



**FINAL REQUEST FOR PROPOSALS
for The New I-64 Design-Build Project**

**BOOK 2 — PERFORMANCE
REQUIREMENTS**

Project Number J6I0978
Missouri Department of Transportation
1590 Woodlake Drive
Chesterfield, MO 63017





CONTENTS of BOOK 2

Section	Title
1	Configuration Requirements
2	Project Management
3	Quality Management
4	Public Information
5	Environmental
6	Third Party Agreements
7	Utilities
8	Right of Way
9	Survey
10	Geotech and Earthwork
11	Signing, Pavement Marking, and Lighting
12	Drainage
13	Roadways and Pavements
14	Signals and Intelligent Transportation Systems
15	Structures
16	Urban Design
17	Maintenance of Traffic
18	Maintenance During Construction



1 CONFIGURATION REQUIREMENTS

The Project configuration requirements are as follows:

- The Contractor shall provide direct interstate to interstate connections at the junction of I-64 and I-170
- The Contractor shall provide at least one additional mainline capacity lane on I-64 from west of Spoede Road to I-170 in both directions
- All Work is to be constructed within the Right of Way shown in Book 4, except for additional Right of Way or Permanent Easements as allowed in Section 8



2 PROJECT MANAGEMENT

All Project Management Activities, including scope, schedule, cost and document management shall be based on the Work Breakdown Structure (WBS) provided in Book 4. The Contractor shall not change the WBS at levels I through IV except that the Contractor shall add Activities to level IV where level IV is required to be detailed by area. The Contractor shall provide additional breakdown below level IV to meet requirements of this section. The Contractor shall incorporate the WBS into the Contract Schedules that shall be used to manage the Project.

2.1 Schedules

Contract Schedules include the Preliminary Baseline Schedule, Original Baseline Schedule, Revised Baseline Schedule, Monthly Progress Schedule, Recovery Schedule, and the As-Built Schedule.

2.1.1 Preliminary Baseline Schedule

The Preliminary Baseline Schedule is the initial Project schedule for the purpose of initiating Work on the Project. The Preliminary Baseline Schedule will be used to evaluate progress and payment for up to the first 120 days of the Project. The Preliminary Baseline Schedule will be replaced with the Approved Original Baseline Schedule as a condition of NTP2.

The Contractor shall submit the Preliminary Baseline Schedule to MoDOT within fifteen Working Days following NTP1. Activities occurring within 120 Days following NTP1 are subject to the 40-Day maximum duration requirements.

2.1.2 Original Baseline Schedule

The Original Baseline Schedule is the Contractor's original plan for the Project from NTP1 through Final Acceptance. It shall represent conditions of the Project at NTP1 and shall not be modified to reflect progress from NTP1 through Original Baseline Schedule Approval.

The Contractor shall submit the Original Baseline Schedule to MoDOT for Approval within 90 Days after issuance of NTP1. Once Approved, this schedule shall become the Baseline Schedule against which all progress and revisions shall be measured. The Original Baseline Schedule shall not change after Approval. The Original Baseline Schedule shall be the basis for the Monthly Progress Schedule by the Contractor in its scheduling and performance of the Work.

2.1.3 Revised Baseline Schedule

The Revised Baseline Schedule is defined as the Original Baseline Schedule with cost and schedule changes from Approved Change Orders, including Work Orders that become Change Orders, incorporated. Each Revised Baseline Schedule shall have a unique name that includes the revision number. This schedule will not show



progress but shall maintain the original data date from the Original Baseline Schedule as a baseline.

The Contractor shall submit a Revised Baseline Schedule to MoDOT for Approval within 30 Days of any Approved cost or schedule changes. Once Approved, this schedule will become the Baseline Schedule against which all progress and revisions shall be measured.

2.1.4 Monthly Progress Schedule

The Monthly Progress Schedule shows actual progress against the Baseline Schedule and the planned execution for the remainder of the Project. Monthly progress updates shall accurately represent all planning changes, adjustments, or updates in the sequencing and timing of Work remaining that have been made or are required to be made to ensure that the schedule stays current with the Contractor's plan for completing the Work. The Contractor may include modifications, subject to MoDOT Approval, such as adding or deleting Activities or changing Activity durations or logic that do not (1) alter the Critical Path or near Critical Path or (2) extend the Completion Deadlines or (3) disrupt the integrity or comparative relationship between the Baseline Schedule and the Monthly Progress update.

The Monthly Progress Schedule shall be submitted to MoDOT each month, concurrent with the invoice submittal. The Monthly Progress Schedule shall include all information current as of the data date.

2.1.5 Recovery Schedule

The Recovery Schedule is defined as the Contractor's program and proposed plan for the recapture of lost schedule progress and to achieve Lane Closure Duration Deadlines, Segment Completion Deadlines, or the Project Completion Deadline, whichever are applicable. The Recovery Schedule shall be based on the latest Monthly Progress Schedule and shall include equivalent detail. The Recovery Schedule shall show the proposed changes to the schedule, include cost loading and additional detail to substantiate the recovery plan, and shall reflect all proposed changes to WBS Level V Activities through Project completion.

If the Work is lagging the late start cost curve in the Current Baseline Schedule for a period that exceeds the greater of (a) fifteen Days in the aggregate or (b) that number of Days in the aggregate that equals 10% of the days remaining until the Project Completion Deadline, then the Contractor, within fourteen Days after Contractor first becomes aware of such schedule delay, shall prepare and submit a Recovery Schedule demonstrating the Contractors program and proposed plan to regain lost schedule progress and to achieve all Lane Closure Duration Deadlines, Segment Completion Deadlines, the Project Completion Deadline and Final Acceptance of the Project to MoDOT for review and Approval. MoDOT will notify the Contractor within fourteen Days after receipt of each such Recovery Schedule whether the schedule is Approved or describing changes that MoDOT believes should be made to the schedule. The Contractor shall incorporate and fully include the Recovery Schedule (including MoDOT's comments) into the next scheduled



Monthly Progress Schedule (or, if the next scheduled Monthly Progress Schedule is due within seven Days of Approval of the Recovery Schedule, then the Recovery Schedule shall be incorporated into the subsequent Monthly Progress Schedule), and shall concurrently provide to MoDOT a Revised Baseline Schedule.

2.1.6 As-Built Schedule

The last Monthly Progress Schedule submitted shall be identified by the Contractor as the As-Built Schedule. The As-Built Schedule shall reflect the exact manner in which the Contractor executed the Work (including start and completion dates, Activities, actual durations, sequences, and logic), and shall be signed and certified by the Contractor's Project Manager and the Contractor's scheduler as being a true reflection of the way in which the Work was executed at the time of Final Acceptance.

2.1.7 Float

Float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, for each and every Activity in the schedule. Float shall be for the benefit of all parties to the Contract and not for the exclusive benefit of the Contractor. Suppression or consumption of Float by extended Activity duration, dummy Activities, or preferential sequencing shall not be allowed. Critical Activities shall be defined as Activities with a total Float less than one Day.

2.1.8 Schedule and Software Requirements

1. Scheduling Software

The software for all schedules shall be Primavera Systems' Primavera Project Planner (P3) V 3.1.

2. General Scheduling Constraints

In all Contract Schedules, the Contractor shall:

- Ensure that the actual number of Activities in the schedule is sufficient to assure adequate planning of the Work and to permit monitoring and evaluation of progress and the analysis of time impacts.
- Limit the maximum duration of any Activity to 40 Business Days. Long duration Project management Activities that will be paid in equal monthly payments are exempted from this requirement.
- Cost load to WBS level V or greater as necessary to meet maximum Activity durations. When summarized for aggregate costs, the Activities shall roll up to prices set forth in the Contract.
- Design Activities shall be consistent with the WBS in Book 4 and shall also identify individual Release For Construction packages.



- Provide a graphic representation of all Activities necessary to complete the Work.
- Show the order in which the Contractor proposes to carry out the Work with logical links between time-scaled Work Activities.
- Use the Critical Path Method (CPM) to determine controlling operations. The Contractor shall utilize progress override method of calculating the CPM schedules. All out of sequence Work must be discussed at the monthly review meeting.
- Depict the sequence and interdependence of Activities required for complete performance of the Work beginning with the date at NTP1 and concluding at Final Acceptance.
- Include the Completion Deadlines set forth in the Contract. Only Completion Deadlines shall be included as constraints.
- Include phasing of the Work, Released for Construction Documents submission dates, Subcontractor Work, procurement, fabrication, preparation of mock-ups and prototypes, delivery, installation, testing of materials and equipment, and any long lead time (over 90 Days) orders for materials and equipment.
- Depict the required coordination with and Work to be performed by other contractors, Utility Owners, Governmental Persons, engineers, architects, Subcontractors, and Suppliers.

2.2 Progress, Invoicing and Payment

2.2.1 Progress Payment Calculations

MoDOT will base progress payments on MoDOT's estimate of physical percent complete of the Work, not on measured quantities (except where specifically stated in the Contract). The percent complete for each Activity multiplied by the cost associated with each Activity will determine the amount of the Contractor's progress payments.

The payment to the Contractor will be the undisputed amount shown on the Contractor's invoice less any deductions.

The Contractor shall ensure that all cost breakdowns are consistent and total up to the Contract Price.

The following items will be paid in equal monthly amounts, as averaged from the number of months remaining until Final Acceptance:

- Project Management (except Mobilization and premiums for bonds and insurance, which will be paid as described in Book 1)
- Public Information Management



- Quality Management
- Maintenance During Construction

Payment for surety bond and insurance premiums will be paid as a pass-through of actual cost based on invoices from the bond and insurance companies.

2.2.2 Invoice Submittals

The Contractor shall utilize a monthly invoice period. Each invoice submittal shall include one paper copy (color) and one electronic copy.

The invoice documents shall include:

1. Invoice Cover Sheet

The signed and dated invoice cover sheet shall include the Project number and title, invoice number, and invoice period. At a minimum the cover sheet shall show the total earned for the invoice period, the total earned to date for the Project as a whole and the total contract value.

2. Monthly Progress Report

The monthly progress report shall include the following:

- A brief narrative description of activity and progress at WBS level III and the Project as a whole, including design and construction.
- Identification of any Completion Deadlines achieved during the period.

3. Payment Breakdown

The Contractor shall include the updated payment breakdown. The payment breakdown shall include the Activity ID, the Activity name, percent complete, total cost per Activity, cost for the billing period for each Activity, and total cost to date for each Activity.

4. Updated Monthly Progress Schedule

The Contractor shall include the Monthly Progress Schedule. The status date of the Monthly Progress Schedule shall be the invoice date. The Monthly Progress Schedule shall include the updated percent complete for each Activity and shall incorporate previous corrections requested by MoDOT.

MoDOT may withhold invoice payment if there is not a current Monthly Progress Schedule and Current Baseline Schedule in place.

The Contractor shall make all corrections to the Monthly Progress Schedule requested by MoDOT and resubmit the Monthly Progress Schedule. If the



Contractor does not agree with MoDOT's comments the disagreement will be resolved pursuant to Section 19, Book 1.

2.3 Facilities

The Contractor shall provide office space and equipment, as specified in this section. This shall include providing a common location for Contractor staff, MoDOT personnel and other personnel working under the direction of MoDOT. All Contractor staff, including administration, design and construction staff shall be located in the I-64 Design-Build Project Office except that construction staff may be located in field offices located on the Project Site. However, up to 15% of design staff, performing routine design tasks and not including design discipline leads, may be located off-Site.

The Contractor shall make its proposed facilities available for inspection and Approval by MoDOT prior to MoDOT occupying any Contractor provided facilities. Both parties shall participate in a facility condition inspection prior to and at the completion of occupancy. MoDOT shall return possession of Contractor provided facilities to the Contractor in essentially the same condition as when MoDOT initially occupied the facilities except for reasonable wear and tear.

The Contractor shall secure sites, obtain all site permits, install, set up, and provide utility services, and maintain the facilities as part of the Work.

In the event that office spaces or appurtenant facilities are stolen, destroyed, or damaged during the Work, except by fault of MoDOT, the Contractor shall at its expense repair or replace those items provided to their original condition within five Working Days. If loss or damage is caused by MoDOT personnel, the Contractor shall replace the facilities within five Working Days, except MoDOT shall be responsible for costs incurred.

2.3.1 Project Office

The Project Office shall be located within two miles of I-64, between State Route 141 and the easterly Project limit. The Contractor shall provide space and facilities to allow MoDOT staff to co-locate within the same building as Contractor staff. The Contractor shall furnish MoDOT's staff with offices that are in good and serviceable condition, at least of the same quality as the Contractor's counterpart staff, and be available for occupancy no later than 60 Days after NTP1. The Contractor shall maintain the office for at least 90 Days after Final Acceptance of the Project.

The Contractor shall be responsible for disposal or removal of all Contractor-provided facilities and any Site restoration Work required.

At a minimum, the Contractor shall provide:

1. Telephone service for MoDOT offices, conference rooms, break room, and filing room, consisting of 40 workstation telephones with direct dial, speakerphone, voice mail, transfer, conference calling, and rollover



- capabilities. The Contractor shall be responsible for its own staff receptionist/operator.
2. One dedicated telephone line for fax service.
 3. Facilities that meet OSHA and code requirements for office space.
 4. Office space for MoDOT staff not less than the size indicated below:
 - A. Ten offices: 150 square feet of enclosed office space (with door) per office.
 - B. Twenty-Five offices: 100 square feet enclosed office space per office (cubicles/partitions are acceptable).
 - C. One enclosed conference room with doors capable of accommodating a 30 person meeting, with at least 15 seats at the conference table. This can be a shared conference room between the Contractor and MoDOT.
 - D. One enclosed conference room with doors for MoDOT's exclusive use capable of accommodating a 20 person meeting, with a fifteen person seating capacity at the conference table. The conference room shall be in an adjacent space to the MoDOT offices.
 - E. One reception area, with common access to Project office space.
 - F. Break room: 150 square feet with hot and cold running water, sink, counter, microwave, and 20 cubic foot refrigerator.
 - G. Filing space: 500 square feet, enclosed, with lockable door and 16 steel, 5-drawer, locking, lateral file cabinets (approximate size = 18 inches by 42 inches). The file room shall also have two 30 inch by 72 inch utility tables with two chairs each.
 5. Workstations for MoDOT staff, as follows, for each office:
 - A. Desk and chair, compatible for computer utilization, with locking drawers
 - B. Two drawer filing cabinet, with locking drawers
 - C. OSHA-approved desk chair
 - D. Extra office chair
 - E. Book shelf
 - F. Wastebasket
 6. Furnishings, as follows, for each conference room:
 - A. Conference table and chairs.
 - B. Wastebasket.
 - C. Hanging, erasable white board, six foot wide minimum.
 7. Indoor restrooms, men's and women's.



8. Hard-surfaced (paved) parking, one space per office for MoDOT staff plus twenty MoDOT visitor spaces.
9. Daily janitorial service (except weekends and holidays).
10. Maintenance of the exterior area of office, including access to parking and snow removal.
11. Heating, ventilation and air conditioning/cooling systems adequate for office use.
12. 24-hours/7-days a week access with security after normal working hours.

2.3.2 Field Laboratory

The Contractor shall provide field laboratories that are adjacent to or part of each of the Contractor's field offices for use by MoDOT staff. If the field laboratories are part of the Contractor's field office, the designated space shall be for the exclusive use of MoDOT's personnel. If the Contractor does not use field offices, the field laboratory shall be located at the Project office. Each laboratory shall have a minimum of three parking spaces, all contained within a security fence. Field laboratories shall be provided to MoDOT at least fifteen Working Days prior to commencement of any field Activities involving earthwork of any type, analysis of mix designs, or planned placement of concrete or bituminous and shall be maintained until Final Acceptance.

