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City of Hiawatha

Engineering Department

101 Emmons St., Hiawatha Iowa, 52233-1697
PHONE (319) 393-1515 ext. 511 FAX (319) 393-1516

To: **Mayor and City Council** **Date: April 15, 2019**

From: John C. Bender PE, City Engineer

Re: Tower Terrace Road Reconstruction Consultant Contract

Report:

We now have the final draft contract with Snyder and Associates as the design consultants for the environmental study/NEPA study /preliminary and final design of the City's approximately 2000 feet of Tower Terrace Road reconstruction. The final determination of using SWAP funds for our section of Tower Terrace Road reduced our level of effort to complete the environmental, archeological, and historical reviews along with a significant time savings.

The attached draft contract has been itemized into 5 sections. The first section is the base contract. The second section will include the bidding services. The third section will include either the intersection design, or the roundabout design. The traffic study will make the recommendation. The fourth section will include the extensive environmental study, only if required. The fifth section is a list of items not included in the contract that may be required at some point, but we are not ready to include these items at this time.

Section C.2 of the contract also outlines the proposed schedule to complete the major tasks for the project. Our schedule allows sufficient time to meet the bidding schedule of the interchange project by the DOT. Primary milestones include:

- Kickoff meeting — May 2019
- Preliminary Plans/ROW Documents — October 2019
- Check Plans — July 2020
- Final Plans — September 2020
- Contracts Turn-in — December 2020

We have a spreadsheet listing all the hours for each task and the anticipated personnel performing the work. The totals have been included in the contract costs for each of the major items. We have attempted to identify what the minimum cost could be for the design; up to what the maximum contract cost would be without additional action from the Council. We think it is a good idea to include the environmental study, although we hope this task will not be necessary. Following is a summary:

	Minimum	Maximum
Base Design Contract:	$187,500.00	$187,500.00
Bidding services:	$ 3,100.00	$ 3,100.00
Intersection Design:	$ 67,200.00*	$ 87,300.00*
Environmental Study:		$ 6,020.00*
Total:	$257,800.00	$ 283,420.00

* Will perform one intersection design based on traffic study. Environmental study most likely will not be necessary.

By combining the base services fee with the bidding services, the intersection design or the roundabout design, and only the environmental concurrence, we are at approximately 8.5% to 9.5% for the possible $3.0 mil project. This is a very reasonable design cost for a project of this type. We currently have $300,000 in the CIP budget funded with GO bonds. We feel we have a good contract and recommend Council moving forward with this project.

If Council has any questions, please let me know.

EXHIBIT A

RECONSTRUCTION OF TOWER TERRACE ROAD
FROM EAST OF I-380 TO NORTH CENTER POINT ROAD

CLIENT: CITY OF HIAWATHA
101 EMMONS STREET
HIAWATHA, IA 52233
C/O KIM DOWNS, CITY ADMINISTRATOR

ENGINEER: SNYDER & ASSOCIATES, INC.
5005 BOWLING ST SW, SUITE A
CEDAR RAPIDS, IA 52404

DATE: April 3, 2019

I. PROJECT DESCRIPTION

This scope of services outlines the Engineering services required to complete an Iowa Department of Transportation (DOT) bid package for reconstruction of Tower Terrace Road from East of I-380 through North Center Point Road in Hiawatha. SWAP funds shall be used to fund the construction of the project. The project shall be let concurrently with the new Tower Terrace Road Interchange (estimated to be bid Spring 2021) with an optional tie. Federal funding requirements shall be met if the tied project is chosen for award.

The design of Tower Terrace Road shall generally conform to the updated Corridor Management Plan approved by the MPO in March 2019. The ultimate roadway shall be four (4) lanes divided with turn lanes, 5-foot wide sidewalk along the north ROW, and a 10-foot wide bike path along the south side, all in a 120-foot wide ROW. This design shall include the ultimate roadway but interim construction may only include one through lane in each direction.

The City of Hiawatha (CLIENT) shall retain Snyder & Associates (ENGINEER) to complete Engineering Services for the project, including preparation of preliminary design, final design, construction plans and specifications, contract documents, right-of-way acquisition and bid phase services as detailed in the following Scope of Services.

