DESIGN SERVICES AGREEMENT

THIS AGREEMENT is entered into between the **CITY AND COUNTY OF DENVER** (the "City"), a municipal corporation of the State of Colorado, and **HDR ENGINEERING, INC.** (the "Design Consultant"), a Colorado Corporation, whose address is 1670 Broadway, Suite 3400, Denver, Colorado 80202.

SECTION 1 – ENGAGEMENT

1.01 Engagement. The City engages the Design Consultant to furnish professional design services for the Project as set forth in this Agreement. The Design Consultant accepts such engagement upon, subject to and in accordance with the terms, conditions and provisions of this Agreement.

1.02 Line of Authority for Contract Administration. The City's Executive Director of Public Works ("Director") is the City's representative responsible for authorizing and approving the work performed under this Agreement. The Director hereby designates the City Engineer as the Director's authorized representative for the purpose of designating a Project Manager, for the purpose of issuing a written Notice to Proceed and for purposes of administering, coordinating and finally approving the work performed by the Design Consultant under this Agreement. The Project Manager shall be responsible for the day-to-day administration, coordination and approval of work performed by the Design Consultant, except for approvals which are specifically identified in this Agreement as requiring the Director's approval. The Director expressly reserves the right to designate another authorized representative to perform on the Director's behalf by written notice to the Design Consultant.

1.03 Independent Contractor. The Design Consultant is an independent contractor retained to perform professional or technical services for limited periods of time. Neither the Design Consultant nor any of its employees are employees or officers of the City under Chapter 18 of the Denver Revised Municipal Code, or for any purpose whatsoever.

1.04 Scope of Design Consultant's Authority. The Design Consultant shall have no authority to act on behalf of the City other than as expressly provided in this Agreement. The Design Consultant is not authorized to act as a general agent for or to undertake, direct or modify any contracts on behalf of the City. The Design Consultant lacks any authority to bind the City on any contractual matters. Final approval of all contractual matters that purport to obligate the City must be executed by the City in accordance with the City's Charter and the D.R.M.C.

SECTION 2 – DESIGN CONSULTANT'S SERVICES

2.01 General. The Design Consultant shall provide professional design services for the Project in accordance with the terms and conditions of this Agreement. The Design Consultant's basic services shall consist of all of those services described in this Agreement and in **Exhibit A**.

2.02 Professional Responsibility.

(a) All of the work performed by the Design Consultant under this Agreement shall be performed in accordance with the standards of care, skill and diligence provided by competent professionals who perform work of a nature similar to the Work described in this Agreement.

(b) The Design Consultant agrees to strictly conform to and be bound by written standards, criteria, budgetary considerations and memoranda of policy furnished to it by the City and further agrees to design each project in compliance with applicable laws, statues, codes, ordinances, rules and regulations, and industry standards.

(c) All professional services, plans and specifications and other work, or deliverables provided under this Agreement for the Project shall be adequate and sufficient for the proper construction of the Project and its intended purpose.

(d) All drawings, specifications and other products shall be prepared so the Project, when constructed in accordance with such drawings and specifications, is in compliance with all applicable laws, statutes, codes, ordinances, and rules and regulations of the City, the State and the Federal government.

(e) Any design changes required by changes in such applicable laws, statutes, codes, ordinances or rules and regulations of the City, the state or the federal government, which are enacted after the City's acceptance of Construction Documents, defined herein, will be outside the scope of the Design Consultant's basic services and basic fee, and will be compensated for approval as an additional service, subject to the additional services budget for that project.

(f) The Design Consultant shall prepare the plans, specifications and other materials for the Project in a format that complies with all City requirements as well as all state and federal requirements for the Project. No funds will be paid to the Design Consultant for the preparation of contract documents in a form other than that considered usual and customary by the Department of Public Works. It shall be the responsibility of the Design Consultant to contact the reviewing agencies and determine the acceptable format for the final documents. No documents will be considered final until approved by the City, even though any responsible federal and state agencies have approved such documents.

