This contract is for the development of a layout, and to get the design to a 45% completion for State Project (SP) 1707-118, Trunk Highway (TH) 71/30.

Overview of Project

A. Convert the intersection at TH71/TH30 to a rural roundabout.
B. Replace existing pipes at the intersection.
C. Close access at one location.
D. Prepare Construction Limits

Task 1.0 Project Management (Source Type 1010)

This task is to manage Contractor staff and project delivery in order to deliver the tasks within scope, on time, and within budget. Contractor will:

1.1 Maintain regular contact with the State's Project Manager (PM) to provide updates, coordinate activities, and schedule project meetings.

1.2 Conduct weekly conference calls with the State's PM, Design Lead, and other team members as needed to review project status and discuss action items. One out of every four meetings will be a team meeting with all team members from State, but not necessarily the contractor's entire team.

1.3 Create and maintain an action item list, risk register and decision log for all meetings. Distribute at weekly meetings.

1.4 Meet as needed with State's project team. Contractor will plan for up to 5 virtual meetings to coordinate with the project team. These meetings are above and beyond what is stated in task 1.2.

1.5 Attend the Project Kickoff Meeting, provide agenda and take meeting minutes.

1.6 Submit monthly invoices for payment by the State. Invoices will show labor hours broken down by task and activity code and will include overhead and fixed fee as well as supporting documentation for all direct expense items.

1.7 Contractor and State will manage the schedule to maintain positive float. The project schedule will be defined by the early dates in the P6 schedule developed by the State. The planned final 45% plan will be turned into the district on or before July 1st, 2026.

1.8 Attend up to four meetings (virtual) with State's District staff to resolve geometric layout comments. These meetings are above and beyond what is stated in task 1.2.

1.9 Attend up to three meetings with State's CO Geometric Design Support Unit (GDSU) to resolve geometric layout comments (virtual).

1.10 Attend up to four meetings (all virtual) with other agencies to coordinate the design and staging of the project. Other agencies include the County, the city (Jeffers and/or Windom), and regulatory agencies.

1.11 Provide agendas two days in advance of meetings and meeting minutes within three days after meeting. This is for all meetings mentioned in Task 1.

1.12 Prepare exhibits (easy to comprehend geometric concepts with turning movements) for interactions with landowners where there will be property impacts. Assume 3 exhibits.

1.13 Coordinate staging with the County within the project limits during the "Roll Plot Phase".

1.14 Develop graphics for meetings with individuals, mailings, including project handouts, data visualization, information exhibits, and presentations to the public (postcards, 1-pager, detour map, project location map etc.).

Task 2.0 Quality Management (Source Type 1250)

Contractor will adhere to the processes in State's Design-Bid-Build Quality Management Process including the following specific requirements, Contractor will:

2.1 Submit a project specific Quality Management Plan (QMP) to State for the project within five days of Notice to Proceed with contracted services. Discuss and resolve any State concerns with the QMP.

2.2 Perform Over-The-Shoulder Reviews during the geometric layout, "Roll Plot Phase", and 45% plan, which will include preparing and presenting exhibits and other information regarding developing design and plan elements. These exchanges may take the form of draft drawings, questions list, etc., and may be transmitted and discussed via targeted emails, weekly phone conference meetings or by other means as appropriate. These meetings will include the involved disciplines and may be conducted in person, over the phone, virtually or by email as is needed.

2.3 Document Over-The-Shoulder Review Resolution items for each phase and will include providing and entering record updates if and as needed, as well as notation of the final conclusion and timing for each item completed.

2.4 Perform Discipline Coordination Reviews for the final submittals associated with the geometric layout, "Roll Plot Phase", and "45% Plan".

2.5 Provide a specific response to each comment that is received, whether in tabulation or redline form, as a part of the District Functional Group reviews of the Contractor's formal submittals. One formal submittal is required at the conclusion of each of the geometric layout, "Roll Plot Phase", and the "45% Plan". The State will strive to provide all comments as entries in Bluebeam. However, some comments may still be received separately, and may thus require Contractor entry (by reference) into Bluebeam, unless entered already by other State personnel.

2.6 Perform quality control & quality assurance checking prior to each submittal at the geometric layout, "Roll Plot Phase", and "45% Plan" submittals.

2.7 Provide Quality Assurance (QA) verification. Contractor's Project Manager or Quality Assurance Manger must review the entire plan design and production process to ensure the completeness and accuracy of Contractor's work and conformance with Contractor's QA procedures.

