

REVISED EXHIBIT A
CONSULTANT'S GENERAL SCOPE OF SERVICES
PROFESSIONAL SERVICE AGREEMENT SCOPE OF SERVICES
CITY OF THORNTON
HOLLY STREET 36-INCH WATERLINE
PROJECT NO. 25-414

Project Description

The Scope of this Professional Service Agreement (Agreement) includes the design and engineering required to prepare the bid package for the construction and installation of approximately 12,500 linear feet (LF) of 36-inch diameter potable water transmission line to facilitate water delivery to the Zone 1 storage tanks.

The 36-inch waterline will begin at the Holly Street Booster Pump Station (located on the northwest corner of Holly Circle South and Holly Street). Two (2) potential alignment options are provided in Exhibit A – one (1) along the Holly Street and 140th Avenue arterial roadways, and another that extends through the Trail Winds Parks complex.

The waterline will connect to an existing 30-inch stub-out on the discharge side of the booster pump station, extend north, and will terminate at a 36-inch stub-out located at East 140th Avenue and Dahlia Street. A 36-inch waterline connection will be required to tie into Thornton's existing 42-inch waterline located on the upstream side of the booster pump station. This portion of waterline will include a check valve for operational flexibility. Refer to Exhibit B for more detail.

Easement acquisitions may be required depending on the selected waterline alignment.

DESCRIPTION OF SERVICES TO BE DONE

Thornton requires that the following engineering services be performed by the Consultant as it relates to the above-described Project and constitutes the basis for this Agreement.

The Services include:

- Professional surveying services as further defined herein.
- Design, engineering, bidding, and construction phase services required for the development and installation of approximately 12,500-LF of new 36-inch potable water transmission line, valves, vaults, and connections to existing infrastructure. Consultant shall perform all required investigations to determine the optimal and most cost-effective waterline alignment. Potential alignments and a connection detail are provided in Exhibit A

- The Consultant shall provide two (2) conceptual alignments that will be evaluated during the pre-design phase. The alignment alternatives will be developed under guidance from Thornton staff.
- Recommendation and coordination for environmental clearances and Clean Water Act Section 404 wetland permit application, in collaboration with Thornton's environmental Consultant;
- Locate all utilities and other existing improvements within Project limits;
- The new 36-inch waterline shall maintain appropriate separation from all existing utilities per Thornton Standards and Specifications and Colorado Department of Public Health and Environment (CDPHE) requirements.
- Easement acquisition including Right-of-Way (ROW) plans/drawings and legal descriptions may be necessary depending on the selected alignment. Consultant shall provide pricing for ROW plans/drawings and two permanent easement legal descriptions.
- Consultant shall provide all design and engineering needed for the contractor to obtain a CDPHE Stormwater Permit, including preparation of a project specific Storm Water Management Plan (SWMP), and erosion and sediment control drawings. These shall be compliant with the new Colorado Discharge Permit System General Permit for Stormwater Discharges Associated with Construction Activities issued November 2018, effective April 1, 2019.
- Provide utility plans that are in compliance with the new American Society of Civil Engineers (ASCE) 38 Standard and Senate Bill 18-167, quality level B shall be attempted to be achieved, and plans shall be prepared by a Colorado Professional Engineer. Quality level A will be required at all crossing utilities and tie in locations.
- All underground utility plans shall indicate tracer wire and marker posts as required.
- Provide technical specifications and distribution system testing procedures for inclusion in the project manual – Division 0 (to be provided by Thornton) and for bidding purposes.

The Services shall be completed in phases as further described below.

I. Information Available

Thornton will provide the Consultant with available information related to the Project. Information will include Thornton's standard front-end documents for construction contracts, as-built drawings if available, Thornton GIS information, Thornton utility drawings, Thornton engineering standards, and related items. Thornton cannot provide related electronic computer aided design and drafting (CADD) files. The Consultant will be responsible for verifying the information supplied by Thornton. The

documentation given to the Consultant is for information only, and Thornton does not guarantee its accuracy. The Consultant shall not utilize aerial photography supplied by Thornton to the Consultant for any purpose other than Thornton's Project.

II. Pre-Design Phase

- A. The Consultant shall attend a Project Kickoff Meeting with Thornton staff.
- B. The Consultant shall conduct data gathering meetings, as necessary, with the Thornton Infrastructure and Support Services Divisions, in order to obtain information and understand the desired outcome of the Project. The Consultant shall plan to attend one (1) in person meeting during this task and conduct virtual bi-weekly progress meetings. The Consultant shall be responsible for documenting, preparing, and submitting the meeting minutes to all attendees.
- C. The Consultant shall evaluate two (2) alignment alternatives for the installation of a new 36-inch potable water line. Cost, traffic control, required easements, proximity to existing utilities, and constructability should all be considerations in the alignment to ensure it meets Thornton's operational needs.
- D. The Consultant shall meet at the Project site and review the existing field conditions. Subconsultants, Thornton's staff and other designated representatives shall be present during this review.
- E. Based on review of available information, data gathering completed by the Consultant, and site investigations, the Consultant shall develop a Pre-Design Technical Memorandum that investigates the feasibility of two (2) proposed alternatives for the 36-inch potable water transmission line. The Technical Memorandum will discuss differences between the alternatives which may include transmission line alignment, pipe material, construction methods and/or techniques, overall cost, right-of-way acquisition, traffic control, constructability or other items the consultant deems appropriate. The consultant will provide a recommended alternative in this Technical Memorandum, and it will be presented and discussed with the city for approval at a Pre-Design Technical Memorandum meeting.
- F. Information provided in this Technical Memorandum can be utilized in the Pre-Design Report deliverable described later in this phase.
- G. All subsequent items identified in this Pre-Design Phase will be completed for the agreed upon selected alignment from the Technical Memorandum.
- H. The Consultant shall contact the Utility Notification Center for utility marking, shall review Xcel Energy, CenturyLink, Comcast, AT&T, Level 3, Thornton signal and fiber, Thornton water, sanitary sewer, and storm sewer and other public and/or private utility provider maps, as required, to accurately depict existing utility locations, depths, and points. The Consultant shall determine whether the level

