Maura Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Monica Tibbits-Nutt, Secretary & CEO
Jonathan L. Gulliver, Highway Administrator

massDOT
Massachusetts Department of Transportation
Highway Division

December 13, 2024

605311-128035

ADDENDUM NO. 10

To Prospective Proposers and Others on:

MARION-WAREHAM
FAP No. HIP(NGB)-003S(786)X
Bridge Replacement, M-05-001=W-06-013 & W-06-016, Marion Road/Wareham Road (Route 6) over Weweantic River
Design-Build

TECHNICAL & PRICE PROPOSALS DUE: Thursday, December 19, 2024, by 2:00P.M.

Transmitting revisions to the RFP Documents as follows:

RFP Volume I of III – Instructions to Proposers (September 12, 2024)
Revised page 43.

ATTACHMENT B: Document B00420
Revised pages 3, 4, and 5.

RFP Volume II of III – Technical Provisions (September 12, 2024)
Revised pages vii, viii, and 157 through 174 inclusive.

Modified the RFP Appendix folder as follows:

\Appendix\C\C.01\
Inserted Updated Highway CAD zip file: 605311 Highway CAD A-10.zip
Inserted new file: Marion - Wareham Addendum CAD Files List A-10.xlsx

\Appendix\D\
Deleted file: 00813DB Steel Price Adj. w Base Prices Design-Build 11-21-2024 A-7.pdf
Inserted new file: 00813DB Steel Price Adj. w Base Prices Design-Build 12-12-2024 A-10.pdf

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
mass.gov/massdot

ADDENDUM NO. 10 (Continued)

Please take note of the above, substitute the revised pages for the originals, extract and overwrite CAD files as identified in the Excel CAD file list, and acknowledge Addendum No. 10 in your Expedite Proposal file before submitting your bid.

Sincerely,

Eric M. Cardone Digitally signed by Eric M. Cardone Date: 2024.12.13 21:56:47 -05'00'

Eric M. Cardone, P.E.
Construction Contracts Engineer

EMC\ltp
cc: Narayana Kolla, P.E., Manager Alternative Procurement and Delivery
Valerie Kilduff, P.E., Design-Build Project Manager

⑩ ADDENDUM NO. 10, December 13, 2024
⑧ ADDENDUM NO. 8, December 6, 2024

3.4 PRICE PROPOSAL

The Price Proposal shall be submitted through the Bid Express on-line bidding exchange at http://www.bidx.com/. Electronic bid files are provided through the Bid Express on-line bidding exchange at http://www.bidx.com/. The Proposer shall follow the on-line instructions and review the help screens provided to assure that the schedule of items is prepared properly. The Proposer shall download and acknowledge any and all addenda files prior to submitting their final bid. Price Proposals shall be submitted in accordance with the requirements of the Bid Express Web Site.

At the designated time of Price Proposal submittal, the Bid Express web site requires a completed set of proposal forms submitted by the Proposer which includes the price proposal sheets (Document B00420), bid bond, addendum acknowledgement, and affidavit of non-collusion acknowledgement.

3.4.1 BID BOND

Every Proposal must be accompanied by a bid deposit in the form of a bid bond, or cash, certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the awarding authority, MassDOT. The amount of such a bid deposit shall be 5 percent of the value of the Price Proposal. Bid Bonds shall be submitted in accordance with Subsection 2.0 of the *MassDOT Standard Specifications for Highways and Bridges*, 2024 and the instructions posted on the Bid Express Web Site.

3.4.2 PAYOUT SCHEDULE

This Design-Build Project is a lump sum contract. Payments shall be made through a payout schedule based on major work items or tasks and in conjunction with Section 9.0 of RFP Volume II – Technical Provisions.

The Proposer's Price Proposal shall include:

- The base bid to include one lump sum cost for all design, construction, and construction engineering and Quality Control system, as required, and any warranties required.
- ⑩ Individual unit costs for bid items identified in the Price Proposal Form contained in Attachment B: Document B00420 Price Proposal Forms. These unit costs are intended to be used by MassDOT to validate the Proposer's Price Proposal. The Fixed Price established for Item 722.1 Schedule of Operations (Type A) - Fixed Price $_____ shall be entered as the unit cost. Please note: the unit price contained in each bid item is "all inclusive" (i.e. includes all costs associated with the item). These costs shall include, but not be limited to: design, engineering, project management, Quality Control, equipment procurement, ancillary equipment, transport, installation, integration, utilities, traffic protection, warranty, bonds, insurance and incidentals.
- ⑧ DBE Schedule of Participation and Letter of Intent. (NOTE: DBE forms to be submitted by the two (2) lowest Best Value Proposers in accordance with Document 00719DB)
- Non-collusion certificate. (NOTE: Submitted as part of the AASHTOWare Project Bids Submission per Section 2.5)
- Document B00420 – Price Proposal Form

⑩ ADDENDUM NO. 10, December 13, 2024

Project # 605311	Contract # 128035			
Location : MARION - WAREHAM				
Description : Bridge Replacement, M-05-001=W-06-013 & W-06-016, Marion Road/Wareham Road (Route 6) Over Weweantic River DESIGN-BUILD				
ITEM #	**QUANTITY**	**ITEM WITH UNIT BID PRICE WRITTEN IN WORDS**	**UNIT PRICE**	**AMOUNT**
100.3	1	HIGHWAY WORK AT _____ LUMP SUM		
115.1	1	DEMOLITION OF BRIDGE NO. M-06-001=W-06-013 AT _____ LUMP SUM		
115.2	1	DEMOLITION OF BRIDGE NO. W-06-016 AT _____ LUMP SUM		
127.4	30	REINFORCED CONCRETE DECK EXCAVATION (FULL DEPTH) AT _____ PER SQUARE YARD		
127.41	20	REINFORCED CONCRETE DECK EXCAVATION (PARTIAL DEPTH) AT _____ PER CUBIC YARD		
180.01	1	ENVIRONMENTAL HEALTH AND SAFETY PROGRAM AT _____ LUMP SUM		
180.02	80	PERSONAL PROTECTION LEVEL C UPGRADE AT _____ PER HOUR		
180.03	80	LICENSED SITE PROFESSIONAL SERVICES AT _____ PER HOUR		
181.11	500	DISPOSAL OF UNREGULATED SOIL AT _____ PER TON		

⑩ Item 100. has been deleted.

