I. Project Overview and Limits

The Contractor will perform Subsurface Utility Engineering (SUE) for both underground and overhead utilities on the project located on TH 23 and TH 10 in Benton County in the City of St. Cloud. All utilities will be located to Quality Level B Designating along with up to 100 hours of Quality Level A locates as directed by the Project Manager.

The project will reconstruct all pavement and replace bridges #9021 and #9022 over TH 10. The interchange ramps will be reconfigured. The grade on TH 10 will be lowered in the vicinity of 4th Street, to provide a grade separated bridge connecting the neighborhoods on the east and west sides of TH 10. Traffic signals at Lincoln Avenue, 14th Avenue, and St. Germain Street will be retrofitted for Americans with Disabilities Act (ADA). Lighting will be replaced. Fiber optic communications will be installed on both corridors. A traffic camera will be installed at the interchange. The project limits on TH 23 extend from 0.1 miles west of Lincoln Avenue to 0.1 mi. west of Benton CSAH 1. The project limits on TH 10 extend from 0.2 mi. north of St. Germain Street to 0.1 mi north of 15th Avenue SE.

The preliminary project layout and survey files for this project will be provided to the Contractor electronically upon request.

The Contractor will locate, identify and designate public and private underground and overhead utility facilities within the project limits of SP 0503-91 (TH 23 & TH 10) as shown on the draft project layout provided by the State. The project limits are understood as:

- The project limits on TH 23 extend from 0.1 miles west of Lincoln Avenue to 0.1 mi. west of Benton CSAH 1.
- The project limits on TH 10 extend from 0.2 mi. north of St. Germain Street to 0.1 mi north of 15th Avenue SE.
- To a minimum distance of 100’ from the back of radius on both sides of TH 23 and TH 10 along the following connecting streets & roadways as shown in the layout. Side roads include but are not limited to:
  
  Lincoln Avenue SE
  East St. Germain Street
  14th Avenue SE / Division Street E
  4th Street SE
  TH 10 East Frontage Road
  TH 10 West Frontage Road
  TH 23 Frontage Road Connection (East of 14th Ave SE)

II. Project Goal

The goal of this project is to obtain accurate utility field data broken down into an electronic format to avoid delays in the project due to inaccurate utility location information. The Contractor will assist the State in identifying utility impacts for the project. The Contractor will complete the preliminary Utility Information Sheets (UIS) for each utility’s conflict points within the corridor.
III. **Deliverable Standards**

The following standards apply to all deliverables in the contract. See the individual deliverable description for more specific deliverable standard requirements.

a. **Software**
   Sections within the scope of work identify the computer software to be used for deliverables. This section lists the software version the Contractor will use for deliverables.
   1. Microsoft (MS) Word 2013
   2. Adobe Acrobat 10.0
   3. Microsoft (MS) Excel 2013
   4. MicroStation and Power Geopak V8i

b. **Paper Copies of Reports**
   Paper copies will be printed as two-sided copies to the extent possible.

c. **Paper Copies of Drawings**
   Paper copies of drawings will be printed on 11” x 17” white bond paper.

d. **Electronic Documents**
   Electronic documents will be delivered via email, flash drive, or State’s FTP Site whenever practicable. No drop Box deliveries will be accepted.

IV. **Scope of Work and Deliverables**

The State requires SUE services of underground and overhead utility survey identification and location for this project located on and adjacent to TH 23 and TH 10 as described in the Project Overview. The Contractor must respond within 48 hours of receiving the notice to proceed to discuss the scope of work, utility impacts, required equipment, direct cost, and to negotiate hours of work. After the State gives the Contractor notice to proceed, the Contractor will commence work. The Contractor will submit all deliverables in accordance with the following schedule:
The Contractor will provide and verify quality level B (Designating) identification of Utilities and up to 100 hours of quality level A (Locating) at critical locations as determined thru consultation between the Contractor and Project Manager. The provided information will be as directed by the State and as described in the Federal Highway Administration (FHWA) Subsurface Utility Engineering publications and the American Society of Civil Engineers (ASCE) *Standard CI/ASCE 38-02*. The Contractor will fully accomplish these tasks to make it unnecessary for the State to supplement any of this work with its own personnel, except as noted hereinafter. The State may, however, review the work from time to time to verify accuracy and evaluate the performance of the Contractor.