Each field laboratory shall be weatherproof with wood or concrete floors and shall have a minimum of two outside doors and four windows. Windows and doors shall be equipped with screens and locks. The outside doors shall be located such that ingress and egress is permitted from opposite ends of the building. Each window shall provide at least 4 square feet of glazed area. The laboratory shall have a minimum of 320 square feet of floor space, with a minimum width of 8 feet and a minimum ceiling height of 7 feet. The laboratory shall be of a sufficient size that all necessary equipment shall fit and be operable while leaving adequate space for easy movement of two persons, adequate storage of equipment and samples, and a sufficient amount of 36" high, 24-30" deep workspaces for testing purposes. An exhaust fan shall be provided that is capable of moving a volume of air each hour equal to at least ten times the volume of the laboratory. The laboratory shall have grounded electrical outlets with 110 to 120 volts, 60-Hertz continuous current or any other type of grounded electrical outlets necessary to accommodate the Contractor provided laboratory equipment. The laboratory shall have a climate control capable of maintaining an ambient temperature range of 72° to 80°F. Circuitry shall be such that all indicated equipment can be used without disruption. The Contractor shall provide an adequate supply of potable water available at all times. Lighting facilities shall be located to adequately illuminate all work in the interior of the laboratory.

A locked storage area for nuclear equipment shall be provided that is at least 15 feet from the normal work areas. A steel box shall be provided in the storage area with locks for the purpose of storing nuclear equipment in accordance with Nuclear Regulatory Commission specifications.



The laboratory shall be constructed with a dividing wall and doorway to allow for a separate testing work area and an office area suitable for computer operation. The laboratory shall have at least one anchored worktable 30 inches high, with a smooth one-piece top, no less than 8 feet long and 30 inches wide. The laboratory shall be equipped with storage shelves, a minimum of four chairs, a desk, a two-drawer filing cabinet and a fire extinguisher.

Each field laboratory shall include all accommodates and testing equipment necessary for field verification that the Work meets the specifications in accordance with the testing procedures required by the Contractor's Additional Applicable Standards. This equipment shall be for the exclusive use of MoDOT. The Contractor shall be responsible for maintenance and calibration of the Contractor furnished testing equipment. The Contractor will not be required to provide nuclear equipment for MoDOT's use. The field laboratories and Contractor supplied testing equipment will remain the property of the Contractor and shall be disposed of by the Contractor upon completion of the Work.

2.4 Network Requirements

The Contractor shall provide and maintain the following for MoDOT's exclusive use at the Project Office:

1. **Computer Network:** The Contractor shall provide a 100 Megabyte per second (Mbs) network wiring infrastructure. The network shall be complete and separate from the Contractor's network wiring topology. The network-wiring infrastructure shall use category 5E cable and category 5 rated patch panels and shall be compliant with ANSI/EIA/TA 568A standards. Rack space shall be provided for MoDOT file servers, patch panels, routers, and switches. The Contractor shall supply wiring topology, As-Built Documents, and cable test certifications. Staff installing the network shall hold current industry certification for 5E.
2. **Internet Connection:** MoDOT's computer network shall have a dedicated Internet connection consisting of an ATM T-1. MoDOT will provide firewall protection.

The Contractor shall provide and maintain the following at each MoDOT Field Laboratory:

1. **Computer Network:** Each field office shall be wired as one network using category 5E cable and category 5 rated patch panels and shall be compliant with ANSI/EIA/TA 568A standards. The Contractor shall supply wiring topology and cable test certifications. Staff installing the network shall hold current industry certification for 5E.
2. **Internet Connection:** Each field laboratory shall have a 640Kbs (minimum) DSL connection, or better. MoDOT will provide firewall protection.



2.5 Project Directory

The Contractor shall maintain and furnish to MoDOT a project directory listing the names, addresses and telephone (office, home, mobile, facsimile and pager) numbers of the Key Personnel and critical support staff of the Contractor and each Subcontractor. The project directory shall be submitted to MoDOT within 30 Days following NTP1. The Contractor shall update the Project Directory quarterly for the duration of the Work.

2.6 Deliverables

All deliverables for all disciplines shall include a minimum of one hard copy and one electronic copy unless otherwise specified in Book 1 or Book 2.

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Preliminary Baseline Schedule		Within fifteen Working Days following NTP1	2.1.1
Original Baseline Schedule	✓	Within 90 Days following NTP1	2.1.2
Revised Baseline Schedule	✓	Within 30 Days of Contract changes	2.1.3
Monthly Progress Schedule		Monthly	2.1.4
Monthly Invoices	✓	Monthly	2.2.2
Office Facility	✓		2.3
Project Directory		Within 30 Days of NTP1	2.5



3 QUALITY MANAGEMENT

3.1 Quality Management System

The terms and definitions used in this Section 3, not otherwise defined shall have the meanings prescribed by the ISO 9000:2000 standard. The Contractor shall develop, implement and maintain a quality management system meeting the requirements of ISO 9001:2000 standard and the requirements below.

The scope of the quality management system shall cover all requirements of the Work included in the Contract Documents. The Contractor's quality management system shall include a Quality Manual which shall be submitted to MoDOT for Approval. MoDOT will respond to the Contractor within 21 days of receipt of the Quality Manual.

The Quality Manual shall indicate the frequency at which the Contractor's top management will review the quality management system. The Quality Manager and Quality Assurance staff shall have no responsibilities in the production of the Work and shall report to the Contractor's top management only. Quality Control staff shall only have responsibilities in the production of the Work and shall remain independent of the Quality Assurance staff. The Contractor shall ensure that all personnel who perform inspection, sampling or testing are certified according to a recognized technician certification program and any other required certifications, for the tasks for which they are responsible. The Contractor shall ensure that all laboratories performing testing participate in and achieve a score of three or greater in the AASHTO Materials Reference Laboratory (AMRL) and/or Cement and Concrete Reference Laboratory (CCRL) proficiency sample programs for the tests being performed by that laboratory.

The following quality planning aspects shall be included in the Quality Manual:

- All Quality Control and Quality Assurance Activities and their standards, methods or procedures, and frequencies for product control and acceptance.
- All release points at which Work shall be formally accepted by Quality Assurance personnel prior to proceeding with additional Work Activities.
- The requirements to be verified by Quality Assurance staff at each release point.
- The Quality Assurance staff position responsible to perform the verification responsibilities including inspection, checking and testing.
- The method of performing Quality Assurance verification responsibilities including inspection, checking and testing.
- The system for recording all Quality Control and Quality Assurance activities including inspection, checking and testing activities.

The Contractor shall include in the Quality Manual its proposed process to resolve Contractor and MoDOT identified Nonconforming Work. The Contractor shall ensure



that this process is applied to all Contract Documents requirements, including design, construction/operational and management systems. The Engineer responsible for the design shall approve all resolutions of Nonconforming Work that require design changes, repairs, or rework. MoDOT shall Approve all remedies for Nonconforming Work.

The Contractor shall include in the Quality Manual its proposed process to address corrective action requests. MoDOT will issue to the Contractor corrective action requests in areas where Nonconforming Work is found to be reoccurring. The Contractor shall be responsible to submit to MoDOT for Approval remedies to eliminate the reoccurring Nonconforming Work (corrective action). Following MoDOT Approval of the proposed corrective action, the Contractor shall advise MoDOT when the corrective action has been implemented so MoDOT may confirm the implementation, should MoDOT so choose.

The Quality Manual shall describe how the Quality Assurance verification records/forms will clearly document conforming and Nonconforming Work. The Quality Manual shall describe how material quantities will be calculated and documented in order to enable the Contractor and MoDOT to sample at their required frequencies.

3.2 Design Documents

Design Documents include Review Documents, Released for Construction Documents, Final Design Documents, and As-Built Documents. The Contractor shall ensure that all Design Documents are 8½" x 11" or 11" x 17" and in English units. All Design Documents shall be developed using a version of MicroStation compatible with MoDOT's and shall follow MoDOT's CADD Standards. MoDOT will provide seed files upon request. Electronic submissions shall be in original MicroStation format and in MoDOT's version of Acrobat. Each deliverable shall include an index detailing the contents and an Acrobat file of the Design Documents, created directly from the native software and organized in a manner that allows easy retrieval of any part of the Design Documents, including individual drawings.

3.2.1 Review Documents

Review Documents shall be incomplete or partial Released for Construction Documents that are being used by the Contractor during its design review process. Five hard copies and one electronic copy of all Review Documents shall be submitted to MoDOT at each stage of review. The Quality Manual shall describe MoDOT's participation in the design review process.

3.2.2 Released for Construction Documents

Released for Construction Documents shall be all drawings, specifications, shop drawings, reports, calculations, revisions thereto, and any other items necessary to construct the Work. The Contractor shall ensure that no construction Work is undertaken without Quality Assurance approved Released for Construction Documents. Five hard copies and one electronic copy of all Released for Construction Documents shall be submitted to MoDOT.



3.2.3 Final Design Documents

Final Design Documents shall be fully completed Design Documents, except for necessary field design changes, for a geographic area organized by discipline. Final Design Documents shall include design information from the most current version of Released for Construction Documents and all design back-up information, including design plans, shop drawings, calculations, reports, specifications, and electronic MicroStation data.

3.2.4 As-Built Documents

As-Built Documents shall be the final record set of documents that incorporate: any changes occurring after the Final Design Documents; all manufacturers' warranties, guarantees, instruction sheets, parts lists, and other product data; and all required evidence of conformance with Contract Documents requirements. The As-Built Documents shall be organized and indexed to facilitate easy retrieval of information and be certified by the Contractor's Project Manager to reflect the actual condition of the constructed Work.

3.3 MoDOT Quality Oversight

MoDOT's quality oversight will use an audit approach for assessing the Contractor's performance. This will entail checking on a sampling basis whether the Work is complying with the Contract Documents requirements.

Auditing will entail the collection and documentation of objective evidence to confirm whether specified requirements have been met. The results of auditing will be documented on standardized audit report forms with copies provided to the Contractor. Nonconforming Work will be tracked and communicated to the Contractor. The audit results may also be recorded in a database, and regular summary and status reports will be provided to the Contractor. The timing, frequency, and depth of auditing will be at MoDOT's discretion.

The Contractor shall provide safe access to the Work, its organization, and all Subcontractor and Supplier organizations to allow MoDOT to carry out quality oversight activities. This will include the allowing of samples for the purposes of testing, the provision of information and records, and interviews with personnel from the Contractor's organization and all Subcontractor and Supplier organizations.

The Contractor shall not use the results of MoDOT's quality oversight activities as a substitute for its own quality Activities. The Contractor shall provide to MoDOT copies of specific records within three Days of receipt of request. When requested, the Contractor shall advise MoDOT of the time, to within four hours accuracy, that a specific Activity, scheduled within the next five Days, is scheduled to occur.

Representatives of agencies of the federal, state and local government shall have the right to inspect the Work to the same extent provided above for MoDOT. The Contractor shall notify MoDOT District Independent Assurance Sampling (IAS) prior to starting construction, through the District 6 Materials Office (314-340-4260). The IAS will be in addition to MoDOT's quality oversight.



3.4 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Quality Manual	✓	Condition of NTP2	3.1
Review Documents		At each review stage	3.2.1
Released for Construction Documents		When released for construction	3.2.2
Final Design Documents		After completion of design	3.2.3
As-Built Documents		Condition of Final Acceptance	3.2.4



4 PUBLIC INFORMATION

4.1 Public Information Plan

The Contractor shall prepare and maintain a Public Information Plan (PIP) to address the development and communication of information to and from the public on the Project. This plan shall be used throughout the Project by the Contractor to manage and implement the construction and traffic coping aspects of the public information process.

A member of the Contractor's public information staff shall be accessible to MoDOT and the media 24 hours a day, 7 days a week and shall respond to address Project issues. The Contractor shall provide MoDOT contact information on its key personnel of which at a minimum shall include the Project Manager and Public Information Manager within 30 Days following NTP1. The Contractor's PI Manager shall be co-located with MoDOT as part of the Contractor's team.

4.1.1 Final Public Information Plan

The Contractor's final PIP shall be submitted to MoDOT for Approval no later than 60 Days following NTP1.

4.1.2 Information Materials

Printed information materials, such as newsletters and brochures, developed by the Contractor for release to the public shall be Approved by MoDOT before public distribution.

4.2 Commercial Vehicle Access and Restriction Information

The Contractor shall inform MoDOT District 6 Transportation Management Center of any construction-related events, including geometric constraints that could restrict or impede the movement of commercial vehicles.

4.3 St. Louis Community Eruv

The Contractor shall inform the St. Louis Community Eruv of any construction-related activities before they disturb the Eruv line, which runs along the MoDOT property line on the north side of I-64 from approximately Boland Avenue to Clayton/Warson.

4.4 Public Hearing

The Contractor shall conduct a public hearing at least 30 days before the first roadway closure is implemented. The public hearing is required to inform the public of the general schedule for construction including expected closures and detours. The public must be notified of the public hearing at least two weeks in advance.



4.4 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Public information staff contact information		Within 30 Days following NTP1	4.1
Final Public Information Plan (PIP)	✓	Within 60 Days following NTP1	4.1.1
Printed information materials	✓	Prior to the scheduled distribution date	4.1.2
Public hearing		At least 30 days prior to the first roadway closure	4.4



5 ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the Environmental Requirements set forth in the Final Environmental Impact Statement/Section 4(f) Evaluation and its Record of Decision.

5.1 General/Community

The Contractor shall complete the following mitigation measures:

- I-64 street crossings shall incorporate bicycle and pedestrian accommodations and meet ADA requirements. Designated bike paths shall be striped and signed on Bellevue and Tower Grove. Pedestrian and bicycle trail detours for existing facilities shall be required during construction.
- Each stream crossing currently bridged shall continue to be bridged at the stream, and all other stream crossings shall use culverts or culvert extensions. All stream crossings shall maintain the low flow characteristics of the streams.

5.2 A.B. Green Athletic Complex, Section 4(f) Property

The Contactor shall comply with the following requirements or shall obtain approval from Richmond Heights to change the following requirements.

- The existing basketball courts shall be reconfigured to relocate the western court south, rotating the eastern court and relocating playing surface. The court fence and lighting shall be replaced.
- The playground area and structures shall be replaced and relocated adjacent to the tennis courts on replacement acres. The playground fence, gate, and lighting shall be replaced.
- A cross walk shall be installed across Laclede Station Road south of I-64 near the northern park entrance.

5.3 Forest Park, Section 4(f) Property

The Contactor shall comply with the following requirements or shall obtain approval from the City of St. Louis to change the following requirements.

- The Contractor shall replace grass landscaping in Forest Park disturbed areas after construction is complete.
- The Contractor shall replace the Tamm Avenue bridge, its approaches and provide six foot wide sidewalks.
- In Forest Park south of I-64, from east of Tamm Avenue to Hampton Avenue, between I-64 and the existing paved walking path, the Contractor shall re-grade disturbed open space to provide less steep slopes. The Contractor shall replace the walking path if disturbed.



- The Contractor shall expand and re-stripe the east end of the existing zoo parking lot to result in no net loss of parking spaces if disturbed.
- The Contractor shall construct a roundabout to replace the existing Hampton Avenue/Wells Drive intersection. Across Hampton, south of Wells Drive, the Contractor shall install a grade-separated crossing for the Forest Park recreational path. The Contractor shall install paved path connections from the relocated path across Hampton to the sidewalks along the east and west side of Hampton.

5.4 Erosion Control

Section 402 NPDES Permit. The Contractor shall be responsible for preparing and obtaining the National Pollutant Discharge Elimination System (NPDES) permit and preparing erosion control plans following the Missouri Department of Natural Resources guidelines for obtaining the NPDES permit. Land disturbance shall not commence before the NPDES permit is issued and furnished to the Contractor.

5.5 Regulatory Floodway and Floodplains

The Contractor shall complete hydraulic studies to assess floodplain and regulatory floodway impacts. All impacts shall be documented and meet the requirements of all federal and state regulations. The Contractor shall obtain a Flood Plain Development Permit from SEMA for construction within areas of identified flood hazard prior to proceeding with construction. The Contractor shall obtain a “No Rise” certificate for construction within a regulatory floodway.

