Preliminary Engineering, Geometric Layout, Environmental documentation, and Detail Design for State Project 6510-67

Section 1.0 – Introduction and Project Information

1.1 - Introduction – This contract includes project development, from project inception through preliminary and detailed design to letting for the downtown reconstruction of Trunk Highway 212 (TH 212) in the City of Sacred Heart along with an un-bonded concrete overlay pavement preservation project on TH 212. The purpose of this contract is to provide the State with project development, preliminary and detailed design services, and deliverables needed to bring the project development of State Project (SP) 6510-67 to the point of letting. This project is an un-bonded concrete overlay from 2.3 miles east of MN 23 through the city of Sacred Heart to the western city limits of the city of Renville. The project is currently programmed for fiscal year (FY) 2022. The products and services needed for these projects include, but are not limited to: overall project management, public involvement, business liaison, agency involvement, building inspections, utility locating and coordination, environmental and cultural/historical work and documentation, surveying, geometric layout, construction limits, detail design, hydraulic design, and ADA design.

1.2 - Project Information -

Reconstruction – This project calls for a full reconstruction of 12 blocks of TH 212 from 160th St. (west city limits) to Washington Ave. (east city limits). The SP number for this project is 6510-67. This project includes the reconstruction of all highway elements, including the coordination with city-owned public utilities such as water main and sanitary sewer, which may be replaced with the project. City utilities will be designed by others. Sidewalk improvements will also be 100% completed under this project to better facilitate pedestrian/Americans with Disabilities Act (ADA) accommodations.

Anticipated items to work through with this reconstruction project but not limited to, are as follows:

A) Storm water hydraulics and hydrology
B) Sanitary Sewer and Water Main Replacements/Installations
C) Assumed Historic properties – Contractor will need to coordinate with State’s Cultural Resource Unit and State Historic Preservation Office (SHPO) throughout this project.
D) Heavy commercial vehicle traffic through downtown
E) Business access
F) On-Street Parking
G) Pedestrian Detours
H) Lighting
I) Utility Coordination
J) Landscaping
K) Typical Section Confirmation

Section 2.0 - Project Management (Source Type 1010)

2.1 - Kick-off Meeting - The Contractor will coordinate and conduct a Project Kick-off meeting in Willmar, MN. The meeting will establish communications protocol and discuss the project schedule. The Contractor will receive available existing information from the State. The State will provide deliverables as available, a brief discussion of known issues, and a review of the project schedule.

2.2 - Project Coordination - Contractor will conduct up to three project coordination meetings (minimum of two face to face) with the Project Management Team (PMT) (assumed in Willmar, MN). This team will possibly consist of members of State Engineering Staff, City of Sacred Heart, and Renville County Representatives. Tasks include agenda preparation, meeting facilitation, follow-up, and a summary of activities and outcomes from each meeting. Meetings may be conducted
via telephone when approved by the State’s Project Manager. Tasks also include routine communications, including biweekly telephone calls or meetings with State’s Project Manager.

2.3 - **Project Instructions and Quality Assurance** - Contractor will develop internal tools (Project Instructions, Gantt Charts, Work Plans) to establish a schedule with defined deliverable dates, budgets, roles, and responsibilities for the project team members throughout the project.

2.4 - **Monthly Progress Reports, Invoices and File Keeping** - Contractor will submit monthly progress reports and invoices to State in the prescribed format. The Contractor will also supply an updated schedule each month. When all project work is complete, Contractor will prepare a final invoice and correspond with State to confirm the completed technical and financial status. Contractor will assemble a complete project record in paper and electronic files for archival purposes.

2.5 – **Geometric Layout Meetings** – Contractor will coordinate and conduct Geometric Layout Meetings. After the kick-off meeting, the Contractor will hold one geometric layout review meeting at the Preliminary and Final Geometric Layout turn-ins. The Contractor and State will discuss needed geometric layout changes. The meeting will take place via phone conference unless deemed necessary to meet face to face by the State’s Project Manager. The Contractor will also prepare and distribute draft minutes within two business days after each meeting and final minutes within three business days after each meeting. All face to face meetings should be assumed in Willmar.

2.6 – **Detailed Design Meetings** - Contractor will coordinate and conduct Design Meetings. The Contractor will hold one plan review meeting at the 30, 60 and 90 percent turn-ins. The Contractor and State will discuss needed design changes. The meeting will take place via phone conference unless deemed necessary to meet face to face by the State’s Project Manager. These are supplemental meetings beyond those explicitly called for elsewhere in this Scope of Services. The Contractor will prepare agenda and facilitate the supplemental meetings. The Contractor will also prepare and distribute draft minutes within two business days after each meeting and final minutes within three business days after each meeting. All face to face meetings should be assumed in Willmar.

