master

Manual for Abandoned Underground Mines - Inventory and Risk Assessment

Pavement Design and Rehabilitation Manual

State Highway Access Management Manual   
Standard Construction Drawings

Plan Insert Sheets

Traffic Engineering Manual

Ohio Manual of Uniform Traffic Control Devices

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

Design Mapping Specifications

CADD Engineering Standards Manual

Geotechnical Bulletins

Add local standards or other specialty item standards (if applicable).

## Basis of Payment

All Items covered by the contract Specifications, Supplemental Specifications, Proposal and Special Provision notes with unit price as a basis of payment will be paid for under the appropriate Lump Sum bid item, unless a unit line price item has been established in the Scope Of Services.

The DBT shall be required to furnish the LPA with a Schedule of Values showing the complete breakdown (approximate cost and approximate work) of the Lump Sum bid items. The breakdown shall be in suﬃcient detail to depict reasonable elements of physical work items and in suﬃcient detail to provide the LPA with a means to check partial payment requests. It shall show estimated quantities of work in suﬃcient detail to determine testing and material reporting requirements per C&MS. It shall be submitted and agreed with the Engineer prior to physical Work. It may be (and is preferred to be) in an electronic format (i.e. Excel Spreadsheet).

The DBT shall create the standard Project Bill of Material (PBOM) for the corresponding Schedule of Values items. The PBOM may be in (and is preferred to be) an electronic format (i.e. Excel Spreadsheet) and agreed with the Engineer prior to physical Work. The standard PBOM shall include the following data for intended material to be incorporated into the proposed work corresponding to the Schedule of Values breakdown: Line Item, Primary & Component materials, Material Name, Item Code, Item Description, Material Unit, & Conversion Factor (material unit per item unit). Supply the standard PBOM to the LPA for review and comment. The LPA’s comments do not relieve the DBT from supplying proper and approved materials to be incorporated into the project.

The LPA shall generate payment estimates upon receipt of a written request from the Contractor, after review and progress verification by the Engineer. The written request shall correspond to the work performed for the payment estimate period. This request shall be in a format which utilizes the agreed Schedule of Values.

The DBT shall submit an updated PBOM as a component of each progress payment. The updated PBOM shall include the following data for material incorporated into the work: Line Item, corresponding Schedule of Values item, Primary & Component materials, Material Name, Item Code, Item Description, Material Unit, Conversion Factor (material unit per item unit), Placed Item Quantity, Approved Material Quantity, Total Quantity, Discrepancies Between Placed Quantity and Approved Material Quantity, and the standard Basis of Acceptance per CM&S. Amendments of the standard PBOM can be made and shall be made by the DBT throughout the life of the project to reflect required material as necessary, approved, and incorporated.

Prior to the LPA's approval of the progress payment, the DBT shall remedy all discrepancies between required material quantity and approved material quantity. The PBOM is a supplement to the DBT's responsibility for material certification and substantiation, and does not waive any requirements for the DBT to comply with the testing material documentation submissions in any governing regulations, including but not limited to TE24, Material Tickets, QPL, and Certified Test Data.

The DBT shall provide a general summary and submit the General Summary with and within the ﬁnal as-built Construction plans

## CADD files supplied by the DBT

The DBT shall comply with ODOT’s or LPA’s CADD Standards, and supply files in accordance with the CADD Engineering Standards Manual for OHDOT CONNECT. All data shall be provided to the LPA according to the provisions as detailed under the appropriate CADD links accessed from ODOT’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.

[List whether the DBT shall follow ODOT or LPA CADD Standards above. ODOT Standards are listed below]

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 LPA 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 OHDOT CONNECT. 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.

[LPA shall determine if CADD files will be MicroStation or AutoCAD]

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).

## 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 LPA 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 LPA representatives familiar with the Project may attend.

While not required, the DBT may prepare general engineering information to be presented to the LPA to help explain design concepts and quantities. This information will be used only by the LPA 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.

## Partnering Agreement

The LPA must determine whether a facilitated or self-facilitated partnering process will be used for the project. One of the benefits of a good DBT team is the opportunity for the LPA and DBT staff to work together as a team, and facilitated partnering may not be required. Additional guidance on which project characteristics would necessitate facilitated partnering can be found in [Proposal Note 111 (Designer Note).](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN111_07202012_for_2019.PDF)

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

Facilitated

Self-Facilitated

A partnering agreement with the LPA on this project. 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 LPA 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 [select “Proposal Note 111” for Facilitated Partnering or “Section 108.02 of PN 126” for Self-Facilitated Partnering, as applicable].

## Communication

All communication during design and construction shall be with the LPA.

|  |  |
| --- | --- |
| LPA’s [Insert Title]: Name: | [Insert Text] |
| Phone number: | [Insert Text] |
| E-mail: | [Insert Text] |

|  |  |
| --- | --- |
| LPA’s [Insert Title]: Name: | [Insert Text, if known - If not known at time of development of the Scope of Services, add optional language: The LPA Project Engineer will be named at the Pre-Design Meeting.] |
| Phone number: | [Insert Text – if known] |
| E-mail: | [Insert Text – if known] |

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

### Task Force Design Meetings

Required

Not Applicable

The below language should only be included with projects having complex design issues which will have an extended design phase. If not applicable to the project, identify as “Not Applicable”. This process will put additional burden on the Designer and the LPA to attend meetings, but will facilitate the understanding of the design and will expedite reviews.

The DBT shall conduct Task Force Design meetings. These meetings will be held to discuss specific DB solutions, resolve issues with the design and update the LPA with the status of the design. At a minimum, these meetings shall include the Designer (and specifically the design element lead engineer or representative) and the Contractor. The DBT shall invite the LPA to each Task Force Design meeting. The Task Force Design meetings shall be held every other week for the duration of the design or until mutually agreed by the LPA and the DBT.

The Task Force Design meetings shall be integrated multi-discipline design meetings, led by the DBT, focusing on integrating design elements into a single, comprehensive, and buildable design. The LPA will participate, but the LPA’s participation will be limited to general opinions and suggestions which shall not be deemed to be direction. The DBT shall maintain its responsibility to ensure adherence to design requirements and schedule.

During the design process, these meeting shall occur at a location agreeable and accessible to all parties. If the co-located field offices are utilized and operational, these meetings should be held at the LPA’s or DBT’s Field Office. The DBT shall provide an agenda two days prior to the meeting.

The DBT shall be responsible to notify any interested or affected third-parties at least two days prior to the meeting . “On-line” meetings (i.e. Microsoft Teams, WebEx) may be acceptable, if approved by the LPA.

## 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.

## Entry on Private Property

The DBT, acting as the LPA’s agent, may enter upon any lands within the jurisdiction of the LPA for the purpose of inspecting, surveying, leveling, digging, drilling, or doing any work deemed necessary in the execution of any survey authorized by the LPA. 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 Manual. The DBT shall forward copies of all notification letters distributed to the LPA’s Project Manager.

[LPA will need to list parameters and specifications for Entry on Private Party ]

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 the LPA’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 the LPA’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.

# 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.

## NEPA & Environmental Commitments

In general, NEPA approval is preferred prior to award of the DB contract, and ideally should be complete or near to complete when the Proposal is issued.

The Scope of Services preparer should determine a project impact area for the DB project. This area will be sized to accommodate a “worst case scenario” from an environmental perspective. It will include all anticipated work areas (including temporary work areas). Assume that all environmental resources within the project impact area will be negatively impacted.

Each Offeror will develop a slightly different project design, resulting in somewhat different environmental impacts and right-of-way needs. To ensure that the project is built in compliance with NEPA (and does not trigger a Supplemental Environmental Impact Statement), the bid documents must specify that all project work must be completed within the limits allowed by the environmental documents, and that all environmental commitments are kept. The only exception to this rule is storage of materials done on properties owned or leased by the DBT.

Environmental commitments identified in the approved environmental document shall be incorporated into the Scope of Services by Contractual Appendix or through a list within the body of the Scope of Servicers. For projects where the NEPA document covers multiple sections/phases of a project corridor, it is recommended that environmental commitments specifically associated with the Project site are extracted and included within the body of the Scope of Services. If the NEPA document applies to the entire Project site and the commitments are clearly communicated within the NEPA document, reference to the appropriate NEPA document as a Contractual Appendix in the Document Inventory is sufficient. Associated environmental studies and reports identifying environmental commitments should also be treated similarly or included as a Reference Document when no commitments are included. This section is intended to capture all commitments related to threatened and endangered species, air quality, noise, cultural resources, Section 4(f), Section 6(f), etc.

The DBT shall perform all environmental commitments as described [Insert in Table 8-1 – Option A or in Appendix XXX (Name of Document) – Option B], unless otherwise specified in the Contract Documents.

Table ‑: Environmental Commitments

|  |  |
| --- | --- |
| Source | Description of Commitment |
| [Insert Text] | [Insert Text] |
|  |  |

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 LPA.
3. Follow ODOT 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 LPA immediately.

## Environmental Permits

The DBT shall:

1. Be aware of all applicable environmental permits related to the Work.
2. Coordinate with the LPA 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 LPA 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 LPA and submit any documents regarding updates required for environmental approvals to the LPA 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 LPA. 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 LPA related to various environmental permits and the status of LPA 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.

List any permits that have been obtained or advanced by the LPA (e.g. USACE 404, OEPA 401, USCG Section 9, OEPA NPDES, etc.). Provide approval dates for those permits that have been approved by the responsible agency. Describe any ongoing activities by the LPA related to obtaining the permits listed (i.e., note if the LPA intends to be the party responsible to get approval) and make documentation available for review by the Offerors, including appendices and agency comments. The LPA shall make every effort to preclude being on the DBT’s critical path for obtaining permits.

Some permits generally cannot be obtained until the DBT has progressed the design sufficiently to provide the information required by the permit. The LPA must plan and budget for these situations. The DBT, for example, is to provide the LPA with the impacts and the disturbed earth quantities in a Storm Water Pollution Prevention Plan as part of the Notice of Intent (NOI).

Table ‑: Status of LPA Activities for Environmental Permits

|  |  |  |
| --- | --- | --- |
| Agency | Permit/Approval | Status |
| [Responsible regulatory agency] | [Name of Permit/Approval] | [Describe status of permit, ongoing responsibilities of LPA, Appendix in Document Inventory with information, etc.] |
|  |  |  |

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.

## 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 LPA 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 LPA Project Manager. Earth disturbing activity is not permitted prior to approval of coverage under the NPDES Permit.

The LPA will submit the NOI to the OEPA within 10 days after information is received from the DBT. Approval from the OEPA takes 21 days and the LPA Project Manager has 10 days to file the NOI.