5.6 Wetlands and Waters of the USA

5.6.1 Section 404 of the Clean Water Act

MoDOT has obtained a Nationwide Section 404 Permit from the U. S. Army Corps of Engineers. The Contractor is responsible for fulfilling the terms of the Clean Water Act Section 404 permit. This permit addresses impacts to streams (including concrete-lined ditches carrying streams) and wetlands caused by the project. This permit is based on projected impacts prior to final design for the project. The Contractor shall work to further minimize stream and wetland impacts during final design and construction. The Contractor shall present the final design quantities for projected stream and wetland impacts to MoDOT and to the US Army Corps of Engineers St. Louis District Regulatory Office to affirm the validity of the original permit. Any stream impacts below ordinary high water exceeding 0.5 acre will require notification to the U. S. Army Corps of Engineers prior to construction and may require an individual permit. Any wetland impacts will require prior notification of the U. S. Army Corps of Engineers. If the Corps deems that a permit modification is required, the Contractor shall work with MoDOT and the Corps to obtain the modified permit before construction can proceed. The Contractor is responsible for fulfilling the terms of any modified Clean Water Act Section 404 permit acquired during the final design process or else due to construction changes.



5.6.2 Section 401 of the Clean Water Act

MoDOT has entered into a Memorandum of Understanding with the Department of Natural Resources in lieu of Section 401 certification (Section 401 MOU). The Contractor shall comply with the following conditions of the Clean Water Act Section 401 MOU:

- Temporary stream crossings shall be designed so that no drops or dams are created that impede the passage of fish.
- Stream channel modifications shall be minimized. Where modifications are necessary for highway design safety or protection of state resources, they shall be designed using the Missouri state channel modification guidelines.
- The following materials shall not be used for stream bank stabilization: earthen fill, gravel, fragmented asphalt, broken concrete with exposed rebar, large slabs of unbroken concrete, tires, vehicle bodies or liquid concrete, including grouted riprap.
- During construction, clearing of vegetation shall be kept to the minimum necessary to accomplish the project.
- Petroleum products, hazardous chemicals, hazardous waste, equipment and solid waste shall not be stored after construction hours below the ordinary high water mark.
- Equipment shall not be operated in wetland areas, except where permitted, expressed by the project plans or the engineer in writing. Petroleum products shall not be stored in wetlands.
- Riparian areas and stream banks shall be restored to a stable condition as soon as possible after final contouring.
- Work done in streams shall be conducted during low flows whenever that is reasonably possible.
- Petroleum products spilled into any stream or body of water or in areas where those materials could enter a stream or body of water shall be cleaned up immediately and the collected petroleum products shall be disposed of properly.
- The following materials shall not be used for stream bank stabilization: earthen fill, gravel, fragmented asphalt, broken concrete with exposed rebar, large slabs of unbroken concrete, tires, vehicle bodies or liquid concrete, including grouted riprap.

5.7 Noise and Vibration

5.7.1 Traffic Noise Mitigation

The Contractor shall provide noise mitigation in accordance with MoDOT's Traffic Noise Policy for a Type I Project and with 23 CFR Part 772. Noise analysis shall be performed using FHWA's Traffic Noise Model version 2.5. Existing noise levels have been determined and are provided in Book 4.



If walls are used for noise mitigation, the cost of a noise wall must not exceed \$30,000 per benefited receptor. The cost index shall be calculated using a cost of \$20 per square foot for a noise wall. The cost per residence shall be calculated over the length of the project. That is, the cost of all noise walls must not exceed \$30,000 multiplied by the total number of benefited receptors from Ballas Road to the easterly project limits. Parallel noise barriers have the potential to generate multiple reflections of sound waves, reducing the effectiveness of the designed noise barriers significantly. The Contractor shall examine the highway cross-section at all locations where parallel noise barriers are proposed. If the width to height ratio is greater than 20:1, no further action is required. If the width to height ratio is less than 20:1, further analysis is required. The Contractor shall then follow the procedure for parallel noise barrier analysis contained in the TNM 2.5 User's Manual to determine if modification of the barrier's height is necessary to achieve the original design goal for each barrier.

The Contractor shall conduct the noise analysis from Ballas Road to the eastern terminus of the Project and determine the need for sound abatement within these limits. Information on proposed sound abatement, including proposed noise levels and the type, size, and location of the abatement measures shall be provided to MoDOT for Approval. MoDOT will present the proposed sound abatement design to the benefited receptors. Each benefited receptor will receive one vote in determining if the sound abatement will be constructed. A simple majority of benefited receptors, for a section from interchange to interchange, will determine if the sound abatement is to be constructed. MoDOT will complete this voting process within 45 days of receiving the sound study and design information from the Contractor. Once MoDOT completes the voting process, MoDOT will then provide the results to the Contractor so the Contractor can proceed with construction of the sound abatement. If a majority of benefited receptors for a section vote "no" on abatement, noise abatement shall not be constructed.

Noise mitigation shall be provided along the Forest Park athletic field.

5.7.2 Construction Noise and Vibration Mitigation

The Contractor shall submit a plan to mitigate construction noise and vibration impacts that meets all applicable laws and regulations. This plan shall be submitted to MoDOT for Approval. Vehicle back-up alarms shall be muffled during nighttime operations. Noise barriers shall be built early in the construction sequence, if feasible, and the monitoring of vibrations and effects to adjacent facilities due to construction activities shall be required.

5.7.3 Special Notices for Mitigation of Noise and Vibration

As part of the environmental mitigation, the Contractor shall provide construction noise, dust, lighting and vibration notification information to and coordination with the St. Louis Zoo. Information to the St. Louis Zoo shall include all construction activities that make any additional level of noise or vibration in the area between Skinker and the St. Louis Science Center overpass.



As part of the environmental mitigation, the Contractor shall provide construction noise and vibration notification information to and coordination with the Central Institute for the Deaf. Information to the Central Institute for the Deaf shall include all construction activities that make any additional level of noise or vibration in the area between the St. Louis Science Center overpass and Boyle.

5.8 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Section 402 NPDES permit and associated erosion control plans		Before any land disturbance	5.4
Hydraulic study		Before construction	5.5
Sound abatement design	✓	Before sound abatement construction	5.7.1
Construction noise and vibration mitigation plan	✓	No later than NTP2	5.7.2



6 THIRD PARTY AGREEMENTS

6.1 City of Frontenac

The Contractor shall meet the requirements of the Municipal Agreement with the City of Frontenac.

6.2 City of Ladue

The Contractor shall meet the requirements of the Municipal Agreement with the City of Ladue.

6.3 City of Brentwood

The Contractor shall meet the requirements of the Municipal Agreement with the City of Brentwood.

6.4 City of Richmond Heights

The Contractor shall meet the requirements of the Municipal Agreement with the City of Richmond Heights.

6.5 City of St. Louis – Board of Public Service

The Contractor shall meet the requirements of the Municipal Agreement with the City of St. Louis.

6.6 County of St. Louis

The Contractor shall meet the requirements of the County Agreement with the County of St. Louis.

6.7 Bi-State Development Agency (Metro)

The Contractor shall meet the requirements of the Cooperative Agreement with Bi-State Development Agency.

6.8 Washington University School of Medicine and Barnes Jewish Hospital

The Contractor shall meet the requirements of the Cooperative Agreement with Washington University School of Medicine and Barnes Jewish Hospital.

6.9 St. Louis Zoo

The Contractor shall meet the requirements of the Cooperative Agreement with the St. Louis Zoo.



6.10 St. Louis Science Center

The Contractor shall obtain approval from the Science Center for any Work that will impact the Science Center pedestrian bridge over I-64.



7 UTILITIES

The Contractor shall conduct all Utility Work in accordance with the Contract Documents and the Utility Agreements. Except as otherwise provided in a Municipal Agreement or a Utility Agreement, Betterments are not included within the Contractor's Work. This section applies to existing and proposed underground and overhead Utilities, except storm water and sanitary facilities, traffic signals, street lighting, variable message signs, video and video detection systems, and Intelligent Transportation Systems (ITS).

7.1 Contractor's Utility Work

7.1.1 Utility Relocations Included in Contractor's Work

The following Relocations shall be included in the Contractor's Work:

- LightCore (formerly Digital Teleport Inc): Design and construction of all Relocation Work.
- Missouri American Water Company: Design and construction of all water service line adjustments and connections.
- City of Saint Louis Water: Design and construction of all Relocation Work including adjustments and connections of service lines. Work to connect Relocated water mains to active water mains is excluded from the Contractor's Work.
- Ameren UE: Design and construction for conduit systems on bridge structures.

The following is a list of locations and requirements for new Ameren UE conduit systems on bridge structures that are included in the Contractor's Work. Conduit systems on bridge structures complete in place shall include, but not be limited to: all conduit, expansion joints, bridge attachment hardware and manholes. Conduit shall be terminated in a 17.5'x 6' manhole located 50 feet from the bridge abutment. All conduits between bridge abutment and manhole shall be concrete encased.

- Clayton Road: 10–5" conduits and 1–2" conduit, 11-lb/ft maximum weight
- McKnight Road: 10–5" conduits and 1-2" conduit, 11-lb/ft maximum weight
- Big Bend Boulevard: 10–5" conduits and 1-2" conduit, 11-lb/ft maximum weight
- Hampton Avenue: 10–5" conduits and 1-2" conduit, 11-lb/ft maximum weight
- Taylor Avenue: 10–5" conduits and 1-2" conduit, 11-lb/ft maximum weight



- Newstead Avenue: 10–5” conduits and 1-2” conduit, 11-lb/ft maximum weight
- Tower Grove Avenue: 10–5” conduits and 1-2” conduit, 11-lb/ft maximum weight
- Boyle Avenue: 10–5” conduits and 1-2” conduit, 11-lb/ft maximum weight
- Hanley Road: 10-5” conduits and 1-2” conduit, 11-lb/ft maximum weight

7.1.2 Other Utility Work Included in Contractor’s Work

In addition to the Relocations that are included in the Contractor’s Work, the Contractor’s obligations with each impacted Utility, regardless of who is performing the Relocation, shall constitute part of the Contractor’s Work:

- Performance of all tasks, obligations, and duties identified to be completed by MoDOT, the Commission or the Contractor in the Utility Agreements, except those that by their nature can only be provided by MoDOT or the Commission.
- Performance of all Incidental Utility Work. The Contractor shall make all arrangements and perform all Utility Work necessary in order to accomplish the Incidental Utility Work, including, but not limited to, locating existing Utilities, identifying conflicts, performing any necessary coordination with Utility Owners and property owners, furnishing design, performing construction, and obtaining and complying with all applicable legal requirements and required Governmental Approvals.
- Making all arrangements and performing all Utility Work necessary to abandon each Utility requiring Abandonment, including, but not limited to, design, construction, and obtaining consent from the affected Utility Owner and any affected landowner(s), as well as any necessary Governmental Approvals.
- Identification and verification of all existing Utilities impacted by the Project, whether or not the existing Utility was indicated in the Verified Utility Information or in the UIS. This may include potholing, if necessary.
- Coordination and schedule verification with all Utility Owners as necessary for all Utility Work.
- Performing Traffic Control for all Utility Work
- Providing survey coordinates on the Utility Relocation Plans and in the field for construction of the Relocations (staking).
- Perform all clearing and grubbing required for all Utility Relocation Work performed by the Contractor or the Utility Owners, including tree removals and replacements.
- Providing all coordination, including all necessary cost estimates and billing information necessary to address requested Betterments.



- Identification, verification, and Approval that the design and construction of all affected and existing Utilities are compatible with the remainder of the Project.
- Preparation and negotiation of Work Orders and applicable Work Order exhibits and other required materials except for those that by their nature can only be provided by the Utility Owner, regardless of who is performing and/or paying for the Utility Work.

7.1.3 Utility Relocations that are anticipated to be added to Contractor's Work through the Work Order Process

The following Relocations are anticipated to be added to Contractor's Work through the Work Order Process because the Utility Owners are responsible for the cost of the Work:

- Charter Communications: Bridge attachment at McKnight Road Overpass.
- AT&T: Bridge Attachments at Hanley Road, Taylor Avenue, and McKnight Road Overpasses.

The Contractor shall be entitled to a Change Order pursuant to Book 1, Section 13 when the Relocation Work described in this Section is added to the Work.

7.1.4 Utility Relocations that are Excluded from Contractor's Work

The following Relocations are anticipated to be performed by the Utility Owners and are therefore excluded from the Contractor's Work:

- Missouri American Water Company: Design and construction of all water mains.
- City of St. Louis Water: Work to connect relocated water mains to active water mains.
- All Ameren UE Relocation Work, excluding conduit systems on bridge structures.
- All Laclede Gas Relocation Work
- All Charter Communication Relocation Work
- All AT&T (formerly SBC) Relocation Work
- All T-Mobile Relocation Work
- All XO Communication Work

The following Relocations will be performed by the Utility Owners. The Contractor is required to avoid impacting these Relocations with its Work. Any additional Relocation Work as a result of the Contractor's Work will be at the Contractor's expense.



- Cingular Wireless relocation of electronics building located at approximately left station 1008+00, Route 64. Relocation will be as shown on Drawing UIS-17-01.dgn, Book 4. Relocation will be completed by March 1, 2007.
- Missouri American Water relocation of 24-inch water main south of I-64 between Clayton Road and Ramp 2 of South Forty Drive from station 842+75, 97' right to 895+83, 96' right, as shown on Drawing UIS-05-78.dgn, Book 4. This portion of the water main Relocation will be completed by June 1, 2007. The remaining Relocation of the water main will not be an early Relocation but will be completed by the Utility Owner in accordance with the MUA. Contractor shall coordinate with Missouri American Water on the storage and staging of materials for the Relocation of the water main.

7.1.5 Shutdowns and Temporary Diversions and Relocations

The Contractor's proposals for shutdowns and temporary diversions, if approved by the Utility Owner, shall be included in the Work Order.

All Utilities shall remain fully operational during all phases of construction except as specifically allowed and approved by the Utility Owner to be removed from operation.

7.2 Identification of Utilities

7.2.1 MoDOT-Supplied Information

MoDOT has conducted a subsurface utility engineering (SUE) investigation of Utility locations. The results of the investigation are shown in the Certified SUE Plans and the Verified Utility Information included in Book 4. Certified SUE Plans are the utility survey drawings produced by a subsurface utility engineering consultant contracted by MoDOT to locate all known utilities in the project limits. Utility locations included in the Certified SUE Plans are identified as either Accuracy Level A or B. Verified Utility Information shall be considered to have an Accuracy Level A.

7.2.1.1 Reasonable Accuracy

An underground Utility whose Relocation is included in the Contractor's Work shall be deemed indicated with "reasonable accuracy", for Accuracy Levels A and B, if:

1. The Utility's actual centerline location is within 5 feet for Accuracy Level A and Accuracy Level B of the horizontal centerline location indicated in the existing Certified SUE Plans and Verified Utility Information.
2. The Utility's actual centerline top elevation is within 1 foot of the centerline top elevation indicated in the existing Certified SUE Plans and Verified Utility Information for Accuracy Level A.
3. One of the following applies for Accuracy Levels A and B, with regard to any difference, whether larger or smaller, between the Utility's actual inside diameter, excluding appurtenances (the "actual size") and the inside diameter indicated for such Utility in the Certified SUE Plans and Verified Utility Information (the "stated size"):



- A. The Utility's stated size is 12 inches or less, and the Utility's actual size is 24 inches or more.
- B. The Utility's stated size is greater than 12 inches but less than or equal to 36 inches, and the Utility's actual size does not differ from the stated size by more than 50 percent of the stated size.
- C. The Utility's stated size is greater than 36 inches but less than or equal to 72 inches, and the Utility's actual size does not differ from the stated size by more than 25 percent of the stated size.
- D. The Utility's stated size is greater than 72 inches, and the Utility's actual size does not differ from the stated size by more than 15 percent of the stated size.