2.7 – **Summary of Meetings:**
- A) Kickoff Meeting – 1 (face to face)
- B) Project Coordination Meetings - 3 (minimum of 2 face to face)
- C) Geometric Layout Meetings – up to 2 (if deemed necessary by the State’s PM)
- D) Detailed Design Meetings – up to 3 (if deemed necessary by the State’s PM)

2.8 – **Quality Control Management** - The Contractor will prepare a Quality Management Plan (QMP), and adhere to the Plan throughout performance of the work. The QMP must be project specific, and must be developed in accordance with the current State QMP Website located at: <http://www.dot.state.mn.us/design/qmp/index.html>. The contractor will be expected to submit their QMP, including internal review and redlines, with each layout and detail design submittal. As part of each layout and/or plan submittal, the Contractor must provide Quality Control (QC) redlines and a spreadsheet listing each review comment and how it was addressed.

2.9 - **Project Management Deliverables and Dues Dates(s) or Time Requirement**

**State’s Deliverables:**
- A) Review and respond to submittals (within 3 weeks)
- B) Coordinate internal reviews (within 3 weeks)
- C) Provide copies of project correspondences and project information (as needed)
- D) Attend meetings (as needed)
- E) Approve deliverables (as needed)
- F) Monitor quality control (at all turn-in milestones)
Contractor’s Deliverables:
A) Coordinate and attend meetings (as needed)
B) Hold an update meeting or conference call with State’s Project Manager (semi-weekly or as needed)
C) Prepare meeting agendas, displays, and minutes (as needed)
D) Prepare and submit invoices and progress reports (monthly)
E) Provide updates to the project schedule (upon request by State’s Project Manager)
F) Provide timely copies of critical correspondences and project issue data (as needed)
G) Submit electronic project files onto ProjectWise (at project completion)
H) Monitor, Document, and submit quality control process documentation (at all turn-in milestones)

Section 3.0 - Public Involvement and Outreach (Source Type 1065)

3.1 - Public Involvement Plan - Contractor will develop a Public Involvement Plan that identifies when public involvement activities will be held, what the purpose of the activity is, who the intended audience is, what the intended format will be, and what information will be needed prior to the meeting. The plan will identify contacts with primary stakeholders as well as media outlets for receipt of project newsletters and/or press releases.

The intent of Public Involvement for this contract is for the Contractor to work with adjacent landowners, businesses, the City of Sacred Heart, other associated stakeholders, and public to inform, educate and engage them on the proposed work of the downtown reconstruction.

A) With prior authorization from the State’s Project Manager, the Contractor will perform direct contacts with State functional units, City of Sacred Heart, Renville County, stakeholders, and other outside agencies to collect information needed for project development and final plans. Contractor will provide copies of communications to the State’s Project Manager.

3.2 - Project Web Documents - Contractor will be responsible for providing project information in Web ready formats for the State’s use in keeping the general public informed in regard to the project. The Contractor will provide documents and graphics for the State to post on their Website. The Contractor will not be responsible for hosting, or maintaining a Website, only for supplying Web ready computer documents.

All documents provided for posting on State’s public website must meet the provisions the State of Minnesota’s Accessibility Standards and Minnesota’s accessibility standard for electronic documents at the following location: <http://mn.gov/oet/programs/accessibility/>.

Contractor will provide updated information at significant steps in the process including public meetings, newsletters, publication of technical reports and environmental documents, and selection of the Preferred Alternative.

3.3 - Newsletters - Contractor will produce a minimum of two newsletters, which will provide updates about the project. Contractor will print and distribute up to 500 copies for each newsletter (using up to both sides of one 11x17 sheet) to a mailing list provided by the Contractor.

3.4 - Public Information/Outreach Meetings - Contractor will organize and conduct up to five Public Information/Outreach Meetings in different locations upon direction from the State Project Manager to inform the public of the design of the downtown reconstruction. It is assumed that a minimum of two will be open houses and a minimum of two local agency meetings (at City and County Board). These meetings will be focused on public outreach of general reconstruction information (construction, schedule, phasing, detour, access, etc.) as well as project specific details.
Contractor will arrange and pay for adequate facilities and refreshments and prepare exhibits and presentation. Public Information meetings will be held in the project area. Contractor will prepare a record of public and agency comments.

