

SCOPE OF SERVICES

Project Description

MoDOT Job Number J8P3192 has been developed to update the existing pedestrian facilities to comply with MoDOT's ADA Transition Plan. The following locations have been identified to be included in this contract:

- Christian CC at Fremont Hills
- Christian CC at 65
- Christian J in Ozark
- Christian NN in Ozark
- Christian 14 in Ozark
- Christian M in Nixa
- West Bypass at State Street and Battlefield
- Division Street at 65 and to the east
- Chestnut Expressway from east of I-44 to Glenstone Avenue (includes the design of a HAWK signal crossing near the intersection of Eldon)
- Eastgate south of Division, at Chestnut and north of Cherry Street
- Ingram Mill Road from Sunshine to Battlefield
- Greene Route EE at Alliance and west of West Bypass
- Strafford – Route 125
- Campbell Avenue from Republic to Lakewood and at Weaver Road (portion north of JRF should be taken care of with LPA project) and at Plainview Road
- Campbell Avenue and Plainview

A supplemental agreement is required for any additional locations that need to be addressed through this contract.

The contract for the design of J8P3192 will be a two or three-phased approach, requiring a supplemental agreement for each additional phase.

Phase 1

Phase 1 of the contract includes an analysis of the existing pedestrian facilities for ADA compliance. Phase 1 deliverable include a conceptual report summarizing the results of the field analysis and a construction cost estimate for the proposed improvements.

Phase 2

Phase 2 of the contract includes surveying, environmental services, utilities coordination, preliminary design, right of way plans, right of way acquisition, final construction plans and construction inspection.

The CONSULTANT shall provide the professional, technical and other personnel resources, equipment, materials and all other things necessary to prepare the conceptual report, survey, preliminary plans, right of way plans, right of way acquisition, construction plans, utilities coordination, environmental services and construction inspections for the ADA improvements for J8P3192.

The CONSULTANT shall perform the following services, all in accordance with the standard practice of the Commission as outlined in the MoDOT Engineering Policy Guide (EPG) and using AASHTO Green Book and other resources as listed in the EPG.

A more detailed description of the process and requirements used by MoDOT for completion of the design may be found in the EPG. The consultant is encouraged to review the appropriate sections of the manual as a means to supplement the information contained in the scope of services and provide additional guidance in the requirements and expectations of MoDOT for completion of the design services.

Services rendered by the CONSULTANT, which are considered additional services, will be addressed per paragraph (3), Additional Services of the Project Design Consultant Agreement. The provisions of the Design Consultant Agreement outlining the responsibilities of the CONSULTANT regarding the quality and accuracy of the deliverables and products shall apply to any decisions regarding determinations of additional services.

Preparation of a supplemental agreement is necessary prior to performance of any work, which is considered as additional services, not included in the original scope of services. The CONSULTANT will not be compensated for additional services performed prior to execution of a supplemental agreement. Only additional services, which are required due to changed or unforeseen conditions or are due to a change in the specified end product, will be considered for inclusion in a supplemental agreement.

The CONSULTANT shall prepare all plans through use of a Computer Aided Drafting (CAD) program. The CONSULTANT shall conform to the Missouri Department of Transportation Specifications for Computer Deliverable Contract Plans as referenced in the MoDOT EPG. The CONSULTANT shall use OpenRoads Designer software.

The CONSULTANT shall review "as built" plans, aerial photographs, manuscripts, etc. and other information to be provided by the Commission and make the necessary field investigations to assure that there have been no significant changes since the information was recorded or obtained.

The CONSULTANT shall prepare a comprehensive design criteria memorandum for this entire project and submit it to the COMMISSION for review and approval. Any deviations from Commission established procedures for design, construction or materials shall be approved through the MoDOT project manager and documented by the CONSULTANT. This documentation shall include a brief justification for the deviation and the signature of the CONSULTANT project manager.

This scope of services is intended to be an accurate description of the items and tasks required for completion of the design of this project. However, each project is unique and may require more or less effort in an individual task to complete the design. The following information will explain and define in general terms the major design items of importance relating to this project. All the elements of work that are necessary to satisfactorily complete the design of this project will be listed.

Project Management and Coordination Tasks

The CONSULTANT shall perform the following Administration/Project Management and Coordination tasks:

1. Coordinate with MoDOT Project Manager to schedule and plan the kick-off core team meeting.
2. Participate in the kick-off core team meeting, inviting any sub consultants that need to attend. It is assumed that this will be a virtual meeting.
3. Schedule, plan and participate in virtual core team meetings with MoDOT. A total of four (4) virtual core team meetings is anticipated for Phase 1 of this contract.
4. Prepare minutes for all meetings and provide to core team.
5. Prepare monthly progress reports that include the following:
 - a. Past month's activities/accomplishments
 - b. Pending issues and decisions
 - c. Problem areas and recommended corrective actions
 - d. Schedule summary status (chart showing baseline schedule vs. actual schedule)
 - e. Next month's planned activities/goals
 - f. Summary of coordination efforts (including correspondence summaries)
6. All of the above shall include/address sub-consultant tasks.