For example, if the stated size of a Utility pipeline is 36 inches, but the pipeline's actual size is 48 inches and its centerline is actually located four feet away from the horizontal centerline location shown in the Certified SUE Plans. Without regard to vertical location, such pipeline shall be deemed indicated with reasonable accuracy and the Contractor shall not be entitled to a Change Order for any increased costs resulting from the increased size or differing location of the pipeline. As a further example, if the stated size of a Utility pipeline listed in Book 4 is 72 inches, but the pipeline's actual size is 48 inches and its centerline is actually located four feet away from the horizontal centerline location shown in the Certified SUE Plans (without regard to vertical location), then such pipeline shall be deemed not indicated with reasonable accuracy, and MoDOT shall have the right to issue a Change Order reducing the Contract Price to reflect the value of any reduction in the costs of the Utility Work to be furnished or performed by the Contractor which is directly attributable to the reduced size of the pipeline (but not its differing location).

7.2.2 Contractor's Investigations

7.2.2.1 Utility Tracking Report

The Contractor shall maintain the Utility Tracking Report, which shall contain at least the following information:

- The name of the Utility Owner and a unique identification number for tracking
- A brief description of the Utility by size and type
- The location of the Utility, based upon Project control datum or by station and offset
- The proposed treatment of the Utility and the date such treatment was Approved by MoDOT
- Once a Work Order has been executed, the party responsible for performance of such Utility Work
- The nature of the Utility Owner's existing right of occupancy of the ROW for such Utility
- The scheduled start and completion dates of construction of the Utility Work



- The actual start and completion dates of construction of the Utility Work
- The status of construction for the Utility Work, including percentage complete
- Other information as requested by MoDOT

The report shall be sort-able so that data can be reported by the following parameters: the Utility identification number, the Utility Owner, the scheduled start-of-construction date, and the scheduled completion date.

7.2.2.2 Utility No-Conflict Closeout Form

Once the Contractor has determined that a Utility shown on the Contractor's Utility Tracking Report is not a conflict, the Contractor shall provide a Utility No-Conflict Closeout Form to the respective Utility Owner to review and sign. A copy shall be submitted to MoDOT.

7.3 Utility Agreements

7.3.1 Master Utility Agreements (MUAs)

7.3.1.1 General

MUAs establish a general framework for addressing the Utility issues within the Project affecting a Utility Owner. All Utility Work shall be performed in accordance with all applicable terms and conditions of the Contract Documents, including the MUAs. For example, MoDOT may agree with the Utility Owner in a MUA that if the Contractor does the Utility Work, it will only be able to use Subcontractors that have been pre-approved by the Utility Owners.

MoDOT has completed or will attempt to complete a MUA with each Utility Owner whose facilities are or may be affected by the Project and are shown on the Utility Tracking Report. A sample standard form of the MUA is provided in Book 5. MoDOT may agree with individual Utility Owners to modify the standard MUA terms and conditions, whether such MUA are provided in the RFP or are agreed to subsequent to the Proposal Due Date.

MoDOT may enter into MUA with Utility Owners whose facilities are affected by the Project after the Proposal Due Date. MoDOT will ensure that the terms and conditions of any such MUA are substantially the same terms and conditions of the sample standard form. However, MoDOT may agree with individual Utility Owners to modify the standard MUA terms and conditions. Such execution shall not entitle the Contractor to a Change Order unless the MUA has been materially changed from the sample standard form resulting in an increase of costs to the Contractor.

MoDOT intends to enter into MUA with all Utility Owners of newly discovered Utilities. For those MUAs entered into after the Proposal Due Date relating to newly discovered Utilities, the provisions of this Section shall apply.

7.3.1.2 Work Order Process

Pursuant to the MUA, when the Contractor has achieved a level of design to determine Utility conflict(s), the Contractor shall coordinate with the respective Utility



Owner and MoDOT to develop a proposed resolution and pertinent information required for the Utility Design Sheet (UDS). MoDOT, the Contractor, and the Utility Owners will then enter into Work Orders to define, negotiate, and order the performance by the responsible party of the Utility Work at each specific UDS location. The Work Orders will also describe applicable terms and conditions for such Utility Work. In MoDOT's election, any Work Order may also function as a Change Order.

If MoDOT elects to have a Work Order also function as a Change Order in accordance with Book 1, MoDOT will modify the Work Order Form accordingly to reflect such dual function. MoDOT will assume responsibilities for negotiating with Utility Owners to resolve issues between MoDOT and the Utility Owners relating to the determination of legal responsibility for costs. The Contractor shall prepare and negotiate the appropriate portions of the Work Order with the Utility Owner regardless of who is doing the Utility Work or who is paying for it. The Utility Owner shall have no voice in the terms and conditions of the Change Order portion of the Work Order. The Contractor shall prepare and negotiate all exhibits to the Work Orders and other required materials except for those provided by the Utility Owner. The Contractor shall make any changes in the Work Order form or exhibits required by MoDOT. If Approved by MoDOT, the Contractor may prepare one Work Order for a group of Utility Relocations.

MoDOT will cooperate with the Contractor in the Work Order process, including attendance at negotiation sessions and obtaining any necessary legal review by MoDOT's counsel; however, MoDOT will not be required to incur any other costs associated with the Work Order process.

Each Work Order shall include Contractor-generated Project design plans (used to identify the conflict) and any applicable design details. MoDOT Utility permits, ROW documents, and/or Utility easement documents for the construction of an affected Utility at a particular location(s) shall also be incorporated into the Work Order.

Once a Work Order has been fully executed, no modifications to the Utility Work may be made without processing a revised Work Order. The Contractor shall coordinate the submittal of all Work Orders. The Contractor shall not submit more than 15 Work Orders per week to MoDOT for review. Excess submittals may, in MoDOT's sole discretion, either (a) be deemed submitted the following week, or weeks, as necessary (a "deferral"), or (b) be reviewed by MoDOT as if submittals were not excess in number. MoDOT will notify Contractor of its election as to the treatment of excess submittals. A failure by MoDOT to give such notice within five Working Days after receipt of the excess submittals shall be treated as a deferral.

A Work Order will only amend a MUA for purposes of the Contract when a Change Order or Directive Letter has been issued. With the exception of Work responsibility allocations, if there is a conflict between the terms of any Work Order that is not acting as a Change Order and the terms of the Contract Documents, the Contract Documents shall prevail between MoDOT and the Contractor; however, Work responsibility allocations set forth in executed Work Orders shall prevail over the Contract Documents.



The provisions of Section 3 with regard to the Contractor's obligations to provide quality management shall prevail over any contrary provision in the Work Order.

Utility Work included within the scope of the Contractor's Work may be deleted from the Work by execution of a Work Order or a separate Change Order providing for the Utility Owner or its contractors to furnish or perform such Utility Work. Also, if requested by a Utility Owner and Approved by MoDOT, Utility Work not included within the scope of the Contractor's Work may be added to the Utility Work by execution of a Work Order or a separate Change Order.

7.3.1.3 Design Approval – Design by Contractor

For Contractor furnished Utility design Work the Contractor shall, before beginning construction, submit its design to the Utility Owner for review and approval for each Utility Relocation Plan. The Contractor shall also submit each design to MoDOT for its advance review and comment. The Contractor shall furnish the Utility Relocation Plans for all the Utility Work necessary for the Project as stated in the Utility Agreements. The foregoing obligation includes temporary Utility Relocations and all necessary Relocations of Service Lines connected to such Utilities, regardless of the ownership of such Service Lines or of the property served by such Service Lines.

In each instance where the Contractor performs the design of the Utility Work concerning a Utility Owner's facilities, the Contractor shall be responsible for obtaining written specifications, current at the Proposal Due Date, from the Utility Owner and for verifying that they are consistent and compatible with the Contractor's overall Project design.

In the event of a conflict between the Utility Owner's design standards and the standards or requirements of the Contract Documents, the most stringent standards or requirements will govern. The Contractor shall obtain Utility Owner approval of the Utility Relocation Plans prior to commencement of construction. The Contractor shall document the Utility Owner's approval by obtaining a Design Approval Letter (included in Book 5) from the Utility Owner, and formally submitting a copy to MoDOT. Upon approval by the Utility Owner, the Contractor shall attach the Utility Relocation Plans to the Work Order. All subsequent changes to designs will require written Utility Owner approval and shall be shown on the As-Built Documents upon completion of the Work.

7.3.1.4 Design Approval – Design by Utility Owner

The Contractor shall obtain Utility Relocation Plans from the Utility Owner for all Utility Work that the Utility Owner is responsible for designing. The Contractor shall review these plans for compliance with the design requirements within the Contract Documents and provide comments to the Utility Owner as appropriate. As a minimum, the Utility Relocation Plan information must meet the standard of quality necessary for the Utility Owner to construct the Utility Relocation. The Contractor shall provide all information necessary for the Utility Owners to create Utility Relocation Plans, including, construction staking and survey information, profile and/or cross section information, and potholing for confirmation of conflicts and coordinates. The Contractor shall confirm that there are no conflicts when the Contractor determines that the location of a Utility does not conflict with the design of



the Project. The Contractor shall evidence its review and certification that the design complies with the design requirements within the Contract Documents by issuing a Design Approval Letter to the Utility Owner and forwarding a copy to MoDOT.

7.3.1.5 Construction Inspection Approval – Construction by Contractor

In each instance where the Contractor performs the construction of the Utility Work, the Contractor shall be responsible for obtaining written standards and specifications, current at the time of the Utility Work, from the Utility Owner and for verifying that they are consistent and compatible with the Contractor's overall Project design. In case of conflict, the most stringent standard or requirement will govern.

The Contractor shall be responsible for restoring infrastructure damaged due to the Utility Work performed by the Contractor.

Each Utility Owner, through its representative, will have the right to inspect the construction performed on its Utilities by the Contractor. The Contractor is not responsible for reimbursing Utility Owners for their costs of inspecting construction performed by the Contractor. The Contractor shall not unreasonably refuse such Utility Owner inspection requests and shall coordinate the schedule and scope of such inspections with the Utility Owner.

7.3.1.6 Construction Inspection Approval – Construction by Utility Owner

The Contractor shall inspect all Utility Work performed by Utility Owners and/or their Subcontractors in order to verify compatibility with construction. In order to evidence its approval, the Contractor shall provide a Construction Inspection Approval Letter (included in Book 5) to the Utility Owner with a copy to MoDOT. The Contractor shall immediately notify MoDOT in writing regarding any noncompliance.

7.3.2 Other Agreements

For Utility Owners that have not entered into MUAs, MoDOT will enter into either a Memorandum of Agreement (MOA) or a Standard Agreement. The MOA will include a Work Order process, coordination requirements, a defined time that the Utility Owner will require for notice of a Relocation, and the amount of time that the Utility Owner requires to perform the Relocation, including design. The Contractor shall comply with all of the terms and conditions of the MOAs. A Standard Utility Agreement will be used in instances of early Utility Relocation work and will include a completion date for each Relocation.

7.4 Utility Owners Without Utility Agreements

7.4.1 Permits

For Utility Owners that have not entered into a MUA, MOA, or a Standard Utility Agreement, MoDOT will issue a permit to the Utility Owner. The Contractor shall comply with all terms and conditions in the permit. The permit will include the following provisions:

- The Utility Owner is required to complete a UIS for each Utility location within the Project limits. The UIS shall include the amount of advanced



notice the Utility Owner requires to begin Relocation Work and the estimated amount of time needed for the Utility design and construction work.

- Once the Contractor has completed a level of design in which to determine actual impacts to Utility Owner's facilities, the Contractor is required to contact the Utility Owner within 5 days. Upon notification, the Utility Company shall make itself available within 5 days to meet with the Contractor to complete the UDS.
- With the completion of the UDS, the Utility Owner and the Contractor will either complete a Utility No-Conflict Close Out Form or enter into a Work Order to define and negotiate the performance of the Utility Relocation work. The Utility Owner shall be available to complete the Work Order within 14 days following the completion of the UDS.
- Once a Work Order is executed, the Utility Owner shall commence with the Utility Design. When complete, the Utility Owner shall submit the Utility Design to the Contractor for review and approval. The Contractor will issue a Design Approval Letter to the Utility Company and MoDOT as evidence of its review and approval of the Utility Design.
- After receipt of the Design Approval Letter, the Utility Owner shall commence construction of the Utility Design according to the schedule agreed upon in the Work Order. Upon completion, the Utility Company will notify the Contractor and the Contractor will review the work. If the Contractor finds the construction acceptable the Contractor will issue a Construction Inspection Approval Letter to the Utility Company and MoDOT as evidence of its review and approval.

7.5 Utility Permits and Easements

MoDOT will obtain MoDOT Utility permits for the Utility Owner.

When the Contractor is responsible for performance of the construction of the Utility Work, the Contractor shall coordinate with the Utility Owner to obtain non-MoDOT permits and/or temporary construction easements or agreements. Separate permits may be required for Work on streets under local entity jurisdictions. In the event the Contractor determines that a Utility Owner does not have the required permits, the Contractor shall immediately notify MoDOT in writing. The Contractor shall comply with such Utility permits and temporary construction easements or agreements.

7.6 Utilities Adjacent to and on Structures

Underground Utilities shall not be installed within 10 feet of bridges and/or structural foundations, unless otherwise Approved by MoDOT. All pressurized mains within 50 feet of a spread footing for a bridge and/or structural foundation shall be cased unless otherwise Approved by MoDOT.

The Contractor shall identify, maintain, and coordinate all utility relocations and/or placements on structures. Pipes carrying water, wastewater, natural gas, propane, petroleum products or byproducts, chemicals, or other volatile, flammable, or



hazardous materials shall not be relocated and/or placed on structures. If required on a bridge structure, the placement location shall hide the utility from view and not impede future bridge inspection and maintenance. Specifically, the hanging of utility conduits shall not be permitted under deck overhangs or on bridge rail.

7.7 Coordination and Cooperation (whether or not there is an agreement)

7.7.1 Coordination with Utility Owners

The Contractor shall be responsible for coordination of all Activities and coordination with the Utility Owners and MoDOT in order to accomplish all Utility Work. In the discharge of its coordination responsibilities, the Contractor shall:

- Keep Utility Owners fully informed of schedules with regard to Utility Work. Contractor shall provide to the Utility Owners, as soon as practicable following NTP1, an estimated schedule for their respective Utility Work and shall notify the Utility Owners of any significant changes to the schedule as soon as practicable;
- Keep Utility Owners fully informed of changes that affect their Utilities;
- Consider, to the extent practicable, Utility Owners' needs for the allocation of resources to perform their respective utility work in a timely manner;
- Keep Utility Owners involved in making decisions that affect their Utilities so Utility Owners are able to provide uninterrupted service to their customers, or to be subject to the least interruption practicable as approved by the Utility Owner; and
- Avoid multiple Relocations of Utilities.

7.7.2 Utility Meetings

7.7.2.1 Between MoDOT, Utility Owners and/or the Contractor

The Contractor shall be available to meet at the request of MoDOT as necessary to discuss and resolve matters relating to the Utility Work. If the meeting is with MoDOT only, the Contractor shall provide MoDOT notification within at least two Days prior to such meeting. If the notice involves the Utility Owner(s), the notice must be at least four Days prior to the meeting, unless other time limits have been agreed to between MoDOT and the Utility Owner in a Utility Agreement. Attendance at such meetings may be by teleconference.



7.7.2.2 Notices Regarding Utility Owner Performance

The Contractor shall be responsible for verifying progress of the Utility Owner's work and for notifying MoDOT should the Contractor have cause to believe that the Utility Owner will not meet the specified time frame(s) for any of the following: construction; review of the Contractor's plans; comment, review, and approval for Work Orders; or inspection. The Contractor shall provide such written notice to MoDOT immediately after discovery.