(g) The City reserves the right to proceed with the construction of the Project using either the City's standard general contractor bidding approach, on call contractors or using construction management techniques. The Design Consultant agrees to organize its Contract Documents for either construction technique and to coordinate the construction documents into selected bid packages, as appropriate. The City will notify the Design Consultant prior to the completion of the Design Development Design Phase which method will be used and the amount of work or the limits of construction to be included in the proposed bid package(s).

(h) The reports, studies, drawings and specifications and other products prepared by the Design Consultant under this Agreement, when submitted by the Design Consultant to the Director and the user agency for any identified phase of the Project, must represent a thorough study and competent solution for the project as per usual and customary professional standards and shall reflect all architectural and engineering skills applicable to that phase of the project.

(i) The responsibilities and obligations of the Design Consultant under this Agreement shall not be relieved or affected in any respect by the presence on the site of any agent, consultant or subconsultant, or an employee of the City.

(j) The Design Consultant shall provide all professional services required by the City in defending all claims against the City, which relate in any way to alleged default

hereunder, errors or omissions of the Design Consultant or its subconsultants, without additional compensation.

2.03 Program and Budget.

(a) The Design Consultant agrees to review the City's program and budget for the Project and further agrees, unless it has timely notified the City that the Project cannot be accomplished within such budget, to accomplish the Project within the intent of the program and established budget. Should the Design Consultant determine that The Project cannot be accomplished within the established budget, the Design Consultant shall immediately notify the City, in writing, so that the project scope or project budget can be reviewed and modified if necessary.

(b) The term "Project Construction Cost" shall mean the estimated cost to the City of actually constructing the Project, but such cost shall not include any Design Consultant's or special consultant's fees or reimbursements or the cost of equipment installed by the City under separate contract, unless the Design Consultant is required by the City to prepare drawings and specifications for such equipment. The initial Project Construction Cost has been provided to the Design Consultant.

(c) The Design Consultant agrees to design the Project within the estimated Project Construction Cost for the Project. Should all responsive bids or proposal received for the Project work provided for in the design exceed such cost, the Design Consultant agrees to redesign the Project at no additional cost to City and, in a manner acceptable to the City.

2.04 Coordination and Cooperation.

(a) The Design Consultant agrees to perform under this Agreement in such a manner and at such times that the City or any Contractor who has work to perform, or contracts to execute, can do so without unreasonable delay.

(b) Coordination with the City and other involved agencies shall be a continuing work item through all phases of each assigned project. Such coordination shall consist of regular progress and review meetings with the City, work sessions with the City's Public Works, and other user agencies or as otherwise directed by the City. Such coordination may also include field and office reviews of plans and documents as required during the development of the design for any specific project. The Design Consultant shall document all such conferences and distribute notes to the City.

2.05 Personnel Assignments.

(a) The key professional personnel identified in **Exhibit B** will be assigned by the Design Consultant or its subconsultants to perform the services required under this Agreement, as appropriate.

(b) The Design Consultant’s services shall be diligently performed by the regular professional and technical staff of the Design Consultant. In the event the Design Consultant does not have as part of its regular staff certain professional consultants, then such consulting services shall be performed, with City approval, by practicing professional consultants outside of the employ of the Design Consultant.

(c) The Design Consultant agrees, at all times during the term of this Agreement, to maintain on its payroll or to have access to through outside subconsultants,

professional design personnel and technicians in sufficient strength to meet the requirements of the City. Such personnel and technicians shall be of the classifications referenced in **Exhibit B**. The hourly rates specified therein include all costs except those specifically referenced as reimbursables in the appropriate hourly rate schedule.

(d) Prior to designating an outside professional to perform subconsultant work, the Design Consultant shall submit the name of such subconsultant, together with a resume of training and experience in work of like character and magnitude of the project being contemplated, to the City and receive prior approval in writing.