Public Involvement

The COMMISSION will be the main point of contact for receiving calls from the public. The CONSULTANT will interact with external agencies and the public as required to accomplish the scope of services of this contract.

1. The CONSULTANT will be required to attend meetings with regulatory agencies, organizations, county officials, local municipalities, property owners and other entities as required. It is anticipated that one (1) meeting will be required per municipality.
2. The CONSULTANT will be required to attend public meetings/hearings. It is anticipated that one (1) virtual public meeting will be required for this project. If in-person public hearings are required, the CONSULTANT shall participate in the public

hearings. It is anticipated that one (1) in-person public hearing will be scheduled per municipality. In-person public hearings will be addressed through a supplemental agreement.

3. The CONSULTANT shall participate in planning meetings with MoDOT personnel before meetings and public meetings.
4. The CONSULTANT shall provide exhibits for the virtual public meeting based on conceptual/preliminary drawings as requested by the COMMISSION.
5. The CONSULTANT shall provide the COMMISSION a database containing all property owners contiguous to the project, or within a reasonable distance of the project. The database shall provide property owner name, mailing address, parcel address and applicable parcel number, designating whether the individual is someone the Commission will need to obtain right of way and/or easements from.
6. The COMMISSION shall advertise for meetings, obtain the meeting location and room, produce copies of handouts and perform mass mailings of notices of meetings or hearings, and newsletters.
7. The COMMISSION shall record and prepare the meeting minutes of the public meeting and shall prepare the transcript, if applicable.

SURVEYING

1. The CONSULTANT shall follow MoDOT's Surveying Policies and Guidelines as stated in the Engineering Policy Guide.
2. The survey data shall be based on the Missouri State plane coordinate system, and modified by a factor provided by the COMMISSION. All elevations and vertical control shall be based on NAVD 88.
3. The CONSULTANT shall provide all computer data in SS4.
4. The COMMISSION shall provide the LIDAR photogrammetry.
5. The CONSULTANT shall be responsible for additional topographic survey and all surveying items necessary to provide preliminary plans, right of way, legal descriptions and final plans.
6. The CONSULTANT shall provide all land survey control information for each project.
7. If necessary for the project, the CONSULTANT will establish or re-establish any necessary section corners or land-ties.

8. The CONSULTANT shall locate all Section Corners, Quarter Section Corners and personal property monuments within the project limits.
9. If necessary, the CONSULTANT shall re-establish any monuments destroyed during construction of the project and record the necessary documentation.
10. The CONSULTANT shall be responsible for staking and re-staking tentative right of way on individual properties, as required by MoDOT staff, during right of way negotiations and acquisition phase of the project.
11. The CONSULTANT shall be responsible to monument new right of way and provide a location survey for each intersection.

CONCEPTUAL DESIGN

1. The CONSULTANT shall review “as built” plans, aerial photographs, manuscripts, etc. and other information to be provided by the COMMISSION before visiting the project site location.
2. The CONSULANT shall perform a field investigation to assure that there have been no significant changes since the information was recorded or obtained. The CONSULTANT shall incorporate any significant changes found during the field investigation as part of this contract. The CONSULTANT shall determine in the field and log the ADA facilities requiring improvement to be brought into compliance with current ADA standards.
3. Existing ADA facilities within the project limits will be field checked by the CONSULTANT to confirm compliance with ADA guidelines. Any areas not meeting current ADA guidelines shall be surveyed and corrective actions included in the project.
4. The CONSULTANT shall document the extent of improvements, location of improvements (side of road, intersection quadrant, etc.), project exceptions and overall intent of the improvements.
5. The CONSULTANT shall document any known or observed utilities within the improvement locations, summarizing potential conflicts with the proposed improvements.
6. The CONSULTANT shall prepare an opinion of cost for the proposed improvements. The estimates shall include construction cost, right of way costs, specialty costs for signals, signing, and lighting revisions, and potential for any utility adjustments. The consultant shall prepare an estimate using MoDOT’s latest version of the estimating tool (BidTabsPro), utilizing district, county and statewide

averages for item costs. If needed, square foot right of way cost estimates and utility relocation cost shall be provided by MoDOT.