7.7.2.3 Minutes

The Contractor shall produce minutes of all meetings with Utility Owners and/or MoDOT, and shall distribute copies of the minutes to the Utility Owner and MoDOT within seven Days after each meeting date.

7.7.3 Review Schedules

Estimated schedules for reviews are as follows: (a) 14 Days for Utility Owner or Contractor to review and approve or provide comments on the Utility Relocation Plans developed by the other party, and (b) seven Days for Utility Owner or Contractor to re-review any Utility Relocation Plans that are revised by the other party, and (c) 14 Days for MoDOT and Utility Owner to review and approve or provide comment on the Work Orders. Failure to timely respond to a Work Order or a Utility Relocation Plan submittal does not constitute an approval.

For Utility Work performed by the Utility Owner, a reasonable schedule required for each Activity shall be negotiated between the Utility Owner, the Contractor and MoDOT and shall be reflected in the Work Order. The times noted in the Work Order for Utility Work shall prevail over the estimated times noted in this Section 7 or in the applicable MUA.

In developing its Project schedule, the Contractor shall allow for appropriate time for the performance of Utility Work assigned to the Utility Owners and/or the Contractor pursuant to the Work Orders.

7.8 Damage to Utilities by Contractor

The Contractor shall be responsible for any and all damage caused by the Contractor's Subcontractors, employees or agents to the property, facilities, structures, or persons of the Utility Owner. The Contractor shall immediately notify the affected Utility Owners of any Utilities damaged by the Contractor during the Contractor's performance of the Work. The Contractor shall be responsible for all costs and/or schedule impact associated with said damage.

Promptly after the Contractor's discovery of such damage or the Contractor's receipt of notice of any such damage from the Utility Owner or from any other source: (a) the Contractor shall repair the damage to the Utility Owner's satisfaction, or (b) at the Utility Owner's election, the Utility Owner may make such repairs at the Contractor's expense. If the Contractor fails to make any payment to a Utility Owner required within 60 Days after receipt of the Utility Owner's invoice, MoDOT may make such payment if required pursuant to the applicable MUA or otherwise at MoDOT's sole



discretion. If the Contractor's failure to pay is due to a reasonable dispute, then MoDOT may not make such payment until at least 60 Days after the final resolution of such dispute has occurred without payment by the Contractor. If MoDOT makes any payment, the Contractor shall reimburse MoDOT for such payment within 10 Days after receipt of MoDOT's invoice, or, in MoDOT's discretion, MoDOT may deduct the amount of reimbursement due from the next payment (or payments, if necessary) due to Contractor under the Contract.

7.9 Failure of Utility Owner to Cooperate

The Contractor shall make diligent efforts to obtain the cooperation of each Utility Owner as necessary for the Project. The Contractor shall notify MoDOT immediately if the Contractor becomes aware that a Utility Owner is not cooperating in providing needed work and/or Work approvals. After such notice, the Contractor shall continue to diligently pursue the Utility Owner's cooperation and assist MoDOT as requested with regard to the problem. Any assistance provided by MoDOT, including legal action as described in this Section 7.8, will not relieve the Contractor of its sole and primary responsibility for the satisfactory completion of all Utility Work and compliance with all other requirements.

In addition to and without limiting its rights pursuant to the preceding paragraph, MoDOT may, in its sole discretion, decide to take legal action against an uncooperative Utility Owner. The Contractor shall cooperate as requested by MoDOT in connection with such lawsuits, including having the Contractor's staff and consultants act as witnesses in such lawsuits and providing information to MoDOT's counsel.

7.10 Partnering and Dispute Resolution

Any disputes that arise between MoDOT and the Contractor shall be subject to the Dispute Resolution provisions set forth in Book 1; however, if the dispute involves a Utility Owner, the Dispute Resolution provisions set forth in Book 1 shall be modified in accordance with this section to include participation by the Utility Owners, if the Utility Owners agree to such provisions, or as modified in the applicable MUA(s) with the Utility Owner(s).

The Contractor and MoDOT agree that the Utility Owner(s) shall be invited to participate in all partnering activities related to the Utility Work of the affected Utility Owner(s). If any dispute arises between the Contractor and MoDOT that involves a Utility Owner(s) and the dispute is not resolved during the partnering process, the Dispute Resolution Board (DRB) procedures set forth in Book 1 shall be modified to allow the affected Utility Owner(s) to select one member to participate on the DRB for the issues affecting the Utility Owner(s), such member to be Approved by MoDOT and the Contractor. Regardless of how many Utility Owners are involved in the dispute, the Utility Owners will only have one member on the DRB. The Utility Owners' DRB member shall have the experience and qualifications required in Book 1 for the DRB members and shall comply with all of the requirements applicable to DRB members therein. If a dispute involves an affected Utility Owner(s), the chairperson of the DRB will act as chairperson for the DRB procedures, but will not



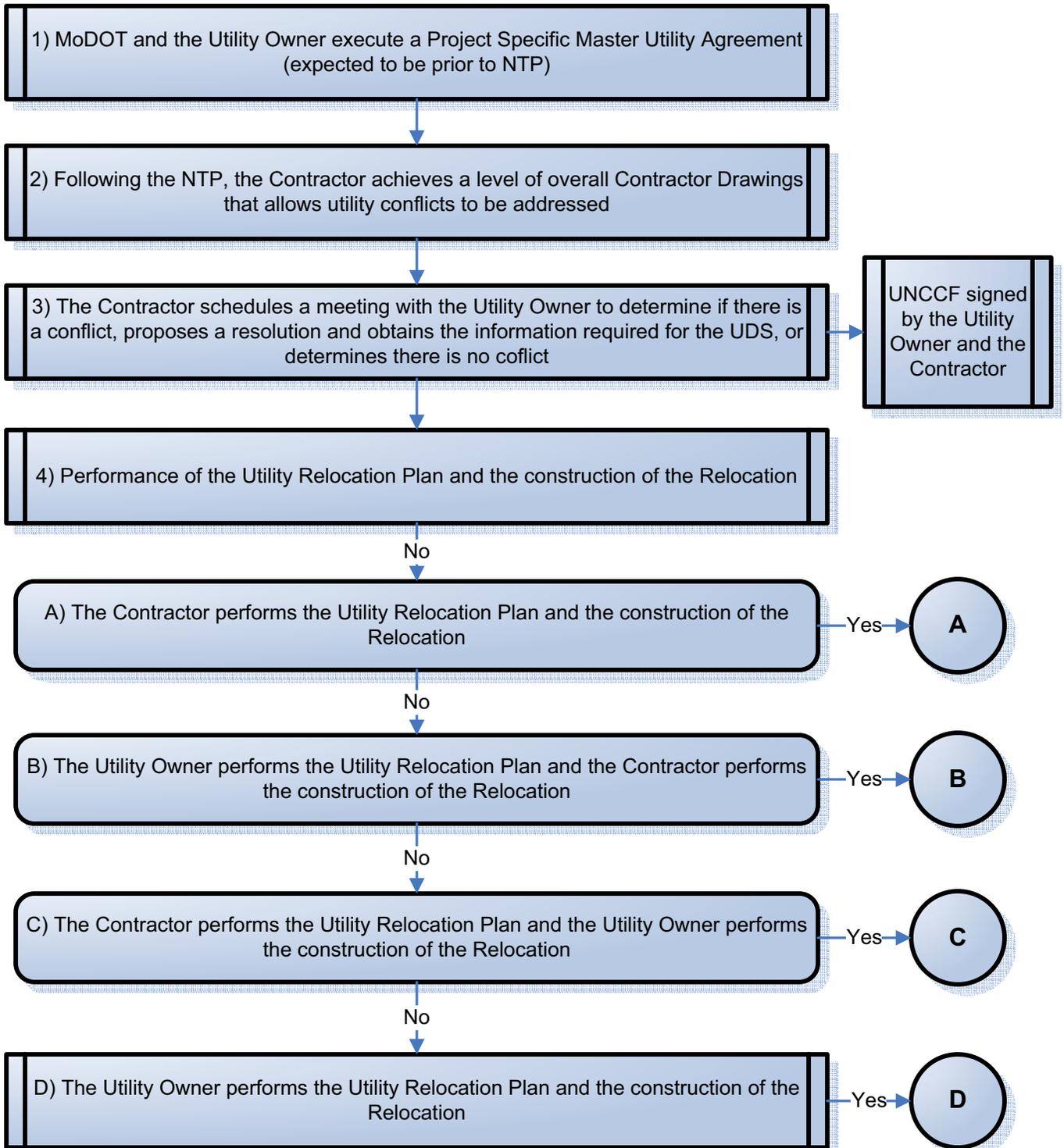
participate in any deliberations or decisions. The Contractor, MoDOT and the Utility Owners may agree to a modified dispute resolution process either in the MUA or in a separate agreement.

7.11 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Utility Tracking Report		Weekly or as otherwise directed by MoDOT	7.2.2.1
Utility No-Conflict Close Out Form			7.2.2.2
Utility Design Sheet (UDS)	✓	Two Days before the initial Work Order meeting	7.3.1.2
Work Order	✓	MoDOT will respond with comments within 10 Working Days of receipt	7.3.1.2
Design Approval Letter	✓	Submit Design Approval Letter within seven Days of submittal of Utility Design completion for each Utility Work Order	7.3.1.3 7.3.1.4
Construction Inspection Approval Letters	✓	Submit Construction Inspection Approval Letter within seven Days of Utility Work completion for each Utility Work Order	7.3.1.5 7.3.1.6

EXHIBIT A
Utility Work Procedure Flow Chart



MoDOT = Missouri Department of Transportation
 NTP = Notice to Proceed
 UDS = Utility Design Sheet
 UNCCF = Utility No-Conflict Closeout Form

