#### **RESOLUTION NO. 2017-**

### A RESOLUTION APPROVING THE TOWN OF CASTLE ROCK SERVICES AGREEMENT (FOUNDERS PARKWAY/FIFTH STREET/RIDGE ROAD INTERSECTION IMPROVEMENT DESIGN)

**WHEREAS**, Town staff solicited design proposals for the design of the Founders Parkway, Fifth Street and Ridge Road Intersection Improvement Project ("Project"); and

**WHEREAS**, the Project selection team has determined Short Elliott Hendrickson Inc., was best qualified to complete the design of the Project; and

**WHEREAS**, the Town of Castle Rock and Short Elliott Hendrickson Inc., have agreed to the terms and conditions by which Short Elliott Hendrickson Inc., will provide design services for the Founders Parkway, Fifth Street & Ridge Road Intersection Improvement Project.

# NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO AS FOLLOWS:

Section 1. <u>Approval</u>. The Town of Castle Rock Services Agreement (Founders Parkway/Fifth Street/Ridge Road Intersection Improvement Design) in the form attached as *Exhibit 1* is hereby approved. The Mayor and other proper Town officials are hereby authorized to execute the Agreement by and on behalf of the Town of Castle Rock, Colorado.

**Section 2.** <u>Encumbrance and Authorization for Payment</u>. In order to meet the Town's financial obligation under the Contract, the Town Council authorizes the expenditure and payment from the 2017 appropriation account 135-3175-431.78-69, in an amount not to exceed \$276,195, which includes a Town managed contingency of \$36,000, unless authorized in writing by the Town of Castle Rock.

**PASSED, APPROVED AND ADOPTED** this 2<sup>nd</sup> day of May, 2017 by the Town Council of the Town of Castle Rock, Colorado, on first and final reading, by a vote of \_\_\_\_\_ for and \_\_\_\_ against.

#### **ATTEST:**

#### **TOWN OF CASTLE ROCK**

Sally A. Misare, Town Clerk

Jennifer Green, Mayor

Approved as to form:

**Approved as to content:** 

Robert J. Slentz, Town Attorney

Robert Goebel, P.E. Director of Public Works

#### TOWN OF CASTLE ROCK SERVICES AGREEMENT (Founders Parkway/Fifth Street/Ridge Road Intersection Improvement Design)

DATE: ,2017.

**PARTIES:** TOWN OF CASTLE ROCK, a Colorado municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104 ("Town").

**SHORT ELLIOTT HENDRICKSON, INC.,** a Minnesota corporation, 2000 South Colorado Boulevard, Suite 6000, Denver, Colorado 80222 ("Consultant").

#### **RECITALS:**

- A. The Town issued a Request for Proposals from qualified firms with expertise in architectural design services.
- B. Consultant timely submitted its proposal.
- C. Town wishes to engage Consultant to provide the services more fully described in the following Agreement and Exhibits.

#### **TERMS:**

Section 1. <u>Scope of Services.</u> Consultant shall provide engineering design services related to the Founders Parkway, Fifth Street and Ridge Road Intersection Improvement Project, in accordance with Consultant's proposal attached as *Exhibit 1* ("Services").

**Section 2.** <u>Payment</u>. Consultant shall invoice Town on a monthly basis for the Services rendered in accordance with the rate and fee scheduled identified in *Exhibit 1*. Town shall pay such invoices within 30 days receipt of such invoice. In no event shall the cumulative payment to Consultant exceed \$240,195, unless authorized in writing by Town.

**Section 3.** <u>Completion.</u> Consultant shall commence the Services upon execution of this Agreement and complete not later than December 31, 2017. Consultant shall devote adequate resources to assure timely completion of the Services. Consultant shall perform the Services under this Agreement using a standard of care, skill and diligence ordinarily used by reputable professionals performing under circumstances similar to those required by this Agreement.

Town shall have the right to terminate this Agreement at any time with 30 days written notice to Consultant. The Town's only obligation in the event of termination shall be payment of fees and expenses incurred up to and including the effective date of termination. Consultant shall turn over all work product produced up to the date of termination. **Section 4.** <u>Subcontractors.</u> Consultant may utilize subcontractors to assist with specialized works as necessary to complete the Services. Consultant will submit any proposed subcontractor and the description of their services to the Town for approval.

**Section 5.** <u>Assignment.</u> This Agreement shall not be assigned by Consultant without the written consent of the Town.

Section 6. <u>Notice</u>. Any notice required or permitted by this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified mail or registered mail, postage and fees prepaid, addressed to the party to whom such notice is to be given at the address set forth on the first page of this Agreement, or at such other address as has been previously furnished in writing to the other party or parties. Such notice shall be deemed given when deposited in the United States mail.

**Section 7.** <u>Prohibition Against Employing Illegal Aliens</u>. Consultant shall not knowingly employ or contract with an illegal alien to perform work under this contract. Consultant shall not enter into a contract with a subcontractor that fails to certify to the Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this contract.

Consultant has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under the public contract for services through participation in either the E-verify program or the Department program, as defined in C.R.S. §§ 8-17.5-101(3.3) and 8-17.5-101(3.7), respectively. Consultant is prohibited from using the E-verify program or Department program procedures to undertake pre-employment screening of job applicants while this contract is being performed.

If Consultant obtains actual knowledge that a subcontractor performing work under this Agreement for services knowingly employs or contracts with an illegal alien, Consultant shall:

A. Notify the subcontractor and the Town within three days that the Consultant has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and

B. Terminate the subcontract with the subcontractor if within three days of receiving notice required pursuant to this paragraph the subcontractor does not stop employee or contracting with the illegal alien; except that the Consultant shall not terminate the contract with the subcontractor if during such three days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

Consultant shall comply with any reasonable request by the Department of Labor and Employment made in the course of an investigation that the Department is undertaking pursuant to the authority established in C.R.S. §8-17.5-102(5).

If Consultant violates a provision of this Agreement required pursuant to C.R.S. §8-17.5-102, Town may terminate the Agreement for breach of contract. If the Agreement is so terminated, the Consultant shall be liable for actual and consequential damages to the Town.

**Section 8.** <u>Insurance.</u> Consultant agrees to procure and maintain, at his own cost, the following policy or policies of insurance. Consultant shall not be relieved of any liability, claims, demands or other obligations assumed pursuant to this Agreement by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance, or types.

A. Consultant shall procure and maintain, and shall cause each subcontractor of the Consultant to procure and maintain a policy with the minimum insurance coverage listed below. Such coverage shall be procured and maintained with forms and insurers acceptable to the Town. All coverage shall be continuously maintained from the date of commencement of services hereunder. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

1. Workers Compensation insurance to cover obligations imposed by the Workers Compensation Act of Colorado and any other applicable laws for any employee engaged in the performance of Work under this contract, and Employer's Liability insurance with minimum limits of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease-policy limit, and FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease-each employee.

2. Comprehensive General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations. The policy shall contain a severability of interests provision.