ADDENDUM NO. 10, December 13, 2024

Project # 605311 **Contract # 128035**

Location : MARION - WAREHAM

Description : Bridge Replacement, M-05-001=W-06-013 & W-06-016, Marion Road/Wareham Road (Route 6) Over Weweantic River DESIGN-BUILD

ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
181.12	100	DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY AT _____ PER TON		
181.13	100	DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY AT _____ PER TON		
181.14	10	DISPOSAL OF HAZARDOUS WASTE AT _____ PER TON		
182.1	1	INSPECTION AND TESTING FOR ASBESTOS AT _____ LUMP SUM		
182.2	260	REMOVAL OF ASBESTOS AT _____ PER FOOT		
184.1	10	DISPOSAL OF TREATED WOOD PRODUCTS AT _____ PER TON		
200.1	1	DRAINAGE AT _____ LUMP SUM		
227.3	9	REMOVAL OF DRAINAGE STRUCTURE SEDIMENT AT _____ PER CUBIC YARD		
227.31	460	REMOVAL OF DRAINAGE PIPE SEDIMENT AT _____ PER FOOT		

⑩ ADDENDUM NO. 10, December 13, 2024

⑨ ADDENDUM NO. 9, December 9, 2024

③ ADDENDUM NO. 3, October 21, 2024

Project # 605311 **Contract # 128035**

Location : MARION - WAREHAM

Description : Bridge Replacement, M-05-001=W-06-013 & W-06-016, Marion Road/Wareham Road (Route 6) Over Weweantic River DESIGN-BUILD

	ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
	451.	85	HMA FOR PATCHING AT _____ PER TON		
	600.1	1	GUARDRAIL AND FENCING AT _____ LUMP SUM		
⑩	722.1	1	SCHEDULE OF OPERATIONS (TYPE A) - FIXED PRICE $167,500 AT One Hundred Sixty Seven Thousand Five Hundred Dollars LUMP SUM	$167,500.00	$167,500.00
⑨ ③	740.3	41	ENGINEER'S FIELD OFFICE AND EQUIPMENT AT _____ PER MONTH		
	748.	1	MOBILIZATION AT _____ LUMP SUM		
③	755.2	1	TIDAL WETLAND MITIGATION AND SALT MARSH REPLICATION AREA AT _____ LUMP SUM		
	851.	1	TEMPORARY TRAFFIC CONTROL AT _____ LUMP SUM		
	851.11	30	TRAFFIC MANAGEMENT AND MOBILIZATION AT _____ PER DAY		
	900.9	1	PUNCHLIST/AS BUILTS REQUIREMENTS-FIXED PRICE $30,000 AT Thirty Thousand Dollars LUMP SUM	$30,000.00	$30,000.00

⑩ ADDENDUM NO. 10, December 13, 2024
⑦ ADDENDUM NO. 7, November 22, 2024

Labor Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

Columbus Day (Federal Holiday)
No work on major arterials from 5:00 AM on the Friday before, until the normal start of business on the following day

Veterans' Day (Federal Holiday)
No work restrictions due to traffic concerns.

Thanksgiving Day (Federal Holiday)
No work on major arterials from 5:00 AM two days before until the normal start of business on the following Monday.

Christmas Day (Federal Holiday)
No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day.

⑦ 2026 FIFA WORLD CUP – BOSTON, MASSACHUSETTS

The 2026 FIFA World Cup will be held at Gillette Stadium in Foxborough and related events will be held throughout the region. Matches and Fan Fest activities are scheduled from June 11, 2026 through July 19, 2026. MassDOT will impose work restrictions as necessary to minimize traffic impacts during FIFA events when the Contractor's operations could impact vehicular traffic, particularly on interstate highways and major arterials throughout the region and local roads near the event site. No additional compensation will be allowed for work restrictions except as determined under Subsection 8.10.

9.1.2 Schedule of Operations

(Replace Subsection 8.02 of the Standard Specifications with the following:)

An integrated cost and schedule controls program shall be implemented by the Contractor to track and document the progress of the Work from Notice to Proceed (NTP) through the Contractor Field Completion (CFC) Milestone. The Contractor's schedules will be used by the Engineer to monitor Project progress, plan the level-of-effort required by the Department's work force and consultants and as a critical decision-making tool. Accordingly, the Contractor shall ensure that it complies fully with the requirements specified herein and that its schedules are both accurate and updated as required by the specification throughout the life of the Project. Detailed requirements are provided in Section 9.1.3.

9.1.3 Construction Scheduling

⑩ 9.1.3.1 **General**

The Design-Builder's approach to prosecution of the Work shall be disclosed to the Department by submission of a Critical Path Method (CPM) schedule and a cost/resource loaded Construction Schedule as defined by the schedule type set forth below. These requirements are in addition to any requirements imposed in other sections.

This section establishes the requirement for scheduling submissions. There are four schedule types identified as types A, B, C and D. The schedule type applicable to this Project is Type A.

All schedules shall be prepared and submitted in accordance with this specification and the instructions contained in the Construction Schedule Toolkit located on the MassDOT-Highway Division website at https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit..

Type A –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded & Resource Loaded CPM
- Resources Graphic Reporting
- Cash Flow Projections from the CPM
- Cash Flow Charts
- Monthly Projected Spending Report (PSR)
- Design-Builder furnished CPM software and computer

Type B –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded & Resource Loaded CPM
- Monthly Projected Spending Report (PSR)
- Design-Builder furnished CPM software and computer

Type C –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Monthly Projected Spending Report (PSR)
- Design-Builder furnished CPM software and computer

Type D –

- Bar chart schedule updated monthly or at the request of the Engineer
- Short-term Construction Schedule
- Monthly Projected Spending Report (PSR)

9.1.3.2 **Equipment, Personnel**

A. Software Requirements

The Design-Builder shall use Primavera P6 computer scheduling software.