### 3.5 - City Involvement

The Contractor will prepare for and attend at least one City Council meeting with the City of Sacred Heart and at least one County Board meeting with Renville County. The content and timing of the meetings will be at the discretion of the State’s Project Manager, and in cooperation with the City and County.

### 3.6 - Public Involvement Deliverables and Dues Dates(s) or Time Requirements

**State’s Deliverables:**
- Participate in Public Meetings and Outreach (as needed)

**Contractor’s Deliverables:**
- Contractor will organize and conduct a minimum of four Public Meetings.
- Prepare a written meeting summary for each meeting (within 3 business days of meeting day).
- Contractor will produce a minimum of two newsletters.
- Contractor will be responsible for providing project information in Web ready formats.
- Mailing list for Newsletters and Open Houses.
- Contractor will provide a draft Public Involvement Plan (at the kickoff meeting).
- Contractor will provide a final Public Involvement Plan (within 10 business days of the kickoff meeting).

### Section 4.0 – Building Inspections (Source Type 0110)

**4.1 – Building Inspections** - In conjunction with survey data collections, addressing ADA requirements, and satisfying the environmental reporting with respect to historic buildings, it is proposed that each building within 20 feet of the right-of-way adjacent to the reconstruction project will be inspected to map, document and verify the location of utility services, conditions of foundations, and the presence of auxiliary facilities (i.e.: coal chutes, extended foundations, access, etc.). It is estimate a total of 5-10 buildings would meet this requirement for inspection.

**4.2 - Deliverables**

- Prepare property inspection documentation reports.
- Prepare an Inventory of findings.
- Determine the necessity to conduct further investigations based on initial findings.
- Coordinate building inspections with sidewalk and ADA requirements, and document recommendations to properly meet historical building preservation requirements.
- Attend kick-off meeting with the State and City to discuss work plan for securing access to buildings for proposed inspections.

### Section 5.0 - Environmental Studies (Source Type 1071)

**5.1 - Early Notification Memo (ENM) and Non-Programmatic Categorical Exclusion (CATEX) Determination** - Contractor will create the ENM and distribute it to the appropriate departments. Using the material gathered from the ENM, the Contractor will complete the CATEX (long form). The State will review the CATEX and make comments. The Contractor will incorporate the State’s comments and submit the final signed CATEX to the State in Word format. The Contractor will also
review the project for material or design adjustments needed and documentation to meet Historical/ SHPO clearance and any other documents needed for completion of the CATEX.

5.2 - Preliminary Wetlands - Contractor will provide the State with Computer Aided Design and Drafting (CADD) files of field verified wetland boundaries and types in the project area as identified from Natural Resources Conservation Service (NRCS) wetland mapping, county soil surveys, county hydric soils lists and Department of Natural Resources (DNR) Public Waters Inventory mapping. Contractor will identify impacts from different layout alternatives and opportunities for wetland avoidance. Contractor will summarize study findings in a draft Preliminary Wetland Technical Memo. Following modification of the geometric layout, Contractor will reassess wetland impacts and finalize the Preliminary Wetland Technical Memo.

5.3 - Final Wetlands - Following selection of a Preferred Layout, the Contractor will conduct the following work on wetlands within 200 feet the proposed highway centerlines:

1. Identify regulatory wetlands according to the currently accepted procedures (1987 Corps of Engineers (COE) manual) and using the Circular 39 classification system, identifying wetland acres by type.
2. Complete Army Corps of Engineers-approved wetland delineation forms; these forms will be appropriate for submittal to state and federal agencies during wetland permitting.
3. Identify and map all wetland edge locations per the 1987 Army COE manual.
4. Identify and assess wetland avoidance, minimization and mitigation strategies.
5. Conduct an assessment of the functions and values of delineated wetlands (Preferred alternative only) using the Minnesota Routine Assessment Method (MnRAM version 3.4. or current)

Contractor will develop an “Only Practicable Alternative Finding” regarding wetland impacts in accordance with Executive Order 11990. Contractor will prepare a Final Wetland Technical Memo by appending summary of this study to the Preliminary Wetland Technical Memo and submit the document to State in paper and electronic formats or a letter/report stating their findings.