3. Comprehensive Automobile Liability Insurance with minimum combined single limits for bodily injury and property damage of not less than ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate with respect to each of Consultant 's owned, hired and/or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision.

4. Professional Liability insurance with minimum limits of ONE MILLION DOLLARS (\$1,000,000) per claim and ONE MILLION DOLLARS (\$1,000,000) aggregate.

B. The policies required above, except Workers' Compensation insurance, Employers' Liability insurance and Professional Liability insurance shall be endorsed to include the Town, its officers and employees, as an additional insured. Every policy required above, except Workers' Compensation and Professional Liability insurance, if applicable, shall be primary insurance, and any insurance carried by the Town, its officers, or its employees, shall be excess and not contributory insurance to that provided by Consultant. The additional insured endorsement for the Comprehensive General Liability insurance required above shall not contain any exclusion for bodily injury or property damage arising from completed operations. The Consultant shall be solely responsible for any deductible losses under each of the policies required above.

C. Certificates of insurance shall be completed by Consultant's insurance agent as evidence that policies providing the required coverage, conditions and minimum limits are in full force and effect, and shall be subject to review and approval by the Town. Each certificate shall identify the Project and shall provide that coverage afforded under the policies shall not be cancelled, terminated or materially changed until at least 30 days prior written notice has been given to the Town. If the words "endeavor to" appear in the portion of the certificate addressing cancellation, those words shall be stricken from the certificate by the agent(s) completing the certificate. The Town reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

D. Failure on the part of Consultant to procure or maintain policies providing the required coverage, conditions, and minimum limits shall constitute a material breach of contract upon which at the Town's discretion may procure or renew any such policy or any extended connection therewith, and all monies so paid by the Town shall be repaid by Consultant to the Town upon demand, or the Town may offset the cost of the premiums against any monies due to Consultant from the Town.

E. The parties understand and agree that the Town is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations (presently \$350,000 per person, \$990,000 per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, \$24-10-101, *et seq.*, C.R.S., as from time to time amended, or otherwise available to Town, its officers, or its employees.

**Section 9.** <u>Indemnification.</u> Consultant expressly agrees to indemnify and hold harmless Town or any of its officers or employees from any and all claims, damages, liability, or court awards including attorney's fees that are or may be awarded as a result of any loss, injury or damage sustained or claimed to have been sustained by anyone, including, but not limited to, any person, firm, partnership, or corporation, to the extent caused by the negligent acts, errors or omissions of Consultant or any of their employees or agents in performing work pursuant to this Agreement. In the event that any such suit or action is brought against Town, Town will give notice within ten (10) days thereof to Consultant.

Section 10. <u>Delays.</u> Any delays in or failure of performance by any party of his or its obligations under this Agreement shall be excused if such delays or failure are a result of acts of God, fires, floods, strikes, labor disputes, accidents, regulations or orders of civil or military authorities, shortages of labor or materials, or other causes, similar or dissimilar, which are beyond the control of such party.

**Section 11.** <u>Additional Documents.</u> The parties agree to execute any additional documents or take any additional action that is necessary to carry out this Agreement.

Section 12. <u>Entire Agreement.</u> This Agreement represents the entire agreement between the parties and there are no oral or collateral agreements or understandings. This

Agreement may be amended only by an instrument in writing signed by the parties. If any other provision of this Agreement is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Agreement shall continue in full force and effect.

**Section 13.** <u>Timeliness of Performance</u>. Both parties are aware that many factors outside of the parties control may affect Consultant's ability to complete the obligations to be performed under this Agreement. The Consultant and Town will perform obligations with reasonable diligence and expediency consistent with sound professional practices.

**Section 14.** <u>Default and Remedies</u>. In the event either party should default in performance of its obligations under this agreement, and such default shall remain uncured for more than 10 days after notice of default is given to the defaulting party, the non-defaulting party shall be entitled to pursue any and all legal remedies and recover its reasonable attorney's fees and costs in such legal action.

**Section 15.** <u>Waiver.</u> A waiver by any party to this Agreement of the breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by either party.

Section 16. <u>Governing Law.</u> This Agreement shall be governed by the laws of the State of Colorado.

**Section 17.** <u>Independent Contractor.</u> Consultant and Town hereby represent that Consultant is an independent contractor for all purposes hereunder. As such, Consultant is not covered by any worker's compensation insurance or any other insurance maintained by Town except as would apply to members of the general public. Consultant shall not create any indebtedness on behalf of the Town.

**Section 18.** <u>No Third Party Beneficiaries.</u> It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to Town and Consultant, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the parties that any person other than Town or Consultant receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

### ATTEST:

#### **TOWN OF CASTLE ROCK**

Sally A. Misare, Town Clerk

Approved as to form:

David. L. Corliss, Town Manager

Approved as to content:

Robert J. Slentz, Town Attorney

Robert Goebel, PE, Director of Public Works

**CONSULTANT:** 

SHORT ELLIOTT HENDRICKSON, INC. a Minnesota corporation

By: Its: RMCIPAL

# Project Sequence and Scope of Services for Founders Parkway (SH 86), Fifth Street and Ridge Road Intersection Improvements

# Short Elliott Hendrickson Inc. (SEH) Scope of Work

The following project sequence and scope of services is provided in accordance with the RFP. Any scope modifications from the RFP are noted. Per the RFP there will be three design phases.

# **Project Sequence**

- 1. Conceptual Design which includes
  - a. Kick off Meeting
  - b. Progress and Review Meetings
  - c. Pre design surveying, geotechnical investigation and potholing
  - d. Accumulation and review of relevant data, reports and existing as built plans
  - e. Conceptual layouts and sections development of 30% design and Conceptual Design Report
  - f. Preliminary Drainage Analysis
  - g. Traffic analyses at roundabouts and intersections
  - h. Opinion of costs
  - i. Initial discussion with affect property owners
  - j. Public open houses
- 2. Preliminary Design
  - a. Progress and Review Meetings
  - b. Development of 75% full construction plans per the rfp, including:
    - Title Sheet with legend and location map
    - Quantity summaries
    - Horizontal Control Plans
    - Typical Sections
    - Demolition Plans
    - Roadway Plan and Profiles
    - Intersection and Roundabout Enlarged Plans
    - Retaining Wall Layout and Profile
    - New Storm Drain Layout and Profiles
    - Detention/Water Quality Design
    - Stormwater Management Plans
    - Utility adjustments
    - Landscaping Plans
    - Traffic Signal Modifications
    - Striping and Signage Plans
    - Lighting Layout
    - Construction Phasing and Traffic Control
    - Roadway Details

- Drainage Details
- Utility Details
- Landscape and Irrigation Details
- Striping and Signage Details
- Roadway Cross Sections (every 50 feet and at Intersections)
- c. Preliminary specifications
- d. Enviornmental
- e. Opinion of Cost
- f. Preliminary Right of Way Plans
- g. Drainage Report
- 3. Final Design
  - a. Progress and Review Meetings
  - b. Updated Plans (95%) as listed for preliminary design
  - c. Final Drainage Report
  - d. Specifications
  - e. Final Right of Way Plans
  - f. Title Commitments
- 4. Bidding
  - a. Final Stamped documents for bidding
  - b. Provide electronic drawing files
  - c. Attend pre bid meeting and answer questions for addendums

Following is a schedule which summarizes the proposed timeline for design tasks

# Scope of Services

# Surveying and Mapping

# Task 1 – Kick Off Meeting - Right of Entry

SEH will prepare letters of survey notice (right of entry) to the property owners where access will be required to inform them of the work taking place on their property. Before letters are sent out SEH will provide a copy to the Town for approval of the wording. The letters will be sent within 24 hours once approval is given. SEH will also obtain a survey permit from CDOT that will allow us to work in CDOT right-of-way. SEH will assume there to be a kick off meeting which will be attended by an SEH survey representative.