In addition to the requirements of Subsection 740 – Engineer's Field Office and Equipment, the Design-Builder shall provide to the Department one (1) copy of the scheduling software, one (1) software license and one (1) computer capable of running the scheduling software for the duration of the Contract. This computer and software shall be installed in the Engineer's Field Office. The computer and software shall be maintained and serviced at no additional cost to the Department.

B. Scheduler Requirements

The Scheduler shall be approved by the Engineer.

For Type A, B and C Schedules the name of the Design-Builder's Project Scheduler together with his/her qualifications shall be submitted to the Department for approval by the Engineer within seven (7) Calendar Days after NTP. The Project Scheduler shall have a minimum of five (5) years of project CPM scheduling experience, three (3) years of which shall be on projects of similar scope and value as the project for which the Project Scheduler is being proposed. References shall be provided from past projects that can attest to the capabilities of the Project Scheduler.

9.1.3.3 **Scheduling Methods**

A. Schedule Planning Session

The Design-Builder shall conduct a schedule planning session prior to submission of the Baseline Schedule. This session will be attended by the Department and its consultants. During this session, the Design-Builder shall present its planned approach to the project including, but not limited to:

1. the Work to be performed by the Design-Builder and its subcontractors;
2. the planned construction sequence and phasing; planned crew sizes;
3. summary of equipment types, sizes, and numbers to be used for each work activity;
4. all early work related to third party utilities;
5. identification of the most critical submittals and projected submission timelines;
6. estimated durations of major work activities;
7. the anticipated Critical Path of the project and a summary of the activities on that Critical Path;
8. a summary of the most difficult schedule challenges the Design-Builder is anticipating and how it plans to manage and control those challenges;
9. a summary of the anticipated quarterly cash flow over the life of the project.

This will be an interactive session, and the Design-Builder shall answer all questions that the Department and its consultants may have. The Design-Builder shall provide a written summary of the information presented and discussed during the session to the Engineer. The Design-Builder's Baseline Schedule and accompanying Schedule Narrative shall incorporate the information discussed at this Schedule Planning Session.

ADDENDUM NO. 10, December 13, 2024

B. Schedule Reviews by the Department

1. Baseline Schedule Reviews
   The Engineer will respond to the Baseline Schedule Submission within thirty (30) Calendar Days of receipt providing comments, questions and/or disposition that either accepts the schedule or requires revision and resubmittal. Rejected Baseline Schedules shall be resubmitted within fifteen (15) Calendar Days after receipt of the Engineer's comments.

2. Contract Progress Schedule / Monthly Update Reviews / Recovery Schedules
   The Engineer will respond to each submittal within twenty-one (21) Calendar Days. Rejected schedules shall be resubmitted by the Design-Builder within five (5) Calendar Days after receipt of the Engineer's comments.

The Engineer's review comments shall not be construed as direction to change the Design-Builder's means and methods. The review and acceptance of the CPM schedule does not relieve the Design-Builder of the responsibility for accomplishing the work within the contract required completion dates. Omissions and errors in the accepted CPM schedule shall not excuse performance less than that required by the Contract.

9.1.3.4 **Schedule Content and Preparation Requirements**

All schedules shall be prepared and submitted in accordance with the instructions contained in the Construction Schedule Toolkit located on the MassDOT-Highway Division website at: https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit and the following:

A. LOGIC

The schedules shall divide the Work into activities with appropriate logic ties to show:

1. conformance with the requirements of this Section and Section 9.1.2 - Schedule of Operations
2. the Design-Builder's overall approach to the planning, scheduling and execution of the Work
3. conformance with any additional sequences of Work required by the Contract Documents, including, but not limited to, Section 9.1 - Prosecution of Work and Standard Specifications Subsection 8.06 – Limitations of Operations.

B. ACTIVITIES

The schedule shall clearly define the progression of the Work from the Notice to Proceed (NTP) to Contractor Field Completion (CFC) by using separate activities, or including attributes within appropriate activities, to address each of the following::

1. Notice to Proceed
2. Work Breakdown Structure
3. The Critical Path is clearly defined and organized.
4. Float shall be clearly identified.
5. Detailed activities to satisfy permit requirements.
6. Subcontractor approvals at fifteen (15) Calendar Days from submittal to response
7. The preparation and submission of shop drawings, procedures, and other required submittals, with a planned duration that is to be demonstrated to the Engineer as reasonable.

8. The review and return of shop drawings, procedures, and other required submittals, approved or with comments, the duration of which shall be thirty (30) Calendar Days, unless otherwise specified or as approved by the Engineer.
9. Procurement of fabricated materials and equipment with long lead times, including time for review and approval of submittals required before procuring and fabricating.
10. Each component of the Work defined by specific activities.
11. Right-of-Way (ROW) takings that have been identified in the Contract.
12. Early Utility Relocation (by others) that has been identified in the Contract.
13. Interfaces with adjacent work, utility companies, other public agencies, sensitive abutters, and/or any other third-party work affecting the Contract.
14. Utility work to be performed in accordance with the Project Utility Coordination (PUC) Form as provided in Subsection 8.14 - Utilities Coordination, Documentation and Monitoring Responsibilities of the BTC Special Provisions
15. Access Restraints – restrictions on access to areas of the Work that are defined by the Department in the bid package, in Subsection 8.06 – Limitations of Operations or elsewhere in the Contract
16. Limitations of Work – time of year restrictions and any other limitations identified in the contract
17. Traffic work zone set-up and removal, night work and phasing
18. Material Certifications
19. Milestones listed in Section 9.1 - Prosecution of Work or elsewhere in the Contract Documents
20. For Type A and B Contracts only: All items to be paid for, including all Unit Price and Lump Sum pay items, shall be identified by activity. This shall include all non-construction activities such as engineering work; purchase of permanent materials and equipment, purchase of structural steel stock, equipment procurement, equipment delivery to the site or storage location and the representative amount of overhead/indirect costs that was included in the Design-Builder's Bid Prices.
21. Design-Builder's request for validation of FBU (ready to open to traffic)
22. Full Beneficial Use (FBU) Contract Milestone per the following requirements: The majority of contract Work has been completed and the asset(s) has been opened for full multi-modal transportation use, except for limited contract work items that do not materially impair or hinder the intended public use of the transportation facility. All anticipated lane takings have been completed, except for minor, short term work items and as defined in Section 9.1 - Prosecution of Work
23. The Department's confirmation of completed work to allow for FBU.
24. Design-Builder's request for validation of Substantial Completion
25. Department generated punch list of twenty-one (21) Calendar Days
26. Substantial Completion Contract Milestone as defined in the standard specifications.
27. Punch list Completion Period of at least thirty (30) Calendar Days per the requirements of Subsections 5.11 - Final Acceptance, 7.15 - Claims Against Contractors for Payment of Labor, Materials and Other Purposes
28. Design-Builder confirmation that all punchlist work and documentation has been completed.
29. Physical Completion of the Work Contract Milestone per the requirements of Subsection 5.11 - Final Acceptance and Section 9.1 - Prosecution of Work
30. Documentation Completion per the requirements of Subsection 5.11 - Final Acceptance and Section 9.1 - Prosecution of Work