5.4 - Environmental Studies Deliverables and Due Date(s) or Time Requirement

State’s Deliverables
A) Complete review and comments (within 3 weeks)

Contractor’s Deliverables
A) All Environmental Documentation (CATEX, ENM)
B) Contractor will provide the State with CADD files of field verified wetland boundaries and types
C) Contractor will prepare a Final Wetland Technical Memo

Section 6.0 - Surveying (Source Type 1021)

6.1 – Design Surveying - The State will provide dtm files, tin files, planometrics, alignment and Right of Way (R/W) information

6.2 – Supplemental Surveying - Contractor will provide supplemental surveys, as needed, and only with approval of the State’s Project Manager. Supplemental surveys include but are not limited to: utilities, storm sewer, culverts and detailed profile work. All surveying will maintain the appropriate horizontal datum, County Coordinates, and vertical datum. The tasks will be performed in
6.3 - Surveying Deliverables

State’s Deliverables:
A) Dtm files, tin files, planometrics, alignment and R/W information (upon contract execution)

Contractor’s Deliverables:
A) Contractor will provide supplemental surveys needed such as utilities, storm sewer, culverts, detailed profile work, etc.

Section 7.0 – Hydraulics Engineering (Source Type 1141)

7.1 - Preliminary Hydraulics - Contractor will provide analyses of the basic surface water management features for the proposed downtown reconstruction along with culvert lining where deemed necessary in the rural setting. All drainage and receiving waters (lakes, wetlands, streams, and county ditches) identified as a part of the preliminary environmental studies will be identified and considered. Contractor will identify major water crossings and potential stormwater treatment locations. Contractor will provide mapping of surface water features to the State for review. The City of Sacred Heart will provide design files for the sanitary sewer and water main design within State right-of-way, the Contractor will be responsible for coordinating with the City of Sacred Heart and incorporating these files.

Contractor will coordinate the hydraulic study and will document hydraulic study results in a draft and final Hydraulic Study Technical Memo. The final memo will be provided to State in paper and Acrobat Reader (*.pdf) formats.

7.2 - Hydraulic / Drainage Analysis and Engineering - The Contractor will identify all water resources issues, using available data, including water quality requirements as imposed by local, State, and federal government regulations; National Wetland Inventory and other wetland/protected waters inventories; and official documents concerning the Project, such as the environmental studies.

7.3 - Hydraulics / Drainage Coordination with Other Agencies and Disciplines - The Contractor will coordinate all water resource issues with regulatory agencies and local partners. The Contractor will document the resolutions of issues for the correspondence file, including meeting minutes and
memoranda for the record. The Contractor will comply with and document the permit requirements, modifications, and contacts with the permitting agencies.

7.4 - Hydraulics / Drainage Design Requirements - The Contractor will review and verify all preliminary hydraulics data in order to make final hydraulic recommendations. The Contractor will create the final hydraulics/drainage design for the areas impacted by the project.

7.5 – Hydraulics Engineering Deliverables and Due Dates(s) or Time Requirement

State’s Deliverables:
A) Complete review and comments (within 3 weeks)

Contractor’s Deliverables:
A) Contractor will provide analyses of the basic surface water management features for the downtown reconstruction.
B) Contractor will coordinate the hydraulic study.
C) Preliminary and final hydraulic study technical memo at preliminary and final layout submittal.

Section 8.0 – Utilities (Source Type 1195)
Utilities Definition: For the purpose of this contract "utility facilities" means and includes all privately, publicly, or cooperatively owned communication lines and facilities; and any system, lines, or facilities for the distribution or transmission of electrical energy, gasoline, oil, gas, water, steam, etc., or for the exclusive collection of sewage.

8.1 – Subsurface Utility Engineering (SUE) – The Contractor will perform SUE services, Quality Level B, along TH-212 from 160th St. (west city limits) to Washington Ave. (east city limits).

8.2 – Designating (Quality Level B) – For the purpose of this contract, “designate” refers to finding the presence and horizontal location of underground utilities using geophysical prospecting techniques, including electromagnetic, magnetic, ground penetrating radar, acoustical, pulse, sonic, and other energy fields methods. Contractor will also use appropriate methods to locate non-tonable facilities, such as unreinforced concrete mains or clay pipes. This work includes efforts and processes to achieve quality levels D, C, and B.

State’s Deliverables:
A) Provide the Contractor with any Quality Level D and C information that others have previously acquired or provided.

Contractor’s Deliverables:
A) Verify, update and refine the survey information for above-ground and overhead utility facilities provided by State as needed.
B) Designate, record, and mark the approximate horizontal location of existing underground utilities and their major laterals and services to existing buildings (Quality Level B), including storm sewer, sanitary sewer and water main. All survey work will be the Contractor’s, or their Sub Contractor’s responsibility.
C) Horizontal surveying of underground utilities will be accurate to applicable survey standards.
D) Inspect manholes for active inlets or outlets to determine if the number of inlets and outlets match the information gathered to date. Any known inlets and outlets will be investigated to designate the attached facility to the maximum extent within the project limits.
E) Inspect manholes for inlets and outlets that have been bulkheaded. If bulkheads are found the Contractor must investigate the history of the bulkhead with the utility owner to determine if the facility was left in place and out of service or removed.