II. BASIC SERVICES

A. PROJECT ADMINISTRATION

The ENGINEER shall perform the following administrative services during the design of the PROJECT:

1. Monthly invoices and progress reports detailing work completed on the project.

2. Project coordination with CLIENT, utility companies, property owners, and necessary agencies.

3. Project design review.

4. Project design meetings: Three meetings will be held during the design phase. An initial meeting will be held with the CLIENT to review project needs and design parameters. Following the initial meeting, three other design review meetings will be conducted to review preliminary and final design documents.

5. Utility coordination:

   a. The ENGINEER will develop preliminary plans for the purpose of coordinating with existing utility owners in the corridor. ENGINEER will coordinate with the CLIENT and utility companies to discuss location of facilities and potential impacts as a result of the Project, review utility relocation plans prepared by the utility company; and help facilitate a schedule with the CLIENT and utility companies to perform relocations prior to the Project construction.

   b. It is understood that the ENGINEER will hold and facilitate two (2) group utility meetings to address specific issues related to the Project. The ENGINEER will meet with utility owners when the design and construction plans are approximately 50% complete. A second meeting with utility owners will be held when the design and construction plans are approximately 95% complete.

   c. ENGINEER will prepare and distribute meeting minutes to all attendees.

6. Preparation and attendance to a Public Information Meeting to be held in the City of Hiawatha to inform local groups, property owners, and general public of the project, the process of the design, and utilize their input on preparation of the final design. Notes will be prepared and sent to the CLIENT for their records. A project plan view display exhibit will be prepared for this meeting. CLIENT shall prepare and distribute notices to property owners.

7. The ENGINEER will investigate additional funding sources for applicability to this project. Possible additional funding sources may include Revitalize Iowa's Sound Economy (RISE) grants, Traffic Safety Improvement Program (TSIP), etc.

B. TOPOGRAPHIC AND BOUNDARY SURVEY

The ENGINEER will provide topographic survey for the project. Topographic survey will include the following:

1. Horizontal Datum will be provided using the Iowa LDP RCS.

2. Vertical Datum will be relative to the North American Vertical Datum of 1988 (NAVD88)

3. Set a minimum of one permanent benchmark on site with description and elevation to the nearest 0.01 foot. Larger sites will require benchmarks at intervals not to exceed 1000 feet horizontal or 25 feet vertical.

4. Site Features:

a. Topographic field survey will be performed of the above ground physical features including pavements, trees, buildings with elevations at doorways that exit at grade, utility appurtenances etc. within the limits of the project.
b. Location of trees 6 inches and greater not lying within a wooded area will be noted as deciduous or coniferous.

c. The drip line or perimeter outline of wooded/brush areas will be shown.

d. A survey corridor of 50'-100' on each side of the existing roadway will be obtained.

e. Spot elevations displayed to the nearest 0.01 feet to be included for shots and are to be shown on a separate CADD drawing level to view when applicable.

f. An approximate 50 foot grid will be used to create topography map along with other grade breaks such as tops, toes, drainage ways, tops and bottoms of retaining walls, etc.

g. Contours will be displayed at 1-foot intervals.

5. Utilities:

a. ENGINEER shall depict known utility information based on record information, surface evidence, as-built drawings and utility company field locates. This service includes the use of Iowa One Call's Design Information Request (DIR) System followed by the Design Locate Request (DLR) system to identify known utilities that subscribe to Iowa One Call. ENGINEER shall perform field survey to locate utilities as designated by their respective owners. Utilities as depicted as a result of this activity will constitute a Quality Level "C" effort in accordance with ASCE 38 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. Private utilities are the responsibility of the owner of such private utilities and shall not be identified as a part of this survey unless included as a separate item.

6. Create 3D digital terrain model for design purposes.

7. The ENGINEER will perform survey to establish current right-of-way, property corners, property lines and existing roadway easements.