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 LPA 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.

## 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.

When documentation/reports are available to identify known regulated materials, the LPA should provide in the Document Inventory and applicable documents may be listed in the below optional language. List all known regulated materials that may be impacted by Work performed. This may include environmental site assessment information, asbestos surveys and regulated material surveys within buildings to be demolished, and listing of utilities that contain regulated materials (transformers, asbestos ducts, etc.). Provide any informational studies and surveys in the Document Inventory and reference here. For bridge projects, test the existing structure for asbestos and provide results. If asbestos is found, include asbestos abatement as a pay item.

The type of material present, as well as quantity, location, parties responsible for testing, handling requirements, and payment method (lump sum or unit price, etc.), should all be listed in this section. The LPA should consider providing Bidders pre-bid access to such locations or structures to be demolished to allow the Bidders to price the remediation that will be required.

If regulated materials are present and the quantities known, provide the information in the Proposal, and have bid as lump sum (risk on the DBT). When regulated materials are present and the quantities are unknown, consider requesting a unit price bid for an estimated quantity as part of the Proposal, with payment based on the actual quantity encountered (risk on the LPA). The risk shall be assessed by the LPA and, if warranted, a contingency quantity maybe established additional discussion is provided in Section 3.5.4 Regulated Materials Change Order.

The DBT shall be responsible for abatement, excavation and handling associated with known regulated materials. Known regulated materials include materials associated with [list appropriate appendices/documents from the Document Inventory].

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

When information regarding type or extent of regulated materials is not sufficient for the Offerors to develop a Bid, it may be necessary for bid purposes to establish assumed limits of regulated materials, type of material, and contamination levels. Depending on the project-specific issues and extent of risk, the LPA may want to include unit price pay items and request quantities to be bid. Coordinate with theLPA regarding use of unit price pay items to address regulated materials.

### Asbestos

In case of asbestos material, list the location information (e.g. the SFN and bridge number) of all affected structures and use one of the following three options, as appropriate:

OPTION 1:

An asbestos survey of the [Insert structure (SFN)] was conducted by a certified asbestos hazard evaluation specialist on [Insert date]. The inspection determined that no asbestos is present on the following structures. See Appendix [XX] for inspection results.

A copy of the Ohio Environmental Protection Agency (OEPA) notification of demolition and renovation forms, partially completed and signed by LPA, will be provided to the successful bidder. The DBT shall complete the form and submit it to the appropriate EPA office from the link below:

**Ohio EPA,**

[Contacts (ohio.gov)](https://epa.ohio.gov/wps/portal/gov/epa/divisions-and-offices/air-pollution-control/permitting/ohio-epa-district-offices-and-local-air-pollution-control-agencies)

At least ten (10) working days prior to the start of any demolition and/or rehabilitation, the DBT shall provide a copy of the completed form to the engineer.

Information required on the form will include: 1) the DBT name and address, 2) the scheduled dates for the start and completion of the demolition or rehabilitation work, and 3) a description of the planned demolition/rehabilitation work and the methods to be used.

The DBT shall furnish all fees, labor, and material necessary to complete and submit the OEPA notification form.

OPTION 2:

Asbestos inspection has been conducted by a certified asbestos hazard evaluation specialist on [Insert date]. See Appendix [XX] for inspection results.

Asbestos containing materials were encountered. All suspect materials shall be removed and properly disposed of by a certified Asbestos Removal contractor in accordance with Ohio Administrative Code (OAC) 3745-20. An individual trained in the provisions of NESHAP (40 CFR Part 61, subpart M) will be on site during the Demolition or Renovation of any structure with Asbestos Containing Materials (ACM) and evidence that the required training has been accomplished by this person will be available during normal business hours.

All associated costs of asbestos materials to be removed and properly disposed of, will be paid under “Third party billing” provisions

OPTION 3:

The DBT shall conduct asbestos inspections of all bridges subject to renovation or demolition as per Chapter 3745-20-04 of the Ohio Administrative Code (OAC) “Demolition and renovation procedures for asbestos emission control” February 2, 2007, utilizing a certified Ohio Asbestos Hazard Evaluation Specialist. Should suspect Asbestos Containing Materials (ACM) be encountered; perform bulk sampling and analysis. Prepare a letter report (1-2 pages) including a brief discussion of the inspection of and sampling methodology, mapping indicating the bridge location and sampling locations, and analytical test results.

For all options, at least 10 working days before operations begin, the DBT shall complete an Ohio Environmental Protection Agency (OEPA) “Notification of Demolition and Renovation” form and submit this to the local air pollution control division, if delegated, or OEPA.

The DBT shall provide a copy of the completed form to the LPA. Payment for all fees, labor and material needed to inspect the bridges and submit OEPA notification shall be included in the appropriate Structure Remove Lump Sum bid item.

Should asbestos containing materials be encountered, all suspect materials shall be removed and properly disposed of by a certified Asbestos Removal contractor in accordance with OAC 3745-20. An individual trained in the provisions of NEODOTPS (40 CFR Part 61, subpart M) will be on site during the Demolition or Renovation of any structure with ACM and evidence that the required training has been accomplished by this person will be available during normal business hours.

All associated costs of asbestos materials to be removed and properly disposed of, will be paid under “Third party billing” provisions

## Noise Analysis and Noise Barriers

If DBT has flexibility with design that could impact noise levels resulting in changes to anticipated noise barrier locations, add requirement for DBT to perform analyses and assume risk of adding/modifying noise wall requirements. If noise walls are required, include specifications and details in Section 19.3.

# RIGHT OF WAY (ROW)

In many cases, ROW acquisition is not necessary to construct the project or the ROW acquisition has been completed prior to advertisement of the DB project. In scenarios where the LPA has not completed right of way acquisition prior to the advertisement of the DB project, the LPA will typically provide a Right of Way Status Matrix as a Contractual Appendix. The matrix typically identifies the parcel number, owner name, acquisition start date, estimated months to clear, date when LPA takes ownership of parcel, date that parcel becomes available for construction, and comments related to the parcel. Optional language is shown below when acquisition is ongoing during the procurement and after contract execution.

For some more involved projects, the DBT can be scoped to provide R/W plans, title reports, and continuation of title reports. Requirements shall be coordinated and approved by the LPA. The LPA must retain responsibility for carrying out appraisals, appraisal reviews, and the acquisition itself. The DBT must understand the Federal Highway Administration acquisition policies and the importance of strict adherence to them.

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 LPA 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. LPA’s Project Manager will be responsible for clearing all encroachments on Federal-aid projects in accordance with standard encroachment removal.

The status of each parcel that is currently in the acquisition process is indicated in Appendix [XX] (Right-of-Way Status Matrix). Additional requirements and information for specific parcels are included in the Right-of-Way Status Matrix. The DBT will be provided access to each parcel as the parcel is cleared. The LPA will provide written notification to the DBT of the availability of each required parcel and notify the DBT of any access restrictions that may be applicable. The DBT shall not be allowed access to any parcel until written notification is provided by the LPA.

The LPA will provide an update to the Right of Way Status Matrix at the time of NTP. In addition, the LPA will provide the DBT with monthly reports regarding the status of the acquisition process for parcels for which access was not provided at the time of NTP.

## Temporary Easements

Projects with temporary easements should address the timing and process related to use of these easements. Optional language is provided below, when applicable.

The LPA will facilitate use of certain parcels through temporary easements. The DBT shall use temporary easements solely for the purposes described within the easement in accordance with Appendix [XX] (Temporary Easements). The DBT shall only be able to use the temporary easement for the duration established in accordance with Appendix [XX] (Temporary Easements). The duration commences on the date when physical work commences within the temporary easement site. The DBT shall provide written notice to the LPA indicating the planned date for beginning work in a temporary easement. The DBT shall not enter into temporary easement sites after the duration of the temporary easement has elapsed.

The DBT shall construct temporary fence around temporary easements being acquired for the Project. Upon completion of Work within temporary easements, and prior to completion of the temporary easement access duration, the DBT shall remove the temporary fence and restore the temporary easement site to pre-construction conditions.

# UTILITIES (OPTION A)

Outreach to potentially-affected utilities is important:

• Pre-Scoping meeting to explain DB process

• Requiring LPA involved during the Scoping process

• Gathering of all known utility plans

• Discussion of risk and coordination on projects with considerable utilities which can only be relocated after final design

• Discussion of using one of the two versions of the utility notes (Option A or Option B within this template document)

• Discussion of Responsibilities of the DBT and of theLPA before and after sale

• Inclusion of all public utilities within the Scope of Services so DBT can control

• Discussion of review timeframes for utility owner review of DBT relocation plans

During the contract, when plans are submitted by the DBT for LPA review, such review must be coordinated with affected utilities. In addition, the contract should specify that LPA should be notified whenever the DBT contacts the Ohio Utilities Protection Service (OUPS).

Option A language should be used on design-build projects which have had utilities clearly coordinated and impacts identified prior to DB procurement. Utility relocations should be completed or should be reasonable assured to be completed. The LPA shall provide the date in which utility relocation(s) will be completed if occurring after Award.

All underground and overhead utilities should be listed in this section of the Scope of Services, similar to a Utility note. The Proposal should indicate that one of the goals of the project design is to minimize utility impacts.

## Existing Utilities

The LPA, in coordination with the registered underground utility protection services, Oil and Gas Producers Underground Protection Service (OGPUPS), and other utility owners that are non-members of any utility protection services, has determined that the 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 ‑: Utility Contacts and Status

|  |  |  |
| --- | --- | --- |
| Utility Owner | Utility Contact | Relocation Status |
| [Insert utility owner name and mailing address] | [Insert contact person name, phone, and email] | [Describe utility relocation status and any committed completion dates] |
|  |  |  |

## 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 LPA 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 LPA 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 LPA approval. The LPA will not compensate for betterments or other ineligible utility work. The DBT shall coordinate determination of eligibility through the District Utility Coordinator via the LPA.

## Subsurface Utilities Engineering (SUE)

If Subsurface Utility Engineering is needed, check “Yes” and specify what level type is required: A, B, C, or D, and provide information defining these level types. A definition of these types can be found in the Department’s Real Estate Policies and Procedures Manual. Consider setting payment for test holes as per location (i.e., not part of a lump sum). If Subsurface Utility Engineering is not needed, check “No” below.

Subsurface Utility Engineering Required:  Yes  No

If yes, then include the following text:

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

SUE Level B

SUE Level C

SUE Level D

If SUE has been completed by the LPA, reference the appropriate Appendix in the Document Inventory as noted in Optional language below.

Completed SUE is provided in Appendix XX (SUE) in the Document Inventory.