EXHIBIT A
Utility Work Procedure Flow Chart



THE CONTRACTOR PERFORMS THE UTILITY RELOCATION PLAN AND THE CONSTRUCTION OF THE RELOCATION

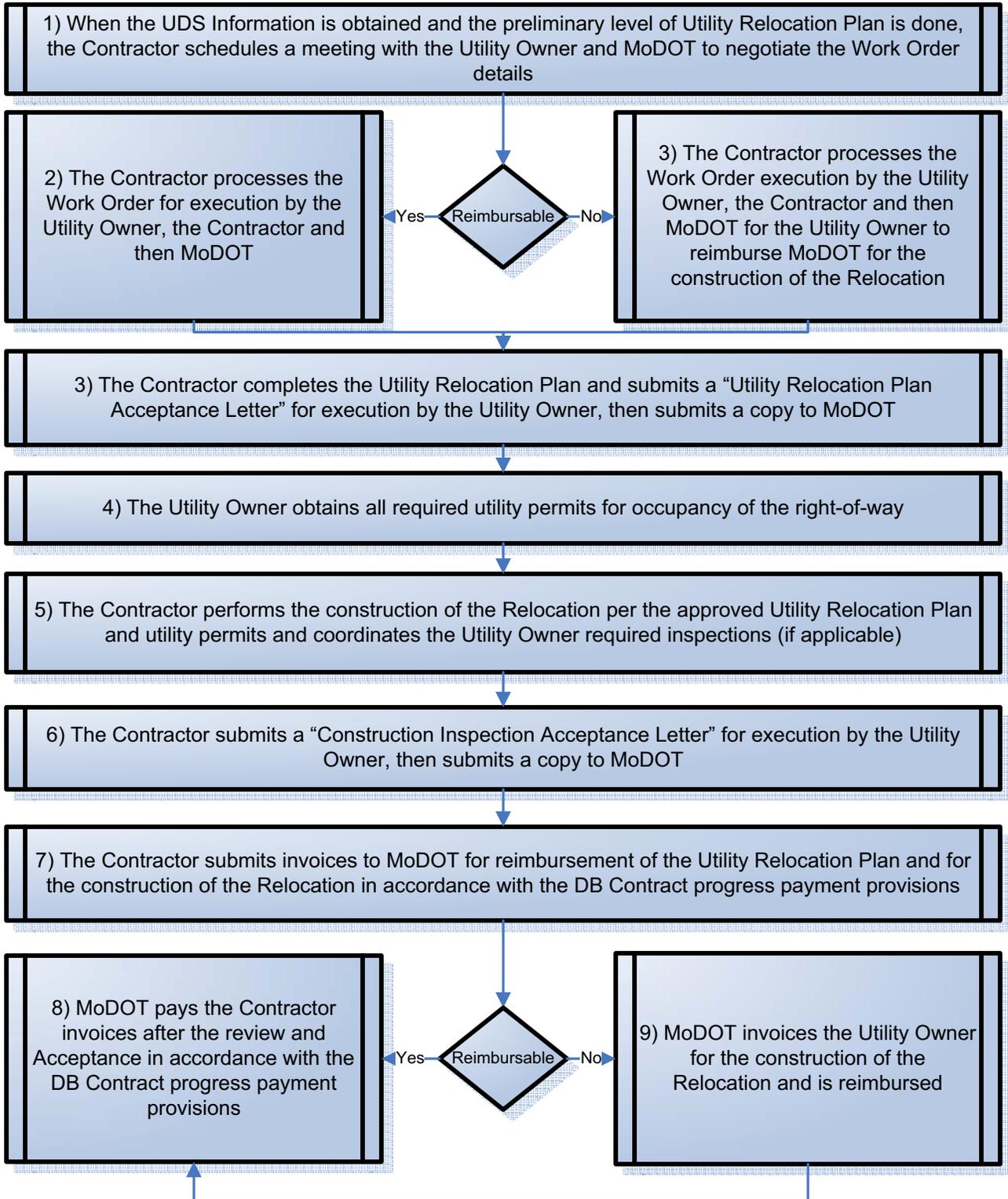


EXHIBIT A
Utility Work Procedure Flow Chart

B

THE UTILITY OWNER PERFORMS THE UTILITY RELOCATION PLAN AND THE CONTRACTOR PERFORMS THE CONSTRUCTION OF THE RELOCATION

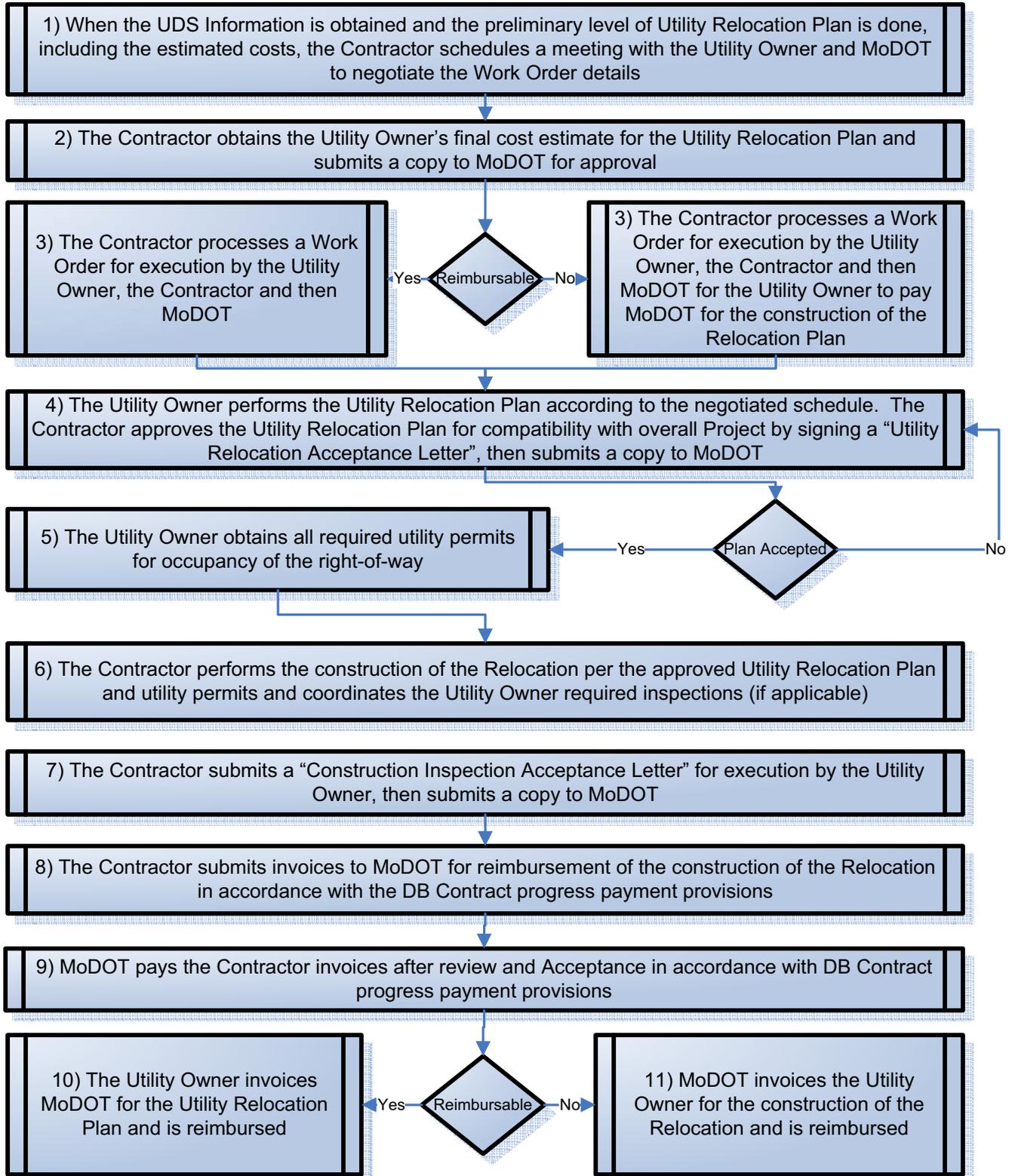


EXHIBIT A
Utility Work Procedure Flow Chart

C

THE CONTRACTOR PERFORMS THE UTILITY RELOCATION PLAN AND THE UTILITY OWNER PERFORMS THE CONSTRUCTION OF THE RELOCATION

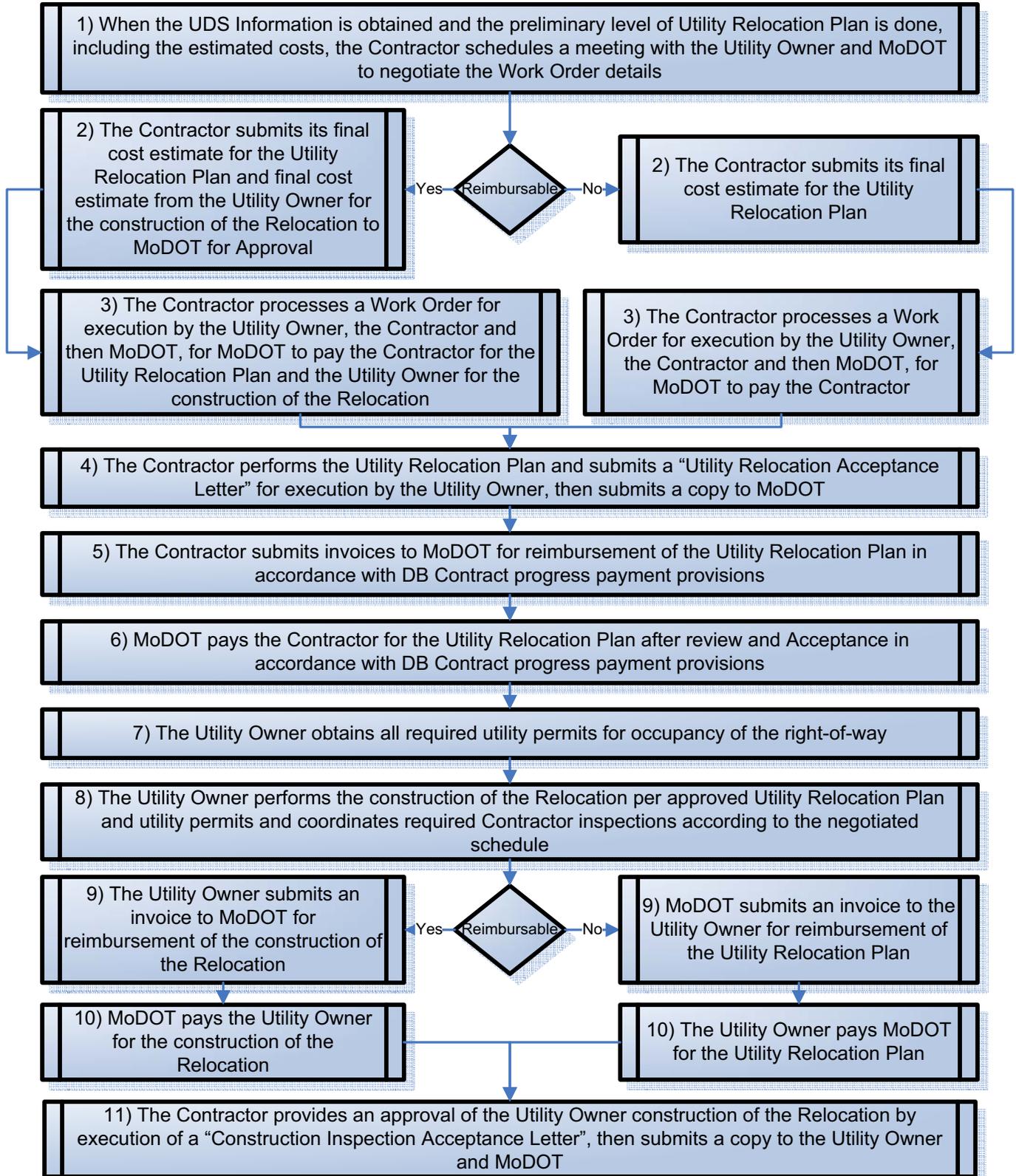
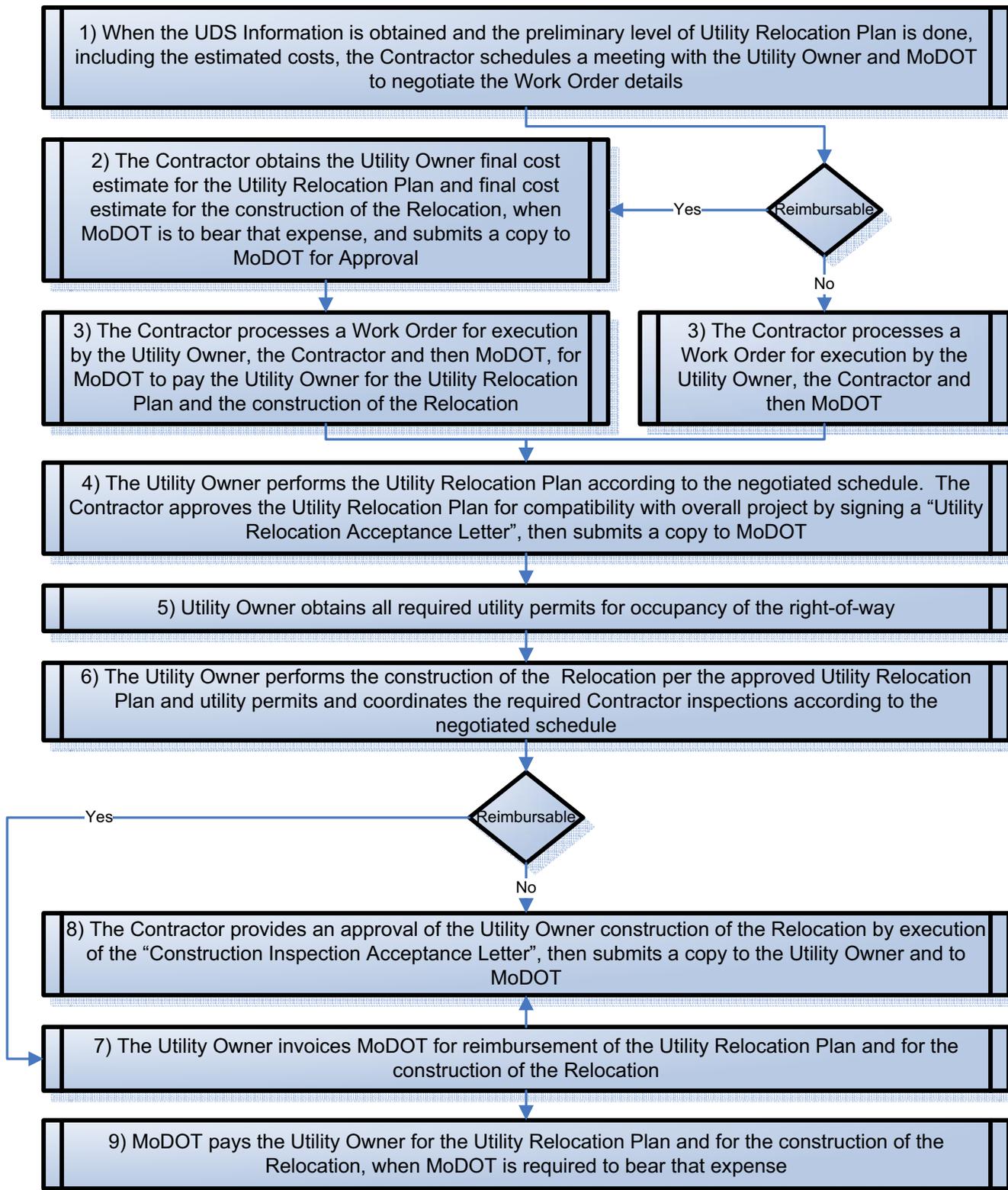


EXHIBIT A
Utility Work Procedure Flow Chart

D

THE UTILITY OWNER PERFORMS THE UTILITY RELOCATION PLAN AND THE CONSTRUCTION OF THE RELOCATION





8 RIGHT OF WAY

8.1 Administrative Requirements

MoDOT will retain possession of each parcel and all improvements, if any, made thereon by the Contractor. The Contractor's access and use of the Right of Way (ROW) arises solely from the permission granted by MoDOT under the Contract.

8.2 Status of Right of Way

MoDOT will acquire all permanent ROW for the Project, including Permanent Easements (PEs) and Utility Easements (UEs).

The Contractor will be allowed access to each parcel acquired as identified in the ROW Schedule. As additional properties are acquired, MoDOT will provide the Contractor with monthly updates to the ROW Schedule, written notice of parcel access, and any applicable restrictions that may apply. The Contractor shall not access any parcel on which access has not been provided.

8.3 Acquisition and Relocation Requirements

Contractor shall comply with all provisions of 23 CFR and 49 CFR Part 24 Uniform Relocation Assistance and Real Property Acquisition Act hereinafter, "The Act," as amended, February 3, 2005.

8.3.1 Temporary Easements

The Contractor, at its sole cost and expense, shall be responsible for acquiring all Temporary Construction Easements (TCEs) necessary to meet the requirements of the Contract Documents.

Contractor may purchase a TCE without an appraisal up to \$10,000.00, so long as the taking presents a non-complex appraisal problem, which does not present issues, such as cost to cure, damage to the remainder, or change of highest and best use. The appraisal waivers shall be performed only by a real estate professional with extensive knowledge and experience of real estate values and sales history in the market area. Should a TCE be required and the anticipated cost exceeds \$10,000.00, but less than \$25,000.00, a payment estimate shall be performed in the form provided in MoDOT's Appraisal Manual. If the TCE is anticipated to exceed \$25,000.00, an appraisal must be performed by a state certified appraiser and an offer made in accordance with Chapters 6 and 7 of MoDOT's Right of Way Manual. The appraisal must also be reviewed by a certified real estate appraiser and the just compensation offered, Approved by MoDOT's Right of Way Manager.

In cases where the TCE causes relocation of personal property in excess of \$1,000.00, the Contractor must provide MoDOT's Right of Way Manager with a relocation proposal for the property to ensure compliance with The Act.



After each TCE is acquired, the Contractor shall submit a complete parcel acquisition file, which includes, but is not limited to, copies of just compensation agreements, fully executed easement documents and/or agreements, the negotiator's signed diary, and a statement signed by the property owner acknowledging receipt of payment in full. Temporary easement acquisition files shall be maintained by Contractor throughout the project and shall be subject to review by MoDOT or FHWA upon request. All temporary easement files shall be submitted to MoDOT at Final Acceptance.

If a TCE is to be acquired from a property that MoDOT has an unsettled condemnation case, the contractor shall provide to MoDOT's Right of Way Manager a copy of all plans and offers pertaining to the easement so that they may be provided to MoDOT's legal counsel in the condemnation case.

8.3.2 Request for Additional Right of Way and Permanent Easements

Should the Contractor determine that additional ROW or permanent easements are necessary or desirable, the Contractor shall request acquisition authority from the Project Director in order to comply with federal law. To request acquisition authority the Contractor shall provide the following to the Project Director:

- Right of Way plan sheets identifying the property, takings and remainders.
- Any necessary environmental clearances for each additional ROW parcel.

Requests for additional ROW or permanent easements shall be submitted to MoDOT for Approval. Once MoDOT has received a complete request with no deficiencies, MoDOT will grant acquisition authority and commence acquisition. MoDOT shall provide a ROW clearance statement and access to the additional ROW shall be granted upon written notification from MoDOT to the Contractor. Cost responsibilities associated with acquiring additional ROW shall be as defined in the contract documents.

8.3.3 Condemnation

If the Contractor cannot reach an agreement with a property owner for a TCE acquisition, the Contractor may request in writing that MoDOT acquire the easement or easements through condemnation proceedings. The Contractor shall submit to MoDOT for Approval, a condemnation document submittal checklist in accordance with the instructions contained in the MoDOT Right of Way Manual.

The Contractor shall provide all right of way and easement staking needs for hearings and viewings and will provide an engineer to attend and answer questions related to the project and the right of way or easement. The Contractor shall not enter any properties until notified in writing that legal possession has been obtained. The Contractor may be required to provide personnel for pre-trial and court hearing testimony for each condemnation case.

8.3.4 Permission to Enter Property

The Contractor shall secure property owner permission, fully executed rights of entry or easements prior to entering any property outside the ROW, for surveying, environmental, and appraisal purposes. Contractor shall retain all such documents for



MoDOT review.

8.4 Driveways and Access

The Contractor shall replace all driveways and approaches on affected parcels “in kind,” by using the same materials that comprise the existing surfaces and improvements. Access to properties must be maintained at all times.

8.5 Temporary Fencing

The Contractor shall provide temporary chain link fencing along temporary or permanent easement lines or ROW lines for residential parcels during construction. The fencing shall be sufficient to impede pedestrian and domestic animal movements into areas of construction or traffic.

8.6 Demolition

The Contractor shall be responsible for demolishing, removing and disposing of all existing buildings from the ROW and permanent easements as shown in the ROW Schedule. Removal of buildings shall include all attached structures, existing rubbish, trash and contents in and adjacent to the building on each parcel.

The Contractor shall follow all applicable state and local laws and regulations.

The Contractor shall notify the Missouri Department of Natural Resources 10 working days before the demolition of any building structure.

The contractor shall use third party air quality monitoring.

8.7 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Request for additional ROW	✓	As needed	8.3.2
Condemnation document submittal checklist	✓	Concurrent with the request to MoDOT for property condemnation	8.3.3



9 SURVEY

Project Survey Coordination

The Contractor shall designate a Missouri professional land surveyor as the person in responsible charge of all Contractor survey Activities on the Project. The Contractor's professional land surveyor shall be required to sign and seal all survey documentation in accordance with state law.

Contractor Supplied Survey Data

Except as provided by MoDOT, the Contractor shall provide all surveys required for completion of the Work.