31. Contractor Field Completion Contract Milestone (which can also be considered the completion date) per the following requirements: All physical contract Work is complete including punchlist. The Design-Builder has fully de-mobilized from field operations and as defined in Subsection 5.11

C. EARLY AND LATE DATES

Early Dates shall be based on proceeding with the Work or a designated part of the Work exactly on the date when the corresponding Contract Time commences. Late Dates shall be based on completing the Work or a designated part of the Work exactly on the corresponding Contract Time, even if the Design-Builder anticipates early completion.

D. DURATIONS

Activity durations shall be in Work Days. Planned Original Durations shall be established with consideration of resources and production rates that correspond to the Design-Builder's Bid Price. Within all of the Department-required schedules, the Design-Builder shall plan the Work using durations for all physical construction activities of no less than one (1) Work Day and no greater than fourteen (14) Work Days, unless approved by the Engineer as part of the Baseline Schedule Review.

Should there be an activity with a duration that is determined by the Engineer to be unreasonable, the Design-Builder will be asked to provide a basis of the duration using bid documents, historic production rates for similar work, or other form of validation that is acceptable to the Engineer. Should the Design-Builder and the Engineer be unable to agree on reasonable activity durations, the Engineer will, at a minimum, note the disagreement in the Baseline Schedule Review along with a duration the Engineer considers reasonable and the basis for that duration. A schedule that contains a substantial number of activities with durations that are deemed unreasonable by the Engineer will not be accepted.

E. MATERIALS ON HAND

The Design-Builder shall identify in the Baseline Schedule all items of permanent materials (Materials On Hand) for which the Design-Builder intends to request payment prior to the incorporation of such items into the Work.

F. ACTIVITY DESCRIPTIONS

The Design-Builder shall use activity descriptions in all schedules that clearly describe the work to be performed using a combination of words, structure numbers, station numbers, bid item numbers, work breakdown structure (WBS) and/or elevations in a concise and compact label.

G. ACTIVITY IDENTIFICATION NUMBERS

The Design-Builder shall use the activity identification numbering system specified in the MassDOT Highway Division Contractor Construction Schedule Toolkit.

ADDENDUM NO. 10, December 13, 2024

H. ACTIVITY CODES

The Design-Builder shall use the activity codes specified in the MassDOT-Highway Division Contractor Construction Schedule Toolkit.

I. CALENDARS

Different calendars may be created and assigned to all activities or to individual activities. Calendars define the available hours of work in each Calendar Day, holidays and general or project-specific non-Work Days such as Fish Migration Periods, time-of-year (TOY) restrictions and/or area roadway restrictions. All calendars shall extend two years beyond the current project completion date.

Project Special Provisions identify specific calendar restrictions some examples of special calendars include, but are not limited to:

- Winter Shutdown Period, specific work is required by separate special provision to be performed during the winter. See Section 9.1 (if applicable)
- Peak traffic hours on heavily traveled roadways. This shall be from 6:30 am to 9:30 am and from 3:30 pm to 7:00 pm, unless specified differently elsewhere in the Contract.
- Special requirements by sensitive abutters, railroads, utilities and/or other state agencies as defined in the Contract.
- Planting seasons for trees, shrubs and grasses and wetlands mitigation work.
- Cape Cod and the Islands Summer Roadway Work Restrictions: A general restriction against highway and bridge construction is enforced between Memorial Day and Labor Day, unless otherwise directed by the Engineer. Cape Ann Summer Roadway Work Restrictions: While there are no general restrictions for Cape Ann as there are for Cape Cod and the Islands, project-specific restrictions may be enforced.
- Turtle and/or Fish Migration Periods and/or other in-water work restrictions: Refer to the Project Special Provisions for specific restrictions. .
- Working over Waterways Restricted Periods:
- Night-time paving and striping operations, traffic and temperature restrictions:
- Utility Restrictions shall be as specified within the Contract.

J. FLOAT

For the calculation of float in the CPM schedule, the setting for *Retained Logic* is required for all schedule submissions, starting with the Baseline Schedule Submission. Should the Design-Builder have a reason to propose that an alternative calculation setting such as *Progress Override* be used, the Design-Builder shall obtain the Engineer's approval prior to modifying to this setting.

K. COST AND RESOURCE LOADING (Types A and B only)

For all Type A and B Schedules, the Design-Builder shall provide a cost and resource-loaded schedule with an accurate allocation of the costs and resources necessary to complete the Work. The costs and resources shall be assigned to all schedule activities in order to enable the Design-Builder to efficiently execute the Contract requirements and the Engineer to validate the original plan, monitor progress, provide cash flow projections, and analyze delays.