of accuracy thus provided is adequate and in accordance with Colorado Senate Bill 18-167; if it is not, the Consultant shall be responsible for establishing such accuracy through other appropriate means such as surveying and potholing.

The Consultant is responsible to pay the cost for the first seventy-five (75) potholing locations in the not-to-exceed fee. If additional pothole locations are necessary, the Consultant shall be compensated at the unit price provided in the schedule of charges for additional locations when agreed to by Thornton. Pothole locations shall be mutually agreed to by the Consultant and Thornton prior to proceeding.

The Consultant shall ensure that the location of all of the subsurface utilities have been properly investigated, located and depicted on the drawings, and that all utility locations and depictions are in compliance with Colorado Senate Bill 18-167. Consultant shall further attempt to achieve ASCE 38 utility quality level B (or its successor utility quality level) on all utilities within any proposed excavation areas unless a reasonable rationale by a licensed Professional Engineer is provided in writing for not doing so.

- I. The Consultant shall provide the necessary field survey, using Thornton's control points, to identify existing features necessary to accurately complete the design of the Project. All features shall be shown within fifty feet (50') of the proposed work area. A licensed surveyor registered to practice surveying in the State of Colorado shall perform the survey work. The Services shall include, but not be limited to, the following:
 1. Site improvements.
 2. Landscape elements including fences, gates, trails, plant materials, sprinkler vaults, water features, streams, etc.
 3. Surface treatments including pavements, curb and gutter, curb ramps, driveways, steps, etc.
 4. All structures.
 5. All utilities, including irrigation lines, poles, vaults, hydrants, cabinets, etc.
 6. All right-of-way (ROW) boundaries and easements, including easements for Thornton-owned utilities.
 7. Street addresses of building structures.
 8. All property lines and corners.

- J. The Consultant shall provide a Geotechnical Report with the necessary number of geotechnical borings or pits to determine soil properties and make recommendations on the design of the applicable elements including but not limited to pavement design, structure foundations, retaining structures, pipe bedding, backfill, grading, compaction, and waterproofing if applicable. The Consultant is responsible to pay the cost for the first thirty (30) borings and/or test pits in the not-to-exceed fee. If Thornton and the Consultant agree that additional borings and/or test pits are necessary, Consultant shall be compensated at the unit price provided in the schedule of charges. All structural design shall be performed by a Licensed Professional Engineer, and not by a Registered Geologist.
- K. The Consultant shall plan and provide any required traffic control for the survey, testing or design process for field activities, which interfere with vehicular, bicycle, or pedestrian traffic operations within existing roadways, sidewalks, trails, or parking areas. Traffic control operations will be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) as well as the American Traffic Safety Services Association's ATSSA Guide for Work Area Traffic Control. Consultant shall submit their traffic control plan to Thornton and obtain the necessary permit(s).
- L. The Consultant shall initiate applications for permits required and reviews of other governmental and non-governmental agencies, as necessary, except environmental permits.
- M. Based on input from Thornton, and from thorough site investigations and analyses performed independently by the Consultant, the Consultant shall prepare and submit a Pre-Design Report including the following, at a minimum:
1. Description of and feasibility of the selected alternative. The Consultant shall include the Technical Memorandum that compares two (2) separate conceptual alternatives for the 36-inch potable water transmission line. Differences between alternatives may include transmission line alignment, pipe material, construction methods and/or techniques, overall cost, or other items the consultant deems appropriate. The Technical Memorandum should be updated for the selected alignment based on additional data gathering and investigations completed after it was delivered to Thornton.
 2. Engineers Estimate of Probable Construction Cost for selected alternative. The cost estimate provided in the Technical Memorandum shall be updated to provide a more detailed evaluation. Thornton requires that a construction contingency allowance of at least ten percent (10%) of the Project construction budget be reserved and carried as a separate line item in all construction cost estimates. Should the cost estimates prepared for the Pre-Design Report exceed the currently approved budget, Consultant shall prepare a list of possible design alternates to bring the design back within budget. Thornton will

either approve the incorporation of some or all of the suggestions into the next design phase and/or amend the budget prior to commencing with the next phase of design.