### V. Project Coordination Tasks

**A.** The Contractor will:

1. Work closely with the State to facilitate the orderly progress and timely completion of the project.

2. Attend an initial meeting and an on-site inspection with the State Project Manager to ensure familiarity with existing conditions and project requirements.

3. Develop a work plan that includes a description of the tasks to be performed and a proposed schedule of activities. The work plan must satisfy the requirements of the project and must be approved by the State prior to commencing work.

4. Meet or conference call with the State periodically, at a minimum of once every two weeks, to coordinate the work effort, discuss progress, and resolve problems.

5. Provide the State with copies of diaries and correspondence that document work-related communications between the Contractor, utility owners, outside agencies, and/or private landowners.

6. Obtain all necessary permits and rights of entry from the State, local jurisdictions, and/or private landowners for locations requiring access as deemed necessary by Contractor to acquire data.

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor Selection</td>
<td></td>
</tr>
<tr>
<td>Scope Verification: Project Kick-Off &amp; Proposal Review</td>
<td>08/12/2020</td>
</tr>
<tr>
<td>Notice to Proceed &amp; Contract Signed</td>
<td>9/2/2020</td>
</tr>
<tr>
<td>Begin QL B Designating next day</td>
<td>9/3/2020</td>
</tr>
<tr>
<td>Utility Identification: Contact GSOC and Utility Owners / Send Questionnaires</td>
<td>9/10/2020</td>
</tr>
<tr>
<td>Interim QL B SUE Plan Submission</td>
<td>10/8/2020</td>
</tr>
<tr>
<td>Preliminary Conflict Matrix 1</td>
<td>10/15/2020</td>
</tr>
<tr>
<td>Utility Information Meeting – Step 2 1 week</td>
<td>10/22/2020</td>
</tr>
<tr>
<td>Utility Owner Information Review / Workshops – Step 3 1 week</td>
<td>10/29/2020</td>
</tr>
<tr>
<td>Final QL B Designating SUE Plan Submission 1 week</td>
<td>11/5/2020</td>
</tr>
<tr>
<td>QL A Locating 1 week</td>
<td>11/12/2020</td>
</tr>
<tr>
<td>Final Certified 2D SUE Plan Submission 1 week</td>
<td>11/19/2020</td>
</tr>
<tr>
<td>Additional QL A Locating (if needed) 3 weeks</td>
<td>12/10/2020</td>
</tr>
<tr>
<td>Final Conflict Matrix Submission 10 days</td>
<td>12/22/2020</td>
</tr>
</tbody>
</table>
7. Provide all maintenance and traffic control necessary to perform the work. All maintenance and traffic control will be performed in accordance with the current Minnesota Manual of Uniform Traffic Control Devices (MMUTCD) and Part VI, “Field Manual for Temporary Traffic Control Zone Layouts”, the “Guide to Establishing Speed Limits in Highway Work Zones”, the Minnesota Flagging Handbook, the provisions of State Standard Specifications 1401 and 1710, the Minnesota Standard Signs Manual Parts I and II, and the Traffic Engineer Manual.

8. Provide all necessary equipment, supplies, and support personnel, including surveying capability, to secure the survey data required in this contract.

9. Upon completion of the work the Contractor will provide the State with a final report consisting of:
   - Electronic copy of the Certified SUE Plans in .pdf and .dgn.
   - Electronic copy of Test Hole Data Sheets in .pdf
   - Hard copies of the above documents.