1. Each schedule activity shall have an assigned cost that accurately represents the value of the Work. Each schedule activity shall have its resources assigned to it by craft and the anticipated hours to accomplish the work. Each schedule activity's equipment resources shall be assigned to it by equipment type and hours operated. Front-loading or other unbalancing of the cost distribution will not be permitted.
2. The sum of the cost of all schedule activities shall be equal to the Design-Builder's Bid Price.
3. Indicating the labor hours per individual, per day, by craft and equipment hours/day will be acceptable.
4. The Engineer reserves the right to use the cost-loading as a means to resolve changes, disputes, time entitlement evaluations, increases or decreases in the scope of Work, unit price renegotiations and/or claims.
5. For all Type A and B Schedules, all subnets, fragnets, Proposal Schedules, and Recovery Schedules shall be cost and resource- loaded to help to quickly validate and monitor the duration of the Work to be performed.
6. For Type A Schedules, cost-loading of the schedule will also be used for cash flow projection purposes.
7. The cost-loading of each activity shall indicate the portion of the cost for that activity that is applicable to a specific bid item (cost account.) The total cost for each cost account must equal the bid item price.

L. NOT TO BE USED IN THE CONTRACTOR'S CPM SCHEDULE

1. Milestones or constraint dates not specified in the Contract
2. Scheduled work not required for the accomplishment of a Contract Milestone
3. Use of activity durations, logic ties and/or sequences deemed unreasonable by the Engineer
4. Delayed starts of follow-on trades
5. Float suppression techniques
6. Leads such as leads, lags, SS, SF, & FF relationships without the expressed permission of the Department.

9.1.3.5 **Submittal Requirements**

All schedules shall be prepared and submitted in accordance with the requirements listed below.

Each monthly Contract Progress Schedule submittal shall be uniquely identified.

ADDENDUM NO. 10, December 13, 2024

Each Submission shall, at a minimum, include the following:

a. Narrative
b. Schedule submittals shall be signed by the Scheduler
c. Schedule Printout - All Activities
d. Schedule Printout - Critical Path Layout
e. Schedule Printout - Remaining Work
f. Schedule Printout - Top 3 Float Path
g. Work Breakdown Structure (WBS) Summary
h. Project Spending Report (PSR) in Portable Document Format (.PDF)
i. Project Spending Report (PSR) in Microsoft Excel spreadsheet (.XLS)
j. Oracle Primavera P6 Schedule File (.XER)

All digital file submittals will be labeled with the following information.

- Contract Number
- Project Number
- Project locations (i.e., town(s))
- Brief description
- Submittal description (i.e., UP07)
- Data Date (MM-DD-YY)
- File Description (i.e., Critical Path)

Example: C110464 (P606309) - Orange Route 2 over 202 – UP23 (07-15-22) - Critical Path

A. Narratives

A written narrative shall be submitted with every schedule submittal. The narrative shall:

1. itemize and describe the flow of work for all activities on the Critical Path in a format that includes any changes made to the schedule since the previous Contract Progress Schedule / Monthly Update or the Baseline Schedule, whichever is most recent.
2. provide a description of any specification requirements that are not being followed. Identify those that are improvements and those that are not considered to be meeting the requirements.
3. provide all references to any Notice of Delay that has been issued, within the time period of the Contract Progress Schedule Update, by letter to the Engineer. Note that any Notice of Delay that is not issued by letter will not be recognized by the Engineer. See Subsection 9.1.3.7.A – Notice of Delay.
4. provide a description of each third-party utility's planned vs. actual progress and note any that are trending late or are late per the durations and commitments as provided in the PUC Form; provide a description of the five (5) most important responses needed from the Department and the need date for the responses in order to maintain the current Schedule of Record.
5. provide a description of all critical issues that are not within the control of the Design-Builder or the Department (third party) and any impact they had or may have on the Critical Path.
6. provide a description of any possible considerations to improve the probability of completing the project early or on time.
7. compare Early and Late Dates for activities on the Critical Path and describe reasons for changes in the top three (3) most critical paths.
8. describe the Design-Builder's plan, approach, methodologies, and resources to be employed for completing the various operations and elements of the Work for the top three (3) most critical paths. For update schedules, describe and propose changes to those plans and verify that a Proposal Schedule is not required.

9. describe, in general, the need for shifts that are not 5 days/week, 8 hours/day, the holidays that are inserted into each calendar and a tabulation of each calendar that has been used in the schedule.
10. describe any out-of-sequence logic and provide an explanation of why each out-of-sequence activity does not require a correction, if one has not been provided, and an adequate demonstration that these changes represent the basis of how these activities will be built, including considerations for resources, dependencies, and previously approved production rates.
11. identify any possible duration increases resulting from actual or anticipated unit price item quantity overruns as compared to the baseline duration, with a corresponding suggestion to mitigate any possible delays to the Critical Path. If the delay is anticipated to impact the Critical Path, refer to Subsections 4.06 – Increased or Decreased Contract Quantities and 8.10 – Determination and Extension of Contract Time for Completion and submit a letter to the Engineer notifying of a potential delay.
12. include a schedule log consisting of the name of the schedule, the data date and the date submitted.
13. include and describe any notifications, communications and coordination meetings with third-parties such as utility companies that occurred from the last update including personnel names, job titles and contact information, date of meeting(s)/correspondence(s), topics discussed, and reasons the third party provided for deviations from the PUC form.

B. CPM Bar Charts

One (1) time-scaled bar chart containing all activities shall be prepared and submitted using a scale that yields readable plots and that meets the requirements of Subsection 9.1.3.4 – Schedule Content and Preparation Requirements Activities shall be linked by logic ties and shown on their Early Dates. Critical Paths shall be highlighted, and Total Float shall be shown for all activities.

A second timescaled bar chart shall also be prepared containing only the Critical Path or, if the Critical Path is not the longest path, the Longest Path using a scale that yields readable plots and that meets the requirements of Subsection 9.1.3.4 – Schedule Content and Preparation Requirements. Activities shall be linked by logic ties and shown on their Early Dates. Total Float shall be shown for all activities.

C. Detailed Activity Schedule Comparisons

A Detailed Activity Schedule Comparison (DASC) is a simple reporting tool in the format of a graphical report that will provide Resident Engineers with immediate, timely and up-to-date information. The DASC consists of an updated bar chart that overlays the current time period's bar chart onto the previous time period's bar chart for an easily read comparison of progress during the present and previous reporting periods.