3. Preliminary land survey drawings
 4. Proposed acquisitions of ROW or easements necessary for the Project along the selected alignment.
 5. Copy of Geotechnical Report and summary of results and recommendations for each alternative being investigated.
 6. Recommendation on whether Project requires a Threatened and Endangered Species Study, Environmental Assessments, or any other study/assessments that may be required for this project. Should Consultant determine that any environmental studies will be required, Thornton, in consultation with the Consultant, will select and engage the services of one (1) of Thornton's prequalified environmental consultants to provide the necessary services under Thornton's existing Environmental General Services Agreement. Consultant shall not include these services in the scope of their proposal except to the extent that Consultant will be responsible to coordinate Thornton's environmental consultants' scope of services, deliverables, and schedule with their own and their Subconsultants' services. Thornton's prequalified environmental consultants include ERO Resources Corporation, Chemistry & Industrial Hygiene, Inc., Corvus Environmental Consulting LLC, and Pinyon Environmental
 7. Summary of all national and local codes and standards applicable to the Project.
- N. It is Thornton's intent to conduct one (1) Public Meeting during the Pre-design Phase. Thornton will prepare and distribute notices for Public Meeting. The Consultant shall prepare renderings and graphic presentation materials and give a presentation to citizens as appropriate. The Consultant shall document the proceedings of this meeting and shall assist Thornton in addressing and resolving citizen concerns
- O. The Consultant shall submit an electronic copy of the draft Pre-Design Report and mapping within one hundred six (106) Calendar Days following Notice-to-Proceed. Thornton requires a minimum of fourteen (14) Calendar Days to review the documents. The Consultant shall attend a Pre-Design Review Meeting with Thornton, record comments of interested parties, and distribute minutes to all attendees. The Consultant shall revise the draft Pre-Design Report and mapping to reflect the comments and submit an electronic copy of the final Pre-design documents within fourteen (14) Calendar Days following the Pre-design Review Meeting.

III. Preliminary Design Phase

- A. The Consultant shall prepare engineering designs and produce appropriate drawings and specifications, to approximately the fifty percent (50%) complete stage, for the selected design alternative.

Drawings shall be twenty-two inches (22") by thirty-four inches (34") with a plan scale of one-inch (1") equals twenty-feet (20'), or as otherwise appropriate and acceptable to Thornton. All drawing graphics shall fit on eleven-inch (11") by seventeen-inch (17") paper when reduced to half size. All graphics, including text and dimensions, shall be legible when reduced to half size. Drawing graphics or notes shall not be obscured under the binding. Refer to the Final Design Phase herein for specification format requirements.

The Consultant shall perform a thorough coordination review of all drawings and specifications, including Subconsultant drawings and specifications, and correct any discrepancies. The drawings shall show, at a minimum, all existing and proposed features both above and below the ground including but not limited to streets, highways, sidewalks, fences, gates, utilities, signs, fixtures, pavements, plantings, trails, water, sewer, electrical services, and other utilities such as storm sewer, telephone, cable, structures, etc. All component conflicts shall be resolved by the Consultant prior to issuance of the documents for bidding

- B. The Consultant shall expand on survey information provided in the Pre-Design Phase to provide information necessary for the design and necessary for construction of the Project. This information shall be shown on the drawings and shall include, but not be limited to, the following:

1. General.

The Consultant shall fully describe the benchmark utilized for vertical control, including the specific datum or origin of the benchmark. The Consultant shall provide the specific datum of any United States Geological Survey information (i.e., NAVD 88, NGVD 29 etc.). More than one (1) control point must be used to develop the horizontal control for the Project. The control points utilized for horizontal control must be completely described to allow the points to be found by an individual who is unfamiliar with the area.

2. Piped facilities.

The Consultant shall begin the stationing at station 0+00.

3. Streets.

The Consultant shall begin the stationing for streets with 0+00 wherever practical. Stationing shall be Project Control Line (or Center Line) stationing with adequate offsets identified. If the Consultant utilizes a separate stationing system, which is included for a line other than the

Project Control Line, then the Consultant shall identify the ends of these lines by offsets from a specific set of Project Control Line stations. The Consultant shall provide adequate reference to the Project Control Line, including stationing and offsets for any grade lines that are non-parallel to the Project Control Line. Designs with a constantly varying street template are discouraged.

- C. The Consultant shall provide drawing sheets, which shall include, but not be limited to, the following:
1. A Title Sheet or Sheets with Thornton's approval signature block, a location map, the Project name and number, issue block with dates and revision number, summary of applicable codes and standards, Drawing Index, sheet number block, space for professional stamp, name, street address, phone, fax, and email address of Consultant and all Subconsultants.
 2. Plan views, including survey control drawings, erosion control plans, ROW and easement boundaries.
 3. Profiles, including pipeline, existing surface area, and existing utilities.
 4. Details, including typical pipe, valve, and trench details.
 5. Elevations.
 6. Schedules, including pipe, valves, etc.
 7. Construction phasing plan.
 8. Staging area plan, site access restriction plan.
 9. Traffic control plan.
 10. Restoration plan.
 11. An irrigation plan, along with proposed details and service connections. The plan shall include main lines and a sprinkler head layout; and shall include scheduling information confirming the ability of the system to operate in accordance with Thornton's Standards and Specifications for the Design and Construction of Public Improvements.
- D. The Consultant shall prepare preliminary technical specifications to describe the elements of work proposed. In general, the technical specifications will be as detailed as possible for all work to be performed. All technical specifications shall be coordinated with Thornton's General and Special Conditions and shall not

repeat or conflict with any information contained in the General and Special Conditions or other standard Thornton front-end contract documents.