(e) It is the intent of the Parties hereto that all key professional personnel be engaged to perform their specialty for all such services required by this Agreement and that the Design Consultant's and the subconsultant's key professional personnel be retained for the life of this Agreement to the extent practicable and to the extent that such services maximize the quality of work performed hereunder.

(f) If the Design Consultant or a subconsultant decides to replace any of its key professional personnel, the Design Consultant shall notify the Director in writing of the desired change. No such changes shall be made until replacement personnel are recommended by the Design Consultant and approved in writing by the Director, which approval shall not be unreasonably withheld.

(g) If, during the term of this Agreement, the Director determines that the performance of approved key personnel or a subconsultant is not acceptable, she shall notify the Design Consultant and give the Design Consultant the time which the Director considers reasonable to correct such performance. Thereafter, she may require the Design Consultant to reassign or replace such key personnel. If the Director notifies the Design Consultant that certain of its key personnel or a subconsultant should be replaced, Design Consultant will use its best efforts to replace such key personnel or a subconsultant within ten (10) days from the date of the Director's notice.

(h) Neither the Design Consultant nor any subconsultant shall have other interests which conflict with the interests of the City, including being connected with the sale or promotion of equipment or material which may be used on a project to which they may be assigned, and the Design Consultant shall make written inquiry of all of its subconsultants concerning the existence of a potential for such conflict. In unusual circumstances, and with full disclosure to the City of such conflict of interest, the City, in its sole discretion, may grant a written waiver for the particular consultant or subconsultant.

(i) Actions taken by the City under this Article shall not relieve the Design Consultant of its responsibility for contractual or professional deficiencies, errors or omissions.

(j) The Design Consultant shall submit to the Director a list of any additional key professional personnel who will perform work under this Agreement within thirty (30) days after this Agreement has been executed, together with complete resumes and other information describing their ability to perform the tasks which may be assigned. Such additional personnel must be recommended by the Design Consultant and approved by the Director before they are assigned to a specific project.

(k) The Director shall respond to the Design Consultant's written notice regarding replacement of key professional personnel within fifteen (15) days after the Director

receives the list of changes. If the Director or his designated representative does not respond within that time, the changes shall be deemed to be approved.

2.06 Basic Services – General.

(a) These services shall be diligently performed by the regular professional and technical staff of the Design Consultant. In the event the Design Consultant does not have as part of its regular staff certain professional consultants, then such consulting services shall be performed, with City approval, by practicing professional consultants outside of the employ of the Design Consultant.

(b) Prior to designating an outside professional to perform work or services under this Agreement, the Design Consultant shall submit the name of such professional, together with a resume of training and experience in work of like character and magnitude as the project being contemplated, to the City and receive prior approval in writing.

(c) All professional consultants and subconsultants must be retained for the life of the Project to the extent practicable, except that acceptable replacements may be substituted with prior written approval from the City as set out in Section 2.05.

(d) The Design Consultant's basic services for the Project shall consist of the phases described below and shall include, but not be limited to, architectural, structural, mechanical, civil and electrical engineering services appropriate to each Project for each phase.

(e) The Design Consultant shall obtain written authorization from the City before proceeding with each phase.

(f) Nothing in this Agreement shall be construed as placing any obligation on the City to proceed with any phase beyond the latest phase authorized in writing by City.

(g) The responsibilities and obligations of the Design Consultant under this Agreement shall not be relieved or affected in any respect by the presence on the site of any agent, consultant, subconsultant, or employee of the City.

2.07 Basic Services - Phase Specific. In the interest of tracking progress towards completion of all work items necessary to complete the Project specified herein, the required Basic Services tasks which must be performed on each Project have been separated into phases. As applicable for the Project, the Design Consultant shall satisfactorily complete all work necessary to complete each phase as specifically set out in **Exhibit A**.