# UTILITIES (OPTION B)

Option B language for utilities should only be included with projects having complex utility issues which may have considerable impact on design and construction. This language results in the need for additional time to be included in the project schedule for the DBT to manage the utility impacts. DBT is required to cooperate with all utilities and document coordination has occurred. Time extensions only will be granted once DBT has proven coordination efforts met a reasonable threshold. This process increases the DBT burden to coordinate utility impacts.

The LPA must coordinate with the utility companies prior and must anticipate the potential impact of a utility relocation on the Project duration. This must be considered in the establishment of the completion date.

This language makes the DBT assume the risk of the relocation during the design. Once design is complete and the utility provides a relocation duration, the LPA owns the risk of the actual relocation duration.

## Existing Utilities

The LPA, in coordination with the registered underground utility protection services, Oil and Gas Producers Underground Protection Service (OGPUPS), and other utility owners that are non-members of any utility protection services, has determined that the utilities identified in Table 11-1 are located in the area of the Project.

List all known utilities on the Project site in Table 11-1.

Table ‑: Utility Contacts and Status

|  |  |  |
| --- | --- | --- |
| Utility Owner | Utility Contact | Relocation Status |
| [Insert utility owner name and mailing address] | [Insert contact person name, phone, and email] | [Describe utility relocation status and any committed completion dates] |
|  |  |  |

## General Requirements

The DBT shall:

1. Coordinate with the owners of all public and private/investor utility facilities affected by the Project.
2. Coordinate with the utility owners, third-parties and stakeholders to resolve all utility conflicts encountered on the Project.
3. Resolve any conflicts between utility facilities and the construction of the Project.
4. Coordinate the completion of all utility relocations with the respective utility owners and stakeholders.

The DBT shall put forth all efforts required to coordinate and resolve utility conflicts within the schedule and shall accept the associated cost and schedule risk, regardless of the entity performing the utility adjustment work, except as described in 11.8 (Deadlines and Delays).

The LPA will solely determine compensable rights related to utility design, relocation, modification and construction for each conflict. When warranted, the LPA will compensate the respective utility owner directly as outlined in Section 11.11(REIMBURSEMENT AND DEPOSIT PROCESSES).

No additional compensation will be made to the DBT for delays, inconveniences, or damages sustained by the DBT due to interference from the utilities or utility work.

The DBT shall be responsible to verify all utility relocation to ensure that the relocation work does not interfere with other proposed construction activities, including relocations of other utilities.

All new utility installation requests within limited access right of way shall be subject to the LPA permitting process.

## Governing Regulations for Utility Design and Construction

The Scope of Services shall identify any utility design and construction which will be the responsibility of the DBT (e.g. municipal utilities are more likely to need this).

The DBT shall be responsible for the design and construction of utility adjustments for the following utility owners:

Provide list of applicable utility owners.

All utility work performed by the DBT shall be consistent with the Department’s Utility Relocation Manual and must meet the Federal Highway Administration (FHWA) “Buy America” policy requirements of 23 USC313 and 23 CFR 635.410. Utility work shall be in accordance with ODOT’s 8100 Policy for Accommodation of Utilities and 8200 Procedure for Utility Relocations, Adjustments and Reimbursement. https://www.transportation.ohio.gov/wps/portal/gov/odot/working/engineering/real-estate/real-estate-manual/8000-utilities

1. The DBT shall perform all utility work in compliance with the following:
2. The utility owner’s specifications, standards of practice and construction methods;
3. Applicable ODOT design and construction standards;
4. Local public agency specifications, standards of practice and construction methods; and/or
5. Railroad permit requirements.

The DBT shall prepare utility relocation plans in accordance with the requirements of the Contract Documents for plan preparation and show, at a minimum, the following information: existing topography, right-of-way, lanes of travel, and the location of the existing utilities. When the DBT develops utility relocation plans, they shall be subject to review and approval by the utility owner in accordance with the design submittal requirements of the Contract Documents.

## Utility Coordination

The DBT shall design the project construction work to minimize the scope and extent of utility conflicts and relocations. 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.

When utility relocations are necessary, coordination and scheduling of these relocations with the involved utilities shall be the responsibilities of the DBT.

Only those utilities affected by the Project shall be relocated or adjusted. If the DBT desires the temporary or permanent relocation or adjustment of the utilities for the DBT’s benefit, the DBT shall conduct all negotiations with the utility owners and pay all costs associated with the relocation or adjustment. The DBT shall assume all schedule and cost impacts from these relocations or adjustments.

The DBT shall perform the following services related to utility coordination:

1. Identify and locate all utility conflicts.
2. Confirm the identification and contact information of the utilities within the project area as provided by the LPA to verify the nature, extent and location of their existing facilities.
3. Minimize potential delays and coordinate the efficient relocation of affected utilities.
4. Provide all project construction documents, other utility relocation plans, subsurface utility engineering (SUE) information, and geotechnical information for relocation of utilities.
5. Coordinate all project work and utility work with the affected utility owners.
6. Schedule and conduct utility coordination meetings during the project design and construction process.
7. Maintain and update the utility coordination information monthly and make that information available to the LPA.

## Notification

In accordance with ORC 153.64 and at least two (2) days prior to commencing construction operations in an area that may affect underground utilities, the DBT shall notify the LPA, registered underground utility protection services, Oil and Gas Producers Underground Protection Service (OGPUPS), and other utility owners that are non-members of any utility protection services.

## Utility Coordination Meetings

The DBT shall schedule and conduct utility coordination meetings commensurate with the complexity of each utility’s relocation issues. The DBT shall notify the LPA at least three (3) business days in advance of each of the meetings. The LPA will participate as necessary. The DBT is responsible for generating meeting minutes within two (2) business days after the meeting and submitting those meeting minutes to the LPA.

## Scheduling of Utility Relocation Work

The DBT shall obtain activity durations for all utility relocation work-related activities from the representative utility owner for incorporation into the DBT’s Project Schedule. The DBT shall provide all documentation supporting the utility owner’s concurrence with the activity durations included in the project schedule.

The DBT shall pay all related acceleration costs incurred by the utility owner if the DBT requests acceleration of utility relocation work. These acceleration costs are NOT eligible for reimbursement to the Utility by the LPA.

The DBT shall review the utility’s design and/or permit application to ensure that the relocation does not interfere with other proposed construction activities, including relocations of other utilities. The DBT shall complete this review no later than fourteen (14) calendar days after submission to the DBT, unless a different time period is expressly agreed to by both parties. The DBT shall compile and provide written review comments to the LPA and the utility owner.

## Deadlines and Delays

The DBT shall monitor the progress of all activities associated with utility relocations and promptly notify the LPA when the progress of the activity controlled by a utility owner or a duration of relocation provided by the utility is not consistent with the durations obtained in section 11.7 (SCHEDULING OF UTILITY RELOCATION WORK).

The DBT may ask the LPA to issue an Obstructive Removal Notice upon submission of sufficient documentation confirming that a utility owner has failed to perform within the schedule activity durations developed in Section 11.7.

The LPA will solely determine if the Obstruction Removal Notice is to be issued. An Obstruction Removal Notice only governs the relocation process when the utility in question is located within the public road right-of-way. If a utility is located within the utility owner’s easement, the notice does not apply and the relocation delay responsibility is based on the relocation schedule provided by the utility.

The LPA will not be responsible for payment of delay claims associated with utility coordination/relocation unless the DBT is able to provide the LPA with sufficient documentation for an Obstruction Removal Notice or failure of the utility to meet its utility relocation schedule.

## Changes to Utility Relocation Work

The DBT shall not make any changes to the Project that would necessitate additional relocation of the utility once a utility relocation by the utility has begun. The DBT shall absorb the schedule impact and provide full compensation for one hundred percent (100%) of all costs (design and construction) associated with the additional relocation incurred by the utility owner if changes occur after relocation design or construction work has begun. The DBT shall provide all documentation related to changes in utility relocation work.

## Utility Owner Inspections

The utility owner may inspect construction of any utility work performed by the DBT on the utility owner’s facility. The DBT shall notify the LPA of any such inspections. The DBT shall provide the LPA with written documentation of all utility comments and resolutions.

The DBT shall provide safe access, including any necessary traffic control, for any utility work inspections performed by the utility owner.

## Reimbursement and Deposit Processes

The DBT shall immediately notify the LPA if a utility owner notifies the DBT that it believes any utility relocation work is reimbursable to that utility owner or if the utility believes an easement acquisition by the LPA is required. The LPAwill work with the utility owner to confirm the compensable position and perform the LPA’s utility reimbursement process.

The DBT shall work with the LPA to determine how the utility will be made responsible for providing a deposit to cover the cost of that utility installation support if the project contains construction work to support the installation of a private/investor owned utility company’s facilities.

## Continuity of Utility Service

The DBT shall ensure that all utilities remain fully operational during all phases of the project, except as specifically approved by the utility owner. The DBT shall obtain approvals from the applicable utility owners for all necessary interruptions of service, including proposals for shutdowns and temporary diversions of affected utilities.

The DBT shall immediately alert the utility owner, the LPA and occupants of nearby premises as to any utility related emergency (e.g., accidental breakage) which interrupts service. The DBT will coordinate with the utility owner to restore service. If service is interrupted, the DBT shall continue efforts to repair until any interrupted service is restored.

The DBT shall obtain approval for continued service from the local fire department authority prior to initiating Work which may impact fire hydrants.

Where the DBT is responsible for performance of utility relocation work, the DBT shall:

1. Maintain service continuity to the extent practicable while performing the utility relocation work.
2. Keep the utility owner fully informed of schedules, including coordinating with the utility owner with regard to the DBT’s design, construction and inspection of the utility relocation work.
3. Coordinate any changes with the utility owner.
4. Keep the utility owner involved in making decisions that affect the utility owner’s facilities so the utility owner is able to provide uninterrupted service to its customers, or be subject to the least interruptions practicable.

## Existing Utility Locations

The DBT shall verify the actual location of all underground utilities, including type, number and depth. The DBT is responsible for verifying the actual location of all overhead utilities including type, number, and elevation of lines and all above ground utility facilities.

The DBT shall disconnect and remove or abandon to ground (abandon in place) all existing underground utilities to be abandoned, including service connections. The DBT shall remove all utility poles and other above ground utility facilities to be abandoned in their entirety.

## Utility Conflicts

Additional unknown utilities may be present that may or may not conflict with the project. The DBT shall identify, verify and document all utility conflicts and potential utility conflicts encountered during the performance of both design and construction work.

## Protection of Utilities

The DBT shall take all necessary precautions to prevent disturbance to utility facilities and coordinate project design and construction with utility adjustments.