Task 3.0 Geometric Layout (Source Type 1140)

Contractor will prepare a geometric layout and supporting documentation required by Geometric Design Support Unit (GDSU) at preliminary, final, and approval stages. Contractor will:

3.1 Prepare preliminary layout and profile for the intersection. Contractor will prepare Highway Design Standards Form. Review Design Guidance with District 7 for agreement prior to beginning layout work. The Pre-design will strive to achieve State's District 7 design guidance. Minimum design guidance will only be used after approval by the State.

3.2 Prepare final geometric layouts and profiles:
- 3.2.1 The level 1 layout will include: submitting the preliminary layout for District and GDSU review with the Layout Checklist, revisions, final for signature and CO submittal, submittal memo, revisions, response memo to CO comments, printing and distributing the final Staff Approved Layout.

3.3 Evaluate roadside safety within project limits and identify any clear zone issues.

3.4 Design Memo – prepare design memo for preliminary geometric layout and profile. This will include design exceptions and justification for those exceptions as needed.

3.5 Prepare Construction Cost Estimate – Prepare a Construction Cost Estimate for Preliminary and Final geometric layout and profile.

3.6 Prepare preliminary construction limits based on the geometric layout, coordination on access, and other issues and submit these for State review and comment.

3.7 Prepare final right of way construction limits and submit to the State.

Task 4.0 Water and Wetland Permits (Source Type 1071)

Contractor will:

4.1 Provide Wetland Permit Impact Exhibit Drawings and Impact Summary Table.
- 4.1.1 Permit exhibit drawings must include the location and area of all proposed temporary and/or permanent impacts to aquatic resources.
- 4.1.2 The aquatic resource impact summary table must summarize all temporary and permanent impacts to aquatic resources.
  - 4.1.2.1 Impacts will be grouped by resource type (wetland, wet ditch, OAR) and identify type of impact (temporary/permanent & cut/fill).

4.2 Prepare modifications to exhibits as permits are being processed.

4.3 Incorporate and verify all comments relating to all permit(s) are incorporated into the plan.

Task 5.0 Hydraulic Design (Source Type 1141)

Contractor will perform the following tasks according to the State's District 7 Hydraulic Guidelines, the Drainage Manual, and other applicable guidance. Contractor will:

5.1 Determine the hydrology of the project area.

5.2 Prepare a drainage map depicting the drainage area of all surface drainage (culverts and catch basins).

5.3 Generate reports of hydrologic and hydraulic computations for the pre- and post-construction conditions.

5.4 Assemble a matrix to summarize the relevant storm water and/or environmental regulations that will apply to the project and coordinate with the State before the "roll plot phase" to ensure the final design meets their storm water and/or environmental requirements.

5.5 Perform drainage modeling and design culverts, ditches, and storm sewer. The design computations and sizes will be delivered between the "Roll Plot Phase" and "45% Plan".
- 5.5.1 This deliverable will include:

5.5.1.1 Drainage plan view sheets showing location of drainage structures, pipes, outfalls, and permanent stormwater management system.

5.5.1.2 Drainage profile sheets showing the hydraulic grade line on proposed pipes and structures.

5.5.1.3 Hydraulic design information in a table showing the proposed drainage structures, drainage areas, Runoff Coefficients, Time of Concentration, Intensity, drainage area discharge, allowed spread width, computed spread width, and bypass flow amounts.

5.5.1.4 Permanent stormwater management system grading plans and details.

5.5.1.5 Hydraulic design of ditches and/or flumes.

5.5.1.6 Incorporate necessary subsurface drainage (tile) into drainage plans, tabulations, and details as needed. No hydraulic modeling necessary.

5.6 Prepare 45% Hydraulic plans, details, and tabulations

Task 6.0 Roadway Design (Source Type 1250)

Contractor will perform the following tasks according to the State's Design Guidelines. The sequenced plan set development will include a formal submittal of a roll plot, or other document agreed upon to depict all design components at the "Roll Plot Phase", and formal submittal of plan sheets at the "45% Plan". Contractor will:

6.1 Prepare the roadway construction plans.

6.1.1 In addition to typical alignments and profiles, prepare alignments and profiles along the edge of pavement as noted in District 7 Roundabout guidelines.

6.2 Provide all final computations, design files and record of correspondence to the State in the specified formats.

6.2.1 Electronic file delivery will coordinate with plan reviews: All plan review stages will have electronic file delivery reflective of the plan stage.