#### Task 2 – Primary/Preliminary Control and Property Research

While waiting for the 14 day property owner response to survey notice period, SEH will begin working on establishing primary control based on the Towns horizontal and vertical datum and control network. Aliquot Corners and property corners along the road right-of-way would also be surveyed at this time which will be used for mapping the existing right-of-way.

Property research will also begin during this time. SEH will research the Douglas County property records to acquire plats and ownership documents to be used to map the existing right-of-way and any

land parcels that would be affected by the proposed improvements. This information will also be used to aid in existing monument recovery.

## <u> Task 4 – Topography Survey</u>

SEH will perform a topographic survey of the defined survey area. Topographic features to be located will include: Utilities and utility structures (both dry and wet), irrigation pipes, diversion structures, swales, ditches, grade breaks, ground shots, concrete walks and structures, pavement, pavement striping, landscape features including all trees, fences, signs, gates, sound wall and barrier locations, storm sewer facilities with pipe sizes and inverts, and sufficient topo point coverage that cross sections can be developed. An AutoCad Civil 3D 2016 drawing with a TIW (Triangulated Irregular Network) of the surface will be delivered.

## Utility locates and potholing

SEH will contract with others to provide underground utility locates 600' in all directions from the center of the intersection. The surface markings of these locates will be located by SEH as part of the topographic survey.

SEH will contract with others to provide potholing services. Once potholes are completed SEH will field locate the potholes with a surface elevation next to the pothole. The location of the potholes, surface elevation next to the pothole and the depth to the utility will be provided to the design engineer. Note: for this proposal it is assumed that up to 10 potholes will be required.

#### Mapping and Legal Descriptions

SEH will provided mapping of the existing road right-of-way for the defined survey area. Any parcels of land that are identified as being needed for right-of-way take or easements will also be mapped. Once the design is far enough along to identify what legal descriptions are needed (fee parcel, utility, drainage, slope and/or temporary construction easements), these legal descriptions will be provided. Title reports for any fee acquisition parcels will be ordered by SEH. Any applicable Schedule B items called out in the title reports will be shown on the legal descriptions and made part of the overall mapping. Once construction is completed any parcels taken in fee for right-of-way acquisition will be monumented.

# **CDOT Format Right of Way Plans and Legal Descriptions**

SEH will prepare CDOT format ROW Plans and legal descriptions for any right-of-way acquisition or easements on private property. This will include the title sheet, tabulation of properties, monumentation sheets, plan sheets, and ownership sheets, along with area closures for each acquired parcel, and signing ROW plans upon CDOT approval. Please note that per the RFP, the fee schedule may need to be updated based on the scoping meeting with CDOT.

# Geotechnical Investigation

Geotechnical explorations and design recommendations are required for the design and construction of an intersection improvement project at Founders Parkway (State Highway 86), Fifth Street, and Ridge Road in Castle Rock, Colorado.

Shannon & Wilson's scope of work will include subsurface explorations, laboratory testing, geotechnical engineering analyses, development of geotechnical engineering and pavement design recommendations, and preparation of a geotechnical engineering report.

A geologist or geotechnical engineer will complete a geotechnical reconnaissance, log borings, and collect samples for classification and laboratory testing. Data generated during the subsurface exploration and laboratory testing programs will be analyzed by a geotechnical engineer in developing findings and recommendations to be presented in a formal report. The report will be signed and sealed by a professional engineer registered in the state of Colorado. The report will include:

- a site plan showing exploration locations;
- ▶ field and laboratory test results, including boring logs;
- general description of subsurface soil/rock conditions and groundwater levels (if encountered) below the site;
- pavement design recommendations based on provided traffic projections;
- subgrade conditions and recommendations for subgrade preparation; and
- earthwork recommendations.

#### Proposed Drilling Plan

- ▶ Drill four 10-foot borings within the paved roadway, all within 250 feet of the intersection.
- Total proposed drill footage for Design Fee is 40 feet.
- Fieldwork will take place on Town of Castle Rock or Colorado Department of Transportation (CDOT) right-of-way where accessible, or others will obtain permissions and/or right-of-entry through private and/or public property to access select boring locations.
- Traffic control will be required during subsurface exploration and lane closures will be necessary.

# Drainage Analysis and Design

The Founders Parkway/Fifth Street/Ridge Road Intersection Improvements project will allow for improvements to be made for the conveyance of stormwater as the ultimate right-of-way improvements to the intersection are designed and constructed. The analysis of drainage and water quality will follow the guidelines of the Storm Drainage Design and Technical Criteria Manual (SDDTCM), developed by the Town of Castle Rock in September 2007 and revised in October of 2012. SEH will provide preliminary and final drainage reports as per Chapter 4, Sub-section 4.1.1 of the SDDTCM.

# **Existing Conditions**

Currently, full curb and gutter sections exist along SH 86, east of the intersection and on Founders Parkway, north of the intersection. On Ridge Road, south of the intersection, curb and gutter sections exist along the east side of the road. On the west side, the curb and gutter extends for only a short distance (approximately 120 ft.). Beyond this point, the roadway borders a grass and dirt shoulder area. On Fifth Street, west of the intersection, there is no curb and gutter along the south side of the road, except for the small portion that exists at the curb ramp on the curve to southbound Ridge Road. On the north side of Fifth Street, there is only a small length of curb and gutter around the curve from southbound Founders Parkway to westbound Fifth Street. Further west on Fifth, the road is bounded by a dirt shoulder.

Only one curb inlet currently exists at this intersection. The inlet is located along the south side of SH 86, at the end of the curve from northbound Ridge Road to eastbound SH 86. Stormwater at the other three corners will drain in curb and gutter sections to downstream inlets or, in the case of the eastbound lanes of Fifth Street and the southbound lanes of Ridge Road, to a sump area just beyond the southwest corner of the intersection. There is also a median inlet at the south approach of Ridge Road.