The technical specifications shall not make any generalized blanket references to Thornton Standards and Specifications, to CDOT Specifications, or to other national standards. If any sections of these standards and specifications are to be included by reference, the Project technical specifications shall cite specific chapters and/or paragraphs of the reference standards.

Thornton Standards and Specifications are intended to be the minimum standards acceptable on private development projects and do not necessarily represent the technical requirements Thornton wishes to achieve on a particular Thornton project. Obtain approval in writing from Thornton prior to citing these reference standards and specifications. Performance specifications in lieu of prescriptive specifications shall only be used with the prior written approval of Thornton.

The technical specifications document must be prepared without section breaks (use page breaks at end of each section) and the page numbering shall be sequential and located in the footer at the bottom center of the page. The Consultant shall prepare a Technical Specification Index/Table of Contents. Refer to Final Design Phase, paragraph M.1. for additional format requirements for technical specifications.

For projects that utilize a unit price contract for construction, the Consultant shall include information on the method for measurement and payment for work performed under each section of the technical specifications. The measurement for payment for each item shall be coordinated with other referenced specification standards, such as Colorado Department of Transportation (CDOT) specifications. The Consultant's drawings and specifications regarding measurement for payment shall be coordinated with Thornton standards for certain measurement and payment methods contained in Thornton's Special Conditions. The Consultant shall at a minimum coordinate the following sections:

1. Excavation,
2. Fill,
3. Subgrade preparation,
4. Asphalt and/or concrete paving,
5. Temporary and permanent asphalt patching,
6. Potholing.

The Consultant shall read and be familiar with Thornton's standard construction contract language regarding the Schedule of Contract Items and Prices and Special and General Conditions regarding measurement and payment. The Consultant and Thornton shall determine which pay items shall be paid at the

Plan Quantity and which pay items shall have an estimated quantity designated as possibly varying more than plus or minus twenty-five percent (25%) from the stated quantity.

E. Stormwater Sediment and Erosion Control and Stormwater Quality Control Measures

1. The Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Division (WQCD), through the Municipal Separate Storm Sewer System (MS4) permit issued to Thornton, requires Thornton to control and reduce the discharge of pollutants to protect stormwater quality and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations (Colorado Regulation 61). The MS4 permit requires the implementation of a program to reduce the discharge from public and private construction sites.
2. Pursuant to Thornton's stormwater program, the Consultant shall develop designs and prepare drawings and details for stormwater quality control measures (CM) for temporary sediment and erosion control to conform to the latest edition of Urban Drainage Criteria Manual Volume III or CDOT M-Standards and in compliance with the Colorado Department of Public Safety (CDPS) General Permit for Stormwater Discharges Associated with Construction Activity (Permit No. COR400000) for CDPHE. The drawings shall show a minimum of three (3) phases for temporary control measures to differentiate the phases of construction. For complex projects, additional phases may be added for proper stormwater management control.
3. If the earth disturbance is less than one (1) acre, the Consultant shall develop temporary sediment and erosion control drawings and details to control construction stormwater runoff. There is no SWMP or CDPS permit required for disturbances under one (1) acre. Sediment and erosion control measures are required for all construction in Thornton.
4. The Consultant shall design permanent water quality CMs for new development, redevelopment, and Capital Improvement Projects that disturb one (1) or more acres, as well as for projects that disturb less than one (1) acre that are part of a larger common plan of development or sale. The requirement does not apply to excluded projects as defined in the MS4 permit.
5. The design criteria for stormwater quality CMs shall be as described in the MS4 Permit and the latest edition of Urban Drainage and Flood Control District Criteria Manual Volume III.

6. For guidance on selecting sediment and erosion control measures and permanent stormwater quality control measures, including project work sheets, checklists and general notes, visit the Thornton stormwater webpage at:

<https://www.thorntonco.gov/city-services/water/stormwater>
 7. The worksheets and checklists must be submitted with the final water quality design documents.
- F. The Consultant shall attend two (2) progress meetings on-site with Thornton's staff to exchange and share information during preparation of the preliminary documents. The Consultant shall plan to attend virtual bi-weekly progress meetings during this task. The Consultant shall be responsible for documenting, preparing, and submitting the meeting minutes to all attendees.
- G. The Consultant shall prepare a property ownership map based on tax records, which identifies ownership with the Project boundaries, along the alignment, or abutting the Project boundaries. The Consultant shall meet with Thornton and third parties to review proposed alignments and impacts on affected parcels. The Consultant shall prepare and submit legal descriptions for the areas identified to be acquired. The Consultant will not be required to act on Thornton's behalf as a ROW agent. Thornton will provide all title work required for evaluation of the ROW acquisition
- H. Should Thornton or the Consultant determine that a field evaluation of the selected site for the presence of wetlands is necessary, Thornton, in consultation with the Consultant, will select and engage the services of one (1) of Thornton's pre-qualified environmental consultants to provide the necessary services under Thornton's existing Environmental General Services Agreement. The Consultant shall not include these services in the scope of their proposal except to the extent that the Consultant will be responsible to coordinate Thornton's environmental Consultant's Scope of Services, deliverables, and schedule with their own and their subconsultants' services. Thornton's prequalified environmental consultants include ERO Resources Corporation, Chemistry & Industrial Hygiene, Inc., and Pinyon Environmental. The environmental consultant shall determine and map the boundaries and size of all wetlands that may be affected by the Project work. The environmental consultant shall prepare and submit a wetlands findings report and 404 permit applications.
- I. The Consultant shall prepare an updated Engineer's Estimate of Probable Construction Cost for the Project. The estimate shall be based on a work breakdown structure describing finite elements of the work and unit prices applicable to each element. The work breakdown structure shall include separate line items for mobilization and project closeout. Thornton requires that a construction contingency allowance of at least ten percent (10%) of the Project construction budget be reserved and carried as a separate line item in all cost estimates. For projects that are to use the unit price method of measurement