2.08 Additional Services.

(a) If the Design Consultant performs services in addition to its Basic Services, as a result of material changes in the Project or due to other circumstances beyond the Design Consultant's control, and if such services (1) are pre-approved in writing; (2) will not cause the total compensation payable to the Design Consultant to exceed the Maximum Contract Amount; and (3) are not occasioned by any neglect, breach or default of the Design Consultant, then the Design Consultant will be reimbursed its pre-approved cost for performance of such service(s).

(b) Before providing any such services, the Design Consultant first shall file with the City, and secure the City's written approval of, a complete description of the proposed services including an estimate of the maximum cost of any and all such services, on the basis set out in **Exhibits A and B**, of rates per hour, per day, or other basis of cost. Such description shall

also include a statement from the Design Consultant that the maximum cost of such services will not cause the total amount payable to the Design Consultant under this Agreement to exceed the maximum contract amount. In no event shall any form of authorization or pre-approval of additional services be deemed valid or binding upon either the City or the Design Consultant if the maximum cost of such services would cause the aggregate amount payable under this Agreement to exceed the maximum contract amount. Payment for additional services shall not, in any event, exceed the cost estimated by the Design Consultant and approved in writing by the City.

(c) The cost of such additional service shall be deemed to be the lesser of the estimated maximum cost or:

1. The actual time card cost of all design personnel including principal designer's time at the rates as set out in **Exhibit B**;
2. The actual cost to the Design Consultant for other necessary outside services, such as structural, mechanical or electrical engineering performed by independent consultants; and
3. The Design Consultant's actual reproduction cost for drawings.

(d) The Design Consultant shall maintain an accurate and acceptable cost accounting as to all such additional expenses and shall make available to the City all records, canceled checks and other disbursement media to substantiate any and all requests for payment for additional services.

(e) Payment to the Design Consultant for such additional services shall not, in any event, exceed the maximum additional services amount set forth in Section 3.

2.09 <u>Surveying and Testing</u>.

(a) The Design Consultant shall obtain all necessary surveying, tests and reports to properly design and administer the construction of each project, including, but not limited to, soils and hazardous materials testing. The Design Consultant shall be responsible for the accuracy, adequacy and content of such tests, surveying and reports.

(b) The Design Consultant and its appropriate subconsultant shall review all survey and test results reports and shall follow the recommendation of the soils engineer or other subconsultant unless, in the exercise of appropriate professional judgment, the Design Consultant or appropriate subconsultant discovers, or should in the exercise of professional judgment discover, factors indicating the report or results are not reliable.

(c) If any such inadequacy or any inconsistency, based upon such exercise of professional judgment, is noted the Design Consultant and/or its appropriate subconsultant shall report such inconsistency or inadequacy promptly to the City and require such inadequacy or inconsistency to be addressed by the soils engineer, testing laboratory or land surveyor before any further use is put to the data.

(d) The Design Consultant shall require all surveying, engineering and testing entities it selects to carry and maintain Comprehensive Auto Liability and Property Damage Insurance, General Commercial Liability and Property Damage Insurance and Professional Errors and Omissions coverage as required by the City's Office of Risk Management which will adequately protect the interests of the City and third parties from the acts and omissions of the testing entity.

(e) The amount of surveying or testing, the cost, and the types of reports required must be approved by the Director prior to the Design Consultant actually ordering any such work to be accomplished. Such approvals by the City shall be for purposes of compensation only and shall not relieve the Design Consultant of any responsibility for determining the scope and amount of surveying and testing necessary for the design of the project.

(f) It is understood and agreed that this Agreement does not include the investigation, sampling, testing, planning, abatement design, and remediation management of asbestos or other hazardous waste material. Should the presence of asbestos or other hazardous waste material be known to exist on a specific project or if the Design Consultant shall observe the presence of asbestos or hazardous waste material on any project site during its performance of services under this Agreement, the Design Consultant shall notify the City in writing immediately.