## **Proposed Drainage Solutions**

The widening of the roadways at the intersection will increase the pavement area and the volume of stormwater at the intersection. SEH will obtain and review the design documents (if available) for the existing drainage system around the intersection, including off-site flows from adjacent areas, and supplement any missing data with survey information and field verification. Before any new drainage infrastructure is considered, the function of the existing drainage system will need to be analyzed to fully understand how stormwater is conveyed throughout the intersection. An understanding of the existing system will provide the basis for the design of the drainage system for the proposed intersection improvements. As a standard practice, SEH stormwater engineers design new drainage systems with the goal of utilizing as much of the existing drainage infrastructure as possible.

The results from the analysis of the additional pavement areas and the increases in stormwater discharge may conclude that additional inlets are needed to prevent flooding around the intersection. The analysis may also conclude that additional stormwater can be conveyed throughout the intersection in curb and gutter sections to existing downstream outfall sources. In either case, the best combination of inlets and/or curb and gutter sections will be used for the design of drainage improvements at the intersection.

Grass areas beyond the four corners of the intersection provide an opportunity for the collection of stormwater from the additional paved areas around the intersection. Depending on the available area at each corner, these areas could be used to meet the detention and water quality requirements for increases in flows from additional paved surfaces. Stormwater could potentially be directed to these areas where small extended detention basins (EDBs) could be used for detention storage and water quality treatment. The flows could then be released to the drainages that currently convey the stormwater from the existing system. Grass bioswales in these areas are another option for water

quality treatment around the intersection. The designs of water quality features and the releases of flow to the existing drainage system would be as per the guidelines of the SDDTCM.

The grass areas around the corners of the intersection also provide a potential opportunity for the use of green infrastructure (GI) for required water quality treatment. The Urban Drainage and Flood Control District (UDFCD) and the City and County of Denver have recently co-developed an Ultra Urban Green Infrastructure Guide that can be used as a tool for water quality treatment in urban areas or narrow corridors where traditional water quality treatments are not feasible. These grassy areas may provide a means for the placement of GI features such as the Streetside Stormwater Planters (SSPs), or similar features. Our previous work on the Brighton Boulevard project (44th to Race Street) is very similar to the water quality requirements for the roadways at this intersection. The Brighton Boulevard project included the preliminary sizing and placement of several SSPs along the roadways. The underdrains in the SSP system are connected to adjacent storm drain inlets where the clean stormwater is conveyed in the downstream drainage system.

A thorough understanding of the existing drainage system and the available right-of-way, along with conveyance, detention and water quality considerations using the guidance of the SDDTCM, will ensure that stormwater is effectively drained from the new intersection improvements.

# Utility Coordination and Design

Thorough and comprehensive identification of existing and proposed utilities in the project area is vital for an effective and successful improvement project. **Our team understands the importance of properly identifying utilities and their associated impacts to this project.** Through a virtual windshield survey and a site walk, we have identified utilities that may potentially be affected by proposed improvements. SEH will work with utility owners to identify, locate and evaluate impacts to their facilities. Our goal is to provide proactive utility coordination to expedite utility relocations. We understand that utility relocations can be a major risk to meeting the construction schedule and we will work to have clearances and scheduling established well before construction is set to begin. We will be able to achieve this based on our relationships and experience with utility companies. **Preliminary utility identification includes:** 

- CDOT traffic
- City of Castle Rock:
  - Water
  - Storm Sewer
  - Street Lighting
  - Traffic
  - Irrigation

- Communications (providers to be determined)
- IREA (UG and OH Electric)
- Black Hills Energy (Natural Gas)

Our team's experience on similar projects with constrained right-of-way indicate that the greatest potential for utility impacts will be related to the roadway and drainage improvements crossing buried utilities. By confirming the location of the utilities relative to the proposed improvements and coordinating with utility owners and the design team, it is possible to avoid or minimize utility relocations.

There are existing overhead powerlines running along the north side of both 5th Street and Highway 86, as well as lines crossing those streets to the south. Storm sewer manholes and inlets are along the median in Ridge Road and along the north and south gutter of Hwy 86. If available, existing utility as-builts and design information will be obtained for all potential impacted utilities along the corridor. Locates will be performed early in the project schedule and incorporated in the design base file so coordination can begin soon after survey is complete. (Insert photo IMG1759 with caption "Existing utilities at north end of proposed Founders Park improvements should be avoided or minimized"

Reviewing the water surface features along the project corridor, there appears to be fire hydrants, valve boxes and air vac/relief vaults and vent stacks along the project that may require minor grade adjustments. Whenever a street reconstruction project occurs, it is usually a good idea to confirm with utility owners to see if planned upgrades can be completed in conjunction with the project. This will limit potential impact to the new paved roadway going forward.

Our approach, combined with our team's relationships with the utility companies, should ensure smooth and productive coordination, allowing the Ridge Road project to move forward with minimal schedule risk. The method involves the following steps:

- **Utility Contacts:** The identification of all utility contacts within the project area is initiated immediately by conducting a search of the UNCC utility owner database and following up with identified owners to confirm the presence and location of facilities.
- **Utility Information:** As-built drawings and key maps would be obtained from utility owners to fill data gaps. Information regarding planned relocations for other projects in the area would provide a complete overview.
- **Utility Identification:** A private engineering locate will be conducted, with horizontal locations of utilities marked and subsequently surveyed. While potholing of utilities is usually reserved for preliminary or final detailed design, pothole data from other projects would be collected and compiled as available. A preliminary estimate of 10 potholes is assumed.

- **Utility Mapping:** Compiling all utility data into an existing utility map and any preliminary design plans is the most important step in the utility program. Map review from all affected utility companies at each phase maximizes data accuracy, and ensures that utility information provided to the design team is the most up-to-date information available.
- **Preliminary Conflict Analysis:** Using the utility mapping and plans, potential conflicts between existing utilities and proposed improvements and relocation strategies are identified. An effort will be made to eliminate or mitigate conflicts by coordinating with the utility owners and project team.
- **Conflict Resolution:** Conflict resolution happens after preliminary conflict analysis. Potholing will be conducted to resolve alignment and cover issues.
- **Utility Agreements:** By following CDOT's utility clearance process, concurrence for all work by and for utility owners is obtained. Relocations of Black Hills Energy and IREA's facilities are done in compliance with the City's franchise agreement.

# Environmental

The project will be financed with local funds; however, Founders Parkway (SH 86) is a part of the State's highway system and Colorado Department of Transportation (CDOT) will be involved in final scoping and project review. Therefore, provisions of the National Environmental Policy Act (NEPA) must be followed. Environmental impacts will likely be minimal, and documentation as a CatEx is anticipated. Pinyon is an expert in NEPA documentation for local agency transportation projects having completed over 300 CatExs to CDOT protocols.

For this project, Pinyon will lead the environmental task by completing the technical studies applicable to CatEx's, as noted on CDOT's Form #128 that are relevant to this project. Not all resources listed on CDOT's Form #128 will need to be addressed beyond the determination that they are not present/not impacted. Based on review of the proposed improvements and the context of the surrounding environment, the focus of the environmental task will be on noise impacts, section 4(f) impacts, and potentially air quality impacts as well.