D. Activity Cost Report and Monthly Cash Flow Projections (Type A only)

With each Contractor Quantity Estimate (CQE), the Design-Builder shall submit an Activity Cost Report and Cash Flow Projection that includes all activities grouped by Contract Bid Item.

The Activity Cost Report shall be generated from the Schedule of Record and shall be the basis of the Monthly Cash Flow Projection. Within each contract Bid Item, activities shall be sequenced by ascending activity identification number and shall show:

1. activity ID and description,
2. forecast start and finish dates for each activity and,
3. when submitted as a revised schedule, actual start and finish dates for each completed activity.
4. any variance to the estimated contract quantity shall be shown.

E. Resource Graphs (Type A only)

Monthly and cumulative resource graphs for the remaining Contract period using the Early Dates and Late Dates in the Contract Progress Schedule shall be included as part of each schedule submittal.

F. Projected Spending Reports

A Projected Spending Report (PSR) shall be prepared and submitted monthly. The PSR shall indicate the monthly spending (cash flow) projection for each month from NTP to Contractor Field Completion (CFC). Each month's actual spending shall be calculated using all CQEs paid during that month. The Projected Spending Report (PSR) shall be depicted in a tabular format and provided in both an .XLS and .PDF.

9.1.3.6 Progress Schedule Requirements

A. Baseline Schedule

The Baseline Schedule shall be due thirty (30) Calendar Days after Notice to Proceed (NTP). The Baseline Schedule shall only reflect the Work awarded to the Design-Builder and shall not include any additional work involving Extra Work Orders or any other type of alleged delay. The Baseline Schedule shall be prepared and submitted in accordance with Sections 9.1.3.4 - Schedule Content and Preparation Requirements and 9.1.3.5 - Submittal Requirements. Once the Baseline Schedule has been accepted by the Engineer, with or without comments, it shall represent the as-planned schedule for the Work and become the Contract Progress Schedule of Record until such time as the schedule is updated or revised under Sections 9.1.3.6.C - Contract Progress Schedules / Monthly Updates, 9.1.3.7.C - Recovery Schedules and 9.1.3.7.D - Proposal Schedules.

The Cost and Resource-Loading information (Types A and B only) hall be provided by the Design-Builder within forty-five (45) Calendar Days after NTP.

The Engineer's review comments on the Baseline Schedule and the Design-Builder's responses to them will be maintained for the duration of the Contract and will be used by the Engineer to monitor the Design-Builder's work progress by comparing it to the Contract Progress Schedule / Monthly Update.

B. Interim Progress-Only Schedule Submissions

The first monthly update of the Contract Progress Schedule/Monthly Update is due within seventy (70) Calendar Days after Notice to Proceed (NTP.) The Baseline Schedule review period ends at sixty (60) Calendar Days after NTP, see Section 9.1.3.3.B - Schedule Reviews by the Department. If the Baseline Schedule has not been accepted within sixty (60) Calendar Days after NTP, an Interim Progress-Only Schedule shall be due within seventy (70) Calendar Days after NTP. The purpose of the Interim Progress-Only Schedule is to document the actual progress of all activities, including non-construction activities, from NTP until the Baseline Schedule is accepted.

C. Contract Progress Schedules / Monthly Updates

The first Contract Progress Schedule shall be submitted by the Design-Builder no later than seventy (70) Calendar Days after NTP. The data date for this first Progress Schedule shall be two months (approximately sixty (60) Calendar Days) after NTP. Subsequent Progress Schedules shall be submitted monthly.

Each Contract Progress Schedule shall reflect progress up to the data date. Updated progress shall be limited to asbuilt sequencing and asbuilt dates for completed and inprogress activities. Asbuilt data shall include actual start dates, remaining Work Days and actual finish dates for each activity, but shall not change any activity descriptions, the Original Durations, or the Original Resources (as planned at the time of bid), without the acceptance of the Engineer. If any activities have been completed out-of-sequence, the Design-Builder shall propose new logic ties for affected in-progress and future activities that accurately reflect the previously approved sequencing. Alternatively, the Design-Builder may submit to the Engineer for approval an explanation of why an out-of-sequence activity does not require a correction and an adequate demonstration that the changes accurately represent how the activities will be built, including considerations for resources, dependencies, and previously approved production rates. Once approved by the Engineer, the Design-Builder may incorporate the changes in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

No revisions to logic ties; sequence, description, or duration of future activities; or planned resource costs shall be made without prior approval by the Engineer.

Any proposed logic changes for in-progress or future activities shall be submitted to the Engineer for approval before being incorporated into a Contract Progress Schedule. The logic changes must be submitted using a Proposal Schedule or a schedule fragnet submission. Once approved by the Engineer, the Design-Builder may incorporate the logic in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

For any proposed changes to the original sequence, description or duration of future activities, the Design-Builder shall submit to the Engineer for approval an explanation of how the proposed description or duration change reflects how the activity will be progressed, including considerations for resources and previously approved production rates. Any description or duration change that does not accurately reflect how the activity will be progressed will not be approved by the Engineer. Once approved by the Engineer, the Design-Builder may incorporate the changes in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

Contract Progress Schedules that extend performance beyond the Contract Time or beyond any Contract Milestone shall not be approved by the Engineer. The Design-Builder shall submit a Recovery Schedule, or a Time Entitlement Analysis, if any Contract Progress Schedule/Monthly Update indicates a failure to meet the Contract Dates.

The Design-Builder shall require each fabricator of critical items (Steel Girders, Pre-cast Elements) to provide a Monthly Fabrication schedule which shall be submitted to MassDOT with each Statused Contract Progress Schedule on a monthly frequency.

D. Short-Term Construction Schedule

The Design-Builder shall provide a Short-Term Construction Schedule that details daily work activities, including any multiple shift work that the Design-Builder intends to conduct, in a spreadsheet format. The daily activities shall directly correspond to the Contract Progress Schedule activities, with a matching reference to the activity identification number in the Contract Progress Schedule and may be at a greater level of detail. The Short-Term Construction Schedule shall be submitted every two weeks. It shall display all work for a thirty-five (35) Calendar Day period consisting of completed work for the two (2) week period prior and all planned work for the following three (3) week period. The initial submission shall be provided no later than thirty (30) Calendar Days after NTP or as required by the Engineer.