(g) Payment to the Design Consultant for such surveying, testing, and abatement shall not exceed the surveying and testing budget set forth in the project specific proposal for each project.

2.10 Compliance with DBE Equal Opportunity Requirements and Federal Grant Requirements. The Design Consultant agrees to comply with all requirements of the City's Equal Employment Opportunity program and the Federal Disadvantaged Business Enterprise Participation program as set out in Article III, Division 2, Chapter 28 of the Denver Revised Municipal Code, 49 C.F.R. Part 26, and any rules, regulations, and guidelines set forth thereunder for such programs. This compliance shall include the obligation to maintain throughout the term of the contract that level of DBE participation upon which the Agreement was initially awarded, unless otherwise authorized by the law or any rules, regulations, or guidelines. The Design Consultant identified in its Proposal DBE firms with which it intends to subcontract under this Agreement, with a total participation level by such firms of **20%.**

SECTION 3 – COMPENSATION, PAYMENT, AND FUNDING

The City shall compensate the Design Consultant for its service performed and expenses incurred under this Agreement as follows.

3.01 Fee for basic services. The City agrees to pay the Design Consultant, as full compensation for its basic services rendered hereunder, a fee not to exceed **SIX HUNDRED SIXTY-SEVEN THOUSAND ONE HUNDRED TWENTY-SEVEN DOLLARS AND ZERO CENTS ($667,127.00)**, in accordance with the billing rates and project budget stated in **Exhibits A and B**. The amounts budgeted for phases may be increased or decreased, and the amounts allocated for services and expenses adjusted, upon written approval of the Director or his designee, and subject to the Maximum Contract Amount stated in this Section 3.

3.02 Reimbursable Expenses. Except for those reimbursable expenses specifically identified in **Exhibit A**, or approved in writing by the City as reasonably related to or necessary for the Design Consultant's services, all other expenses shall be included in the Design Consultant's fee and will not be reimbursed hereunder. The maximum amount to be paid for all reimbursable expenses under this Agreement is **SEVENTY-NINE THOUSAND FIVE HUNDRED FORTY-ONE DOLLARS AND EIGHTY SIX CENTS ($79,541.86)** unless an additional amount is approved by the Director or his designee in writing, subject to the Maximum Contract Amount stated herein. Unless this Agreement is amended in writing according to its terms to increase the Maximum Contract Amount, any increase in the maximum amount of

reimbursable expenses will reduce the Design Consultant's maximum fee amount accordingly.

3.03. Additional Services. If pre-approved additional services are performed by the Design Consultant, the City agrees to pay the Design Consultant for such additional services in accordance with Section 2.08. The maximum amount to be paid by the City for all additional services under this contract is **ZERO DOLLARS AND ZERO CENTS ($0.00)**.

3.04 Invoicing and Payment. The City will make monthly progress payments for all services performed under this Agreement based upon the Design Consultant's monthly invoices. Such invoices shall be in a form acceptable to the City and shall include detail of the time worked by the Design Consultant's own personnel, billings from subcontractors, and all other information necessary to assess the Design Consultant's progress. Invoices shall be accompanied by documentation of expenses for which reimbursement is sought, and all other supporting documentation required by the City. The City's Prompt Payment Ordinance, §§ 20-107 to 20-118, D.R.M.C., applies to invoicing and payment under this Agreement. Final Payment to the Design Consultant shall not be made until after the Project is accepted, and all certificates of completion, record drawings and reproducible copies are delivered to the City, and the Agreement is otherwise fully performed by the Design Consultant. The City may, at the discretion of the Director, withhold reasonable amounts from billing and the entirety of the final payment until all such requirements are performed to the satisfaction of the Director. However, no deductions shall be made from the Design Consultant's compensation on account of penalty, liquidated damages or other sums withheld from payments to contractor(s).