and payment, the Consultant shall prepare measurement and payment specifications for each item proposed. Should the updated cost estimate exceed the currently approved budget, Consultant shall prepare a list of possible design alternates or revisions to bring the design back within budget. Thornton will either approve the inclusion of the alternates or revisions and/or amend the budget prior to commencing with the next phase of design.

J. The Consultant shall prepare and submit information to be incorporated with Thornton's standard construction contract documents including, at a minimum, the following:

1. A brief description (one [1] paragraph) of the Project that adequately depicts the work to be completed, which will be used in the Invitation for Bids of Thornton's standard contract documents.
2. An estimate of the number of consecutive Calendar Days that will be required for completion of construction of the Project, which will be included in Thornton's standard construction contract documents. The estimate shall take into account average weather conditions for the time of the year that construction is anticipated to take place, as well as any other limitations on the work by the contractor, such as planting windows, seasonal water flows, and school schedules. The estimate shall consider any intermediate milestones and construction phasing that may be necessary to complete the construction.
3. A summary of recommended modifications to the Special Conditions section of Thornton's standard construction contract documents. The Special Conditions are used to modify the standard General Conditions to fit the specifics of each project. The General Conditions will not be edited. The summary shall include, at a minimum:
 - a. Consultant's recommendations regarding the type of schedule to be provided by the contractor (critical path method (CPM) for example versus simple bar chart),
 - b. A list of other outside contractors and/or agencies the contractor will be required to coordinate with,
 - c. Any special insurance requirements,
 - d. Language for unique conditions such as assignment of pre-purchased materials or equipment to the general contractor,
 - e. A calculation for recommended liquidated damages to be imposed if the general contractor should fail to substantially complete the Project within the specified contract time,
 - f. Bid item descriptions including measurement and payment information,
 - g. An estimate of the time required for the review of shop drawings and submittals.

4. A "Schedule of Contract Items and Prices" using Thornton's standard format. This schedule shall contain blank areas where the bidder will fill in the amount of its bid for each recommended item. A separate mobilization and close out item is mandatory for all bid schedules. Do not include the project contingency line from the estimate in the Schedule of Contract Items and Prices.
5. A technical specification section on Submittal requirements, which coordinates with and is consistent with Thornton's Special and General Conditions sections on Submittals, and which includes a thorough and complete Project Submittal Log.

The Submittal Log shall list all submittals for this Project, including but not limited to all Shop Drawing, Samples, Materials Certificates, and Equipment that are required by the technical specifications to be submitted for review and approval by either Thornton and/or the Consultant. The Submittal Log shall indicate the time frame required for Thornton's and/or the Consultant's review of each individual Submittal. The Submittal Log shall include blank columns for the contractor's future use to indicate the submittal processing dates, review and approval status, and comments.

- K. The Consultant shall complete the Preliminary Design Phase of services and submit an electronic copy of preliminary drawings, specifications, and Engineer's Estimate of Probable Construction Cost within two hundred twenty-five (225) Calendar Days following Notice to Proceed. Thornton will require a minimum of fourteen (14) Calendar Days to review the submitted information. The Consultant shall attend a Field Inspection Review (FIR) Meeting and record comments of all interested parties. The Consultant shall be responsible for documenting all decisions reached during the meeting and preparing and submitting the meeting minutes to all attendees.
- L. Along with the Preliminary Design Report (Final), the consultant shall submit one (1) set of legal descriptions and ROW drawings sealed by a registered land surveyor in the State of Colorado and any other information required by Thornton to start the ROW acquisition on this project. It is anticipated that there will be up to two (2) legal descriptions necessary for this Project. If additional legal descriptions are necessary, the Consultant shall be compensated at the unit price provided in the schedule of charges for additional legal descriptions when agreed by Thornton.

IV. Final Design Phase

- A. Based on comments received at the FIR Meeting, the Consultant shall prepare pre-final and final drawings and specifications in Thornton's required format.