The DBT shall perform work in a manner that will cause the least reasonable inconvenience to the utility owner and those being served by the utility. Existing, adjusted or new utilities remaining within the right-of-way of the project shall be properly protected by the DBT to prevent disturbance or damage. If the DBT encounters a previously unknown utility that requires adjustment, the DBT shall not interfere with the utility, but shall take the proper precautions to protect the utility or take appropriate actions, per Contract Documents, to coordinate the adjustment of the facility.

## Utility Relocations

The DBT shall coordinate and resolve all utility conflicts with the affected utility owner at no additional cost to the LPA.

## Utility Betterments

Any ineligible, unnecessary or betterment to the utility facility will be the responsibility of the utility owner and not the DBT. Determination of eligibility shall be coordinated through the LPA. Payment for betterment or ineligibility costs shall be made by the appropriate utility owner through the LPA to the utility contractor. Betterment procedures shall follow the Department’s Utilities Relocation Manual.

## Subsurface Utilities Engineering (SUE)

If Subsurface Utility Engineering is needed, check “Yes” and specify what level type is required: A, B, C, or D, and provide information defining these level types. A definition of these types can be found in the ODOT’s Real Estate Policies and Procedures Manual. Consider setting payment for test holes as per location (i.e., not part of a lump sum). If Subsurface Utility Engineering is not needed, check “No” below.

Subsurface Utility Engineering Required:  Yes  No

If yes, then include the following text:

If marked yes, the DBT shall use a state approved subsurface utilities engineering location service to field verify all underground utilities prior to beginning of any design work and shall incorporate the results in the design.

DBT shall have the SUE perform the following Quality Levels:

SUE Level A

SUE Level B

SUE Level C

SUE Level D

If SUE has been completed by the LPA, reference the appropriate Appendix in the Document Inventory as noted in Optional language below.

Completed SUE is provided in Appendix XX (SUE) in the Document Inventory.

# MAINTENANCE OF TRAFFIC (MOT)

## 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 LPA fourteen (14) 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

If other agencies are involved which require notification, add contact information.

The DBT shall furnish temporary MOT devices compliant with the AASHTO Manual for Assessing Safety Hardware (MASH), as applicable.

All detour routes will be provided by the LPA and shall be signed by the DBT. The designated local detour will be provided by the LPA.

## MOT Requirements

The DBT shall be design and implement the MOT in accordance with the requirements referenced in Table 12-1.

Table ‑: MOT Requirements

|  |  |
| --- | --- |
| Requirement | Detailed Requirement Information |
| Minimum number of lanes in each direction to remain open during construction | [Insert detail regarding the requirement] |
| Minimum lane width | [Insert detail regarding the requirement] |
| Maximum duration of detour | [Insert detail regarding the requirement] |
| Restrictions on lane closures during special events (sports events, fairs, concerts, etc.) | [Insert detail regarding the requirement] |
| Restriction related to hospitals, fire and police, schools, etc. | [Insert detail regarding the requirement] |

Additional rows to address various MOT requirements may be incorporated in Table 12-1 or added to this section to address the following, as applicable to the project.

Construction-Phase Traffic Management

The DBT should be allowed flexibility in the duration and phasing of the maintenance of traffic (MOT), to match the needs of their construction plans.

Permits

The LPA shall acquire the permits needed for any lane closures allowed and include within the Document Inventory.

LPA shall provide details on any Exceptions to Permitted Lane Closures (Maps/Schedules are suggested).

Indicate that any exceptions must be requested through the LPA for a waiver or modification of the lane closure restrictions at the site.

Project-Specific Restrictions

Local coordination is required to prepare a MOT plan that takes in to account local needs (e.g. no closures during local fairs and festivals) as well as identifying typical holiday traffic issues (e.g. Thanksgiving traffic on SR-01). This coordination work with local officials may be assigned to the DBT as part of the contract. However, because the LPA owns the project, it will retain ultimate responsibility for public response. It may therefore be best to leave MOT coordination in the hands of the LPA and only require that the DBT send personnel to participate in the coordination efforts, or simply require that the DBT adhere to the restrictions set out by the LPA.

Restrictions that should be considered and included in the Scope of Services (as applicable) include the following:

• Identify FHWA restrictions on interstate routes

• Define time restrictions/construction time management

• Short duration total closures anticipated

• Identify peak hour, lane closure prohibitions, seasonal peaks, special events, local events (sport events, festival, college move-in days, etc.), and national holidays, particularly times and locations of high traffic congestion

• Define limits to construction zone (Project work limit [or refer to project description], MOT phases work limits [use mapping], Number of lanes required to remain in-service in each construction phase)

• Define requirement for temporary traffic signals, if applicable

• Define maximum length of closures allowed

• Coordinate with other local projects that may impact traffic (e.g. closures on parallel or intersecting roadways undergoing construction)

• Define if impact attenuators are required (temporary or permanent)

• Define speed management -regulatory or warning

• Define temporary pavement marking material types (existing and new pavement)

Detours

If detours are needed during construction, identify the following:

• Route – include detour surveys and approvals from local road agencies

• Consider pre-approval of detour if needed from local entity

• Length of the detour

• Expected traffic volume

• Any physical limits on vehicle type such as load or width limits, hazmat routing, etc.

• Transit/freight rail accommodations and/or detours

• Detour route improvements (during detour or upon completion)

• Haul route restrictions

• Pavement conditions video requirements for detours/haul routes (pre-construction)

Note that where structural capacity of bridges, shoulders and pavement of detours are inadequate, these elements may need to be improved as part of the project, particularly if heavy or oversize truck traffic is expected.

Bicycle and Pedestrian Traffic

A determination should be made as to whether bicycle and pedestrian facilities need to be maintained during construction (either on and/or off road). If so, the following information must be provided to the DBT in the Scope of Services:

• Location of bike/ped facilities that need to be maintained

• Maximum spacing between crossings/access points to bike/ped facilities

• Temporary warning sign locations - while there is no need for the LPA to provide detailed sign locations nor any LPA specific design requirement, project-specific requirements may need to be defined for important bike/ped routes should be noted.

• Effect on permanent signing

• Additional special provisions needed (e.g. covered walkways)

• Use of portable message boards

• Use of local enforcement officers for ensuring safety and directing traffic - Scope of Services should provide the approximate number of hours officers will be required, as well as locations and/or construction operations where officers are needed. This will provide definition for potential Bidders.

• Nighttime delineation and illumination of signs

Transit Coordination

A determination should be made as to whether transit (bus or rail) services need to be maintained during construction (either on and/or off road). If so, the following information must be provided to the DBT in the Scope of Services:

• Define relocation requirement (temporary or permanent) for transit stops in the vicinity of the project

• Define relocation of pedestrian access to bus stops, covered walkways, etc

• Require DBT coordination with transit agencies regarding notification of agency as well as riders

Railroad Crossings and Coordination

The DBT will be required to coordinate with railroads that cross or are adjacent to the site to ensure safety. The Scope of Services must include the following:

• Identification of railroads located in or adjacent to the project site, and train frequency

• Requirement for DBT to coordinate with the railroad to provide flaggers when needed and details about financial responsibility

• Define temporary signal operation

Other Construction Phasing Issues

Phasing Requirements

• Allowable lane closures for bridge steel erection if required

• Maximum length of work area or lane closure

• Require DBT to submit the location of work zone access/egress points for LPA review (suggestion - design should be in accordance with ODOT Traffic Engineering Manual - [Pages - Traffic Engineering Manual (state.oh.us)](https://www.dot.state.oh.us/roadway/TEM/Pages/default.aspx))

• Night work restrictions (consider local noise ordinances prohibiting work during certain hours)

• Define width restrictions

• Restrictions on groupings of closures – (e.g. cannot close two adjacent entrance ramps at the same time)

• Duration of work/special conditions – (e.g. setting up conditions such as the maximum allowed closure time for specific phases or holidays, winter requirements if more than one year of construction)

• Evaluation of existing shoulder, ramps, gores or other likely locations of MOT traffic (consideration of known condition issues and needed repairs).

• Drop-offs (change in grade between lanes) – reference a standard drawing regarding required barrier types

• Sign bridge installations

• Intelligent Transportation System (ITS) deployment for work zones

• Ramps that may be closed (If an entrance ramp is to be closed, consider location, volume, and impact on mainline, if working on an entrance ramp, ensure that the merge lengths are adequate, etc.)

• Temporary drainage needs – to prevent flooding during construction (must follow L&D Manual and CMS)

• Restrictions on use of lights for night work (to not blind oncoming drivers)

• Temporary roadway lighting for night traffic

• Start-up procedures and phase changes

• Temporary Barrier installation

• Clarify if portable barrier can be stored in the median over the winter shutdown

• Geometry of temporary roadways

• Clarify if there will be a drop off in the construction zone. If so, attach the Drop off in Construction Zone plan insert sheet

• Special contract provisions needed (i.e., anything else not listed above)

Access to Construction Zone and Worker Parking

In general, this issue should be left to the DBT, with text in the Scope of Services stating that “the DBT is responsible for maintaining access to the construction zone and employee parking that meets the requirements of the TTCM, and does not unduly impact traffic and local residents and businesses.”

Before issuing the Proposal, however, LPA should consider the issues below to determine if additional right-of-way is needed, or if additional DBT requirements should be specified (e.g. restrictions on construction vehicle travel through sensitive areas).

• Worker parking

• Restrictions on delivery routes for construction materials and equipment (including roads not to be used, restrictions on hours of use, or a designated delivery route)

• Acceleration or deceleration lanes needed

• Local traffic on closed roads (e.g. residential traffic, access to commercial properties)

• Restrictions on waste and borrow sites

• If required by the LPA, add a note that the DBT is required to provide a detail of access point requirements for construction ingress/egress area in accordance with MOT Manual and any designs per Insert Plan Sheet.

Issues for Multi-Year Projects

If it appears likely that the work will extend multiple seasons, the following items should be considered, again keeping in mind than many of these issues can be left to the DBT:

• Need to specify longer-lasting pavement marking requirements if traffic will be diverted for multiple seasons or interim pavement marking requirements

• Part width construction for structures

Emergency Planning and Coordination

DBT project managers need to be prepared for different types of emergencies, including evacuations (e.g. from floods), for incident response by local responders (e.g. for injury accidents) and by tow trucks (e.g. for vehicle breakdowns), as well as ambulance access for workplace incidents. Emergency response must also consider mitigation for MOT that may hinder emergency response to surrounding neighborhoods, and ongoing coordination may be required to ensure that police, fire, and ambulance services have ways to get over or through a closed construction site if possible.