C. ENGINEERING DESIGN AND CONSTRUCTION PLANS

The ENGINEER will prepare design and construction plans including the following:

1. ENGINEER shall prepare design criteria and plans for the project in accordance with current Iowa DOT standards and specifications, and shall furnish copies of these documents to the CLIENT for review, comment and approval. The comments and review recommendations will then be incorporated into the final plans.

2. ENGINEER will complete and submit contract documents in accordance with the Iowa DOT critical path schedule for non-Federal-aid Local Public Agency Projects let by the Iowa DOT. Two (2) submittals are required, with final plans to be submitted September 22, 2020 for a December 22, 2020 bid letting. ***The submittal schedule will be adjusted as necessary to align with the letting for the new Tower Terrace Road Interchange.*** Final Plans will be

revised as necessary to meet the requirements and comments of the Iowa DOT Check Plan review. The list of project milestones along with submittal dates are outlined below:

Contract Approval ..... April 17, 2019
Project Kickoff Meeting ..... May 1, 2019
Topographic Survey..... May 2019
Traffic Study..... May 2019-August 2019
Preliminary Plans..... October 15, 2019
Check Plans ..... July 7, 2020
Final Plans ..... September 22, 2020
Contracts Turn-In..... October 6, 2020
Letting Date ..... December 22, 2020

3. Preliminary Plans (50% City Submittal)

   a. One set of plan originals shall be prepared on 22"x34" size sheets. Half-size plans will be allowed for CLIENT review.

   b. ENGINEER shall prepare a Preliminary opinion of probable cost.

   c. ENGINEER shall specify right-of-way and easement needs for the project and present to the CLIENT with the Preliminary Plan submittal. The CLIENT shall review and approve all right-of-way and easement needs prior to development of documents.

   d. The ENGINEER will provide Preliminary Plans to the CLIENT for review that, at a minimum, shall include:

      i. Typical Sections
      ii. Preliminary plan and profiles
      iii. Existing and proposed ROW lines and easement lines
      iv. Grading limits
      v. Existing utilities
      vi. Details
      vii. Traffic control plan
      viii. Erosion control plan
      ix. Striping and signage plan

4. Check Plans (90% DOT Submittal)

   a. ENGINEER shall not commence Check Plan preparation until after the CLIENT has reviewed the Preliminary Plans and approval to proceed is given.

   b. ENGINEER shall prepare an opinion of probable cost. The ENGINEER shall prepare an opinion the total probable construction costs based upon the designs developed for the project improvements. Statements of probable construction costs prepared by the ENGINEER represent the best judgment as a design ENGINEER familiar with the construction industry. It is recognized, however, that the ENGINEER has no control over the cost of labor, materials or equipment, over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the ENGINEER does not guarantee that any actual cost will not vary from any cost estimate prepared by the ENGINEER.

c. ENGINEER shall prepare the final acquisition plats upon approval of the CLIENT. Right-of-way acquisition assistance includes the following:

i. Determine the location of existing Right-of-Way (ROW)
ii. Locate existing monumentation along the corridor
iii. Prepare legal description and acquisition plat for each ROW and easement acquisition. This scope includes preparation of up to six (6) plats. Additional plats will performed as additional services.
iv. Acquisition plat and/or temporary easement location exhibit.

d. The ENGINEER will provide Check Plans to the CLIENT for review that, at a minimum, shall include:

i. Title sheet
ii. Typical Sections
iii. Quantity estimate and estimate reference information
iv. General notes
v. Plan and profile sheets
vi. General site plan
vii. Removal limits plan
viii. Traffic control plan
ix. Erosion control/pollution prevention plan
x. Striping and signage plan
xi. Street lighting plan
xii. Construction Details

5. Final Plans and Project Development Certificate (PDC) (100% Bid Documents)

a. ENGINEER shall incorporate CLIENT and Iowa DOT comments from the Check Plan submittal into the Final Plans.

b. ENGINEER shall prepare the PDC to include with the Final Plan submittal.

6. ENGINEER shall complete and obtain required permits from the Iowa Department of Natural Resources as necessary for the NPDES, as well as from Iowa DOT for work within State ROW (if needed). All applicable fees shall be paid by the CLIENT.