The following are the key tasks needed and included in this proposal:

Noise: Pinyon will conduct the noise assessment and any mitigation analysis using CDOT's current Noise Analysis and Abatement Guidelines as these guidelines are in accordance with the requirements of 23 CFR §772, Procedures for Abatement of Highway Traffic Noise and Construction Noise and utilize the Federal Highway Administration's Traffic Noise Model (TNM, version 2.5) to predict existing and horizonyear traffic noise levels within the study area. The scope included in this task is outlined below.

• Data Gathering: Pinyon will first review the data for existing conditions and proximity of transportation elements to noise-sensitive receptors. The data required includes: CAD drawings of the existing and proposed conditions with elevations, aerial photographs, land use, and

existing and future traffic data. If necessary, Pinyon can utilize Google Earth (or equivalent) for the ground elevation of receptors; however, it is assumed that the traffic data and the intersection design (in GIS) will be provided by SEH. Also included in this task are noise measurements taken at four sites of at least 15 minutes each, which will be taken with a calibrated sound meter that conforms to American National Standards Institute Standards for Type 2 sound level meters during suitable weather conditions. Traffic volumes and truck percentages will be counted and traffic speeds will be measured during each of the noise measurements to validate TNM model.

• Noise Modeling and Reporting: Computer modeling will be performed for existing conditions and the horizon year at the intersection resulting in two (2) model runs. Pinyon will document the environmental context, noise assessment methodology, and model results in a technical memorandum for the Town. Should the current or horizon year noise levels exceed the Noise Abatement Criteria thresholds, Pinyon will also include recommendation for next steps in assessing mitigation options but has not included the development and assessment of mitigation measures in this proposal.

Air Quality: An initial step will be to review the traffic data to confirm the need to model for carbon monoxide (CO) at the three intersections. Assuming modeling is required, Pinyon will consult with CDOT and the Colorado Department of Health Public and Environment to obtain the MOVES data for use in the hot spot analyses, complete the hot spot modeling for the current year and horizon year, and develop an Air Quality Technical Memorandum. Should modeling not be required, Pinyon will document the rationale as why it is not needed in a brief memo to file; this would reduce the level of effort from that proposed in this scope. We assume that SEH will provide the required traffic and design data.

Historic Resources: A Pinyon staff historian will perform a COMPASS database search and review of County assessor's data. This scope assumes there are no eligible historic resources or resources that need to be assessed for eligibility will be impacted by the proposed actions and the results of the search will be documented in a brief memorandum. Should additional resources be found that are eligible for listing on the National Register of Historic Places (NRHP) or that need to be assessed for eligibility and that are expected to be impacted, additional scope and fee will be required for eligibility and effects determination and Section 4(f) documentation.

Biological Resources: Pinyon biologist will evaluate sensitive biological resources, including federally and state-listed threatened and endangered species, Senate Bill 40, noxious weeds, prairie dogs, wetlands, and migratory birds. Species-specific surveys, noxious weed management plans, and/or mitigation plans may also be necessary, but are not included in this proposal. This information will be presented in a Biological Resources Report.

Hazardous Materials: Based on aerial photograph review, commercial and industrial activities are unlikely to occur near the project. Pinyon will document these conditions in an Initial Site Assessment report and CDOT Form 881 and present recommendations for handling hazardous materials if needed. A file search and regulatory agency review will be conducted as part of this task; interviews will not be conducted.

Section 4f: Federal Highway Administration (FHWA) Section 4(f) regulations govern the use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites. City of Castle Rock Open Space is located adjacent to the roadway and includes the sidewalks located within the project area. The sidewalks within the Open Space may be considered a Section 4(f) resource. Impacts to the sidewalks are assumed to be minor with full restoration or enhancements. A de minimis Section 4(f) evaluation or utilization of an "Exception" under Section 4(f) 23 Code of Federal Regulation (CFR) §774.13, specifically (g) "transportation enhancement", is anticipated. Pinyon will coordinate with CDOT and City of Castle Rock, the Official with Jurisdiction (OWJ) and prepare an OWJ letter. A de minimis determination will also require FHWA agency coordination and public involvement (which is assumed to be minor such as a newspaper advertisement). Any use of Section 4(f) resources requiring evaluation other than an exception or de minimis finding would require additional scope and fee.

CDOT Form 128 includes other documentation requirements that were not included in the Request for Scope/Fee from the Town of Castle Rock. Based on the project description section 6(f), archeology, and paleontology resources are not expected to be required and is not included in this scope or associated fee.

# Landscape and Irrigation Design

Due to the narrow width of the raised medians at each of the approaches to this intersections it's likely that hardscape median cover material would be provided in these medians in an effort to minimize the landscape and irrigation maintenance. Where applicable landscaping and irrigation will be provided between detached sidewalks.

# **Right of Way Documents**

Per Addendum #2, the Town and CDOT have acquired right-of-way at the intersection and if any additional right of way acquisition services will be provided by the Town. As stated in the survey scope of work above, SEH will provide title reports and right of way per the CDOT standards.

# Lighting Design

There is street lighting on the existing signal poles within the intersection along with several light poles along the Founders Marketplace frontage that may be impacted by this project.

Street and pedestrian lighting options will be analyzed to ensure adequate vehicular and pedestrian safety with the wider road section and new sidewalk. Preliminary lighting plans will be prepared and necessary items will be incorporated into the preliminary construction cost estimate. We will coordinate with the Town to incorporate LED lighting along the corridor if necessary. SEH's lighting designer, Ken Taillon, provided design of the first LED street lighting in Centennial at the Peakview Peoria intersection.

Lighting plans, details and specification will be further developed with the Pre-Final and Final deliverable submittals.

# Roadway Design and Traffic Engineering

SEH will develop roadway horizontal and vertical profiles along the limit of the project in an effort to make sure the design matches critical locations, such as driveways, intersections and roundabouts and to identify right-of-way and utility impacts. While the proposed design does not anticipate impacting the existing curb and gutter along the east side of the roadway, SEH will run a flow line profile along this existing curb and gutter to make sure there are not lowpoints that could pond water and that inlets are placed in the correct location. Flowline profiles will also be prepared for new curb and gutter sections.

#### **Conceptual Designs**

SEH will develop a 30% level of design for up to three alternative configurations for the Founders Parkway, Fifth Street and Ridge Road Intersection improvement project that passed the initial screening. The design will include the topographic mapping, property lines, and aerial to evaluate the impacts to the ROW, the existing access. Each design will follow the City of Castle Rocks standards for roadway design or the American Association of State Highway and Transportation Officials guidelines, whichever is appropriate.

#### **Traffic Operations Analysis**

SEH will model each alternative using the Synchro/SimTraffic modeling software to evaluate the traffic operations of each intersection within the study area including Founders Parkway, Fifth Street and Ridge Road Intersection. The model will also include those intersections along the roads that could potentially improve as a result an east/west reliever route. The measures of effectiveness (MOEs) for each alternative will include a combination of the overall system delay, arterial travel times, individual intersections, and individual movements.