The items below should be considered after reviewing the local incident management plans, and discussing the project with the LPA. DB contracts can be written to have the DBT perform the coordination, with participation and review by LPA who have local expertise in these matters.

• Incident management plans (IMPs). An IMP will be developed by LPA for general purposes (not project/MOT specific) and DBT must provide a plan for the project area during construction (on major projects)

• Specify that the DBT is required in their plans to provide access for dealing with accidents, breakdowns, tow trucks, snow removal, emergency closures (e.g. hazmat spills, Level 3 snow emergencies), utility interruptions.

• The DBT will need to provide a contact for coordination with State police and local law enforcement and local officials (police, fire, hospitals, schools, environmental agencies, utilities, toll facilities, etc)

• Public awareness to provide information on changing traffic patterns, closures, etc. This can include the media, motorist service agencies, local businesses, motor carriers, and use of portable changeable message signs (specify number and/or locations).

• Special events

• Intra-agency coordination – maintenance crews, permits section, adjacent projects

• Transit, ferries, railroads, airports

• Work Zone Speed Limit

## 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 the Traffic Engineering Manual.

## Haul Routes

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

## Traffic Engineering Manual Notes

The LPA is responsible for establishing the TEM requirements and clearly defining expectations on a project-specific basis.

If there are notes that only apply to certain situations, the LPA shall modify the language to clarify that the DBT shall be responsible to be compliant with the LPA’s guidance in the TEM, specific to the proposed MOT approach.

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

List required TEM notes

# SURVEY

1. LPA Survey Responsibilities

The LPA shall ensure the below information is provided in the Document Inventory. Update as needed to be consistent with available information.

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

1. Centerline control and benchmarks
2. Beginning and ending centerline points for the project
3. At least two benchmarks for the project (the datum used was that which the project was originally laid out by)
4. Critical points such as P.C., P.I., P.T., T.S., C.S.
5. Vertical clearances for the overhead structures, to serve as a check for the existing vertical clearances
6. DBT Survey Responsibilities

The DBT shall submit all survey data using ODOT’s standard field codes and ODOT’s standard mapping codes unless otherwise specified by the LPA. Reduced point data, in comma delimited ASCII text format, will be provided for all surveyed points. This data will include: point number, North (y) coordinate, East (x) coordinate, elevation and point ID.

For projects with new/revised alignments, DBT may need to set new centerline/ROW monumentation. Optional text provided below.

The DBT shall install all new centerline monuments, monument assemblies, and reference monuments, as required, in accordance C&MS 623 and the ODOT Real Estate Policies and Procedures manuals. If applicable, the DBT shall set ROW monuments for parcels being acquired for the Project Right of Way. Monuments on LPA-maintained facilities shall be furnished and installed in accordance with LPA standards.

The DBT shall not disturb existing monumentation. If the DBT disturbs the monumentation, then the DBT shall replace the monument, in-kind, using a Registered Surveyor, with current registration, recognized by the Ohio State Board of Registration for Professional Engineers and Surveyors. Costs associated with monument replacement caused by DBT disturbance shall be borne by the DBT. The DBT shall provide copies of all monumentation changes to the LPA.

The DBT shall include all control points, provided by the LPA, in the ASCII file supplied by the DBT to the LPA. They should retain the original point numbers and coordinate values as assigned by the LPA.

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

1. Copies of all field notes (written or electronic) which shall include the following information:
   1. Date
   2. Crew members
   3. Weather conditions, including temperature, barometric pressure, etc.
   4. Instrument(s) used (Serial Number)
   5. Raw observation field data
   6. Other notes as needed
2. Copies of all Deeds, Plats, Maps and other written evidence used to establish points related to the project including summaries of all parole evidence acquired as a part of the survey operation.
3. Listing of all found monumentation (Horizontal and Vertical).
4. Listing of all monumentation set as part of the project (Horizontal and Vertical) including reference ties for recovery.
5. All monumentation shall be located utilizing NAD 83 (Horizontal Data), NAVD 88 (Vertical Data).
6. Short report indicating adjustment factors and methods, signed and certified by a Registered Surveyor (State of Ohio). The Registered Surveyor (State of Ohio) shall include in the report the datum used and all associated adjustments used.

# PAVEMENT

Define limits of full-depth pavement, pavement repairs, and resurfacing. Define the type of grading (safety, clear zone, standard). Define if curb and gutter is required or just curb. Define pavement composition for traveled lanes and shoulders, including different requirements if different classes of roadways or different local/ODOT maintenance requirements. Alternatively, require DBT to design pavement in accordance with the ODOT Pavement Design Manual ([Pavement Design Manual | Ohio Department of Transportation](https://www.transportation.ohio.gov/wps/portal/gov/odot/working/engineering/pavement/pavement-design-manual/)) if the LPA does not have standards. The LPA may specify pavement types (e.g. asphalt or concrete). Confer with pavement selection committee, when applicable.

Define resurfacing/restoration of roadways impacted by MOT operations that are outside of project limits. Recommend giving typical sections. Full depth/partial depth pavement repairs should be provided as a contingency item. The LPA should establish an estimated quantity and locations with work to be done on a unit cost basis.

Initial soil exploration data shall be provided by the LPA. The LPA will analyze the subgrade according to Geotechnical Bulletin 1 (GB1): Plan Subgrades. Collection of additional soils information if needed, should be performed by the LPA, but may be assigned to the DBT. Provide type, locations, and limits of any subgrade stabilization needed.

Address longitudinal joint requirements, as needed.

# ROADWAY

Address roadway geometric requirements.

Provide existing horizontal and vertical alignments and define new horizontal alignment and vertical profile in accordance with Conceptual Plans or provide flexibility for the horizontal alignment and vertical profile to be determined by DBT. Identify and correct all deficiencies in horizontal and vertical alignment, and any design exceptions needed. Establish requirements for maximum grades, curves, or other geometric elements for each roadway classification.

Describe roadway work. Identify specific requirements for various typical section elements, if applicable, including: number of lanes, lane widths, median widths, shoulder widths, curbing, treelawn width, bike and pedestrian facilities, grading type (safety, clear zone, standard, barrier), maximum slopes, barriers, fencing, ditch configuration, etc.

Specify the intervals at which DBT should provide cross sections to LPA for review (usually 50' and any abrupt changes).

Identify alignment/profile configurations to be avoided (e.g. not keeping alignment tangent in attempt avoid an item, exceptions to site distance, especially for detours)

Identify if any superelevation deficiencies need to be corrected. Identify if partial and if design exception is needed.

List the criteria to meet the standards for (for example, increase sight distance at intersections to stopping sight distance (SSD), increase sight distance at intersections to intersection sight distance (ISD), increase vertical clearances at structures

Identify items to be avoided such as light poles, signal installations, etc.

Define intersection/interchange geometric requirements such as turn lane lengths, design vehicle requirements, etc.

Define removal of existing infrastructure elements no longer used.

Address on-site waste opportunities/restrictions.

## Design Exceptions

Typically, any known design exceptions will have been obtained and approved prior to advertising a project for sale. The Scope of Services should explicitly state if additional design exceptions will be allowed or prohibited. Specify a time period for review and approval of the design exception for the planning/scheduling of the DBT.

The LPA has obtained approval for the following design exceptions:

List and provide information or specific reference to Document Inventory appendix. Design Exceptions included shall be identified as Contractual.

The DBT shall notify LPA regarding any design features that are believed to not meet the minimum design criteria and require a design exception.

Option 1: The DBT shall develop a design which does not require approval of additional design exceptions.

Option 2: The DBT may develop a design requiring a design exception, subject to sole discretion approval of the Department, LPA, and FHWA. The DBT shall prepare any proposed design exceptions and submit to the LPA for coordination with FHWA and approval. Following submittal of the complete design exception submittal, the LPA will provide a response within thirty (30) days. The DBT shall accept all cost and schedule risk associated with obtaining ODOT, LPA, and FHWA approval of the design exception.

## Interchange Modification/Justifications Studies

If applicable, provide any IMS/IJS as an Appendix to the Scope of Services.

The DBT shall prepare a design compliant with the Interchange Modification Study and/or Interchange Justification Study, if applicable.

The DBT may develop a design which requires modification to an existing Interchange Modification Study and/or Interchange Justification Study, subject to sole discretion approval of the Department, LPA and FHWA. The DBT shall prepare any proposed modifications and submit to the LPA for coordination with FHWA and approval. The DBT shall accept all cost and schedule risk associated with obtaining ODOT, LPA and FHWA approval of the modification.

# DRAINAGE

The Scope of Services should include requirements for drainage along mainline and ramps. Refer to ODOT L&D Manual, Volume 2 for additional information. Note that L&D Volume 2 includes the use of many “should” and “may” conditions, which should be reviewed against project requirements. ([Location & Design Manual, Volume 2 - Drainage Design | Ohio Department of Transportation](https://www.transportation.ohio.gov/wps/portal/gov/odot/working/engineering/hydraulic/location-design-vol-2/01-location-design-vol-2))

Item to consider and specify requirements for include the following:

• Specify if existing system is to be retained

• Specify whether drainage systems need to be cleaned out or repaired prior to construction. If re-used, perform evaluation and specify portions for salvage (length and location)

• Specify if DBT needs to close any drainage systems or if open drainage can be used

• Define adjustment to catch basins, inlets and manholes to accommodate resurfacing or feather pavement

• Specify use of catch basins, scuppers or sodded flumes for bridge drainage

• Specify any acceptable variation to spread practice (prohibit any variation to spread)

• Specify if County/City Engineer flow line approvals are required

• Specify if FEMA approvals are required

• Specify if COE/EPA approvals are required.

• Establish criteria for allowable reuse of infrastructure including applicable video/condition assessment/condition analysis and define removal/abandonment criteria for items not reused. Provide condition assessment if available.

• Specify if new headwalls are required for existing drainage conduits.

• Specify possible drainage problems outside the toe of the embankment and requirement to address.

• Specify need for slope drains, spring drains or field drains if applicable

• Note in the Scope of Services that post-construction storm water Best Management Practices (BMP) are required as per Location and Design Manual, Volume 2. Any site-specific or owner-specific requirements should be included in the Scope of Services if they differ from LPA’s practice.

Hydraulics

See L&D Manual, Volume 2 and the Bridge Manual. ([Pages - BDM2020 (state.oh.us)](https://www.dot.state.oh.us/Divisions/Engineering/Structures/standard/Bridges/Pages/BDM2020.aspx))

Issues to consider and specify requirements for:

• For structures, Preliminary hydraulics should be part of the Scope of Services.