7. ENGINEER shall administer a quality control review which includes a site walk through and a thorough plan review. This quality review of the plan will be performed by an ENGINEER at least once during the project development process.

D. TRAFFIC STUDY

The ENGINEER will perform data collection and traffic analysis to confirm functional geometric and traffic control needs at the intersection of North Center Point Road and Tower Terrace Road. Specific services include:

a. Utilize information from the 2018 Interchange Justification Report (IJR) and available traffic count data to develop projected opening year AM and PM peak hour turning movement traffic forecasts at the Tower Terrace Road interchange intersections and the

Center Point Road intersection (study intersections). Utilize 2040 traffic forecasts from the IJR for analysis of design year traffic.

b. Review Iowa DOT crash data for the Tower Terrace Road and Center Point Road intersection. Evaluate potential safety benefits of a roundabout vs a traffic signal at the intersection.

c. Develop AM and PM peak hour traffic simulation models for the following scenarios to evaluate average delays, levels of service and vehicle queuing. It is assumed that applicable VISSIM models developed as part of the IJR will be provided by Iowa DOT.
   i. Opening Year with traffic signal at Center Point Road
   ii. Opening Year with roundabout at Center Point Road
   iii. Design Year with traffic signal at Center Pont Road
   iv. Design Year with roundabout at Center Point Road

d. Based on analysis results, determine recommended opening year and design year lane configurations along Tower Terrace Road between the I-380 interchange and Center Point Road.

e. Prepare concept design drawings and preliminary construction cost opinions for the Center Point Road roundabout and signalized intersection alternatives. Prepare a summary of projected annual costs for the roundabout and signalized intersection alternatives, including construction, maintenance, travel time and crash costs.

f. Prepare a draft traffic study report summarizing analyses, findings and recommendations. Finalize the report after receipt of draft report comments from the CLIENT and Iowa DOT.

E. ENVIRONMENTAL CONCURRENCE

The Project Team will coordinate with the Iowa DOT Office of Location and Environment (OLE) regarding field studies, documentation, and review agency coordination for the appropriate documentation and any permits required.

III. BIDDING SERVICES

The ENGINEER shall be available to answer questions from the Contractor and the Iowa Department of Transportation.

IV. ADDITIONAL SERVICES

The ENGINEER shall provide additional services, upon authorization, as follows.

A. ROUNDABOUT DESIGN

1. Prepare a roundabout geometric design for the Tower Terrace Road and Center Point Road intersection, based on concept design prepared as part of the Traffic Study. Conduct roundabout performance checks (fastest paths, vehicle turning paths, etc.) and revise geometric design as needed.

2. Provide additional design and plans sheets for the proposed roundabout in addition to the Engineering Design and Construction Plans in Article II. Additional design work includes horizontal and vertical alignments, cross-sections, grading, sidewalks, pedestrian ramps, storm sewer, intersection details and traffic control/staging plans.

3. Prepare signing and pavement marking plans for the proposed roundabout.

4. Prepare street lighting plans for the proposed roundabout.

5. Preparation and attendance to a Public Information Meeting to be held in the City of Hiawatha to inform local groups, property owners, and general public of the Roundabout project, the process of the design, and utilize their input on preparation of the final design. Notes will be prepared and sent to the CLIENT for their records. A project plan view display exhibit will be prepared for this meeting. CLIENT shall prepare and distribute notices to property owners.

B. TRAFFIC SIGNAL AND INTERSECTION DESIGN

1. Utilize project base mapping and proposed intersection design to prepare preliminary, check and final traffic signal and intersection lighting plans for the Tower Terrace Road and Center Point Road intersection, using applicable Iowa DOT, SUDAS and MUTCD specifications and standards.

2. Provide design and plans sheets for the proposed intersection in addition to the Engineering Design and Construction Plans in Article II. Design work includes horizontal and vertical alignments, cross-sections, grading, sidewalks, pedestrian ramps, storm sewer, intersection details and traffic control/staging plans.