#### **Conceptual Design Report**

SEH will used the above mentioned data and prepare a Conceptual Design Report. This report will include traffic measures of effectiveness summaries on assessed concepts, cost/benefits summary, recommended intersection concept, conceptual drawings and design calculations, and identify all land acquisitions requirements. Additionally it will contain a conceptual Opinion of Cost to be used to identify any possible funding shortfalls.

SEH will prepare the 30% plans for review by the Town of Castle Rock and CDOT, Plans will include complete roadway plans, storm drainage layouts, retaining wall layouts, demolition plans, typical sections, landscaping, quantities summaries and general notes. SEH will prepare an opinion of probable cost for the proposed improvements along with a Conceptual Design Report. SEH and Town will meet to discuss the plans, estimate and report and come to a consensus on a preferred intersection layout and configuration prior to progressing into 75% design The cost estimate will be unit price based on CDOT item numbers. Unit prices will be established using CDOT and recent bid results from local municipalities in an effort to provide an estimate that reflects the current bidding market. We will also provide a utility plan with any potential conflicts identified. This will help us initiate discussions with potential impacted utilities. We recommend that potential conflict locations be potholed after review and acceptance of the 30% plans to determine specific conflicts and the possible need for relocation.

SEH will prepare the 75% and 90% submittal packages which will include documents required for utility clearances as well as right-of-way, if necessary. The 75% plan will include plans for construction phasing and traffic control.

After addressing comments from the 90% review, SEH will prepare 100% level construction documents in order to obtain clearance to construct the project.

We anticipate participating in two progress meetings per month as well as a preliminary (75%) and final (90%) design review meeting. We will prepare meeting notes for all meetings that have action item assignments with dates. Based on the schedule, we anticipate 13 bi-weekly and monthly progress meetings.

# Schedule

The SEH team has provided a project schedule as part of this proposal. Per the RFP, this schedule shows completing the design by December 2017. We realize that this is an aggressive schedule for a project of this size, but we feel we have the necessary capacity to deliver. However, with any project there are factors that need to fall in place in keep a project on schedule. Prior to the scoping meeting, Rick will prepare a detailed MS Project schedule with anticipated milestones and tasks.

With this project, we see several factors that are will be critical in meeting this schedule. This project has the potential to impact several parcels with the proposed improvements. In an effort to keep this project moving, the project design, utility coordination and the identification of right-of- way impacts will need to get started soon after notice to proceed to allow our team adequate time to make offers and complete all related tasks necessary for right-of-way and utility clearance. SEH will work collaboratively with the Town and other affected project stakeholders during this design by establishing open lines of communication to freely share ideas and develop consensus on design alternatives early in the design process.

Timely reviews by stakeholders will also be critical in meeting this schedule. The SEH schedule assumes three week review time for major submittals. A two to three-week review is typical of review times. Again, establishing open lines of communication among stakeholders will be key to meeting these review time frames. We will also make sure that submittals comply with Town of Castle Rock standards. We will specifically establish criteria to be used at the scoping meeting prior to the notice to proceed to minimize later delays. During the conceptual and preliminary design phases, the SEH team will attend biweekly coordination meetings. In the early stages of design, this will provide more opportunities to solicit feedback from the County and other stakeholders, and allow issues to be discussed and resolved in a timelier manner to minimize the potential for schedule delay. Once the majority of major design and project issues have been resolved and the project is progressing, progress meetings can be moved to a monthly basis.

It is possible that this schedule could be accelerated if both projects are designed by one firm. These efficiencies would come in the topographic survey and design efforts.

# **Public Meeting Assistance**

Public meetings are proposed to provide residents the opportunity to learn about the project, what changes to expect, and potential impacts during construction. SEH will provide graphic displays for the meetings and assist with presentations. SEH team members have participated in many presentations on roadway projects of this type and have helped numerous communities build consensus around improvements.

Typically a public meeting is held early in the design to inform citizens and give them the opportunity to provide feedback. Additional meetings can be held later in the process to present how concerns were addressed and provide more detail on the project. We also recommend scheduling a meeting just before construction to introduce the contractor, the proposed traffic control and phasing, and the final schedule.

# Project Management Approach

# PROJECT CONTROL

The SEH project manager selected to lead the Ridge Road Widening project, Erik Nyce, brings more than 22 years of experience as a manager and senior engineer on municipal roadway and drainage design projects, including several similar projects for Denver Metro and Colorado communities. Erik will be the Town of Castle Rock's primary contact, responsible for oversight and management of cost and quality control for the project and adherence to the project schedule. SEH recognizes the project manager is the frontline project representative of our company to our clients, subconsultants, outside agencies and staff; because of this, we require our project managers and select key staff to attend specific training in the areas of quality, cost and schedule management.

# Cost Control

Erik will execute a well-conceived and disciplined project management strategy to stay one step ahead, avoid surprises and meet the project budget—our goal is to provide our services to you within the

budget for the defined scope of work. To accomplish this, he will monitor all project activity to make sure the work delivered as agreed, with resources that can complete the work as budgeted and scheduled. Rick will regularly review project progress to assess any gaps in delivery or schedule, and take appropriate corrective actions.

Our approach begins with adequate scoping, focusing on processes, requirements and expectations. In addition, Erik's cost control capabilities are derived from:

- Regular project updates and meetings accompanied by thoughtful action items designed to maintain the schedule and project delivery.
- Full and accurate disclosure of challenges as they arise, in tandem with cost-effective solutions.
- Application of project experience and lessons learned.
- Allocation of appropriate specialists and quality staff

Erik will keep a regularly updated cost estimate that will be available at any time during the project. With the current fluctuation in bid pricing, this will help assure there are no surprises when the final construction cost estimates are provided to the Town at the final plans stage of development.

If at any point the construction cost estimate appears to be beyond the available budget, the SEH team will work with our project engineers and the Town's project manager to explore a range of solutions available to get back within budget.

# **Quality Control**

SEH has a formal, firm-wide Quality Assurance/Quality Control (QA/QC) Program incorporated into a set of published guidelines used by each department and project manager to develop a unique plan for each project. The SEH Civil Practice QA Plan requires that all designs be reviewed by a senior level project engineer, not involved in the day-to-day design. For this project, Rick Coldsnow, our project principal, will serve in that role. Hours and budget are allocated to QA review at each milestone of the project.

At the beginning of the project, Erik will develop a project work plan that includes QA/QC requirements. This plan and schedule will be presented at the kick-off meeting. The plan will be reviewed by the Town to ensure a clear understanding is formed and agreed upon regarding project requirements including goals and objectives. The program continues throughout the project and imparts professionalism and technical specialties into the work as it is performed.



#### Schedule Control

Keeping projects on track is critical to meeting budget objectives. SEH's goal is to follow a streamlined, feasible and customized work plan/schedule that leaves you with a constructible and affordable project. For the Founders/Fifth/Ridge Road Intersection Improvement project, we recognize that the sooner plans can be completed in 2017, the more likely it is that favorable pricing will be provided for 2018 construction.