• The LPA shall determine if a flood hazard evaluation is necessary, and the DBT is responsible for certifying the hydraulics for the structure. In other words, prior to the issuance of the Proposal, LPA is responsible for preliminary structure hydraulics.

• Be aware that a decrease in the waterway opening must be carefully considered. In a designated Flood Insurance Area, generally a decrease in the waterway opening is not acceptable.

• DBT is responsible for acquiring permits including FEMA Coordination and approval if needed for floodplain impacts, as well as for certifying the structure opening.

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 Location & Design Manual 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 LPA 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.

# LANDSCAPING

Landscaping Required:  Yes  No

The DBT shall permanently grade and seed all impacted areas.

Define specific seeding requirements and tree and landscape requirements (species, spacing, location(s) and limits, and sizes) if applicable.

# Additional Description of Required Work and Special Provisions

List / describe any contract requirements outside of those not addressed (aesthetic treatments, Public Information Officer requirements (e.g. must live near site, hours of availability), potential emergency management plans, and any other item of additional managerial responsibilities to be placed on DBT (monthly budget reports, schedule updates, etc.).

# STRUCTURES

## Existing Structures Identification

Structure Identification: CRS

Structure File Number: SFN

Feature Intersection: Over/Under Route/Waterway name

## General Requirements

Consider including a list of General Requirements identifying specific items that may be prohibited or permitted and would apply to all structures.

## Design and Construction Requirements of Structure

Copy and repeat Section 18.2 for every structure on the project (copy Paste Options – continue List).

For each retaining wall, perform similar exercise identifying specific wall requirements, excluded wall types, aesthetic treatments, railing/fence system, etc. If MSE, or other similar wall types are allowed, then define utility restrictions within reinforcement areas.

For existing structures being reused/rehabbed define applicable structure design loading controls, define allowable demo/rehab methods, methods of measurement and compensation terms for anticipated work and changed conditions. Consider multiple payment items to avoid large lump sum work items that would be hard to negotiate price structure for extra work.

Str: Cnty-Route-Section

Existing Structure Data:

|  |  |
| --- | --- |
| Overall Length: | [Insert Text] |
| Width o/o: | [Insert Text] |
| Design Loading: | [Insert Text] |
| Type: | [Insert Text] |
| Spans: | [Insert Text] |
| Date Built: | [Insert Text] |

Alignment & Profile

Alignment:  Follow Existing

Relocated:  Per LPA  Per DBT

Profile:  Follow Existing

Relocate:  Per LPA  Per DBT

Feathered (Adjustment):  Per LPA  Per DBT

Span Configuration:  Per Original

Span Lengths:  Per LPA  Per DBT

Variable

Transverse Sections

|  |  |  |  |
| --- | --- | --- | --- |
| Roadway Width: | [Insert Text] | | |
| Railing: | Yes  No | Type: |  |
| Fence: | Yes  No | Height/Type: |  |
| Sidewalks: | Yes No | Width: |  |

Investigate the need for Prefabricated Structure:  Yes  No

Investigate the need for Retaining Walls:  Yes  No

All Shop Drawings shall comply with Item 501.

Initial foundation investigation will be provided by the LPA.

Foundation investigation shall be provided as an Appendix. If contractual, documentation shall not include any foundation recommendations.

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.

Rehabilitated Structures

Superstructure

• Do the existing beams meet loading criteria (as given in the Bridge Design Manual [BDM])?

• Merlin Dash or comparable analysis (with composite action) should be completed prior to writing the Scope of Services.

• If the beams need the load carrying capacity increased beyond being made composite (i.e., moment plates, etc.) replacement is to be considered.

• Do the existing steel beams meet the AASHTO fatigue criteria? If not, specify fatigue retrofit or new beams. Analysis should be done prior to Scope of Services.

• Are hinges utilized? If so, consider removing.

• If the beams are to be replaced, should any replacement superstructure type be prohibited?

• Is the deck to be retained or replaced? If the deck is to be retained, is an overlay necessary? If so, specify type.

• Eliminate the longitudinal joint? See the BDM, section 405.1.

• Will bridge widening with weathering steel beams be permitted where original structure is painted?

• Will fracture critical members be allowed or will they be prohibited.

Abutments

• Are the abutments to be salvaged or replaced? Refer to the BDM, section 403.

• If the abutments are replaced, define type acceptable if there are any limitations.

• If the abutments are to be salvaged, what is the load carrying capacity? And if repairs are needed to salvaged abutments, specify limits.

• If the footings are to be retained and are supported on piles, are the pile logs available?

• If their condition is good, stub and integral type abutments should be considered acceptable if the dead loads are increased by 20% or less due to the new superstructure (live + dead loads) and the bearing locations are not changed.

• Foundations should be considered acceptable if the increase in load is less than given in the following list for appropriate type (Friction piles of Drilled Shafts -15%, piles bearing on rock -30%, drilled shafts with rock sockets -no limit)

• Backwall -retained or replaced? If replaced, should there be any restrictions as to type?

• Abutments founded on spread footings not on bedrock are normally prohibited. If allowed, they must be founded below the stream thalweg, as well as evaluated by the geotechnical engineer and the hydraulics engineer.

• Guardrail and Barrier Type and Tie-in

Piers

• Are the piers to be retained or replaced? Refer to the BDM, Section 403.

• Prohibit non-redundant piers? In the case of widening, will freestanding piers be allowed or prohibited?

• Evaluate shear capacity of existing pier caps and potential need for retrofit. If piers are functioning properly and are in good shape, the requirements to meet code can be waived if the superstructure loads are not increased by more than 15% and the new beam lines are placed in the same bearing location (except wall type) as the existing beam lines. Consult the LPA before including in Scope of Services. This should be analyzed for each structure, prior to scope.

• Piers on spread footings, not on bedrock, in a stream shall be replaced.

• If the footings are to be retained and are supported on piles, are the pile logs available?

**New Structures**

Type

• Are there any preferred structure types, or should any structure types be prohibited?

• Are there any preferred prestressed beam shapes, or any prohibited shapes? Will beam shapes be restricted to those shown in ODOT standards? Some non-ODOT shapes have advantages for certain situations (e.g. post-tensioned bulb tees to reduce number of piers required.)

• Are box beams allowed. Can the superstructure be non-composite or is composite required?

• Concrete slab bridge acceptable?

• Truss bridge acceptable?

Superstructure

• Is a specific size (length) structure desired?

• Are there skew restrictions needed?

• Are two Bidwell pours permitted with rail supports in deck?

• If so, give the minimum acceptable length (begin - end stations)

• Are utilities to be banned from the structure? If so, no utilities shall be placed on the bridge. The BDM suggests keeping utilities off.

Substructure

• Should any substructure type be ruled out? (Example - No capped pile piers for overpass structures)

• Evaluation of drilled shafts vs. piling for interbedded shale

• Any need to limit the abutment type?

• The BDM does not limit the use of spread footings except when in streams. (Location and Design Manual, Volume 2, Section 1008 provides limitations on the use of spread footings for arch or flat slab topped culverts)

## Noise Barrier

Noise Barrier Construction Required:  Yes  No

The DBT shall design, prepare the detail construction plans, and construct the noise barrier according to the following design requirements:

General Noise Barrier Requirements:

Noise Barrier Panels and Posts:

Noise Barrier Bearing Pad and Block Riser:

Noise Barrier Foundations:

Specific Barrier Descriptions:

Noise Barrier Aesthetic Requirements:

Include any aesthetic treatment requirements and patterns, define color if any, provide appendix within the Document Inventory as needed.

Structure mounted Noise Barrier Requirements:

Other Noise Barrier Requirements:

Consider location requirements (outside of clear zone, or acceptable to have placement against roadway with barrier).

Graffiti removal on existing noise walls should be considered

Initial foundation investigation will be provided by the LPA.

Foundation investigation shall be provided as an Appendix. If contractual, documentation shall not include any foundation recommendations.

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.

# TRAFFIC CONTROL

## 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.

1. Pavement Marking Requirements and Locations

Specify type of markings and if same on concrete and asphalt surfaces

1. Raised Pavement Markers:  Yes  No.

Requirements and Locations: Specify

1. 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: Specify

1. 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.

1. Object Markers:  Yes  No.

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

Locations and requirements: Specify

## Signing

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

List any additional requirements, for example: Recreational and Cultural Interest Area Signs, Destination Guide Signs, Memorial or Dedication Signs, Road User Services Guidance, Tourist Information, and Evacuation Routes. Also identify responsibilities of existing third-party signs/supports that are impacted by project. Provide details/specifications for any custom signage, such as local requirements for overhead mast arm mounted street name signage. If specific treatments are desired for locations where the TEM and OMUTCD provide options to the designer, such as multi-lane freeways exits, then define requirements for DBT.

### Flat Sheet Signs

1. Flat Sheet Sign work required:  Yes  No.
2. Redesign and replace all existing flat sheet signs with new signs, except as indicated below. This includes all signs on the mainline and interchange ramps. This also includes all STOP signs on intersecting roads. Size the signs in accordance with the OMUTCD, except as follows: List Exceptions
3. The following signs shall remain in place and not be replaced: List
4. The following signs shall be removed and not replaced: List
5. The following signs shall be installed where none currently exist: List
6. The following signs will be provided by LPA for contract installation: List
7. At the following locations, the signs shall be mounted overhead: List

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

Typically, all flat sheet signs on a project should be upgraded, even if some have not reached the end of their useful life.

It must be made clear to the DBT that the Department maintains the STOP signs on any intersecting non-state roads, and that these will need to be included as part of the project design and construction.

The road name signs on conventional state highways are usually maintained by the local jurisdiction. The LPA can decide to install road name signs (including advance signs) if desired. This can be selectively done on an intersection by intersection basis.

Optional signs that are to be included should be sufficiently described. This includes destination signs, cross road and side road intersection warning signs, other warning signs, generator signs, and recreational and cultural interest area signs.

If supplemental left side mounted signs are to be used at any locations, the LPA must specify where.

If oversized signs are to be used at any locations, the LPA must specify where.

If some signs will be provided by the LPA for DBT installation this needs to be clearly indicated.

Specify the minimum mounting height and lateral offset if different from the OMUTCD and Standard Construction Drawing requirements. If a maximum mounting height is desired, this needs to be specified as well.

If some flat sheet signs will be mounted overhead, this needs to be specified.

### Extrusheet Signs

1. Extrusheet Sign Work Required:  Yes  No.

Redesign and replace all existing extrusheet signs with new signs, except at the locations indicated below. This includes all signs on the mainline and interchanges ramps. Size the signs in accordance with the OMUTCD (exceptions are noted below): List

1. The entrance ramp approach signing on the following roads shall be included in this project: List
2. The following signs shall remain in place and not be replaced: List
3. The following signs shall be removed and not replaced: List
4. The following signs (in addition to those required by the OMUTCD and TEM) shall be installed where none currently exist: List
5. The following signs will be provided by LPA for contract installation: List
6. 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 72hrs 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.