3.05 Maximum Contract Amount.

(a) Notwithstanding any other provision of the Agreement, the City's maximum payment obligation will not exceed **SEVEN HUNDRED FORTY-SIX THOUSAND SIX HUNDRED SIXTY-EIGHT DOLLARS AND EIGHTY SIX CENTS ($746,668.86)** (the "Maximum Contract Amount"). The City is not obligated to execute an Agreement or any amendments for any further services, including any services performed by Design Consultant beyond that specifically described in **Exhibit A**. Any services performed beyond those set forth therein are performed at Design Consultant's risk and without authorization under the Agreement.

(b) The City's payment obligation, whether direct or contingent, extends only to funds appropriated annually by the Denver City Council, paid into the Treasury of the City, and encumbered for the purpose of the Agreement. The City does not by the Agreement irrevocably pledge present cash reserves for payment or performance in future fiscal years, and the Agreement does not and is not intended to create a multiple-fiscal year direct or indirect debt or financial obligation of the City.

(c) The Design Consultant understands and agrees that the provision of any services by the Design Consultant, which would cause the total amount payable to the Design Consultant to exceed the amount of previously appropriated and encumbered funds, is strictly prohibited. In the event the continuation of services by the Design Consultant would cause the amount payable to the Design Consultant to exceed such amounts, the Design Consultant agrees to give to the Project Director at least two (2) weeks notice of the exhaustion of available funds. In the event additional funds are not made available within such two (2) week period, the Design Consultant agrees to stop providing services until such time as additional funds are appropriated and encumbered for the purposes of this Agreement, and amounts which remain available for payment to the Design Consultant

SECTION 4 – TERM AND TERMINATION

4.01 Term.

The Agreement will commence on execution of this Agreement and expire, unless sooner terminated, upon final completion of the Project.

4.02 Termination.

(a) Nothing herein shall be construed as giving the Design Consultant the right to perform the services contemplated under this Agreement beyond the time when its services become unsatisfactory to the Director.

(b) The Director may terminate this Agreement for cause at any time if the Design Consultant's services become unsatisfactory, in the sole discretion of the Director. The City shall have the sole discretion to permit the Design Consultant to remedy the cause of a contemplated termination for cause without waiving the City's right to terminate the Agreement.

(c) In the event of a termination for cause, or in the event the Design Consultant becomes unable to serve under this Agreement, the City may take over work to be done under this Agreement and prosecute the work to the completion by contract or otherwise, and the Design Consultant shall be liable to City for all reasonable cost in excess of what the City would have paid the Design Consultant had there been no termination for cause.

(d) The City may, for convenience, cancel and terminate this Agreement by giving not less than thirty (30) days' prior written notice to the Design Consultant, which notice shall state the date of cancellation and termination.

(e) If the Design Consultant's services are terminated, postponed or revised, or if the Design Consultant shall be discharged before all the work and services contemplated have been completed, or if the project is, for any reason, stopped or discontinued, the Design Consultant shall be paid only for the portion of work or services which has been satisfactorily completed at the time of such dismissal, termination, cancellation, postponement, revision or stoppage.

(f) All drawings, specifications, and other documents relating to the design or administration of work completed or partially completed shall be delivered by the Design Consultant to the City in the event of any dismissal, termination, cancellation, postponement, revision or stoppage.

(g) In the event of any dismissal, termination, cancellation, postponement, revision or stoppage, the Design Consultant shall cooperate in all respects with the City. Such cooperation shall include, but not be limited to, delivery of drawings, specifications, and other documents referred to herein, and assisting the City during a transition to another Design Consultant, if applicable.

SECTION 5 – GENERAL PROVISIONS

5.01 City's Responsibilities.

(a) The City shall provide available information regarding its requirements for each project, including related budgetary information, and shall cooperate fully with the Design Consultant at all times. However, the City does not guarantee the accuracy of any such information and assumes no liability therefore. The Design Consultant shall notify City in writing

of any information or requirements provided by the City which the Design Consultant believes to be inaccurate or inappropriate to the design or construction of the project.