7. The CONSULTANT shall submit a conceptual stage RES. The CONSULTANT shall review the comments provided by MoDOT's Environmental Staff with each RES submittal. The CONSULTANT shall provide any requested information to the MoDOT Project Manager and Transportation Project Designer. Items that may need to be addressed include historical buildings, bridges and sites, archeological sites, conversion of farmland, endangered species, wetlands and parklands.
8. The CONSULTANT shall summarize the determinations made during the scoping stage in a Conceptual Study Report. The CONSULTANT shall exhibit proposed improvements in a plan view superimposed over an aerial image, such as Google Earth.
9. The CONSULTANT shall develop an Excel or Access database with the contact information for each property owner within the project limits. At a minimum, the database should include property owner name, street address, mailing address and noted if it is anticipated that new temporary easements, permanent easements and/or new Right of Way will be required from the property.

CONCEPTUAL SUBMITTAL

1. One (1) electronic copy cost estimate in .pdf form utilizing BidTabPro.
2. One (1) conceptual stage Request for Environmental Services (RES) submittal.
3. One (1) electronic copy of the Conceptual Study Report.
4. One (1) file showing proposed improvements in a plan view superimposed over an aerial image, such as Google Earth.
5. One (1) Excel or Access database providing property owner contact information.

UTILITY COORDINATION

The CONSULTANT shall lead the effort on utility coordination and shall work with the professional land surveyors for the following project documentation and plan details:

1. Review completed topographic surveys to develop preliminary plans, right-of-way plans and final roadway plans, including any necessary improvements and existing topography within the limits of the project. Topographic surveys shall consist of pertinent topographic features, but not limited to:
 - a. existing drainage and sanitary structures (pipes, types, flowlines, sizes) where pipe improvements were identified during the concept and preliminary phases
 - b. all identifiable utility locations and equipment at signalized intersections and longitudinal areas in between intersections that are adversely impacted
 - c. existing signal, lighting and any ITS equipment inside slope limits
 - d. sign posts, size, identification and photo log

2. Field locate visible above ground evidence of utilities located within the project area. "Missouri One Call" and MoDOT will be contacted and a formal request will be submitted for marking the locations of member utilities. In the event that "Missouri One Call" fails to respond, in whole or in part, to the formal request, underground facilities, structures, and utilities will be plotted from surveys and/or available records. The locations of all utilities are to be considered approximate. There may be other utilities, whose existence may not be known at the time of the survey.
3. Consultant utility manager to coordinate with surveyors on underground utility locates.
4. Coordinate to obtain One-Call tickets to have utilities located in identified areas of proposed project. An estimate of 1 MO One Call ticket for every 400 linear feet of sidewalk is reasonable for preliminary design. Additional MO One Call tickets after preliminary design is complete will be required where additional items were added to the final design plans compared to the concept design plans.
5. Coordinate with surveyor to complete utilities survey and verify completeness and accuracy of utility topographical survey. Service connections shall be included as part of the utility survey.
6. Coordinate with utility companies on the development of the plan of adjustment and obtain cost estimates for reimbursable utilities for the District Utility Manager's approval.
7. Show the existing utility facilities and plan of adjustments for proposed utilities facilities in the contract plans. (plans sheets, cross sections, culvert sections).
8. Work with the various utility owners to determine if any needs for renewals within the project limits.
9. Coordinate relocation of each impacted utility on the project during design and construction.
10. Prepare special utility sheets as necessary (including utility profile and exhibits).
11. Assist District Utility Manager and/or Coordinator in the preparation of agreements.
12. Identify locations for power service needs, prepare service request for submittal and coordinate with the power company to obtain estimated costs.
13. Coordinate with MoDOT District Utility Manager regarding the need for test holes and initiating the potholing with the applicable utility owner. Provide test hole information at critical utility locations to the District Utility Engineer.

14. Prepare utility job special provision and information for the preparation of the Utility Status Letter for District Utility Manager.
15. Provide assistance and answer utility related questions during the construction phase for MoDOT staff and the roadway contractor.
16. Review MoDOT excavation permits in project area for conflicts with design and construction phase. This includes new utility installation, modifications to existing facilities, and any developer driven improvement within the project limits.