The Design-Builder shall be prepared to discuss the Short-Term Construction Schedule, in detail, with the Engineer in order to coordinate field inspection staff requirements, the schedule of work affecting abutters and any corresponding work with affected utilities. Short-Term Construction Schedules shall be prepared and submitted in accordance with Sections 9.1.3.4 - Schedule Content and Preparation Requirements and 9.1.3.5 - Submittal Requirements.

9.1.3.7 Impacted Schedule Requirements

A. Notice of Delay

The Design-Builder shall notify the Engineer in writing, with copies to the District and State Construction Engineers, within fifteen (15) of the start of any delays to the Critical Path that are caused by actions or inactions that were not within the control of the Design-Builder. Delay notifications that are not provided in a letter to the Engineer, such as a delay notification in the schedule narrative, will not be recognized as contractual notice in the determination of any Time Extension related to the impacts to the work associated with this specific alleged delay. Should such a delay continue for more than one (1) week, the Design-Builder shall note it in the Schedule Narrative until the delay is no longer impacting the Critical Path for the completion of the Contract Milestones. The Engineer will evaluate the alleged delay and its impact and will respond to the Design-Builder within ten (10) Calendar Days after receipt of a notice of delay.

B. Time Entitlement Analysis

A Time Entitlement Analysis (TEA) shall consist of a descriptive narrative, prepared in accordance with Section 9.1.3.5.A - Narratives, and an as-built CPM schedule, which may be in the form of a schedule fragnet that has been developed from the project's Contract Progress Schedule of Record, and illustrates the impact of a delay to the Critical Path, Contract Milestones and/or Contract Completion Date as required in Subsection 8.10 - Determination and Extension of Contract Time for Completion. TEAs shall also be used to determine the schedule impact of proposed Extra Work Orders (EWO) as also required in Subsection 8.10.

TEAs shall be prepared and submitted in accordance with the requirements of Sections 9.1.3.4 - Schedule Content and Preparation Requirements and 9.1.3.5 - Submittal Requirements and shall be based on the Contract Progress Schedule of Record applicable at the start of the delay or impact from an EWO. A TEA fragnet must start with a specific new activity describing the work contained in either a Notice of Delay previously submitted to the Department per Section 9.1.3.7.A - Notice of Delay or an EWO.

TEAs shall be submitted:

1. as part of any Extra Work Order that may impact Contract Time,
2. with a request for a Time Extension,
3. within fifteen (15) Calendar Days after a request for a TEA by the Engineer for any other reason.

A TEA shall be submitted to the Engineer before any Time Extension is granted to the Design-Builder. Time Extensions will not be granted unless the TEA accurately reflects an evaluation of all past delays and the actual events that occurred that impacted the Critical Path. The TEA must also demonstrate a plan for the efficient completion of all of the remaining work through an optimized CPM Schedule. The analysis shall include all delays, including Design-Builder-caused delays, and shall be subdivided into timeframes and causes of delays.

TEAs shall incorporate any proposed activities, logic ties, resource considerations, and activity costs required to demonstrate the schedule impacts most efficiently in addition to detailing all impacts to existing activities, logic ties, the Critical Path, Contract Milestones, and the Contract Completion Date. In addition, TEAs shall accurately reflect any changes made to activities, logic ties, restraints, and activity costs, necessitated by an Extra Work Order or other schedule impact, for the completion of the remaining work. The Design-Builder shall provide TEAs that demonstrate that all delays have been mitigated to the fullest extent possible without requiring an Equitable Adjustment to the original bid basis.

All TEAs shall clearly indicate any overtime hours, additional shifts and the resources that are proposed to be incorporated in the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts. The Engineer shall have the right to require that overtime hours and/or additional shifts be used to minimize the duration of Time Extensions if it is determined to be in the best interest of the Department to do so.

When accepted, the changes included in a TEA shall be incorporated into the next Contract Progress Schedule per the requirements of Subsection 9.1.3.6.C - Contract Progress Schedules / Monthly Updates. During the review of any TEA, all Contract Progress Schedules shall continue to be submitted as required.

The Engineer may request that the Design-Builder prepare a Proposal Schedule or a Recovery Schedule to further mitigate any delays that are shown in the accepted TEA or Contract Progress Schedule.

C. Recovery Schedules

The Design-Builder shall promptly report to the Engineer all schedule delays during the prosecution of the Work. Contract Progress Schedules that predict performance extended beyond the Contract Time or beyond any Contract Milestone shall not be approved as the schedule of record. This requirement is critical to the Department's ability to make informed decisions regarding Contract Time and costs.

The Design-Builder shall submit a Recovery Schedule within fifteen (15) Calendar Days of a Contract Progress Schedule submission that shows failure to meet the Contract Dates unless a recovery schedule is waived by the Department. Waiving the recovery schedule does not relieve the Design-Builder of responsibility for the delay. The Department may revoke the waiver of a Recovery Schedule, at which time a Recovery Schedule shall be submitted within fifteen (15) Calendar Days of the Design-Builder being notified.

Changes represented in accepted Recovery Schedules shall be incorporated into the next Contract Progress Schedule.

D. Proposal Schedules

A Proposal Schedule is an alternative schedule used to evaluate proposed changes to the Contract scope or significant alternatives to previously approved approaches to complete the Work, which may include changes to activity durations, logic, and sequence. For Types A and B Schedules, the Proposal Schedule shall be cost and resource loaded.

A Proposal Schedule may be requested by the Department at any time or may be offered by the Design-Builder. The Engineer may request that the Design-Builder prepare a Proposal Schedule to further mitigate any delays that are shown in an accepted TEA or Contract Progress Schedule.

The Design-Builder shall submit the Proposal Schedule within thirty (30) Calendar Days of a request from the Department.