1. At the following locations, the signs shall be mounted overhead: List

Removed extrusheet signs shall become the property of the Contractor.

Coordinate overhead sign support work with roadway/pavement scope, noting that changes to median barrier heights may require replacement of sign supports and sign support foundations. Also coordinate to ensure that changes to pavement elevation to not adversely affect required minimum clearances to overhead signs.

Typically, all extrusheet signs on a project must be upgraded, even if some have not reached the end of their useful life.

Optional signs that are to be included must be sufficiently described. This includes additional advance guide signs, generator signs, and recreational and cultural interest area signs.

Specify the minimum mounting height and lateral offset if different from the OMUTCD and Standard Construction Drawing requirements.

Specify where extrusheet signs will be mounted overhead.

Specify that wide, narrow signs, such as destination signs on conventional highways, be made of extrusheet.

For freeway and expressway mainline designable guide signs, the element sizes (level of signing) must be indicated if it may be unclear to the DBT what level would be required, or if the LPA desires to use a higher level than required by the OMUTCD and TEM.

If some signs will be provided by the LPA for DBT installation, such as state line signs, this needs to be clearly indicated.

For freeway and expressway guide signing, the LPA must scrutinize the current signing, and decide if different signing strategies should be employed. This includes the increased use of sign spreading, interchange sequence signs, and diagrammatic signs.

For freeway and expressway guide signing, unnecessary pull-thru signs must be eliminated

Freeway and expressway entrance ramp approach signing that is located beyond the right-of-way and is not on a rural state route or state route extension in a municipality is not the responsibility of the LPA. If this signing will be included, it must be clearly indicated. (Consent of the local jurisdiction may be required.)

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, Ohio Logos can be required to temporarily remove or relocate the signs during construction. They can also be required to permanently remove or relocate the signs.

### Ground Mounted Post Supports

1. Replace:  Yes  No.
2. 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.
3. Removed ground mounted supports shall become the property of the Contractor. Except the following: Specify

Typically, all ground mounted post supports must be upgraded. All post supports in exposed locations not meeting current crash testing requirements (e.g. back-to-back U‑channel posts) must be replaced.

For No. 2 and No. 3 posts, direct driven U‑channel, direct driven square post, and square post in anchor base are considered as equivalents on SCD TC-41.20. If the LPA prefers one support system, this needs to be described. (Even if square posts are specified for flat sheet signs, the LPA may want to consider allowing U‑channel for small extrusheet signs to simplify sign attachment to support.)

If the LPA wants a breakaway connection used, this needs to be described in detail.

### Ground Mounted Beam Supports

1. Ground Mounted Beam required:  Yes  No.
2. Redesign and replace all existing ground mounted beam supports with new ones, except at the locations indicated below: Specify
3. Supports subject to multidirectional impacts at intersections shall use the alternate connection on sizes larger than S4 x 7.7.
4. Removed ground mounted beam supports shall become the property of the Contractor. Remove all existing foundations. Except for the following: Specify

Confirm whether existing supports are to be reused. Galvanized steel structural beam sign supports can oftentimes be reused if they are in good condition, in the correct location, and the replacement sign is of a comparable size.

For structural beam supports, the slip base and alternate connection as shown on SCD TC-41.10 are considered as equivalents. The slip base connection will usually be supplied due to its lower cost. If the LPA wants to require the exclusive use of the alternate connection, this needs to be specified.

Structural beam sign supports subject to multidirectional impacts at intersections should use the alternate connection on sizes larger than S4 x 7.7.

If the LPA wants to use a different support system, such as the laminated veneer wooden beams, this needs to be described in detail.

1. Overhead Supports:  Yes  No.
2. Design all location of all supports per the Traffic Engineering Manual unless otherwise specified in the Scope of Services.
3. The following overhead supports shall be reused in place: List
4. The following overhead supports shall be relocated: List
5. The following overhead supports shall be replaced: List
6. At the following locations, new overhead supports shall be installed: List
7. The following aesthetic treatments shall be used: List
8. At all locations, a minimum vertical clearance shall be per the Traffic Engineering Manual unless otherwise listed.
9. At the following locations, the median end frame foundation shall be in accordance with the details shown in Standard Construction Drawing TC-21.40: List
10. At the following locations, protection of the end frame or poles shall be achieved as follows: List
11. All sign attachment assemblies shall be replaced. List

Removed overhead supports and sign lighting components shall become the property of the Contractor.

Due to the high cost of overhead supports, the LPA will need to determine in advance which overhead supports will be reused in place, relocated, or replaced, and where new overhead supports will be installed.

Overhead sign supports must be inspected by the LPA to determine their condition and structural adequacy.

The steel portions of existing structures that will be reused can be recoated using the standard four-step process developed for this purpose. This process can also be applied to new structures.

Specify the required vertical clearance of overhead signs. **OMUTCD** Section 2A‑18 defines this as seventeen feet, except when other structures use a lesser clearance. In this case, the vertical clearance does not need to be greater than one foot higher than the minimum design clearance of other structures. However, whenever possible, a seventeen foot clearance is required.

Consideration should be given to revising median end frame foundations that are encased in barrier wall assemblies to the top of the concrete barrier (SCD TC‑21.40). The barrier wall assembly can result in increased maintenance as this design will tend to accumulate debris that will need to be periodically removed to avoid vegetation growth.

If end frames and poles located in the clear zone do not meet current requirements for shielding (guardrail or barrier), a determination will need to be made regarding appropriate remedial measures.

The use of aesthetic treatments should be considered in accordance with the LPA policy.

Specify type of sign and lighting needs. Verify if lighting is required.

Sign lighting components must be removed and disposed of by the DBT.

## Lighting

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

Proposed Lighting

• Define the maintenance responsibilities for existing lighting, and the schedule for when the Local Public Agency will resume maintenance.

• Define requirements for river navigation lighting or airway clearance.

• Define the type of lighting equipment to be installed (Conventional, off highway, low mast, high mast, underpass, post top, decorative).

• Define the light source required (high pressure sodium, induction, light emitting diode, metal halide)

• Define owner preferences (brands and model of luminaries, brands of lowering devices, type of pullboxes, wiring methods, maximum wire sizes, metered electric, type of conduit)

• Include equipment details (mounting heights, power supply locations, system voltages)

• Define aesthetic devices.

• Include tunnel lighting. Widened overpasses can result in longer underpasses. Refer to TEM or provide project-specific requirements. It is recommended that the Scope of Services specify spacing.

• Is light trespass into surrounding areas a concern (public meetings and input, cut-off luminaries, low mast or conventional instead of high mast)

Existing Lighting

• If existing lighting is not to be disturbed, include statement if any equipment, poles, foundations, pull boxes, conduit crossovers, etc. be reused or define criteria for reuse.

• State if existing lightings need to be maintained

• State who will own the existing equipment if replaced and when and where it is to be delivered.

• Evaluate existing lighting for the need for tunnel/underpass lighting

Jurisdictional boundaries

• Provide jurisdictional boundaries and note that luminaires in different jurisdictions are to be separate physical plant and have separate power services.

• Determine if township and county road underpasses are to be lit (local agencies willing to pay power cost).

Engineering

• Define what information will be given to the Bidders concerning preliminary pole location and circuit design.

• Define the extent of the lighting plan to be developed and requirements for LPA approval.

• If the DBT is to determine the pole locations, add the following note to the Design Requirements: “Lighting fixtures of various manufactures are not exactly identical in their respective outputs. The DBT shall include supporting calculations to allow the reviewer to determine that the proposed design will function within the required design parameters as stated herein no matter which of the currently specified brands of equipment is installed.”

• Provide list of luminaires for consideration in design. Specify any needed lighting revisions, upgrades, or relocations. Specify replacement of controller (if necessary) or upgrades to wiring. If applicable, identify any unique requirement differences between LPA maintained and other locally maintained lighting systems impacted by the project, including but not limited to: fixtures, circuits, photocells, power supply, conduit systems, pull boxes, transformers, and control centers. Identify specific circuit requirements, such as overhead versus underground, 480V, versus 240V, etc.

## Traffic Signals

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

Specify any needed signal revisions, upgrades, or relocations. Specify replacement of controller (if necessary), upgrades to wiring, locality specific requirements. Identify signal head requirements (three-section versus five-section, placement requirements of heads over lanes, number of heads per approach, detection system requirements, controller requirements, directional, etc.).

Signal Analysis

• Define if the DBT is responsible for signal warrant analysis or state where signalized intersections are located. If the DBT does the analysis, define how the DBT is to proceed with the warrants that are met.

• Define signal phasing, timing analysis, and signal coordination (timing and time-space) requirements.

• Specify who is responsible for traffic counts and if the DBT has to get TTS certification

• Specify if a central monitor station is to be provided, what the minimum equipment requirements are for personal and laptop computers. List locations where central monitor stations will be provided.

• Specify if emergency vehicle preemption or railroad preemption is required. List locations. New railroad preemption may require agreements and force account work by the railroad company.

• Specify if signals need to be interconnected (where and how)

• Specific design requirements of municipalities must be addressed

• Specify the use of adaptive signals (which detect traffic, and can alter signal timing in response to queueing).

Reconstructed Signal Intersections

• List the existing signalized locations, including flasher locations.

• Define if any signal(s) are required to be interconnected and where and how.

• Define the extent to which the existing signal operation is maintained and if timing can be changed, or turns prohibited.

• Specify if any equipment be reused.

• Specify if any existing foundations or supports be reused.

• Specify if any existing loops to be reused.

• Specify if the existing controller is capable of being upgraded.

• Specify if the existing underground conduit system and pullboxes be reused. If reused, specify if the DBT needs to clean it.

Pedestrian

• Define pedestrian push-buttons requirements (across mainline, across all approaches, access, paved area/curb ramps)

• Define pedestrian signal heads requirements/locations

Control Equipment

• Define any restrictions or limitations on multiple intersections being run from one controller. Specify need to coordinate with signal system owners.

• Define type of controller/cabinet and/or minimum phase capability.

• Define if ground or pole mounted.

• Define cabinet finish (Unpainted or aesthetically painted, color)

• Define software needs and who provides (DBT or the LPA)

• Specify “guarantee and warranty” periods

• Specify if “prepare to stop when flashing” (PTSWF) operation be used. Specify where and the distance in advance of the intersection.

• Specify if concrete work pad required

• Specify if any proprietary items are required for system compatibility.