- B. The Consultant shall attend one (1) Progress Meeting on-site during the Final Design Phase to discuss previously undiscovered conditions or concerns arising during final design. The Consultant shall plan to attend virtual bi-weekly progress meetings. The Consultant shall be responsible for documenting, preparing, and submitting the meeting minutes to all attendees.
- C. The Consultant shall identify and utilize an individual or individuals to perform an independent quality control check of the drawings and specifications to assure the documents are clear and complete and to assure functional coordination of the varied systems and components of the construction documents. This individual shall not have had a role in the development of the construction documents. The quality control check shall include checking dimensions, sizes, detail, section, and elevation references, coordination between the Consultant and Subconsultant's drawings, compatibility of materials, references within technical specifications to other sections and to drawings, and constructability. Consultant shall submit the comments from the independent quality control check to Thornton. Thornton may engage independent consultants to perform a separate peer review. Consultant shall supply all necessary calculations, analyses, and other documents and cooperate fully with any such independent peer review.
- D. Consultant shall prepare an updated Engineer's Estimate of Probable Construction Cost based on the Pre-Final Documents (approximately ninety-five percent [95%] complete design). The estimate shall include a work breakdown structure describing finite elements of the work and estimated unit prices applicable to each element. The work breakdown structure shall include items for mobilization and Project close-out. Thornton requires that a construction contingency allowance of at least ten percent (10%) of the Project construction budget be reserved and carried as a separate line item in all cost estimates.

It is Thornton's desire for the Project construction to remain within the allocated Project budget and Thornton expects to be notified of significant budgetary issues with the submission of Engineer's Estimates of Probable Construction Costs during for each phase of the design, including the Pre-design and Preliminary Design Phases. Should the Consultant fail to notify Thornton that construction costs are likely to exceed the allocated budget, and the Engineer's Estimate of Probable Costs submitted during the Final Design Phase exceeds Thornton's currently approved budget by more than ten percent (10%), Consultant shall be required to work with Thornton to find appropriate changes to the bid and/or design documents that will resolve the budgetary concerns. Under these circumstances, any necessary revisions to the design to come within Thornton's budget shall be completed at no cost to Thornton. Note that Thornton may engage the services of an independent third party to provide assistance in cost estimating and to verify Consultant's estimate. Thornton may request that the independent third party estimator assist with development of design alternatives if required to bring the Project back within budget. Should

Thornton engage the services of a third-party cost estimator, Consultant shall cooperate with and participate in the independent third party cost estimating and design alternatives evaluation. Consultant shall make changes to the design documents at no cost to Thornton resulting from this effort.

- E. The Consultant shall complete the pre-final design documents (approximately ninety-five percent [95%] design completion) and submit an electronic copy of pre-final drawings, specifications, and revised pre-final Engineer's Estimate of Probable Construction Cost within three hundred twenty-five (325) Calendar Days following the notice to proceed. Thornton will require a minimum of fourteen (14) Calendar Days to review the documents. The Consultant shall attend a Final Office Review (FOR) Meeting to receive comments on the pre-final documents from all interested parties. The Consultant shall be responsible for documenting all comments and decisions reached during the meeting and preparing and submitting the minutes of the meeting.
- F. The Consultant's pre-final and final contract documents shall provide drawing sheets that shall include, but not be limited to, the following:
 - 1. Title sheet or sheets with Thornton's approval signature block, a location map, the Project name and number, issue block with dates and revision numbers, summary of applicable codes and standards, Drawing Index, sheet number block, space for professional stamp, name, street address, phone, fax and email address of Consultant and all Subconsultants.
 - 2. Dimensioned construction drawings for all required disciplines which may include, but not necessarily be limited to, ROW plans, demolition plans, staging plans, traffic control, erosion control, drainage, roads, trails, utilities, grading, paving, landscape restoration, irrigation restoration, site furnishings, site lighting, and site signage, as required to detail the work sufficiently to allow for the complete construction of the Project.
- G. The Consultant shall comply with the International Building Code, Americans with Disabilities Act, and all other nationally adopted design standards, as well as other standards adopted by Thornton, in designing each element of the Project.
- H. The Consultant shall make document revisions noted and agreed upon at the FOR Meeting within twenty-one (21) Calendar Days following the FOR Meeting. Revisions may include denoting work elements as bid alternatives and revising the bidding form and alternates specification section if, in Thornton's sole opinion, the cost estimates are not consistent with the budgeted level of funding and the design alternatives accepted have not sufficiently reduced the cost estimate to align with the budget. If, in Thornton's sole opinion, the final documents submitted by the Consultant do not adequately respond to the FOR

comments, the Consultant shall revise and reissue the final documents at no additional cost to Thornton until all comments are resolved to Thornton's satisfaction.

I. When Thornton determines that the final contract documents are acceptable and are ready for bidding, the Consultant shall submit the following to Thornton:

1. Technical Specifications: Submit technical specifications in Microsoft Word, either emailed to Contract Administrator or on a CD, prepared using the following format:

- a. 8 1/2" x 11", 11.5 pt. Arial font, single line spacing;
- b. Margins: left 1.0", right 1.0", top 1.0", bottom 1.0"; footer 0.5", no headers;
- c. Index/Table of Content of Technical Specs with no page numbers indicated;
- d. No section breaks, use page breaks between specification sections;
- e. Section titles in all caps, bold, 14 pt. Arial font, centered on page at top of each new specification section;
- f. Entire set of specification pages numbered sequentially beginning with Page 1 of X;
- g. Footer with file path name left justified and page number centered, 8 pt. Arial font.