F) Designate abandoned of left in place out of service facilities based on Contractors recommendation or as directed by the State Project Manager.

G) Separately submit all quality level B utility designating data to the State in a Microstation file compatible with States Level 2 CADD standards, available at: www.dot.state.mn.us/caes/cadd/. Contractor will also submit data to the State in an Excel spreadsheet file, as well as providing two hard copies of the Microstation plans and Excel spreadsheets. Contractor will await States written authorization to perform Quality Level A work.

H) Be responsible for the accuracy of all information presented to the State. An official of the Contractor will certify all completed designating services on the plans as the State directs.

8.3 – Utilities Coordination Process – The Contractor will participate in the steps of the State’s utility coordination process through step 4 and will coordinate the project development with all utility owners that may be affected by the project. Utility coordination generally includes resolving and mitigating all utility conflicts. Specific utility coordination activities must be handled in compliance with the State’s Utilities Manual and as outlined in the consultant information packet, both of which can be found at State’s website www.dot.state.mn.us/utility. The time frame for completion of the steps in the utility coordination process is to be determined by the Contractor in coordination with the State’s project manager. The utility coordination services set forth herein must be performed by individuals trained to execute the coordination process according to the State’s Utilities Manual.

Section 9.0 – Geometric Layout (Source Type 1140)

9.1 – Prepare Geometric Layout - Contractor will develop and evaluate alternative alignments, profiles, and/or cross sections that demonstrate consideration of strategies to avoid resources, minimize the impacts of R/W acquisition, and provide and understanding of vehicle types, traffic patterns, and turning movements. When determining the typical section(s) for this project, the Contractor is to collaborate with, and gather input from, the State and the City of Sacred Heart regarding the preferred typical section.

9.2 Pedestrian Facilities Layout Development
A preliminary Pedestrian Facilities Layout will be developed by the Contractor for SP 6510-67 based on the Final ADA Field Walk Recommendations. These layouts will be used to determine construction limits. Contractor will follow ADA development guidelines found at http://www.dot.state.mn.us/ada/pdf/adaprojectdesignguidememo.pdf.

9.3 – Concept Level Geometric Layout – The Contractor will produce a Concept Level Geometric Layout for State review. The Concept Level Layout will, at a minimum, consist of typical section(s), alignment, profile, 2-dimensional linework and truck turning templates.

9.4 – 60% Geometric Layout – Contractor will submit a 60% Geometric Layout and Draft Construction Limits for State review. State will then provide comments to the Contractor to be incorporated into the 90% Geometric Layout.

Contractor will submit the 60% Geometric Layout, profiles, and 3D Model for State review. Submittal will include both hard copy (up to 3 copies) and electronic file. As part of each layout submittal, the Contractor must provide QC redlines and a spreadsheet listing each review comment and how it was addressed. All electronic files will be in Microstation power GEO-PAK SS3 or newer in accordance with State CADD standards, online at <http://www.dot.state.mn.us/caes/cadd/>. 
9.5 – 90% Geometric Layout – Contractor will submit a 90% Geometric Layout and Draft Construction Limits for State review. State will then provide comments to the Contractor to be incorporated into the Final Geometric Layout. The 90% Geometric Layout will also be sent to the Geometric Design Support Unit (GDSU) for cursory review.

Contractor will submit the 90% Geometric Layout, profiles, and 3D Model for State review. Submittal will include both hard copy (up to 3 copies) and electronic file. As part of each layout submittal, the Contractor must provide QC redlines and a spreadsheet listing each review comment and how it was addressed. All electronic files will be in Microstation power GEO-PAK SS3 or newer in accordance with State CADD standards, online at <http://www.dot.state.mn.us/caes/cadd/>.

9.6 - Final Geometric Layout - Contractor will prepare a Final Level 2 Layout for State signature. Included with the Final Layout will be typical sections, profiles, and preliminary cross sections at maximum 50 foot intervals, construction limits, detailed ADA recommendations (stoop slopes, etc.) and any other elements necessary for plan preparation and R/W acquisition. Construction limits will consider special ditch grades, storm water treatment or rate control locations, ADA improvements, extension of City Utilities, and any other items that effect construction limits and R/W impacts/acquisition. Contractor will submit the electronic files with the refined alternatives and a draft and final design documenting the alternative development and evaluation process in paper and Acrobat Reader (*.pdf) formats to State.