Preservation of Survey Control Monuments

The Contractor shall preserve all survey control monuments included in Book 4. The Contractor shall notify MoDOT as soon as it becomes known that a monument is in a position that will interfere with new construction or with Contractor operations. The monument position shall be accurately preserved prior to disturbing any such monument.

If a marker is disturbed, or cannot be preserved in place, the Contractor shall set the new marker in accordance with the requirements of the Governmental Person.



10 GEOTECHNICAL

The Contractor shall determine the need for geotechnical information and conduct investigations as necessary to complete the analyses, design, and construction.

10.1 Geotechnical Report

The Contractor shall prepare and submit a Geotechnical Report. The Geotechnical Report shall include a detailed method statement describing the general philosophy and methods of design and construction and the rationale for selection of the proposed construction methods for all geotechnical and foundation aspects of the Project. The method statement shall indicate how material and design details are chosen to match selected construction methods and construction details and the soil, rock, and groundwater environment for the site.

The Geotechnical Report shall define the engineering and design approach that will be followed in order to develop technically and environmentally acceptable and durable foundations, cut and fill slopes, retaining structures, and geotechnical designs for the Project.

The Geotechnical Report shall be prepared and signed and sealed by a Professional Engineer registered in the State of Missouri.

10.2 Geotechnical Data

The Contractor shall form its own interpretation of the existing geotechnical data. MoDOT neither assumes nor implies any other warranty regarding the data provided, other than the information was obtained at locations and depths indicated and to the accuracy of the data at the time of testing.

The additional investigations to be performed by the Contractor shall supplement the data provided by MoDOT.

10.3 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Geotechnical Report		Before Construction of Area	10.1



11 SIGNING, PAVEMENT MARKING, AND LIGHTING

11.1 Signing

The Contractor's design shall address modifications to permanent signing outside the Project limits that are made inaccurate, ineffective, confusing or unnecessary by the Project.

Permanent signage shall not be allowed to obstruct the view of the name on the bridge.

The Contractor shall install all new sign panels.

11.2 Permanent Pavement Marking

The permanent pavement marking system on MoDOT owned roadways shall be according to MoDOT's Standard Specifications and Standard Plans as follows:

- Lane lines shall be 6 inch wide Type 2 Preformed Pavement Marking Tape installed in a groove.
- Edge lines shall be 6 inch wide Epoxy Pavement Marking Material over rumble strip.
- Gore lines shall be 12 inch wide Epoxy Pavement Marking Material over rumble strip.
- Arrows, crosswalks, stop bars, words, symbols, or other intersection marking shall be Type 2 Preformed Pavement Marking Tape installed in a groove.

On all other roadways within the Project, the Contractor shall match the existing permanent pavement marking systems.

11.3 Permanent Lighting

Basic lighting shall be provided at all I-64 interchanges from Spoede Road to Bellevue inclusive, and on I-170 from Eager Road to Galleria Parkway.

1. The average illumination of the traveled way including ramp terminals shall provide an average maintained intensity of not less than 0.6 foot-candles, and a minimum intensity of not less than 0.2 foot-candles.

Continuous lighting shall be provided on I-64 within the St. Louis City limits, and on all cross streets where continuous lighting is currently used.

1. The average illumination of the I-64 traveled way and ramp connections shall provide an average maintained intensity of not less than 0.6 foot-candles, and a minimum intensity of not less than 0.2 foot-candles.
2. The average illumination of cross streets shall provide an average maintained



intensity of not less than 0.4 foot-candles, and a minimum intensity of not less than 0.2 foot-candles.

Lighting shall be provided under all bridges over 75 feet wide.

The average illumination in pedestrian tunnels shall provide an average maintained intensity of not less than 0.5 foot-candles. Pedestrian level lighting shall be provided for sidewalks on bridges.

The Contractor shall install efficient lighting and equipment to optimize the use of light on the roadway surface while minimizing stray light trespassing on adjacent properties.



12 DRAINAGE AND SEWERS

The Project shall include all Work for the design and construction of all new or modified storm drainage, sanitary, and combined sewers and facilities both permanent and temporary to convey proposed design discharges. The Project shall also include all Work for the design and construction of permanent and temporary erosion control measures.

12.1 Location and Ownership of Drainage and Sewer Facilities

The Contractor shall verify the location and ownership of all storm drainage and sewer facilities within the limits of the project.

12.2 Storm Drainage

Storm drainage shall include all sewers, culverts, channels and appurtenant structures that provide the facility for removing and transporting runoff.

All storm drainage facilities identified as owned and/or maintained by MoDOT and are affected as part of this Project shall be designed by the Contractor in accordance with the following publications: All FHWA Hydraulic Design Series (HDS) publications, all FHWA Hydraulic Engineering Circular (HEC) publications, all USGS Water Resources Investigations Reports relative to Urban Basins in Missouri. For interstate facilities Sections 9-02.2(1), 9-02.5(4) and 9-02.6 of MoDOT's Project Development Manual shall be used.

All storm drainage facilities identified by the Contractor as owned and/or maintained by Governmental Persons shall be designed in accordance with the appropriate procedures and requirements of that Governmental Person. The Contractor shall obtain all Governmental Approvals from the appropriate authority for the design and construction of all new facilities, modifications and/or connections to the existing storm drainage system that are affected as part of the Project.

12.2.1 MoDOT Storm Drainage Facilities to be Used in Place

All existing MoDOT facilities within the Project that are identified by the Contractor to be used in place as a part of a new or modified storm drainage system shall be cleared of debris in order to sustain the proposed design discharges. The Contractor shall furnish a report, prior to Work in that area, detailing the condition of the used in place facility and the rationale for using it in place. The report shall contain, at a minimum, textual, photographic and video documentation as to the structural and hydraulic condition of that facility.

12.2.2 MoDOT Storm Drainage Facilities to be Left in Place

All MoDOT storm drainage facilities within the Project that are identified by the Contractor to be left in place and are not part of a new or modified storm drainage system shall be cleared of debris in order to sustain the existing discharges. The



Contractor shall furnish a report, prior to Work in that area, detailing the condition of the left in place facility. The report shall contain, at a minimum, textual, photographic and video documentation as to the structural and hydraulic condition of that facility.

12.3 Combined Sewers

Combined sewers include all sewers and appurtenant structures that provide for the conveyance of both surface runoff and wastewater. The Contractor shall obtain Governmental Approvals from Metropolitan Sewer District (MSD) for the design and construction of all new combined sewers and modifications, and/or connections to the existing MSD combined sewer system that are affected as part of this Project.

12.4 Sanitary Sewers

Sanitary sewers shall include all sewers and appurtenant structures that provide for the conveyance of wastewater. The Contractor shall obtain Governmental Approvals from MSD for the design and construction of all new sanitary sewers and modifications, and/or connections to the existing MSD sanitary sewer system that are affected as part of this Project.

12.5 Coordination with Other Agencies

The Contractor shall coordinate all sewer and drainage issues with affected regulatory agencies that have jurisdiction over the drainage facility. The Contractor shall invite MoDOT to all meetings with affected regulatory agencies.



13 ROADWAYS AND PAVEMENTS

13.1 Traffic Analysis and Interstate Access

Book 4 provides the year 2020 forecasted design year traffic volumes for the Project.

The Contractor shall be responsible for obtaining Approval from MoDOT and FHWA for any desired modifications to the Access Justification Report (AJR) provided in Book 5.

13.2 Interstates

Design of the Project shall be in accordance with AASHTO. The contractor is responsible for obtaining Approval from MoDOT and FHWA on any design exceptions.

13.3 Local Roadways

Reconstructed local roadways and sidewalks shall be at least as wide as existing. Sidewalks along Tamm Avenue, Hampton Avenue, and Kingshighway shall be at least six feet wide.

The Contractor shall construct connecting roads, driveways, or curb cuts to provide access to property parcels where existing accesses have been disturbed or modified.

13.4 Non-Vehicular Facilities

Bellevue Avenue and Tower Grove Avenue are designated bike routes. Designated bike lanes shall be provided on Bellevue Avenue and Tower Grove Avenue. These bike lanes shall be at least four feet wide in each direction and signed and marked as a bike lane.

Multi-use path in Forest Park

Any disturbed or re-constructed sections of the Forest Park multi-use path shall be replaced to match the width and pavement type of the existing path.

Pedestrian Connections

All pedestrian connections shall meet ADA requirements.

The following pedestrian connections shall be provided and shall be separate from other vehicular and pedestrian connections:

- Across I-64, east of the Kingshighway Boulevard interchange, from the sidewalk on Chouteau Avenue or from the sidewalk on Gibson Street on the south side of I-64 to the sidewalk at the intersection of Clayton Road and Euclid Avenue on the north side of I-64. The Contractor shall provide at least a ten-foot wide connection.



- Across I-64, between the eastern limit of Aviation Field and the western limit of St. Louis University High School, from the sidewalk along Oakland Avenue on the south side of I-64 to the Forest Park trail located east of Aviation Field that travels along the south side of Police stables and Science Center Planetarium on the north side of I-64. The Contractor shall provide at least a ten-foot wide connection with at least twelve-foot vertical clearance for horse-mounted users. If the Contractor uses the existing tunnel in place, they shall provide lines of sight so the tunnel entrance and its approaches can be seen from the Oakland Avenue sidewalk and the Forest Park trail. Oakland Avenue or the Forest Park trail shall be visible by users from within the tunnel. The tunnel and its connections shall meet ADA requirements. If the existing tunnel is not used in place, it shall be removed or the Contractor can propose an alternative disposal measure to MoDOT for acceptance.
- Across I-64, east of the Hampton Boulevard interchange, from the sidewalk at the intersection of Oakland Avenue and Highlander Drive on the south side of I-64 to the Forest Park sidewalk located between Wilken Place and Aviation Field on the north side of I-64. The Contractor shall provide at least a ten-foot wide connection.
- Across I-170, connecting an existing sidewalk on the east side of I-170 to an existing sidewalk on the west side of I-170 that is on Brentwood Boulevard or has a connection to Brentwood Boulevard. The connection can be anywhere from one hundred feet south of the limits of Galleria Parkway on the north to Red Bud Avenue on the south. The Contractor shall provide at least a ten-foot wide connection.

13.5 Pavement Selection

Any pavement reconstruction on arterials or local streets shall match the existing pavement type.

13.6 Barrier at State Right of Way Line

The Contractor shall provide a continuous method of access and pedestrian control at least 60 inches high at or near the right of way line or the access-control line.

13.7 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
AJR Modifications	✓	Prior to issuance of applicable Released for Construction Documents	13.1
Design Exceptions	✓	Prior to issuance of applicable Released for Construction Documents	13.2



14 SIGNALS AND INTELLIGENT TRANSPORTATION SYSTEMS

14.1 Design Requirements

The Contractor shall prepare traffic signal and Intelligent Transportation System (ITS) designs and perform construction for the Project. The Contractor shall conform to the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals.

The Contractor shall install and connect power service for the Project for temporary and permanent traffic signals, traffic management equipment, lighting, and ITS equipment. Prior to installation, the Contractor shall design power service and perform power service requests for the Project for approval by AmerenUE. The Contractor shall also submit power service requests to MoDOT. The Contractor shall coordinate with AmerenUE to determine electric power requirements for the Project. All power cables shall be in exclusive conduits.

14.2 Temporary and Permanent Traffic Signalization

The Contractor shall keep the existing signalized intersections functional, including maintaining any existing communication links between the signal controllers and other equipment. If signals must be shut down, the Contractor shall provide temporary signals or appropriate traffic control.

The Contractor shall perform signal warrants using the Manual of Uniform Traffic Control Devices (MUTCD) and provide signals at intersections if signal warrants #1 or #2 are satisfied using year 2020 forecasted traffic volumes.

The Contractor shall design and test all permanent signal controllers to communicate with MoDOT's Eagle ACTRA central signal system software in the Transportation Management Center (TMC).

The Contractor shall connect permanent signals for the Project to existing adjacent signal systems as follows. The Contractor shall install fiber optic networks and all equipment necessary to make the systems operational.

- I-64/Lindbergh Boulevard (US 67) interchange – If new signals are warranted, then the new signals shall connect into the existing fiber optic signal system along Lindbergh Boulevard owned by MoDOT. The connection shall create an operational link between the new signals and the existing signals at Clayton Road/Lindbergh Boulevard intersection and Conway Road/Lindbergh Boulevard intersection.
- I-64/Clayton Road interchange near Warson Road – The Contractor shall connect the Clayton Road interchange signals to the St. Louis County signal at Clayton Road/Warson Road intersection.
- I-64/Brentwood Boulevard – The Contractor shall connect the Brentwood



Boulevard interchange signals into the existing fiber optic signal system along Brentwood Boulevard owned by St. Louis County. The connection shall create an operational link between the interchange signals and the existing signals at Eager Road/Brentwood Boulevard intersection and St. Louis Galleria/Brentwood Boulevard intersection.

- I-170/Galleria Parkway interchange – The Contractor shall connect the Galleria Parkway interchange signals to the St. Louis County signal at Galleria Parkway/Brentwood Boulevard intersection.
- I-170/Eager Road interchange – The Contractor shall connect the Eager Road interchange signal to the existing fiber optic signal system along Eager Road owned by St. Louis County. The connection shall create an operational link between the interchange signal and the existing signals at Eager Road/Brentwood Boulevard intersection and Eager Road/Brentwood Promenade Court intersection.
- I-64/Hanley Road interchange – The Contractor shall connect the Hanley Road interchange signals into the existing fiber optic signal system along Hanley Road owned by St. Louis County. The connection shall create an operational link between the interchange signals and the existing signals at Hanley Road/Clayton Road intersection, Hanley Road/Eager Road intersection and Hanley Road/Dale Avenue intersection.
- I-64/Big Bend Boulevard interchange – If new signals are warranted, then the new signals shall connect into the existing fiber optic signal system along Big Bend Boulevard owned by St. Louis County. The connection shall create an operational link between the interchange signals and the existing signals at Big Bend Boulevard/Wise Avenue intersection and Big Bend Boulevard/Dale Avenue intersection.
- I-64/McCausland Avenue interchange – The Contractor shall connect the McCausland Avenue interchange signals into the existing fiber optic signal system along McCausland Avenue owned by the City of St. Louis. The connection shall create an operational link between the interchange signals and the existing signals at McCausland Avenue/Clayton Avenue/Oakland Avenue intersection and McCausland Avenue/Dale Avenue intersection.
- I-64/Hampton Avenue interchange – If new signals are warranted, then the new signals shall connect to the existing signal at the Hampton Avenue/Oakland Avenue intersection and connect into the existing fiber optic signal system along Hampton Avenue owned by the City of St. Louis. If new signals are warranted along Oakland Avenue, then the new signals shall connect to the existing signals at Hampton Avenue/Oakland Avenue intersection and at Oakland Avenue/Highlander Drive intersection.
- I-64/Kingshighway Boulevard interchange – If new signals are warranted, then the new signals shall connect into the existing fiber optic signal system along Kingshighway Boulevard owned by the City of St. Louis. The connection shall create an operational link between the interchange signals and the existing signals at Kingshighway Boulevard/Hospital Plaza intersection and Kingshighway Boulevard/Oakland Avenue intersection.



- I-64/Tower Grove Avenue/Boyle Avenue interchange – If new signals are warranted, then the new signals shall connect into the existing fiber optic signal system along Manchester Avenue/Chouteau Avenue owned by MoDOT.

For signals that connect to existing fiber optic networks owned by MoDOT or St. Louis County, existing interconnection equipment is located within the existing intersection signal cabinets. For signals that connect to existing fiber optic networks owned by the City of St. Louis, interconnection equipment shall be located independently and separate from signal cabinets.