2. Bid documents:

Thornton will prepare the Project Manual for bidding. The Project Manual for bidding will not be stamped by the Consultant. The cover page on the Project Manual shall read "Issued for Bidding" with date.

Consultant shall submit electronic files of drawings on CD. Submit one (1) disk with drawing file(s) in AutoCAD format compatible with Thornton's system. Submit another disk with drawings combined into a single file using .pdf format. Alternatively, the .pdf version may be emailed to the Contract Administrator provided the file size is small enough to email successfully.

3. Consultant shall submit a final Engineer's Estimate of Probable Construction Cost. Thornton requires that ten percent (10%) of the engineer's estimate be available in the overall budget for a construction contingency at the time of bidding to cover unforeseen changes during the construction of the Project.

V. Bid Phase

- A. The Consultant shall attend the "Pre-Bid Conference" and shall provide assistance to Thornton in responding to inquiries by the prospective bidders during the bidding period. Bidding is anticipated to occur in April 2026.
- B. The Consultant shall prepare all necessary corrections and additional information based on prospective bidder inquiries. All answers to questions shall be coordinated with Thornton and issued by Thornton. Consultant shall not respond directly to any prospective bidder or subcontractor during the bid phase. Consultant shall assist Thornton with preparation of addenda. Thornton will issue all addenda.
- C. The Consultant shall assist Thornton in the review of bids received and the qualification of bidders as deemed appropriate by Thornton.
- D. If more than one hundred eighty (180) Calendar Days have elapsed between the date of the Consultant's most recent Estimate of Probable Construction Cost and the date of the bid submission, the Estimate of Probable Construction Cost total shall be adjusted for inflation based on the Engineering News Record Construction Cost Index for Denver. The adjusted estimate shall be used as the basis for evaluating the bids and the Project budget. It is anticipated that this adjustment will be needed for Phase 2.
- E. Should the bid of the lowest responsive and responsible bidder exceed the Consultant's Estimate of Probable Construction Cost, Thornton and the Consultant shall explore options, including but not limited to awarding the project as designed if sufficient budget contingency is available, evaluating design alternatives and estimates of related cost savings to bring the Project back within budget, and re-designing and re-bidding. Thornton, at its sole option, will determine the course of action to take.
- F. It is expected that the engineer will design the project to the established budget. Should the Engineer find that the project is estimated to overrun the budget, the Engineer shall notify Thornton and provide options for cost saving measures. If bids exceed available funds, and Thornton chooses to negotiate an adjustment of the bid price, including changes in bid requirements, with the low responsive and responsible bidder in order to bring the bid within the amount of available funds, the Consultant shall cooperate with the negotiations and assist in identification and preparation of cost savings and value engineering efforts as directed by Thornton to reduce the Project cost.
- G. At the end of the Bid Phase, the Consultant shall make final revisions to the contract documents based on addenda issued during the Bid Phase. Drawing revisions shall be indicated by encircling addenda changes with "clouds" and including a delta indicating the addendum number. All addenda dates and delta numbers shall also be indicated in the revision block on each sheet. Project

Manual addenda revisions shall be denoted by striking through deleted text and italicizing added text with the addendum number noted in parentheses immediately following each text revision. The Project Manual index shall indicate those sections that contain addenda revisions by placing an asterisk next to the section number in the Index/Table of Contents. The Consultant shall provide revised reproducible and electronic documents to Thornton within ten (10) Calendar Days following the opening of the bids. Issue block shall read "For Construction" and shall be dated as of the general contractor's date of Notice of Award. Thornton will issue the "For Construction" documents to the successful general contractor for use during the construction phase. Consultant shall be responsible for the cost of printing and distributing hard copies of the "For Construction" documents to themselves and their Subconsultants.

VI. Construction Phase

- A. Construction is anticipated to commence approximately two (2) months following the delivery of the bid-ready set of documents. The Consultant shall attend the "Pre-Construction Meeting" and assist Thornton in responding to inquiries by the contractor during the Pre-Construction Meeting.
- B. The Consultant and their Subconsultants shall provide periodic field observation at least on a bi-weekly basis to assure themselves and Thornton that the work is proceeding in accordance with the intent of the contract documents. The Consultant shall submit a report to Thornton and the contractor for all field observations performed. Notwithstanding the foregoing, if required by any permitting agency or Thornton, the Consultant's Engineer shall be required to inspect structural work, including but not limited to any foundations and steel structures, and provide a letter to the permitting agency and Thornton certifying that the work was constructed substantially in accordance with the design intent.
- C. The Consultant shall attend weekly construction meetings on site with the contractor and Thornton for the Project.
- D. The Consultant shall review the contractor's proposed submittal schedule and comment on submittal review times proposed. The Consultant and contractor shall negotiate until mutually acceptable review times are established for each submittal. The Consultant shall complete submittal review within the agreed upon allotted time so as to not delay the construction.
- E. The Consultant shall promptly respond to requests for information issued by Thornton, the contractor, subcontractors, testing agencies, commissioning agent, building department, or other entities so as not to delay construction.
- F. The Consultant shall issue "Supplemental Instructions" to Thornton or their designated representative when an ambiguous condition requiring clarification is discovered in the contract documents. The Consultant shall prepare documents providing clarification and/or correcting errors or omissions in the contract

documents at no charge to Thornton. Consultant shall prepare a Proposal Request for issuance to the contractor when such items may have a cost or schedule impact.