Erik will develop and maintain a detailed project schedule that clearly illustrates the sequence, duration and interdependencies of all tasks. SEH uses Microsoft Project scheduling software to develop, track and manage critical project tasks. The schedule will remain fluid as the project progresses and may be updated to reflect changes or new information that comes into play.

In addition, Erik will actively monitor project progress by task, on a bi-monthly basis. Variances from the schedule will be flagged, and Erik will employ necessary measures to redirect tasks back on schedule. Schedule updates will be provided to the Town at monthly project meetings or between meetings as needed. A critical part of schedule management is identifying critical path elements. These elements usually include right-of-way, utilities and environmental. We will closely monitor and address these elements in off-line meetings to carefully identify even the slightest potential delay.

Erik uses earned-value management on all of his projects as a way to track work performed compared to work completed to make sure that work is being completed on time and on budget. Erik will provide an earned value report each month as part of the project progress report.

Town of Castle Rock - Founders Parkway (SH 86), Fifth Street, and Ridge Road Intersection Improvements

SEH Fee Proposal

4/14/2017

PROJECT FEE ESTIMATING WORKSHEET		3y: Jate:	By: EI Date: 47	۲4/2017						Revision Date	ö	4/14/201	7					
SEH INC.	<u>-</u> С	Proposal No: 7	osal No: Project: Fc	unders Pa	kway (SH	36), Fifth St	reet, and Rid	dge Road Int	tersection Imp	Job Nc vrovements - R	o: FP NO. PW20:	17.03						
Estimated Project Duration - 7 months								6										
SEH	0	Client:	Client: To	wn of Cas	le Rock										Subconsulta	uts.		
TASK	Principal Hrs	Senior Project Manager Hrs	Survey Manage F r Ei	Senior Project S ngineer De	enior Mai signer Hrc	iject Surv Jage Cre r Chiu	(ey Staff w Engine. ef II Hrs	er Staff Enginee	r I Accountir Hrs	SEH SUBTOTAL HOLIPS	SEH SUBTOTAL Cost	SEH	Utility Locates	Utility Potholing	Pinyon Environmental	Goodbee/PKM	Shannon and Wilson	Total Cost
Hourly Rates	\$204.00 RC E	\$177.00 N,SJ, DK, SK, KT	\$170.00 \$ GR CV	139.00 \$ V, JL, SI	29.00 \$12 DS 51	9.00 \$95.	00 \$100.0 I (A, BW,	00 \$95.00 MV EE	) \$115.00 SO		50							
1 Project Management and Meetings Project Management	4	32							16	22	\$8,320.00				\$5,743.00			\$14,063.00
Kick Off Meeting Design Progress/Coordination Meetings (Assume 13 meetings - 12 bi-weekly and 1	2	9		ε						11	\$1,887.00	\$50.00				\$428.00		\$2,365.00
monthly)	4 (	26 64	c	∞ £	c		2 2	C	4	40 103	\$6,730.00 \$16,937,00	\$500.00	00.05	00.02	\$5 743 00	00 8428 00	00.02	\$7,230.00 \$0.00
2 Topographic Survey	2	5	5				7		2	6	0.100,014	0.000	0.04	00.04	00.041.04	00.0244	0.04	00:000/070
Right of Entry Primary/Preliminary Survey Control and Property Topographic Survey	Research	~		~		4 4 30 15(				4 34 154	\$516.00 \$3,366.00 \$14.882.00	\$16.00 \$825.00 \$3.836.00						\$532.00 \$4,191.00 \$18.718.00
Triprogrammer our work Utility Locates and Potholing Existing ROM Manning		1		4		2 20				40 23	\$2,158.00	\$517.00	\$4,594.00	\$4,594.00				\$11,863.00 \$11,863.00 \$5 160.00
ROW Plans, Legal Descriptions, Title Work, Set M.	onuments		-			16				49	\$5,818.00	\$150.00						\$5,968.00
Task 2 Subtotal	0	2	-	2	3	12 21	0	0	0	303	\$31,900.00	\$5,344.0	9 \$4,594.00	\$4,594.00	\$0.00	\$0.00	\$0.00	\$46,432.00
3 Conceptual Design Geotechnical Investigations and Report Poedway and Grading Design		- c		ę						<del>-</del> 5	\$177.00 ©E 011.00						\$11,008.00	\$11,185.00 \$6.011.00
roadway and orading Design Utility Design and Coordination		ν <del>Γ</del>		6 6						3 42	\$455.00							\$455.00
Hydrology and Hydraulic Analysis and Design		5		4 4			∞ α			14	\$1,710.00							\$1,710.00
I rame Analysis Cost Estimate				16 2			N N			19	\$2,601.00 \$655.00							\$655.00
Prepare 30% Plans and Report Environmental	7	4		16			40	4		99	\$7,720.00							\$7,720.00
Noise Assessment Air Quality Assessment											\$177.00 \$177.00				\$13,864.00 \$14,527.00			\$14,041.00 \$14.704.00
Historic Resources Memorandum to File		- c								- c	\$177.00				\$2,514.00			\$2,691.00
WUS, including Wetlands		5 4								N 61	\$354.00				\$3,771.00			\$4,125.00
Hazardous Materials Section 4(f)		0 0								~ ~	\$354.00 \$354.00				\$6,612.00 \$5,554.00			\$6,966.00 \$5,908.00
30% Design Review Meeting with Town of Castle Rock and CDOT Respond to Review Meeting Comments	8	2		6 4			2			2	\$1,179.00 \$1,110.00	\$50.00						\$1,229.00 \$0.00
Task 4 Summary	4	27	0	87	0	0	54	4	0	168	\$23,468.00	\$50.00	\$0.00	\$0.00	\$53,657.00	\$0.00	\$11,008.00	\$84,472.00
<ul> <li>4 Preliminary Design (15% Design and Frans) Landscape Design (including irrigation) Roadwav and Grading Design</li> </ul>				16			24			0 04	\$0.00 \$4.624.00					\$3,968.00		\$3,968.00 \$4.624.00
Utility Design and Coordination		4		4			œ			16	\$2,064.00							\$2,064.00
Structural Engineering (Retaining Wall Design)		2		2	2					9	\$890.00							\$890.00
Hydrology and Hydraulic Analysis and Design		-		8			16	4		28	\$3,092.00							\$3,092.00
Signing, Striping and Traffic Signal Design Construction Phasing		2		रू <del>प</del>			16			26	\$3,066.00							\$3,066.00
Lighter Design Lighter Design Preliminary Drainade Renort		144		2 α			19 1			20 27	\$2,308.00							\$2,308.00
Specifications		۲œ		0 4			4			12	\$1,972.00							\$1,972.00
Cost Estimate Prepare 75% Plans	7	- 8		2 16			24	4 4		11 06	\$1,235.00 \$10,248.00							\$1,235.00 \$10,248.00
Compile and Respond to 75% Review comments		4		4						8	\$1,264.00							\$1,264.00
Attend 75% Design Review Meeting with Town of Castle Rock and CDOT		e		9						6	\$1,365.00	\$50.00						\$1,415.00
Task 5 Summary	7	44	0	94	2	0	124	48	0	314	\$38,480.00	\$50.00	\$0.00	\$0.00	\$0.00	\$3,968.00	\$0.00	\$42,498.00
5 Final Design are reach Landscape Design (including irrigation) 							ę			0	\$0.00					\$2,718.00		\$2,718.00
Roadway and Grading Design Utility Design and Coordination		2		2			٩	∞		24	\$2,360.00 \$632.00							\$2,360.00 \$632.00