ENVIRONMENTAL

1. The CONSULTANT shall submit the Request for Environmental Services (RES) for each project milestone and if more than twelve (12) months lapse between required RES submittals.
 - a. Conceptual Stage – The consultant shall submit the RES within one month of receiving Notice to Proceed.
 - b. Preliminary Stage – The consultant shall submit the RES upon approval of the conceptual report. The CONSULTANT shall note any known right of way or easement acquisitions, creating a slightly larger footprint of acquisition if there is uncertainty of the size of acquisition.
 - c. Right of Way Stage – The CONSULTANT shall submit the RES upon approval of the preliminary plans. The CONSULTANT shall update any known right of way or easement acquisition needs in this submittal.
 - d. Final Stage – The CONSULTANT shall submit the RES upon approval of the Right of Way plans and at least 90 days prior to the scheduled PS&E submittal deadline.
2. The CONSULTANT shall review the comments provided by MoDOT's Environmental Staff with each RES submittal. The CONSULTANT shall provide any requested information to the MoDOT Project Manager and Transportation Project Designer. Items that may need to be addressed include historical buildings, bridges and sites, archeological sites, conversion of farmland, endangered species, wetlands and parklands.
3. The Section 106 work will be carried out by, or under the direction of, an individual who meets the Secretary of the Interior's Professional Qualification Standards.
4. The CONSULTANT will consult with the MoDOT Historic Preservation Section (HP) to establish the area of potential effects (APE) for the archaeological and architectural surveys prior to the initiation of any work.
5. MoDOT HP will prepare Tribal Notification for Federal Highway Administration to submit to interested Tribes.

6. The CONSULTANT shall then develop a concise historic context to guide the investigations to identify and evaluate historic properties (or explain their absence) in the APE and shall conduct archaeological and architectural surveys.
7. The CONSULTANT will conduct an architectural survey that follow the MoDOT *Built Environment Resources Methods* and will identify and document all architectural resources (i.e., buildings, structures, objects, sites, and districts/landscapes) and all bridge resources (i.e., highway, railroad and pedestrian bridges, viaducts and culverts, excluding metal, plastic and reinforced concrete pipes) that are forty or more years of age located within the APE. The CONSULTANT shall contact MoDOT HP regarding NRHP eligibility recommendations for all bridges.
8. The CONSULTANT will complete the archaeological investigation within the APE to identify prehistoric and historical sites following MO SHPO's *Guidelines for Phase I Archaeological Surveys and Reports*. For archaeology, this current scope of services covers only consultant services through the Phase I survey and the subsequent Phase I survey report.
9. The results of the built environment (e.g., buildings, bridges, etc.) and archaeological investigations, including effects on resources eligible for listing on the National Register of Historic Places, should be presented by the CONSULTANT in single draft report to MoDOT HP, unless the reasons for separate documents has already been approved by MoDOT HP. Once the report is finalized, MoDOT HP will submit it to SHPO.
10. MODOT will coordinate with the SHPO regarding potential cultural, historical, and archeological issues.

PRELIMINARY DESIGN

Performance of work for the preliminary design requires a supplemental agreement.

The CONSULTANT's attention is directed to Section 235 of MoDOT's Engineering Policy Guide (EPG) for general guidelines and requirements for preliminary design.

1. The COMMISSION shall furnish the Consultant the pavement design recommendation and general special provisions to be used in the preliminary plans.
2. The CONSULTANT shall utilize MoDOT's Southwest District ADA Streamlining plans and guidelines for all practical locations.

3. At a minimum, the following shall be submitted for the Preliminary Plans:
 - a. Preliminary Plan Title Sheet
 - b. Typical Sections – the CONSULTANT shall use the typical sections provided by the COMMISSION as part of the ADA streamlining program. Additional typical sections might be required.
 - c. Plan Sheets at 1" = 20' horizontal (or different scale as determined by MoDOT Project Manager for clarity) and extend to 100 feet beyond the project limits.
 - d. Paved Approaches – the plan sheets shall include existing and proposed paved approach information, including:
 - i. Existing and proposed slope
 - ii. Existing and proposed width
 - iii. Drainage information, if needed
 - e. Profile Sheets at 1" = 20' horizontal and 1" = 10' vertical (or different scale as determined by MoDOT Project Manager for clarity)
 - f. Special Sheets for geometrics and special design features.
 - g. Preliminary signal and lighting layout sheets (if required).
 - h. Preliminary drainage sheets (or information provided in plan sheets)
 - i. Tentative Easement and Right of Way limits with property lines and ownership information, if needed. A supplemental agreement will be prepared if new Right of Way is required.
 - j. Preliminary cross sections. Preliminary cross sections will only be required in areas identified as outside MoDOT's Southwest District ADA Streamlining plans.
4. The CONSULTANT shall prepare the preliminary plan construction cost estimate.
 - a. The COMMISSION will prepare the right of way cost estimate based on the right of way requirements furnished by the CONSULTANT, if needed.
 - b. The CONSULTANT shall prepare the cost estimate for any utility impacts. The CONSULTANT shall include utility impacts in the plans and construction cost estimate for those utility impacts that are determined to be included in the construction contract.
 - c. The CONSULTANT shall develop the preliminary plan construction cost estimate using the latest version of MoDOT's estimating tool.
 - i. The estimate should have detailed pay items (eliminating as many lump sum items as possible at this stage).
 1. Temporary Traffic Control pay items should not be a lump sum.
 2. Signing, striping, lighting and signal items should not be a lump sum.
5. The CONSULTANT shall prepare the letter of transmittal for the preliminary plans. The COMMISSION will provide the template upon request.