6.2.2 Electronic file folders will be free of non-current data no longer reflected in the plan sheets.

6.2.3 File folder will contain a read-me document that describes what each file consists of.

6.3 Provide one electronic copy of the agreed upon deliverable at the "Roll Plot Phase", and one electronic copy of the plan sheets associated with the "45% Plan".

6.4 Prepare (updated from Task 3 if needed) Design Memo (for submittal to CO by the District). This will include design exceptions and justification for those exceptions as needed.

Typical Components of Phases

The "Roll Plot Phase" submittal will include a roll plot, or other document agreed upon to depict major design elements that are in the scope of the project, including but not limited to:

1. Typical Sections
2. Paving Limits (including termination of pavement on side roads and entrances)
3. Hydraulic Recommendations (depicting existing infrastructure and proposed areas of bridge, culvert and storm sewer work)
4. Traffic Recommendations (lighting as notes, signing as notes, pavement markings as notes, rumbles as notes)
5. Geometrics (alignment, profile, turn lanes and crossovers)
6. Utility Work
7. Proposed Detour Routes
8. Staging Concept
9. Construction Limits for R/W
10. Design Memo (Including Roadside Safety Recommendations and any Standards Deviations)

The "45% Plan" submittal plan will include quantities of the major construction items (in excel) and the following plan sheets. Sheets will be considered substantially completed Plan Sheets awaiting primarily the incorporation of State's District final review comments. Minor alterations, however, may still be needed to fully integrate the substantially completed plans with the other as yet uncompleted sheets. "45% Plan" sheets will typically consist of, but are not limited to:

1. Draft Title Sheet
2. General Layout
3. Draft Statement of Estimated Quantities (SEQ) with line items and units (no quantities)
4. Typical Sections
5. Detail Sheets
6. Standard Plans
7. Alignment Plans
8. Removal Plans
9. Construction Plans
10. Drainage Plans
11. SWPPP
12. Utility Conflicts/Plans
13. Plan and Profile Sheets
14. Preliminary Signing plans
15. Staging Plans
16. Detour Plans
17. Exhibits for Detour Agreement(s)
18. All Other Detailed Plan Sheets Required to Adequately Convey the Design

State-Provided Information

The State will provide the following information and data:

1. Existing Sign locations
2. All existing Design Surveys Information
3. Materials Design Recommendation

4. State's geometric design standards and exceptions: http://dotapp7.dot.state.mn.us/edms/download?docId=623068
5. State's electronic project directory standards and file naming standards
6. State's CADD Standards at: CADD Resources and Data Standards - CADD Unit - MnDOT (state.mn.us)
7. State's Quality Management Process for Design-bid-build projects at: http://www.dot.state.mn.us/design/qmp/documents/QMP-manual.pdf
8. State's Pavement Message Guidelines at: http://www.dot.state.mn.us/trafficeng/pavement/index.html
9. Temporary Traffic Control template sheets at: http://www.dot.state.mn.us/trafficeng/workzone/ttc-templets.html
10. Signing plan information at: http://www.dot.state.mn.us/trafficeng/signing/signingplansheets.html
11. Current Transport Pay Item List at: http://transport.dot.state.mn.us/Reference/refItem.aspx
12. The State's Standard Plans and Plates at: http://standardplans.dot.state.mn.us/ and http://standardplates.dot.state.mn.us/stdplate.aspx
13. Seeding manual at: http://www.dot.state.mn.us/environment/erosion/pdf/seedingmanual.pdf
14. SWPPP template
15. District 7 Design Guidelines
16. District 7 Traffic Guidelines
17. District 7 Hydraulic Guidelines
18. District 7 Survey Guidelines
19. District 7 Roundabout Guidelines

Format for Electronic Contractor Deliverables

All deliverables will be provided to the State in native format and uploaded to ProjectWise. Specific required formats:

- CAD: Bentley OpenRoads Designer CE, using State Level 2 CAD Standards
- Design computations: Excel and/or .pdf as appropriate
- SignCAD: Bentley SignCAD, Version PV 9.10, following the State Sign Panel Library Coding Manual
- Correspondence (Email, MS Word, PDF)
- Drainage Map: ArcPro
- Drainage inspection videos: AVI
- Storm sewer features map: ArcMap and PDF
- 3D models/surfaces: Bentley OpenRoads Designer CE validated tin, XML
- Plans for review: PDF (reviewed in Bluebeam)
- Public documents for graphics: adhere to ADA accessibility and MnDOT brand guidelines

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