Contractor will submit the Final Geometric Layout and profiles for State approval including final review and signature. Submittal will include both hard copy (up to 3 copies) and electronic file. Submission of Final Geometric Layout will include construction limits map. As part of each layout submittal, the Contractor must provide QC redlines and a spreadsheet listing each review comment and how it was addressed. All electronic files will be in Microstation power GEO-PAK SS3 or newer in accordance with State CADD standards.

9.7 - Design Memorandum - The Contractor will be responsible for the Highway Design Standards Form, Design Memorandum and documentation and submitting for design exceptions. This information be submitted with each Geometric Layout submittal.

9.8 – Municipal Consent – The Contractor will be responsible for all administration and coordination necessary to obtain Municipal Consent.

9.9 – Municipal Facilities Coordination – The Contractor will coordinate with the City of Sacred Heart to incorporate any landscaping, street light, and utility improvements into the layout and construction limits.

9.10 - Cost Estimating - Contractor will prepare preliminary cost estimates for the alternatives. Cost estimates will be based on the Contractor’s preliminary geometric layout, and typical State roadway construction costs, assembled by Contractor with concurrence by State Project Manager. Contractor will prepare and provide a cost estimate with the final geometric layout. Cost estimates will be calculated on a detailed (including all grading, base, surfacing, etc.) basis for various roadway design typical sections (mainline roadway, frontage roads, ramps, etc.) plus drainage features, structures, lighting, retaining walls, bridges and any other features of the constructed project. Estimated costs shall be separated into columns according to state, city, and county funding sources. Additionally, R/W acquisition costs will also be estimated.

9.11 – Geometric Layout Deliverables and Dues Dates(s) or Time Requirement

State’s Deliverables:
A) Review Layout and cost estimate and submit comments (within 3 weeks)

**Contractor’s Deliverables:**
A) Concept Level Geometric Layout (September 14, 2018)
B) 60% Geometric Layout (November 2, 2018)
C) 90% Geometric Layout (December 21, 2018)
D) Final Signed Geometric Layout (February 8, 2019)
E) Signed Municipal Consent (February 8, 2019)
F) Municipal Facilities Coordination (on-going)
G) Construction Limits Map (February 22, 2019)
H) The Contractor will be responsible for the Design Memorandum and any design exceptions
I) Contractor will prepare cost estimates for the alternatives and final layout

**Section 10 – Detailed Design (Source Type 1250)**

10.1- Detailed Design-The Contractor will prepare the construction plans for the proposed roadway improvements that are consistent with horizontal and vertical alignments, typical sections, and construction limits identified in the approved Final Geometric Layout. The road plans prepared will also be consistent with findings and recommendations identified in the Project Design Memorandum, the CATEX and the Materials Design Recommendation (MDR). The State will provide the Detour Routes which the Contractor will use to create plan sheets and incorporate into the plan set. The Contractor will also use the Detour Routes to analyze and prepare the Traffic Management plan (TMP), and also respond back with any comments and recommendations for Traffic Control, Detour Routes, etc. Work will be in accordance with the State HPDP, State Computer Aided Drafting and Design (CADD) standards, and Technical Memoranda. Work will be completed using English units. The format of the construction plans will comply with the State sample plan and the State CADD Standards as found at [http://www.dot.state.mn.us/caes/cadd/](http://www.dot.state.mn.us/caes/cadd/). The construction plan set may consist of, but is not limited to, the following sheets:

1. Title Sheet
2. General Layout
3. Statement of Estimated Quantities (SEQ)
4. Soils Construction Notes and Standard Plates & Plans
5. Typical Sections
6. Quantity Tabulations
7. Public Utility Tabulations
8. Miscellaneous Details as needed
9. Standard Plan Sheets
10. Construction Staging Plans
11. Traffic Control - including Detour - Plans and Tabulations
12. Alignment Tabulations
13. In-place Topography, Utilities and Right-of-Way
14. Removal Plans and Tabulations
15. Construction Plan Sheets
16. Roadway Profile Sheets
17. Storm Water Pollution Prevention Plan
18. Drainage Plans and Profiles
19. Temporary Erosion/Sediment Control Plans
20. Turf Establishment and Permanent Erosion/Sediment Control Plans
21. Landscaping Plans
22. Proposed Drainage Tabulation
23. Striping Plan
24. Signing Plan
25. Lighting Plan
26. Cross-Section Sheets