6. The CONSULTANT shall review the preliminary plan checklist prior to submittal. The COMMISSION will furnish the checklist upon request.

PRELIMINARY PLAN SUBMITTAL

1. One (1) preliminary RES submittal, upon approval of conceptual study.
2. One (1) .pdf set of Preliminary Plans, submitted electronically.
3. One (1) SW District Preliminary Plans Letter of Transittal (Microsoft Word format).
4. One (1) Construction Cost Estimate, including estimated right of way acquisition areas and estimated utility relocation costs.

RIGHT OF WAY DESIGN

Performance of work for the right of way design requires a supplemental agreement.

1. The CONSULTANT shall prepare right of way plans, which may be separate drawings from those used for design and construction details. The right of way plans shall show alignment, geometric design, removal of improvements, drainage facilities, property lines and ownership, $\frac{1}{4}$ $\frac{1}{4}$ section lines, subdivision lot lines, other land survey information, street lines and existing right of way and easements. The CONSULTANT should also include any plan details, which will require additional right of way or easements during the construction phase of the project such as bypasses, temporary erosion control, etc. Right of way plans include title sheet, typical sections, profile sheets, and cross sections as needed. Areas of new right of way, permanent easements and/or temporary easements required from each individual property owner may be shown in tabular form on the respective sheets, but will also be included on the individual plan sheets.
 - a. The CONSULTANT shall finalize any previous review of the roadway cross sections sufficiently to determine the feasibility of constructing retaining walls versus obtaining additional right of way. This final review shall consist of construction estimates versus right of way estimates.
 - b. Upon completion of the estimates by COMMISSION and CONSULTANT, the CONSULTANT shall recommend to the COMMISSION a choice at the various locations which warrant consideration of the alternate retaining wall versus right of way solutions. The COMMISSION shall make the final determination of purchasing right of way, or constructing retaining walls.
2. Preliminary right of way plans shall be submitted to the COMMISSION for review and approval as scheduled in Exhibit IV. The right of way plans shall be at the same scale as the construction plans. The right of way plans shall include any design details that will control the width of right of way and necessary easements.
 - a. New right of way lines and all easements shall be dimensioned from the

centerline, or cross road centerlines, if necessary. Stations and offset distances will be labeled for each break point. Bearings and distances on the right of way lines may be required.

- b. The following minimum design features shall be included on the right of way plans:
 - 1) Title sheet with the appropriate project limits, access note and traffic data completed.
 - 2) Typical section sheets showing typical curb ramp designs.
 - 3) Cross sections as needed. Cross sections shall be included at each entrance with new and existing entrance grades.
 - 4) Construction limits (slope lines); drainage facilities; entrances (with existing and new grade percentage) and their reference location, width and type; property owners, with areas of new right of way, easements and remaining property; centerline bearing, ties to legal land corners from centerline stations with notation for corner witness by a registered land surveyor; existing utility locations and easements, including replacement utility easements; horizontal curvature information; and proper right of way symbolization for new right of way (access control) and easements, including areas which may be required to accommodate temporary erosion control.
 - 5) Township, Range, Section and/or U.S. Survey information on each plan sheet near the title block or appropriate survey/section line. Subdivision lot lines, and $\frac{1}{4}$ $\frac{1}{4}$ section lines will also be included.
3. The COMMISSION shall arrange for a design field check to review right of way plans with the CONSULTANT and right of way personnel prior to completion of the right of way plans. The CONSULTANT shall make any necessary revisions to the right of way plans as determined by this design field check.
4. The COMMISSION shall review, approve, and certify the right of way plans as completed by the CONSULTANT. The CONSULTANT shall provide one (1) electronic set of fully signed and sealed right of way plans, size 22-inch by 34-inch for the COMMISSION'S further use.
5. The CONSULTANT will prepare right of way appraisals and secure the necessary right of way by negotiation or condemnation, if necessary, for construction of this project.
6. The CONSULTANT will provide title commitment information, last ownership deed of record, and existing utility easement deeds for all parcels that have a new acquisition of easements or new land. The COMMISSION shall be responsible for staking and re-staking tentative right of way on individual properties, as required by MoDOT staff, during the right of way negotiation and acquisition phase of the project.
7. The CONSULTANT shall be responsible for making all revisions to the right of way and construction plans due to negotiations with the property owners in an effort to

acquire the right of way.

RIGHT OF WAY PLAN SUBMITTAL

1. One (1) Right of Way stage submittal of the RES, upon approval of the preliminary plans.
2. One (1) set of Right of Way plans with Professional Engineer's seal on the title sheet.
3. One (1) Construction Cost Estimate, including estimated utility relocation costs.