3. Prepare signing and pavement marking plans for the proposed intersection.

4. Prepare street lighting plans for the proposed intersection.

5. Preliminary plans (50%) will include preliminary traffic signal layout. Check plans (90%) are anticipated to include the following plan sheets.
   i. Estimated quantities and general notes
   ii. Traffic signal layout
   iii. Traffic signal wiring
   iv. Traffic signal phasing
   v. Traffic signal interconnect to I-380 interchange
   vi. Traffic signal details

6. Prepare traffic signal construction cost opinion to incorporate into the overall project construction cost opinion.

7. Prepare traffic signal special provisions or general notes as needed to supplement Iowa DOT or SUDAS specifications.

8. Prepare final traffic signal plans, special provisions and construction cost opinion based on CLIENT and Iowa DOT check plan comments received. Incorporate traffic signal plans into final project plans.

9. Preparation and attendance to a Public Information Meeting to be held in the City of Hiawatha to inform local groups, property owners, and general public of the Traffic Signalization project, the process of the design, and utilize their input on preparation of the final design. Notes will be prepared and sent to the CLIENT for their records. A project plan view display exhibit will be prepared for this meeting. CLIENT shall prepare and distribute notices to property owners.

C. ENVIRONMENTAL STUDY

1. Archeological investigation, Phase 1A – Intensive Archeological Investigation.
   i. Desktop archeological investigation

2. Wetland Investigation
   i. Identify wetland areas and project impacts

D. OTHER SERVICES

The following items shall be considered Other Services as may be requested by the CLIENT. Other Services may be performed on an hourly basis or should a specific scope of services be defined, a quotation for services may be performed.

1. Any subsurface utility Engineering (SUE) services requested to obtain accurate utility depth and location information.
2. Design of any private utility facilities.
3. ROW services including property owner contact, appraisals, acquisition negotiations, public notices relocation assistance, closing documents, recording of documents, warranty deeds and other legal documents.
4. Utility design of water, sanitary sewer and associated permits.
5. Wetland delineation or environmental analysis.
6. Phase II - NRHP Eligibility/Significance Testing archeological investigation.
7. Meetings above listed in scope of services.
8. Submittal fees to any and all regulatory agencies.
9. Front end bidding documents.
10. Construction observation and administration.
11. As-built drawings.
12. Geotechnical services and soil borings.

V. COMPENSATION

A. BASIC SERVICES

Compensation for Basic Services as outlined in Article II shall be hourly, not to exceed, as follows:

Task	Hourly Fee
Project Administration	$61,900
Topographic and Boundary Survey	$12,300
Engineering Design and Construction Plans	$91,100
Traffic Study	$20,500
Environmental Concurrence	$1,700
Total	**$187,500**

B. BIDDING SERVICES

Compensation for Bidding Services as outlined in Article III shall be hourly, not to exceed, as follows:

Task	Hourly Fee
Bidding Services	$3,100
Total	**$3,100**

C. ADDITIONAL SERVICES

Additional Services will be provided upon authorization to proceed with the selected Tasks. Only the Roundabout Design or the Traffic Signal and Intersection Design will be selected for completions, but not both. Compensation for Additional Services as outlined in Article IV shall be hourly, not to exceed, as follows:

Task	Hourly Fee
Roundabout Design	$87,300
Traffic Signal and Intersection Design	$67,200
Environmental Study	$6,020
Other Services	Per Attached Fee Schedule

RESOLUTION NO. 19-
City Council

RESOLUTION APPROVING A PROFESSIONAL SERVICES AGREEMENT FOR DESIGN WORK IN CONNECTION WITH TOWER TERRACE ROAD RECONSTRUCTION PROJECT FROM I-380 TO NORTH CENTER POINT ROAD

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HIAWATHA, IOWA, that the Mayor is hereby authorized to sign a Professional Services Agreement between the City of Hiawatha and Snyder and Associates. for the following purposes and under the following terms:

preparation preliminary design, final design, construction plans and specifications, contact documents, right-of-way acquisition and bid phase services in an amount not to exceed $283,420.00, as detailed in the attached Exhibit 'A.'

AYES:
NAYS:
ABSENT:

PASSED AND APPROVED this 17th day of April, 2019.

_____
Bill Bennett, Mayor

ATTEST:

_____
Kari Graber, City Clerk