-

Town of Castle Rock - Founders Parkway (SH 86), Filth Street, and Ridge Road Intersection Improvements

SEH Fee Proposal

4/14/2017

PROJECT FEE ESTIMATING WORKSHEET SEH INC.		By: Uate: Proposal No:	By: Date: . Dosal No:	EN 4/14/2017						α.	evision Date: Job No:		4/14/2017						
Estimated Project Duration - 7 months		Project:	Project:	Founders F	arkway (S	H 86), Fift	n Street, ar	nd Ridge R	toad Interse	action Improv	/ements - RF	PN0. PW2017	03						
		-tooiD	Cloth	Town of C	otlo Dock														
SEH		CIIGHT	CIRIL													Subconsultan	S		
TASK	Principal Hrs.	Senior Project Manager Hrs.	Survey Manage r Hrs.	Senior Project Engineer I Hrs.	Senior 1 Designer Hrs	Survey Project S Aanage r Hrs	urvey Crew Er Chief Hrs.	Staff ngineer II E Hrs.	Staff ingineer I	Accounting Hrs.	SEH SUBTOTAL HOURS	SEH SUBTOTAL Cost	SEH Expenses	Utility Locates	Utility Potholing	Pinyon Environmental	Goodbee/PKM	Shannon and Wilson	Total Cost per Task
Hourly Rates	\$204.00	\$177.00	\$170.00	\$139.00	\$129.00	\$129.00	95.00 \$1	100.00	\$95.00	\$115.00									-
Structural Engineering (Retaining Wall Design)		4		4							ø	\$1,264.00							\$1,264.00
Hydrology and Hydraulic Analysis and Design		ę		4				œ			15	\$1,887.00							\$1,887.00
Signing, Striping and Traffic Signal Design		0 0		@ a				5			12	\$1,666.00 \$1.666.00							\$1,666.00 \$1,666.00
		7 4		0				16			21	\$2 308 00							\$2 308.00
Final Drainage Report		r 0		4				5 4			10	\$1.310.00							\$1.310.00
Specifications		ø		4							12	\$1,972.00							\$1,972.00
Cost Estimate		٢		-				4			9	\$716.00							\$716.00
Prepare 90% Plans	2	2		æ	2			24	40		78	\$8,332.00							\$8,332.00
Compile and Respond to 90% Review comments		4		9							10	\$1,542.00							\$1,542.00
Attend 90% Design Review Meeting with Town of Castle Rock and CDOT		з		თ							12	\$1,782.00	\$50.00						\$1,832.00
Tack E Cuttotal	c	20	c	g	c	c	c	26	Q	c	000	407 407 DD	\$E0.00	¢0.00	¢0,00	¢0.00	¢0.746.00	¢0.00	#20.20E.00
6 Construction Documents	v	10	>	8	4	>	>	0	£	<b>,</b>	573	00.104,124	00.004	00.04	<b>00.0</b> ¢	<b>0</b> ¢	42'' I 10'00	0.0¢	00.002,000
100% Design				4				80			12	\$1,356.00							\$1,356.00
Prepare Construction Documents	-	4		4				8	8		25	\$3,028.00					\$584.00		\$3,612.00
Task 6 Subtotal	-	4	0	8	0	0	0	16	œ	0	37	\$4,384.00	\$0.00	\$0.00	\$0.00	\$0.00	\$584.00	\$0.00	\$4,968.00
Attend and prepare for 3 Public Meetings	e	6		e				8	4		27	\$3,802.00	\$150.00						\$3,952.00
Task 7 Subtotal	е	6	0	з	0	0	0	æ	4	0	27	\$3,802.00	\$150.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,952.00
8 Did Support Attend Pre-Bid meeting		ε		°							9	\$948.00					\$130.00		\$1,078.00
Respond to Bidding Questions		2		8							10	\$1,466.00							\$1,466.00
Shop Drawing Review		2		œ							10	\$1,466.00							\$1,466.00
Task 8 Subtotal	0	7	0	19	0	0	0	0	0	0	26	\$3,880.00	\$0.00	\$0.00	\$0.00	\$0.00	\$130.00	\$0.00	\$4,010.00
Total SEH Hours per Staff =	22	194	1	282	4	82	216	280	112	16	1201								
Total SEH Cost per Staff Assumptions: 7 month design schedule 13 Design Progress meetings Survey Right of Entry Topographic survey and ROW mapping Utility Locates and potholing Legal Descriptions and Norumentation Geotechnical score includesjour (4) exploratory borh; Landscape and ringation design No ROW acquisition services Up to 20 utility porholes Up to 20 utility porholes	19s	\$34,338	\$170	\$39,198	\$516	10.578 \$\$	20,520	58,000	\$10,640	\$1,840 Pr	\$150,288 oject Totals	\$150,288.00	\$6,194	\$4,594	\$4,594	400 53	\$7.828	\$11,008	\$240,195

SUDSME

2

4/14/2017



# SEH Hourly Billable Rates – 2017

Title	Hourly Rate
Principal / Group Manager	\$204.00
Senior Project Manager	\$177.00
Survey Manager	\$170.00
Senior Project Engineer/Architect	\$139.00
Survey Project Manager	\$129.00
Professional Engineer/Architect	\$118.00
Staff Engineer/Architect II (2-4 years)	\$100.00
Staff Engineer/Architect I (0-2 years)	\$95.00
Senior Designer (15+ years)	\$129.00
Designer	\$83.00
Accounting	\$115.00
Administration	\$85.00
Engineer/Architect Intern	\$60.00
Senior Surveyor	\$109.00
Survey Crew Chief	\$95.00
Survey CAD Technician	\$78.00
Field Surveyor	\$78.00
Lead Project Representative	\$120.00
Sr. Project Representative	\$100.00
Project Representative	\$95.00

Effective:January 1, 2017Expires:December 31, 2017



# SEH Schedule of Expenses – 2017

#### Vehicle Mileage Rates

\$0.53/mile

#### Vehicle Allowance Costs

#### Survey Equipment

Robotic Total Station	\$30.00/hour
Global Positioning System (GPS)	\$30.00/hour

#### **Other Equipment Expenses**

SEH uses many different types of equipment, such as traffic counters; flow meters; air, water, and soil sampling kits; inspection cameras; density meters; laser scanners and many others. Our equipment is frequently upgraded to utilize current technology. You will be charged for equipment usage per your agreement with SEH.

**Other Expenses at Cost** 

SHORT ELLIOTT HENDRICKSON INC.