FINAL DESIGN PHASE

Performance of work for the final design requires a supplemental agreement.

1. The CONSULTANT shall prepare plans for adjustments to the existing storm water drainage system as required to accommodate proposed improvements to the pedestrian facilities. This will include drainage and hydraulic studies as required to ensure the proposed changes coordinate with the existing system, provide adequate drainage and do not adversely affect the performance of the drainage system.
2. The CONSULTANT shall revise plans to adhere to all utility company standards and requirements, and make necessary utility plan revisions as they become necessary during final plan design and approvals.
3. The COMMISSION will secure execution of municipal agreements with the cities and/or county agreements. A copy of the executed agreements will be furnished to the CONSULTANT for his information. The CONSULTANT shall conform to all design provisions of these agreements.
4. The design plans shall include a detailed traffic control plan with an outline for construction staging conforming to the requirements of the MUTCD and the MoDOT EPG, and as may be supplemented by samples provided by the COMMISSION. The traffic control plan requires submittal to the COMMISSION for review and approval prior to inclusion in the final design plans.
5. A final design field check shall be held with CONSULTANT and COMMISSION representatives prior to completing final design plan quantities. The CONSULTANT shall make any necessary revisions to the final plans as determined by this design field check.
6. Prepare detailed temporary erosion control plans for review and approval before inclusion in the final design plans.
7. The CONSULTANT shall prepare computations for all design plan quantities. All plan quantities shall be shown on the Quantities Sheets, by construction stage, if applicable. The format for these sheets shall be furnished by the COMMISSION.

Specialty items may have separate sheets for quantity tabulations.

8. The CONSULTANT shall prepare for review and approval by the COMMISSION all necessary Job Special Provisions, which are to supersede the Missouri Standard Specifications for Highway Construction. A brief reason for the deviation from the standard plans and specifications should also be provided.
9. The COMMISSION shall be responsible for all incidental surveying and staking that is required to gather data or provide control for the detailed design of the project. This shall include, but not be limited to temporary and permanent easements, staking for geotechnical investigations, borrow areas and temporary right of way control points.
10. The CONSULTANT shall utilize MoDOT's Southwest District ADA Streamlining plans and guidelines for all practical locations.

PLANS, SPECIFICATIONS AND ESTIMATE

The following list shall be considered the as the minimum requirements for a completed set of Final Design Plans.

- a) Title Sheet
- b) Typical Sections
- c) Quantity Sheets
- d) Plan Sheets at 1"=20' horizontal (or different scale as determined by MoDOT Project Manager for clarity)
- e) Profile Sheets at 1"=20' horizontal and 1"=10' vertical (if needed)
- f) Special Sheets for geometrics, referenced points, grading plan, traffic control plan, temporary erosion control plan and any other sheets for special design features
- g) Highway Lighting Sheets, including quantity sheets (if needed)
- h) Highway Signing Sheets, including quantity sheets (if needed)
- i) Culvert Sections at 1"=10', horizontal and vertical (if needed)
- j) Driveway Profile Sections
- k) Earthwork Quantities, Cross Sections as required, 1"=10', horizontal and vertical, including entrance sections with existing and proposed grades
- l) Tabulation of Quantities Sheets
- m) File with Job Special Provisions in a format readable in COMMISSION'S current word processor, and a computer file with the bid items and quantities as generated by COMMISSION'S current estimate program
- n) Construction workday study, D-12, D-15 (if needed) and other supporting documents

Additional plans and information may be required to complete the final Design Plans. With the submittal of the Final Design the CONSULTANT shall also provide the COMMISSION a statement that an internal quality control check has been conducted and to the best of the CONSULTANT'S knowledge the final design plans are free of gross errors, misleading or confusing typos, and includes adequate information to construct the

project.

CONSTRUCTION INSPECTION

Performance of work for bidding and construction requires a supplemental agreement.

1. Purpose

- a. The Consultant shall provide construction inspection, materials testing, and other services as needed. Support services will be assigned by the MoDOT Brad Gripka Resident Engineer, as described within this Exhibit for Job No. J8P3192 (PROJECT).
- b. The Consultant shall provide support services as requested throughout the following phases of the Project:
 - Construction
- c. The Consultant shall provide PROJECT related services as described herein.
 - The consultant shall provide to MoDOT qualified inspection services to supplement MoDOT's Resident Engineer (RE) and staff on the inspection of the above referenced project(s).
 - The services provided shall include Quality Assurance (QA) verifications on all items of installed work and QA tests as outlined in the attached Contractor Quality Control Job Special Provision (JSP). Testing frequencies shall be no less than as defined in the Inspection Testing Plan (ITP) and in accordance with the applicable Missouri Standard Specifications for Highway Construction. Above referenced documents can be found at <https://www.modot.org>.
 - Any testing performed by the consultant can only be performed by personnel certified for the tests being conducted through MoDOT's technician certification program AND testers must carry current credentials validating their certification
 - The consultant's inspector shall be present on the jobsite daily to capture necessary diary information for progress monitoring. For periods of work between critical installations and at certain hold points, the inspection time spent on the project (while daily) can be minimal if approved by the RE.
 - Daily, the inspector shall provide/perform:

- A daily work report entered into AASHTOWare Project documenting all construction activities on the project
 - Any QA tests required by the ITP for the work being performed
 - All test results shall be recorded in AASHTOWare Project in the proper format as defined by the Sampling Checklist and Materials Summary
 - A work zone traffic control review of all TCDs associated to the project to ensure compliance with the plans and MUTCD. All reviews will be maintained and available for review upon request by the RE
- On a semi-monthly basis, the inspector may be required to run an AASHTOWare Project estimate and submit to the RE for review.
 - As needed, develop change orders to document overruns/underruns on the project to ensure prompt payment to the contractor.
 - Expected allocation of resources are as follows:
 - Staffing of above referenced projects from March 2020 to November 2021. Services may be extended by an amendment to the contract amount.
 - The consultant should expect to dedicate 2 individuals for a total of 40 hours each per week for the duration of the project(s) except for intervals of time that the weather will not allow the work to continue or the contractor chooses not to staff the project in question.

2. Quality Assurance Personnel Duties and Responsibilities

- a. Quality Assurance Testers – Quality Assurance Testers will perform testing and sampling during construction as outlined in the Inspection & Test Plan (ITP). The QA sampling and testing will be performed by QA Testers certified through the MoDOT Technician Certification Program or a certification program preapproved by MoDOT. The QA Testers report directly to the Quality Assurance Inspector (QAI). **The QA tester can be the QAI.**
- b. QA Tester responsibilities:
 - Perform required tests and document test in accordance with contract documents
 - Conduct material sampling and testing in conformance with the appropriate methods and frequencies
 - Ensure all measuring and test equipment is properly maintained and calibrated
 - Promptly communicate nonconforming material to RE and production staff

- c. Quality Assurance Inspectors (QAI) – Quality Assurance Inspectors will have a thorough understanding of the contract requirements and will perform inspections during construction to ensure the quality of the work meets or exceeds contract specifications. The QA Inspector will be knowledgeable of the work he/she is inspecting and will be able to recognize conforming and nonconforming work and material. The QA Inspector reports directly to the MoDOT’s Resident Engineer.
- d. QA Inspector responsibilities:
 - Perform required inspections and complete checklists in accordance with contract documents and found at the following link - http://www.modot.org/business/contractor_resources/Quality_Management/
 - Ensure inspection observations are included on Daily Inspection Report (DWR)
 - Ensure material is conforming to the contract requirements before being incorporated into the work
 - Promptly communicate nonconformance material and work to RE
 - Wage rate inspections are required at a maximum of 1 every week per job. QAI needs to discuss required frequency on each job with the RE prior to work to ensure accuracy.
 - CUF (commercially useful function) reviews on all DBE Subs, minimum 1/sub/job. These must be submitted to CPOA (Construction Project Office Assistant) within 24 hours of completion
- e. **Pre-Activity Meeting**
 - Pre-Activity Meetings are necessary to discuss details of the Work Plan and schedule. Pre-Activity Meetings will be held 24-hours prior to the start of each new project activity or change in work crew. The Superintendent/Job Foreman of the activity will lead the meeting and others present at the meeting will be the QA Inspection and Testing Staff, and MoDOT.
- f. **Inspection and Testing**
 - Inspection and testing are performed during all phases of the work from start to completion to ensure the work and testable material (asphalt, concrete, aggregate, etc.) meets or exceeds the contract requirements. Consultant will perform inspection and testing of the work and material as specified in the Inspection and Testing Plan and MoDOT-provided checklists. All results will be documented in AASHTOWare Project.

3. Inspection and Testing Plan (ITP)

- a. The Inspection and Testing Plan (ITP) outlines the acceptance criteria for contract items for this project along with the required tests, testing frequency, and the required QA documentation. The ITP is provided by MoDOT. Any changes to the

specifications, testing procedures, or the testing frequencies from the standard ITP will be implemented via change order. In addition, a change order will be completed to add acceptance criteria for nonstandard contract items not included in the standard ITP.

b. See link below for ITP:

- http://www.modot.org/business/contractor_resources/Quality_Management/

4. Daily Work Report (DWR)

- a. A Daily Inspection Report (DWR) will be completed on the project each day to document pertinent project activities. The report will include a detailed diary that describes the work performed as well as observations made by QA Inspection staff regarding quality assurance. The DWR will include other items such as weather conditions, location of work, installed quantities, tests performed, and a list of all subcontractors that performed work on that date. The DWR is completed in AASHTOWare Project.