Contractor will also identify and verify utility impacts with the project in accordance with the States Utilities Manual. Contractor will prepare the Preliminary Utility Information Sheets (UIS) denoting required action for all facilities within the project limits. Upon completion of the work the Contractor will also provide the State with a final report consisting of:
   - Utility Information Sheets (UIS) in .xlsx and .dgn
     - Existing Utilities will be labeled with the utility owner and type. This information will be in the line work of the illustrated utility as shown in MicroStation drawings and on any plan sheets.
   - Estimated Utility Relocation Costs in .xlsx and .pdf
   - Hard copies of the above documents

B. The State will:

1. Provide highway information showing the project limits, alignment, profile, benchmark data, drainage, coordinate data, CADD files, and any other applicable information; and

2. Offer assistance as needed to obtain all necessary permits and rights of entry from the State, local jurisdictions, and/or private landowners for locations requiring access as deemed necessary by Contractor to acquire data.

VI. Designating (Quality Level B)

A. 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.

B. The Contractor will:

1. Verify, update and refine the survey information for above-ground and overhead utility facilities
provided by State as needed.

2. Designate, record, and mark the approximate horizontal location of existing underground utilities and their major laterals and services to existing buildings (quality level B). All survey work will be the Contractor’s, or their Sub Contractor’s responsibility.

3. Horizontal surveying of underground utilities will be accurate to applicable survey standards.

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

5. Separately submit all quality level B utility designating data to the State in a Microstation V8i 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.

6. 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.

C. The State will:

1. Provide the Contractor with any Quality Level D and C information that others have previously acquired or provided.

VII. Locating (Quality Level A)

A. Upon the State’s authorization, the Contractor will locate utilities that have a high potential for conflicts with the proposed improvements. For the purpose of this Contract, “locate” means to obtain the precise horizontal and vertical position of subsurface utilities by excavating a test hole. The test holes will be done using vacuum excavation or comparable nondestructive equipment in a manner that will not cause damage to the utility while exposing it for data collection. After excavating a test hole, the Contractor will perform a field survey to determine the exact location and vertical position of the utility. This work is considered quality level A.

B. The Contractor will:

1. Review plans and recommend areas to the State that require locating test hole sites within the project limits. The Contractor will recommend changes to the State’s location plan based on SUE best practices and obtain utility company records as required.

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

3. Obtain necessary permits and rights of entry from the local jurisdictions, and/or private landowners for locations requiring access as deemed necessary by Contractor to acquire data.

4. Neatly cut and remove the existing pavement or surface, with a maximum cut area of 225 square inches
unless unusual circumstances exist. The Contractor will excavate using a method enabling vertical and horizontal exploration through this cut.

5. Excavate test holes to expose the utility to be measured in a manner that ensures the safety of excavation and prevents any damage to the utility. In performing such excavations, the Contractor will comply with all applicable utility damage prevention laws and coordinate with utility inspectors as required.

6. Investigate, evaluate, measure, and record all utility data ascertainable from each test hole site.

7. Be responsible for any damage to the utility during excavation. In the event of utility damage, the Contractor will stop work and notify appropriate agencies, including the utility owner. Work will not resume until the owner has determined what action to take. The Contractor will be liable for all costs associated with the repair or replacement of the facility and will contact the appropriate environmental coordinator immediately if hazardous materials are encountered.

8. Backfill the excavation with approved material around the utility structure and compact, in lifts, with appropriate devices.

9. Permanently restore the pavement within the limits of the original cut at the time of backfill. If the test hole is excavated in an area other than the roadway pavement, the Contractor will restore the area to equal or better condition than it was in before excavation. The Contractor will be responsible for the integrity of the backfill/surface restoration. If the work site is not appropriately restored, the Contractor must return and properly restore the site at no extra cost to the State.

10. Furnish, install, and color code a permanent above-the-ground marker (i.e., PK nail, peg, steel pin, or hub) directly above the centerline of the structure and record the elevation of the marker.