10.2 - Special Provisions - One set of Special Provisions will be required for the letting. The Contractor will be responsible for producing the Special Provisions for all unique items in the project that are not covered in the State Standard Specifications for Construction. Each provision will contain a description, materials, construction requirements, method of measurement, and basis of payment for each item. Deletions from, and additions to Standard Specifications will be written and included as necessary. Construction contract time and traffic provisions (timeline and bar chart) will be developed with input from State. A copy of the Special Provisions will be submitted to State for review along with the 90%, and 100% Construction Plan submittals. Electronic copies of the final Special Provisions in Microsoft Word format will be submitted with the Final Construction Plans.

10.3 - Engineer’s Construction Cost Estimate - The Contractor will submit the Engineer’s Construction Cost Estimate based on quantities and information at hand, starting with the Detail Design (90%), and all submittals thereafter. Lump sum items in the estimate will need to be broken down in detail to explain the estimated cost. The cost estimates will use the latest cost data available. An electronic copy of the cost estimates in Excel format will be submitted in addition to the hard copy. In addition to the required cost estimates in Excel format, the Construction Plan submittal (100%) will include an electronic file of estimated quantities and costs. The electronic file will be submitted by State’s Central Office directly to the State’s Estimates Unit for loading into the Trns*port system.

10.4 - Plan Format - The format of the Construction Plans will comply with the State’s current CADD data standards, related appendices, and the State’s current design concepts and practices. All sheets contained in the Construction Plans and cross sections will be submitted to the State in Microstation power GEO-PAK SS3 or newer formats. The Plans, Profiles, cross sections, and 3D Model will be in compliance with the State CADD Standards, as found at <http://www.dot.state.mn.us/caes/cadd/>. Plans submitted for reviews will be delivered on 11”x17” bond sheets. The detail design plan will be submitted on 11”x17” bond sheets and only the title sheet will be on an 11” x 17” sheet of vellum.

10.5 - Plan Review and Approval
10.5.1 - Preliminary/Intermediate Design (30% Complete) - The Contractor will submit one set of prints and electronic design files showing the following elements of the construction plans: Title sheet, preliminary cross sections, preliminary profiles and typical sections. The State’s staff will complete review and comment on this submittal within 15 business days of the submittal date. The Contractor will make all necessary revisions required by the State’s staff.

10.5.2 - Intermediate Design (60% Complete) - The Contractor will submit one set of prints and electronic design files showing all elements of the Construction Plan listed in Section 6.1 of this Scope of Services. The State’s staff will complete review and comment on this submittal within 15 business days of the submittal date. The Contractor will make all necessary revisions required by the State’s staff and provide responses to the previous State’s review comments.

10.5.3 - Detail Design (90% Complete) - The Contractor will submit one set of prints and electronic design files for the proposed Construction Plan, one copy of the Special Provisions, Traffic Management Plan (TMP), Quantity Calculations and comps, and one copy of the Engineer’s Construction Cost Estimate for the State’s Review and Comment. Included in the submittal shall be
the documents from the result of the consultant’s QMP process that include a QC/QA “redlined” plan set and responses to the previous State’s review comments. The Contractor will incorporate the Detour Plan, Hydraulics files, provided by the State into their 90% plan. The State’s staff will complete review and comment on this submittal within 15 business days of the submittal date. Selected sheets will be sent to State’s Central Office for preparation of any necessary Agreements. The Contractor will make all necessary revisions required by the State’s staff.

10.5.4 - Construction Plan (100% Complete) - The Contractor will submit one set of prints and electronic design files for the proposed Construction Plan, one copy of the Special Provisions, TMP, Quantity Calculations and comps, and one copy of the Engineer’s Construction Cost for the State’s Review and Comment. Included in the submittal shall be the documents from the result of the consultant’s QMP process that include a QC/QA “redlined” plan set and responses to the previous State’s review comments. The State’s staff will complete review and comment on this submittal within 15 business days of the submittal date. The Contractor will make all necessary revisions required by the State’s staff.

Upon making the revisions to the 100% Construction Plan submittal, the Contractor will submit two signed and certified vellum title sheet. The plan set will be submitted to State’s Central Office Design Liaison Unit for review and approval. The State’s Central Office Design Liaison Unit will make a final review and comment on the certified Construction Plan.