5. Hold Points

- a. Hold Points are events in the work process that require approval from MoDOT prior to continuing work. Hold Points occur between different definable stages of work when the succeeding work depends on the acceptance of the preceding work. A list of minimum Hold Points is available on MoDOT's website and can be provided upon request. Additional Hold Points can be added by MoDOT.
- b. Hold Point inspections will be at times planned in the Weekly Schedule. The Hold Points may be rescheduled as needed, but the Consultant Inspector will provide a minimum 24-hour advance notification to MoDOT, unless otherwise approved by MoDOT.
- c. Prior to all Hold Point inspections, the consultant Inspection Staff will provide MoDOT with the Daily Inspection Reports, Inspection Checklists, Test Reports, and Materials Receiving Inspection Reports for the work performed leading up to the Hold Point. MoDOT-identified issues will be corrected prior to continuing work and a new Hold Point scheduled.

6. Material Receiving

- a. Material Receiving is assurance that products and materials are identified from receipt and during all stages of production, delivery and installation. At receipt, the Consultant Inspection Staff will inspect general condition of material and determine if material is compliant based on the requirements specified in the ITP, Specifications, Job Special Provisions, Standard Drawings, or other pertinent contract documents. For products that require on-site inspection by MoDOT

Materials staff, the RE will notify MoDOT staff promptly to schedule the inspection.

- b. Some materials are pre-qualified or pre-accepted for use on MoDOT projects. A list of these items is maintained by MoDOT and can be found on the MoDOT internet site. These lists include: Pre-Acceptance List (PAL), Approved Product List (APL), Bridge Pre-qualified Products List (BPPL), and the Qualified List (QL). Although pre-qualified or pre-accepted, appropriate documentation detailed in the Specifications will accompany these products for acceptance.
- c. All material delivered to the project, excluding testable material, will be inspected for appropriate dimensions, quantity, condition, markings, etc., and accompanied with appropriate documentation. All PAL items will be inspected to ensure material conforms to plans and specifications and disposition remarks added to the associated identification number in AASHTOWare Project.

7. Quality Documentation

- a. Project documentation (inspection checklists, daily work reports, test records, Materials Receiving Inspection Reports, etc.) referenced in this plan will be electronically stored and organized by the Consultants Inspection Staff in AASHTOWare Project.
- b. Project documentation will be electronically saved to AASHTOWare Project within 48-hours after the work shift ends.
- c. In addition, to the above, all project correspondence must be delivered to MoDOT electronically so it can be archived with the project's permanent records. Copies should be maintained by the consultant for access as needed. This includes, but is not limited to: delivery tickets, mix designs, mill test reports, certifications, test reports, contractor schedule, any letters associated to the contract, wage rate inspections, NCR's, and order records. These items shall be uploaded and stored in eProjects.
- d. Certified payrolls for contractor activity will be checked and maintained by MoDOT.

8. Control of Non-Conforming Work and Material

- a. Non-conformance reporting will be used to identify and ensure that work, material, and/or processes (i.e. QC inspections, tests, documentation, etc.) that fail to satisfy the contract requirements are identified and promptly resolved. QA staff or production staff will identify non-conformances and the QAI will document using a Non-Conformance Report (NCR). MoDOT may also initiate an NCR.
- b. The NCR process is as follows:
 - 1. Non-conforming work and/or material are identified.

2. NCR is issued on the provided standard form.
3. QAI forwards copy of NCR to MoDOT with proposed resolution.
4. MoDOT either approves or rejects the proposed resolution. A dialogue will ensue following any rejected proposals until an acceptable solution is identified.
5. The MoDOT-approved resolution is executed.
6. New inspection and/or test of previously identified non-conforming item is completed.
7. QAI verifies previously identified non-conforming item is now compliant and requests final approval from MoDOT.
8. MoDOT evaluates previously identified non-conforming item. If accepted, MoDOT signs NCR for closure.

STANDARDS

The CONSULTANT shall use the latest version of the following publications to determine the design criteria and procedures which will be followed for development of the project:

- "Federal Emergency Management Administration Flood Insurance Guidelines and Specifications,"
- MoDOT "Engineering Policy Guide,"
- AASHTO's "Manual on Uniform Traffic Control Devices" (MUTCD)
- AASHTO's "A Policy on Geometric Design of Highways and Streets"
- "Missouri Standard Specifications for Highway Construction"
- "Missouri Standard Plans"
- "Missouri Department of Transportation Specifications for Computer Deliverable Contract Plans"
- MoDOT "Bridge Manual"
- any other publications which the ENGINEER directs the CONSULTANT to use.