Signal Interconnection

• Specify which signals are to be interconnected and how (radio, twisted pair, fiber optic) and if is to be overhead or underground.

• Define master controller requirements.

• Specify telephone drop and modem requirements and who is responsible for maintaining the telephone account and for how long (final acceptance).

Vehicle Detection

• Define type and location of detection required (video, loops, magnetometers, microwave) along with specific requirements (size, lead-in cable and detector channel, delay/extension features, rack/shelf mounted, etc).

• Specify emergency vehicle preemption requirements.

1. Signal Support work required:  Yes  No.
2. Shall be galvanized steel. No wood poles. Provide additional pole requirements (painting systems, continuously tapered tubes, etc.) if required.
3. For span wire installations, pole strength shall be designed for 3% sag and pole height shall be designed for 5% sag.
4. Strain poles shall be a minimum size of Design 5 and of the anchor base type.
5. Location of the supports shall be as per the Traffic Engineering Manual.
6. Clearance from overhead electric wires shall be as per utility company requirements.

Specify if mast arms or span wires? If span wires:

Are simple spans allowed or is a pole required in each quadrant?

Can the alternate wire wrap be used or are pole clamps required?

Are supports aesthetically painted?

1. Vehicle Signal Heads: Yes  No
2. Shall be made of \_\_\_\_\_\_\_\_\_\_.
3. Lenses shall be 12 inch and made of \_\_\_\_\_\_\_\_\_\_.
4. Shall be completely \_\_\_\_\_\_ except for the inside of visors which shall be black.
5. Tri-stud wire entrance fitting
6. Far side mounting of signal heads shall be used as much as practical.
7. For protected/permissive operation of a 5-section signal head (either left or right turn), the recommended location of the signal head is over an extension of the channelizing line, through the intersection, that separates the turn lane and the through lane.
8. Shall have backplates.
9. Shall be rigidly mounted on mast arms or tethered on span wires.

Vehicle signal heads

• Specify if directional signal heads are required (typical if known high skews).

• Define signal head requirements (Aluminum or polycarbonate body, glass or polycarbonate lenses, tri-stud wire entrance fitting, rigid mounted [if on mast arms], incandescent or LED signal lamps)

Pedestrian signal heads

• Define location and requirements for pedestrian signal heads (Type, material, countdown, aluminum or polycarbonate, bracket arm or 2-piece clamshell mount, incandescent or LED, disconnect switch or electric meter)

1. Pull box:  Yes  No
2. Shall be concrete, CMS 725.08, 18 inch minimum opening size.
3. Shall not be located in curb ramp areas.
4. Shall not be located where subject to vehicular traffic.
5. Conduit:  Yes  No
6. Maximum conduit run length between pull boxes and/or poles is 200 feet.
7. Conduit under roadway pavement shall be 3 inch diameter minimum.
8. Conduit must be sized for the number and size of the conductors contained in the conduit. Cable fill should not exceed the allowable amount inside of the cross sectional area of the conduit as stated in the ODOT Traffic Engineering Manual.
9. Conduit shall be per CMS 725.04.
10. Cable and Wire:  Yes  No
11. Unswitched power cable shall not be run inside of conduit, poles or pull boxes containing other signal cables.
12. Lighting cables operating at voltages higher than 120 volts shall not be run inside of conduit, poles or pull boxes with signal cables.
13. Utility company approval shall be obtained for the attachment of any interconnect cables to utility poles, and for the location of power sources.
14. All abandoned cables shall be removed from aerial spans, conduit and pull boxes. Direct burial cables will be abandoned in place.
15. Signal messenger wire size shall be 3/8-inch diameter.

Specify minimum wire size and number of conductors for signal cable

Specify interconnect cable size

Specify wiring for future left turn signal heads if applicable

1. General
2. All signal installations shall be designed and equipped for “approach monitoring”. If a two-phase signal is used, a dual ring controller and cabinet wiring utilizing phases 2+6 and 4+8 will be furnished and installed.

Signal(s) part of an Intelligent Transportation System (as defined by the Traffic Engineering Manual, Part 13):  Yes  No

## Intelligent Transportation Systems (ITS)

1. ITS Work Required:  Yes  No

1. Reference the following documents for ITS requirements:

“Project Level ITS Architecture Report” dated \_\_\_\_\_\_\_\_\_\_\_

“Systems Engineering Analysis” dated \_\_\_\_\_\_\_\_\_

1. Other ITS Requirements: Specify

# PROJECT SCHEDULE REQUIREMENTS

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

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 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.

Designer notes within each proposal note ([PN 105](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN105_10192018_for_2019.pdf), [PN 107](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN107_10192018_for_2019.pdf), [PN 132](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN132_01182019_for_2019.pdf)) provides additional guidance for selecting which schedule requirements/proposal note(s) shall be included.

# PLAN SUBMITTALS AND REVIEW REQUIREMENTS

## Plan Components

All plans submitted by the DBT shall be in conformance with the following ODOT manuals unless otherwise noted by the LPA:

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.

1. Bridge Design Manual.

Note: Bridge subsummaries are required.

1. 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.

## 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 LPA of any apparent discrepancy between the various design and construction manuals and the Contract Documents.

The LPA shall have the discretion to dictate the level of Design review. The LPA’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 LPA 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 LPA 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 LPA will schedule a review meeting or issue review comments as appropriate.

## Comment Resolution Process

The language below is utilized by the Department and is highly suggested for LPAs but is optional.

This section establishes transmittal processes and interaction between the LPA 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 LPA 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 LPA shall establish a file transfer website (typically, a 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, LPA and DBT), file server location/IP address, known required persons needing access, and login requirements.

1. Procedure

The LPA 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 LPA 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 LPA and other third-party reviewers at Interim Design Submission. The LPA and applicable reviewing agencies shall review for Contract requirements. The LPA will utilize the CRS document to centralize all LPA employee Buildable Unit Design Submission comments.

LPA review comments will primarily focus on compliancy with the Contract Documents. The LPA will refrain from making excessive preferential and formatting comments. Reviewer preferential comments shall be marked “Preference” within the CRS. While formatting comments do not need responded to, the LPA reserves it’s right to reject a submission which, in its judgement, is not reasonably following required CADD standards.

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 LPA and other appropriate third-party reviewing agencies will review the DBT’s formal disposition to Interim Submittal review comments as well as revised plans to respond to previous comments. The LPA will include any additional comments based on the Final Design Submittal review within the CRS.

The DBT shall clearly identify if an LPA 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 LPA 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 LPA or other third-party review, require a change to a Contract, the DBT shall first contact the LPA for clarification and shall, within 10 days of receipt of the comments or direction, provide written notice to the LPA concerning the reasons why the DBT believes the scope has been changed.

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

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

1. The LPA shall notify the DBT, either within the CRS or other notice, if the LPA requires a Comment Resolution Meeting.
2. The DBT shall notify the LPA 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 LPA and the DBT, a comment resolution conference call may be sufficient.

The DBT shall obtain LPA 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 LPA’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 LPA and coordinate revisions for concurrence.

The LPA shall review to ensure all comments from final reviews have been resolved or “Closed” to the satisfaction of the LPA. There is no formal review period for Construction submission.

The DBT has the responsibility for ensuring the RFC meets all contract requirements. If upon LPA review it is determined that it is questionable as to whether comments received from the LPA 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 LPA review.

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

1. 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 LPA 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 LPA 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 LPA to discuss any comments from previous submittals that remain “Open” according to the reviewer. The DBT and the LPA 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 LPA 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 |

## 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 LPA.

The DBT shall create a folder for each BU on the LPA’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.

## 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.

## Optional Over-the-Shoulder Reviews

The DBT or the LPA 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 LPA.

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 LPA, may also participate in these meetings. The DBT or the LPA 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 LPA may also request an OTS review during any stage of design to facilitate review or design development.

## 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 LPA, 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 LPA in writing.

## Interim Design Review Submission

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

Interim Design Submission is defined as followed:

1. 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.
2. 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).
3. All other plan components and supplemental submittal requirements as defined as Stage 1 per the ODOT Location & Design, Volume 3.

Unless indicated below, the LPA 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.

Include any other agencies (for example, utilities, other local jurisdictions) performing review along with review time. This review time will be contractual and used in the DBT’s Progress Schedule so expectations with agencies shall be coordinated prior to RFP release.

|  |  |
| --- | --- |
| Submittal | Adjusted Review Time |
|  |  |
|  |  |
|  |  |
|  |  |

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, except that **each affected utility company shall receive one full size (22"x34") plans.**

|  |  |
| --- | --- |
|  | Number of half size Sets |
| LPA Production/ Design |  |
| LPA Construction |  |
| ODOT District ##  ATTN: District LPA Manager and LPA Construction Monitor |  |
| Each affected utility or railroad company |  |

## FINAL DESIGN Review Submission

For each Buildable Unit the DBT shall submit the Final Design submission for review by the LPA 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 LPA’s use in establishing testing requirements.

The LPA 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.

Include any other agencies (for example, utilities, local jurisdiction) performing review along with review time. This review time will be contractual and used in the DBT’s Progress Schedule so expectations with agencies shall be coordinated prior to RFP release.

|  |  |
| --- | --- |
| Submittal | Adjusted Review Time |
|  |  |
|  |  |
|  |  |
|  |  |

Following the review, the LPA 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 except that each affected utility company shall receive one full size (22"x34") plans:

|  |  |
| --- | --- |
|  | Number of half size Sets |
| LPA Production/ Design |  |
| LPA Construction |  |
| ODOT District ##  ATTN: District LPA Manager and LPA Construction Monitor |  |
| Each affected utility or railroad company |  |

## 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 LPA 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 LPA 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 full size (22" x 34") and/or half size (11" x 17") paper prints of the each plan submission simultaneously to the parties indicated below:

|  |  |
| --- | --- |
|  | Number of half size Sets |
| LPA Production/ Design |  |
| LPA Construction |  |
| ODOT District ##  ATTN: District LPA Manager and LPA Construction Monitor |  |
| Each affected utility or railroad company |  |

## Railroad Submittals

1. 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.

1. 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 LPA 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.

## Plan Distribution Addresses

Ohio Department of Transportation, District .

(Complete Address):

ATTN: District LPA Manager and LPA Construction Monitor

County Engineer (address and contact person) if applicable

City Engineer (address and contact person) if applicable

Utility Companies

(As shown in section 12)

## 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 LPA 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.

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

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

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.

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

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 LPA has approved the As-Built Construction Record-Drawings, the associated electronic files shall be delivered to the respective ODOT District. 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.

# 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 LPA, 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 LPA and railroad.