Upon making the revisions requested by State’s Central Office Design Liaison Unit, the Contractor will submit new signed and certified sheets, as necessary. An electronic copy of the project’s GEOPAK design files (.gpk) and each sheet in Microstation power GEO-PAK SS3 or newer format will be submitted upon final corrections. One copy of the final design computations and quantity calculations will also be submitted.

10.6 - Detailed Design Deliverables and Due Dates(s) or Time Requirement

State’s Deliverables
A) Final Materials Design Recommendation (April 17, 2020)
B) Detour Route (May 15, 2020)
C) Complete review and comments (within 15 business days)

Contractor’s Deliverables:
A) 30% submittals (Plans) (September 18, 2020)
B) 60% submittals (Plans, Electronic Computations) (March 26, 2021)
C) 90% submittals (Plans, Electric Computations Special Provisions, TMP, Engineer’s Construction Cost Estimate.) (August 24, 2021)
D) 100% submittals (Plans, Special Provisions, TMP, Engineer’s Construction Cost Estimate, Project Manager Utility Certification, Electric Computations.) (October 19, 2021)
E) 3D Surface models of Subgrade, Grading Grade, and Finished Grade produced using Corridor Modeler Microstation power GEO-PAK SS3 or newer. The final file format for the surface models will be in .XML file format.
F) The Contractor will submit all deliverables as required to meet the letting date (February 22, 2022). The State expects 100% completion of tasks and deliverables for a final Construction Plan turn in on November 16, 2021.
Section 11 - Permits (Source Type 1141)

11.1 - Permit Applications - The Contractor will prepare and submit all required permits and exhibits for all permits required for both projects as requested by the State. This may include, but is not limited to investigating the needs for the Department of Natural Resources (DNR) Public Waters permit and Wetland permit, County Ditch Orders, and NPDES.

11.2 - Permits Deliverables and Dues Dates(s) or Time Requirement

State’s Deliverables:
A) Review permit applications

Contractor’s Deliverables:
A) Prepare exhibits for permit submittals. (as requested by the State)
B) Submit permits.

Section 12.0 – Project Schedule

The following schedule is for the major items and is based off an assumed date (notice to proceed) of January 15, 2018. The schedule should be adjusted accordingly as per the actual notice to proceed date at the time of contract execution.

The Contractor will be responsible for carrying out all work on the project according to the following schedule. Dates shown are the date a task must be complete and the work accepted by the State’s Project Manager.

<table>
<thead>
<tr>
<th>Deliverable Item</th>
<th>Deliverable Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>Duration of the Project</td>
</tr>
<tr>
<td>Cost Estimation</td>
<td>Duration of the Project</td>
</tr>
<tr>
<td>Updated project schedule</td>
<td>Monthly</td>
</tr>
<tr>
<td>Design Vehicles</td>
<td>August 10, 2018</td>
</tr>
<tr>
<td>Distribute ENM</td>
<td>As Needed</td>
</tr>
<tr>
<td>Public involvement Plan</td>
<td>August 10, 2018</td>
</tr>
<tr>
<td>Wetland Documents</td>
<td>August 10, 2018</td>
</tr>
<tr>
<td>Concept Level Geometric Layout</td>
<td>September 14, 2018</td>
</tr>
<tr>
<td>Prelim Hydraulics Study Tech Memo</td>
<td>October 12, 2018</td>
</tr>
<tr>
<td>60% Geometric Layout</td>
<td>November 2, 2018</td>
</tr>
<tr>
<td>90% Geometric Layout</td>
<td>December 21, 2018</td>
</tr>
<tr>
<td>Final Signed Geometric Layout</td>
<td>February 8, 2019</td>
</tr>
<tr>
<td>Final Design Memo</td>
<td>February 8, 2019</td>
</tr>
<tr>
<td>Construction Limits</td>
<td>February 22, 2019</td>
</tr>
<tr>
<td>Signed CATEX</td>
<td>August 23, 2019</td>
</tr>
<tr>
<td>Signed Municipal Consent</td>
<td>August 23, 2019</td>
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<tr>
<td>Final Hydraulic study</td>
<td>February 22, 2019</td>
</tr>
<tr>
<td>30% Detail Design Submittal</td>
<td>September 18, 2020</td>
</tr>
<tr>
<td>60% Detail Design Submittal</td>
<td>March 26, 2021</td>
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<tr>
<td>Service</td>
<td>Date</td>
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</tr>
<tr>
<td>90% Detail Design Submittal</td>
<td>August 24, 2021</td>
</tr>
<tr>
<td>100% Detail Design Submittal</td>
<td>October 19, 2021</td>
</tr>
</tbody>
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