The Proposal Schedule shall not be considered a Schedule of Record until the logic, durations, narrative, and basis of the Proposal Schedule have been accepted by the Engineer. If the Proposal Schedule took the form of a fragnet, it must be incorporated into the Contract Progress Schedule of Record showing the current progress of all other activities and the impacts/results of the changes made by the Proposal Schedule before the Proposal Schedule is accepted by the Department.

Proposal Schedules shall clearly indicate any proposed acceleration including overtime hours, additional shifts, and the resources that are proposed to be incorporated in the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts. Proposal Schedules that contain a cost element shall be submitted with a separate Cost Proposal.

Changes represented in the accepted Proposal Schedules shall be incorporated into the next Contract Progress Schedule. During the review of any Proposal Schedule, all Contract Progress Schedules shall continue to be required every month.

E. Disputes

All schedules shall be submitted, reviewed, dispositioned, and accepted in the timely manner specified herein so as to provide the greatest possible benefit to the execution of this Contract.

The Design-Builder may dispute a decision by the Engineer by filing a claim notice within seven (7) days after the Design-Builder's request for additional time has been denied or if the Design-Builder does not accept the number of days granted in a time extension. The Design-Builder’s claim notice shall include a revised time entitlement analysis that sufficiently explains the basis of the time-related claim. Failure to submit the required time entitlement analysis with the claim notice shall result in denial of the Design-Builder 's claim. A determination on the Design-Builder’s claim shall be in accordance with Subsection 7.16 Claims of Contractor for Compensation. Pending resolution of any dispute, the last schedule accepted by the Engineer will remain the Contract Schedule of Record.

9.1.3.8 **Method of Measurement**

Schedule of Operations (Types A, B, C and D)

The project bid documents specify the fixed-price amounts to be paid to the Design-Builder for the Project Schedule requirements contained herein. Each Proposer shall include this fixed price bid item amounts in their bid. Failure to do so may be grounds for the rejection of the bid.

This fixed price amount is for payment purposes only and is separate from what the Department considers to be the Design-Builder's General Condition costs. If the Design-Builder deems it necessary to include additional costs to provide all of the requirements of this section, these additional costs shall be included in the Design-Builder's overall bid price.

All required schedule-related work, including, but not limited to computers, computer software, the planning and coordination with utilities, training, schedule preparation and schedule submittals will be paid for under the fixed price amount.

Twenty percent (20%) of this pay item will be paid upon the Engineer's acceptance of the Design-Builder's Baseline Schedule, prepared and submitted in accordance with Section 9.1.3.6.A.

The remaining eighty percent (80%) of this pay item will be paid in equal monthly installments distributed across the Contract Duration from Notice to Proceed (NTP) to Contractor Field Completion (CFC), less the 2 months required for the submittal and review of the Baseline Schedule in accordance with the following formula:

$$\text{Monthly Payment} = \frac{\text{Remaining Fixed Price amount (80\% of Item 100.)}}{\text{Contract Duration in whole months} - 2 \text{ months}}$$

The Schedule of Operations pay item will be adjusted to pay for only the actual quantity of schedules that have been submitted in accordance with this section.

Should there be a Time Extension granted to the Design-Builder, the Engineer may provide an Equitable Adjustment for additional Contract Progress Schedule Updates at intervals directed by the Engineer. The monthly payment will be the basis for this Equitable Adjustment.

9.1.3.9 **Basis of Payment**

The timely and accurate submission of the Baseline Schedule is critical to the Contract and the Department's ability to make informed decisions. Only payments under Item 740.3 - Engineer's Field Office and Equipment and Item 748 – Mobilization will be made until the Baseline Schedule is accepted by the Engineer.

All required schedule-related work, including, but not limited to computers, computer software, the planning and coordination with utilities, training, schedule preparation and schedule submittals (including monthly progress schedules, short-term schedules, project spending reports, TEAs, recovery schedules or impacted schedules) shall be included in this work.

No payment for any other pay item will be processed beyond seventy-five (75) Calendar Days from Notice to Proceed (NTP) until the Baseline Schedule is accepted by the Engineer. Until the Engineer's acceptance of the Baseline Schedule, the combined total of all payments made to the Design-Builder will be limited to an amount no greater than the total price for Item 748 - Mobilization or 3% of the contract price, whichever is less.

All Contract Progress Schedule Updates submitted later than ten (10) Calendar Days after the CQE (Contract Quantity Estimate) completion date, or greater than forty (40) Calendar Days from the Data Date of the previous submission, will be deemed to be no longer useful and will not qualify for payment. The late submission of Impacted schedules, including TEAs, recovery schedules and proposal schedules will result in the forfeiture of the monthly payment for the month in which they were due and subsequent months until the submission is made. Late submission of missed submittals will not result in recovery of the previously forfeited portion of the Schedule of Operations Fixed Price Payment Item.

Failure to submit schedules as and when required may result in the forfeiture of that portion of the Schedule of Operations Fixed Price Payment and/or the withholding of the full or partial CQE payments by the Engineer.

Failure to submit schedules that are acceptable to the Engineer may result in the forfeiture of that portion of the Schedule of Operations Fixed Price Payment and/or the withholding of the full or partial CQE payments by the Engineer.

The Schedule of Operations pay item will be adjusted to pay for only the actual quantity of schedules that have been submitted in accordance with this section.

The Design-Builder's failure or refusal to comply with the requirements of this Section shall be reasonable evidence that the Design-Builder is not prosecuting the Work with due diligence and may result in the Engineer withholding of full or partial payments of all work performed.

9.1.3.10 **Payment Items**

722.1	SCHEDULE OF OPERATIONS (TYPE A) - FIXED PRICE $_____	LUMP SUM
722.2	SCHEDULE OF OPERATIONS (TYPE B) - FIXED PRICE $_____	LUMP SUM
722.3	SCHEDULE OF OPERATIONS (TYPE C) - FIXED PRICE $_____	LUMP SUM

9.2 ACCESS RESTRAINTS

[**THIS SECTION NOT APPLICABLE**]

9.3 INCENTIVE/DISINCENTIVE REQUIREMENTS

[**THIS SECTION NOT APPLICABLE**]