11. Provide complete cleanup of the work site to equal or better condition than it was before excavation.

12. Tie all vertical elevations to a minimum of two checked benchmarks. The accuracy of these turns will be in accordance with established surveying practices.

13. Return utility “locating” information (quality level A) to the State in a digital format compatible with the State’s Level 2 CADD Standards, available at www.dot.state.mn.us/caes/cadd/. The following test hole information must be included:

   a. Elevation of the top and/or bottom of the utility, tied to datum of the furnished plan;
   b. Elevation of the existing grade over the utility at the test hole;
   c. Horizontal location referenced to the project coordinate datum after performing all required survey work;
   d. Outside diameter of the pipe or width of the duct banks and configuration on the non-encased multi-conduit systems;
   e. Utility structure material compositions;
   f. Pavement thickness and type, where applicable;
   g. Identification or benchmarks used to determine elevations;
   h. Elevation with accuracy of +/-0.05 ft;
i. Horizontal location with an accuracy that is at least 0.01 feet; and

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

C. The State will:

1. Provide input and approval of all test hole locations.

2. Offer assistance as needed to obtain all necessary permits and rights of entry from the State, local jurisdictions, and/or private landowners for locations requiring access as deemed necessary by Contractor to acquire data.

VIII. Utility Coordination

A. Contractor will:

1. Assess the quality of any utility information gathered to date for this project and update as needed using various methods to identify all utility facilities and their owners within the project limits. Using the list provided by the State, Contractor will contact utilities, local government, and businesses needed to obtain records that are missing and to verify that records already received are the most current and correct to the best of the utility owners knowledge.

2. Contact Gopher State One Call to identify which utility owners have facilities in the project limits.

3. Review the project site for utilities not already listed.

4. Update the preliminary lists of utilities or agency contact persons within the project limits provided by the State. Compile utility contact information including name of key contact person, address, phone numbers and e-mail addresses.

5. Schedule and facilitate a SUE Kick-Off Meeting to familiarize the utility owners with the project and facilitate discussions to determine if there are any initial concerns or information that can be shared prior to starting field locations.

6. Provide State meeting minutes of the Sue Kick-Off Meeting, and any other additional coordination meetings that occur during the duration of the Contract.

7. Update and refine the above ground and overhead designating information provided by the State as needed.

8. Provide a recommendation to the State Project Manager on the utility quality level needed to locate any abandoned or left in place out of service facilities identified taking into account the risk that the facility may pose to the project.

9. Create utility tabulation sheets clearly depicting the facilities within the project limits.
10. Submit utility tabulation sheets to the respective utility owner for review and verification.

11. Schedule Utility Workshops for each utility owner.

12. In coordination with States Project Manager identify and tabulate all utility conflicts and actions required for each utility owner’s facilities.

13. Ensure that all the Utility Tabulation Sheets are completed to the satisfaction of the State Project Manager.

14. Summarize, by conflict, the estimated costs for utility relocation for the project that are deemed eligible for reimbursement.

15. Attend all scheduled Utility Information and Design meetings. Record and submit to the State Project Manager all meeting minutes.

B. The State will:

1. Provide the Contractor with any Quality Level D and C information acquired.
2. Provide a brief presentation at the SUE Kick-off meeting to describe the construction project.
3. Attend coordination meetings and workshops as required.
4. Review and approve the information presented within the Utility Tabulation Sheets.
5. Incorporate the utility information from Utility Tabulation Sheets, and cost estimates, if necessary, into the Plans and any necessary Utility Agreements.

IX. Data Management

A. Data management involves assembling and presenting the designating and locating information in a format compatible with the State’s Level 2 CADD standards, available at www.dot.state.mn.us/caes/cadd/.

B. Field information obtained and recorded in field books will be drafted on plan sheets in electronic format using the current MicroStation and Geopak Standards and format that the State uses under the supervision of a Minnesota Licensed Professional Engineer.

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