For each phase defined in the Maintenance of Traffic Plan, the Contractor shall develop signal timing plans for the Project and roadways designated as detours and submit the plans for Approval. After Approval, the Contractor shall implement, test and adjust signal timings to prevailing conditions or as directed by MoDOT. During each phase, the Contractor shall be responsible for adjusting signal timings to prevailing conditions or as directed by MoDOT. The Contractor shall provide accessible pedestrian signals for signalized intersections with pedestrian crossings within the Project. The Contractor shall provide full video detection for signalized intersections within the Project. The Contractor shall not use bridges to support signal equipment unless the signalized intersection occurs beneath a bridge. The Contractor shall install signal heads aligned over the center of each travel lane to encourage motorist positive lane control.

14.3 Intelligent Transportation Systems

Communication between the TMC and the cameras, dynamic message signs, and other MoDOT field equipment shall be via the fiber optic network. The communication shall be via Ethernet. The Contractor shall make ITS equipment operational with computers in the TMC and MoDOT's Gateway Guide ATMS software. MoDOT will configure Wide Area Network communications equipment and be responsible for wide area network operations. MoDOT will furnish the following ITS equipment for the Contractor to install and make functional: networking switches, dynamic message signs excluding sign supports, closed circuit television cameras excluding poles, device servers and video encoders. The Contractor shall submit Notice for MoDOT furnished equipment. MoDOT will provide equipment no later than 90 days after Notice is received. The Contractor shall be responsible for storage and maintenance of MoDOT furnished equipment.

The Contractor shall keep the existing dynamic message sign, the closed circuit television camera and the Traffic.com equipment functional. The Contractor shall remove three nonfunctional traffic detectors owned by MoDOT. The Contractor shall relocate existing devices as necessary so that they can continue to perform their intended function. The Contractor shall aim devices, test functionality and adjust operating parameters. The following table describes the location of existing ITS devices.



Existing ITS Devices		
Type	I-64 Location	Owner
RTMS detector	West of Spoede bridge	Traffic.com
Dynamic message sign	Between Spoede and Lindbergh interchanges	MoDOT
RTMS detector	West of Clayton/Warson interchange	Traffic.com
RTMS detector	Between Clayton/Warson and McKnight interchanges	Traffic.com
RTMS detector	Just east of McKnight bridge	MoDOT
RTMS detector	Between McKnight and McCutcheon bridges	Traffic.com
Camera	Between Brentwood and I-170 interchanges	MoDOT
RTMS detector	Between I-170 and Hanley bridge	Traffic.com
RTMS detector	West of Big Bend bridge	MoDOT
RTMS detector	West of Bellevue bridge	Traffic.com
RTMS detector	Between Tamm and Hampton bridges	Traffic.com
RTMS detector	West of Newstead bridge	MoDOT

14.3.1 Communication System

The Contractor shall provide and install an underground fiber optic network in an exclusive conduit bank for the Project along I-64 and I-170. The Contractor shall provide and install conduit banks for the Project consisting of two (2) two-inch diameter High Density Polyethylene (HDPE) conduits, one carrying a three-compartment textile innerduct, 24-fiber distribution cable and a 72-fiber trunk cable. The other parallel conduit shall be empty. The Contractor shall connect permanent signalized intersections within the Project to the new underground fiber optic network. The Contractor shall provide and install fiber optic networks and all equipment necessary to make the systems functional. The Contractor shall provide and install fiber optic cable that is loose tube, single mode dielectric cable. The Contractor shall splice all optical fibers, including spares, only in equipment cabinets to provide continuous runs between cabinets. The cables shall be constructed with twelve fibers per tube.

In every pullbox that is not at an equipment cabinet, the Contractor shall store 20 feet of slack fiber optic cable for every cable that passes through the pullbox. At cabinet locations, where cable runs from the pullbox directly to an equipment cabinet, the Contractor shall store 30 feet of slack fiber optic cable in the pullbox.

The Contractor shall provide and install warning tape in all trenches containing



conduit. The Contractor shall provide and install locator wire in all underground non-metallic conduits and into each pullbox or base.

The Contractor shall not splice flexible non-metallic ducts. All runs shall be continuous. The Contractor shall not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

The Contractor shall furnish and install equipment cabinets for the Project. All cabinets shall have locks built into the latching mechanism and the Contractor shall provide a padlock for each cabinet. The built-in cabinet lock shall be keyed to match the lock in MoDOT's other traffic equipment cabinets. The Contractor shall provide and wire all equipment cabinets for three-wire 240/120-volt AC service. The Contractor shall provide and identify all cabinet doors with cabinet identification labels displaying the cabinet identifier. The Contractor shall submit labeling system and cabinet wiring diagrams.

14.3.2 Video System

The Contractor shall install a permanent video surveillance system for the Project on I-64 and I-170. The system shall enable the MoDOT staff at the Transportation Management Center to see any part of the I-64 or I-170 roadway, including all lanes and shoulders, as well as the adjacent portions of the streets and highways that exchange traffic with the interstates.

The Contractor shall install video systems consisting of dome cameras installed on poles. The Contractor shall restrict the camera's field of view, if necessary, so that a user cannot use the cameras to look at private property or other inappropriate views. The Contractor shall submit Notice to highlight situations in which there is a conflict between the need to protect privacy and the need to know about traffic situations. The Contractor shall adjust camera installations to solve the conflict or as directed by MoDOT.

The location and height of the camera pole shall be such that the camera can be serviced from a bucket truck with a 70-foot boom.

14.3.3 Dynamic Message Signs

The Contractor shall install six new dynamic message signs and relocate one existing sign. Signs shall be located approximately one mile in advance of the desired diversion point. The Contractor shall submit dynamic message sign locations for Approval. The approximate locations for each sign is shown below:

Signed Diversion Candidate	I-64 Sign Location
WB I-64 to I-270	Between Lindbergh and Ballas
EB I-64 to Lindbergh	Between I-270 and Lindbergh
WB I-64 to Lindbergh	Between Clayton/Warson and Lindbergh



Signed Diversion Candidate	I-64 Sign Location
EB I-64 to I-170	Between Clayton/Warson and McKnight
WB I-64 to I-170	Between Bellevue and I-170
EB I-64 to Hampton or Kingshighway	Between Bellevue and Hampton
WB I-64 to Kingshighway or Hampton	Between Sarah and Kingshighway

The Contractor shall provide and install sign power that passes through an equipment cabinet mounted on the sign structure, and it shall be possible to disconnect the sign from all power using breakers in that cabinet. Cables coming from below ground to the cabinet mounted on the sign structure shall run through the structure. The cables going from the cabinet to the sign shall also run through the structure.

14.4 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Power Service Requests	✓	30 days prior to installation	14.1
Signal Timing Plans	✓	30 days prior to implementation	14.2
Notice for MoDOT furnished ITS equipment		90 days prior to installation	14.3
Cabinet Labeling System		Project Completion	14.3.1
Cabinet Wiring Diagrams		Project Completion	14.3.1
Notice of Video System Conflict		No later than 7 days after installation	14.3.2
Dynamic Message Sign Locations	✓	30 days prior to installation	14.3.3



15 STRUCTURES

Designs shall be in accordance with applicable state and federal regulations. The design truck shall be HS-25 for bridges designed using AASHTO Standard Specifications for Highway Bridges or HL-93 for bridges designed using AASHTO LRFD Bridge Design Specifications.

The Contractor shall request a bridge number for each bridge or any retaining wall that exceeds 5 feet in height. All correspondence relative to a specific bridge shall contain the bridge number in the subject line.

The Contractor shall load rate new and rehabilitated bridges. The load ratings shall be in accordance with the "Load Rating for Design Build Bridges" memorandum. A report for each structure shall be supplied detailing the ratings for all axle configurations identified by the memorandum. The Contractor shall use VIRTIS software to rate each structure. The input and output shall be supplied to MoDOT in electronic format. New bridges shall not require load posting. Inventory ratings shall, at the minimum, be equivalent to the design truck.

15.1 Governmental Approvals

The Contractor shall obtain approval from the Science Center for any Work that will impact the Science Center pedestrian bridge over I-64.

The Contractor shall obtain approval from Bi-State Development Agency (Metro) for any Work that will impact the MetroLink structure under I-64 west of Hanley Road.

15.2 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
VIRTIS rating of each bridge		Before construction of bridge	15



16 URBAN DESIGN

The Contractor shall incorporate into the project urban design elements and landscaping in keeping with the 'streamline moderne' Art Deco style.

16.1 Urban Design Elements

The Contractor shall submit a final Urban Design Concept. The plan shall show the location of all urban design elements and the materials to be used and shall meet the following criteria:

- Pedestrian areas on bridges shall have pedestrian level light fixtures.
- All sound walls shall have patterns on both sides.
- All exposed vertical concrete surfaces shall have a sacrificial graffiti coating.

16.2 Landscaping

The Contractor shall inventory the existing trees along the corridor. Existing trees and under-story vegetation in good condition shall remain in place when possible.

The Contractor shall submit a Landscaping Plan that shows the proposed location of all landscaping and shall meet the following criteria:

- Existing canopy and ornamental trees shall be replaced one for one in shrub or mulch beds as close to the removal location as possible. New canopy trees shall have a caliper of at least 2½ inches. New ornamental trees shall have a caliper of at least 2 inches.
- Landscape plantings shall seek to restore visual buffer areas through the use of evergreen and deciduous material and locating plantings to achieve the greatest level of visual screening.
- Lawn areas shall be sod in areas adjacent to pedestrian facilities. All other disturbed areas not designated for mulch shall be seeded.

16.3 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Comments
Urban Design Concept		Before construction of any walls or bridges but no later than Final Design Documents
Existing Tree Inventory		Before any trees are removed
Landscaping Plan		Before installation of landscaping but no later than Final Design Documents



17 MAINTENANCE OF TRAFFIC

The Contractor shall conduct all Work necessary to meet the requirements associated with Maintenance of Traffic (MOT), including provisions for the safe and efficient movement of people, goods and services through and around the project while minimizing impacts to local residents, business and commuters. The Contractor shall provide the greatest regional traffic mobility and least impact to motorists while completing the project in the least amount of time. Contractor shall describe the MOT plan with reasonable, measurable tasks and milestones.

The Contractor shall not close all I-64 mainline lanes to traffic for the entire duration of the Project.

The Contractor shall coordinate and cooperate with other regional construction projects.

The final MOT Plan shall be submitted at least 30 Days prior to beginning the first phase or stage of construction. The final MOT plan shall include all elements of the draft MOT Plan and the following additional elements:

- Approach to developing detailed Traffic Control Plans (TCP).
- Access management plan and access maintenance plan for all impacted parcels. Access to all parcels within the Project limits shall be maintained or the Contractor shall provide alternative access.

The final MOT Plan shall be updated by the Contractor throughout the Project as needed.

17.1 Traffic Control Plans

The Contractor shall develop and submit Traffic Control Plans for each stage of construction that shows the Contractor's proposed construction staging and proposed traffic control devices consistent with the MOT Plan. The TCP shall be submitted to MoDOT prior to construction of the Work shown in the TCP. Major revisions to a TCP shall also be submitted to MoDOT. The TCPs shall include, at a minimum, the following elements:

- A detailed diagram which shows the location of all traffic control devices.
- An access maintenance plan for all properties requiring access during construction. The plan shall also indicate the areas where equipment will be stored and vehicles parked if within the Project limits.
- A plan for maintaining and controlling pedestrian, bicycle, and other non-vehicular traffic.

17.1.1 Bicycle and Pedestrian Impacts

The Contractor shall minimize bicycle and pedestrian impacts to the regional bicycle



and pedestrian systems within the project area. If impacts occur to the following locations, the Contractor shall provide alternate access and signed detours. The signed bicycle and pedestrian detours shall be shown on the TCP.

- Pedestrian bridge east of Kingshighway
- Pedestrian bridge north of I-64 across I-170
- The Forest Park trail system from the Clayton Road/Skinker Boulevard interchange to the Kingshighway Boulevard interchange
- Tamm Avenue overpass
- The St. Louis Regional Bicycle Facilities on Bellevue Avenue and Tower Grove Avenue
- The existing bike/pedestrian trail along Clayton Road south of the Clayton Road/Warson Road interchange
- South Outer 40 east of the Clayton Road/Warson Road interchange
- The trail crossing under I-64 along the Metro light rail transit right of way west of the Hanley Road interchange

17.1.2 Detour Requirements

The Contractor shall provide alternate access and signed detours for closures. The signed detours shall be shown on the TCP.

- The Contractor shall use state owned roadways and state right of way for detours.
- The Contractor shall obtain approval from local roadway owners to use non-state owned roadways for detours.
- The Contractor shall sign detours for Forest Park attractions and zoo access during Hampton Avenue interchange and Tamm Avenue reconstruction.

17.2 Construction Requirements

- The Contractor shall provide a paved surface for all detours.
- The Contractor's placement of construction equipment, materials and vehicles shall comply with AASHTO.



17.3 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Final Maintenance of Traffic Plan		30 Days prior to start of Construction	17
Traffic Control Plans		Prior to Implementation	17.1



18 MAINTENANCE DURING CONSTRUCTION

The Contractor shall be responsible for Project maintenance starting on the day the Contractor mobilizes on any portion of the Right of Way on the Project or on NTP2, whichever occurs first.

Provisions for local traffic, including safe and uninterrupted flow of bicycle and pedestrian traffic, shall be maintained by the Contractor at all times during construction.

The Contractor shall maintain the roadbed substantially free of ruts, holes, and detrimental surface deformations. The Contractor shall control the height of vegetation for traffic safety, and shall provide and maintain a safe condition for all approaches and intersections.

The Contractor shall maintain the Project until Final Acceptance. MoDOT will assume maintenance responsibilities for individual Project Segments that have been accepted by MoDOT,

The contractor will not be required to perform snow removal for lanes open to traffic.

18.1 Maintenance Plan

The Contractor shall develop and submit to MoDOT a maintenance plan. The plan shall define the Contractor's complete strategy for the implementation, coordination, scheduling, and monitoring of maintenance Activities during the Project. The plan shall be updated annually to reflect changes in the Contractor's construction Activities.

The maintenance plan shall be submitted to MoDOT for Approval at least 15 Days prior to the first occurrence of Contractor mobilization on any portion of the Right of Way on the Project, or 75 Days following NTP1, whichever occurs first.

18.2 Maintenance Responsibilities of the Contractor

The Contractor shall perform all required maintenance Activities including, but not limited to:

- Patching and repair of pavements and shoulders
- Patching and repair of all structures
- Repair of shoulder drop-offs
- Snow and ice removal for lanes closed to traffic
- Maintenance of delineators, signing and pavement markings
- Drainage maintenance
- Repair or replacement of damaged safety devices and fence



- Vegetation control
- Litter control
- Graffiti removal
- Pest control for buildings acquired within the MoDOT Right of Way

The Contractor shall maintain properties and provide reasonable safety and security measures to preserve the acquired Right of Way or easements. The Contractor shall prevent, minimize, or correct problems such as mowing grass, vandalism, trespassing, rodent infestation, weed control, illegal dumping or disposal of rubble, and other debris on all areas of the Project, which are still under the Contractor's maintenance responsibility.

Once the Contractor permission to enter has been acquired for the use of Right of Way and easements, in accordance with Section 8, the Contractor shall manage and minimize losses to the property.

18.3 Limits of Maintenance Responsibilities

The longitudinal limits of the Contractor's maintenance responsibilities on the Project shall extend from existing concrete pavement match point on I-64 from 0.89 miles west of Spoede Road to the fill face of the I-64 Vandeventer Overpass, and on I-170 from Eager Road to the south fill face of the I-170 bridge over Clayton Road. The lateral limits of Contractor's maintenance responsibility shall be the Right of Way, temporary easements, and permanent easements for I-64 and I-170 mainline, ramps, viaducts, crossroads, outer roads, and service roads within the Project Site. Any other area disturbed by Contractor Activities, outside of these limits, shall be the sole maintenance responsibility of the Contractor.

18.4 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Maintenance Plan	✓	At least 15 Days prior to the first occurrence of Contractor mobilization on any portion of the ROW or 75 days following NTP1, whichever occurs first	18.1