- G. The Consultant shall review progress payments and make recommendations as to the validity of percentages complete claimed by the contractor.
- H. The Consultant shall confirm the As-Built information with Thornton's Construction Coordinator provided by the contractor at the conclusion of the project.
- I. The Consultant shall provide change order consultation as it relates to change order requests submitted by the contractor, including but not limited to review of change order requests for impacts on schedule, quality, constructability, aesthetics, functionality, and proposed change order pricing. Change order consultation may also be necessary for discretionary changes requested by Thornton; however, such consultation is not included in the not-to-exceed fee for this Agreement. Compensation for discretionary change order consultation shall be made on a time and expense basis at the rates specified in the Schedule of Charges included in the Professional Service Agreement.

VII. Closeout Phase

- A. When the contractor applies for "Substantial Completion," the Consultant, in consultation with Thornton's representative(s), shall perform a walk-through of the Project to review and add to the contractor's punch list. The Consultant shall monitor the contractor's progress on the punch list and recommend to Thornton when all items are satisfactorily completed and "Initial Acceptance" may be granted.
- B. Within sixty (60) Calendar Days after Initial Acceptance of the Project, the Consultant will be required to submit the following electronically:
 - 1. Pre-design Report and review comments in Microsoft Word.
 - 2. FIR review comments in Microsoft Word.
 - 3. FOR review comments in Microsoft Word.
 - 4. The Consultant shall prepare and submit As-Built documents. The issue block on the drawings shall read "As-Built" and indicate the date, which shall be the date of Initial Acceptance. The As-Built Project Manual shall indicate "As-Built" and the Initial Acceptance date on the cover page.
 - a. As-Built electronic drawing files shall be in a vector format compatible with the AutoCAD version currently in use by Thornton. Provide both .dwg and .pdf formats.

- b. The Project Manual shall be submitted in a Microsoft Word file compatible with the version currently in use by Thornton and as a .pdf file.

VIII. Warranty Phase

- A. The Consultant shall assist Thornton in resolving warranty repairs during the warranty period.
- B. The Consultant shall participate in a walk-through of the Project near the end of the Warranty Phase and prepare a final punch list of items needing correction. The Consultant shall review progress made by the contractor on the Warranty Phase punch list and recommend when the work is completed satisfactorily and the Project is ready for Final Acceptance.

Project Schedule

Project deliverable, meetings, and review times are listed below as an example. Consultant shall provide a proposed project schedule as part of their proposal.

- Notice to Proceed – Date to be determined. Target date is May 2025.

Pre-Design Phase

- Attend Project Kick Off Meeting – date to be determined.
- Attend Data Gathering Meetings – dates to be determined.
- Attend field conditions walk-through – date to be determined.
- Attend bi-weekly meetings – date to be determined.
- Submit Pre-Design documents within one hundred six (106) Calendar Days after Notice to Proceed.
- Attend Pre-Design Review Meeting within one hundred twenty (120) Calendar Days after Notice to Proceed.

Preliminary Design Phase

- Attend Progress Meetings – dates to be determined.
- Attend Bi-weekly Meetings – dates to be determined.
- Submit Preliminary Design documents within two hundred twenty-five (225) Calendar Days after Notice to Proceed.
- Attend FIR Meeting within two hundred thirty-nine (239) Calendar Days after Notice to Proceed.

Final Design Phase

- Attend Progress Meetings on site – dates to be determined.
- Attend Bi-weekly Meetings – dates to be determined.
- Submit Pre-Final Design documents within three hundred twenty-five (325) Calendar Days after Notice to Proceed.
- Attend FOR Meeting within three hundred thirty-nine (339) Calendar Days after Notice to Proceed.
- Submit Final Design bid documents within twenty-one (21) Calendar Days after FOR Meeting.

Bid Phase

- Attend Pre-Bid Conference – date to be determined.
- Revise documents as required to meet budget – submission date to be determined.
- Prepare addenda for Thornton’s review – dates to be determined.
- Prepare “For Construction” contract documents incorporating all addenda items – deadline to be determined and to correspond to date of Notice of Award for the construction contractor.

Construction Phase

- Attend Pre-Construction Meeting – date to be determined and to correspond to date of Notice to Proceed for the construction contractor.
- Perform periodic field observations at least bi-weekly – dates to be determined.
- Attend Bi-weekly Construction Meetings – dates to be determined.

Closeout Phase

- Attend punch list walk-through – date to be determined.
- Monitor punch list progress – dates to be determined.
- Review contractor submitted closeout documents – date to be determined.
- Recommend issuance of Initial Acceptance – date to be determined.
- Submit As-Built documents – within sixty (60) Calendar Days following issuance of Initial Acceptance to construction contractor.

Warranty Phase

- Assist Thornton with obtaining warranty repairs as needed – dates to be determined.
- Attend warranty punch list walk-through – date to be determined.