(b) If the City observes or otherwise becomes aware of any fault or defect in the project or non-conformance with Contract Documents, it shall give prompt notice thereof to Design Consultant.

5.02 Ownership of Documents.

(a) The City shall have title and all intellectual and other property rights, in and to all phased and final Design documents, and all data used in the development of the same, including the results of any tests, surveys or inspections at the Project site, and all photographs, drawings, drafts, studies, estimates, reports, models, notes and any other materials or work products, whether in electronic or hard copy format, created by the Design Consultant pursuant to this Agreement, in preliminary and final forms and on any media whatsoever (collectively, the "Documents"), whether the Project for which the Documents were created is executed or not. The Design Consultant shall identify and disclose, as requested, all such Documents to the City.

(b) To the extent permitted by the U.S. Copyright Act, 17 USC § 101 et seq., as the same may be amended from time to time, the Documents are a "work made for hire," and all ownership of copyright in the Documents shall vest in the City at the time the Documents are created. To the extent that the Documents are not a "work made for hire," the Design Consultant hereby assigns and transfers all right, title and interest in and to the Documents to the City, as of the time of the creation of the Documents, including the right to secure copyright, patent, trademark, and other intellectual property rights throughout the world and to have and to hold such copyright, patent, trademark, and other intellectual property rights in perpetuity.

(c) The Design Consultant shall provide (and cause its employees and subcontractors to provide) all assistance reasonably requested in securing for the City's benefit any patent, copyright, trademark, service mark, license, right or other evidence of ownership of such Documents, and shall provide full information regarding the Documents and execute all appropriate documentation in applying for or otherwise registering, in the City's name, all rights to such Documents.

(d) The Design Consultant agrees to allow the City to review any of the procedures used in performing the work and services hereunder, and to make available for inspection the field notes and other documents used in the preparation for and performance of any of the services performed hereunder.

(e) The Design Consultant shall be permitted to retain reproducible copies of all of the Documents for the information and reference, and the originals of all of the Documents, including all CAD disks, shall be delivered to the City promptly upon completion thereof, or if authorized by the City's Project Manager, upon termination or expiration of this Agreement.

5.03 Taxes and Licenses. The Design Consultant shall promptly pay, when they are due, all taxes, excises, license fees and permit fees of whatever nature applicable to the work and services which it performs under this Agreement, and shall take out and keep current all required municipal, county, state or federal licenses required to perform its services under this Agreement. The Design Consultant shall furnish the Director, upon request, duplicate receipts or other satisfactory evidence showing or certifying to the proper payment of all required licenses and/or registrations and taxes. The Design Consultant shall promptly pay all owed bills, debts and

obligations it incurs performing work under this Agreement and shall not allow any lien, verified claim, mortgage, judgment or execution to be filed against land, facilities or improvements owned or beneficially owned by the City as a result of such bills, debts or obligations.

5.04 Examination of Records. Any authorized agent of the City, including the City Auditor or his or her representative, has the right to access and the right to examine any pertinent books, documents, papers and records of the Consultant, involving transactions related to the Agreement until the latter of three (3) years after the final payment under the Agreement or expiration of the applicable statute of limitations. Records of the Design Consultant's direct personnel, consultant and reimbursable expenses pertaining to this Project and records of accounts between the City and the Design Consultant shall be kept on a generally recognized accounting basis.

5.05 Assignment and Subcontracting. The City is not obligated or liable under this Agreement to any party other than the Design Consultant named herein. The Design Consultant understands and agrees that it shall not assign or subcontract with respect to any of its rights, benefits, obligations or duties under this Agreement except upon prior written consent and approval of the City to such assignment or subcontracting. Any attempt by the Design Consultant to assign or subcontract its rights hereunder without such prior written consent of the City shall, at the option of the City, automatically terminate this Agreement and all rights of the Design Consultant hereunder. Such consent may be granted or denied at the sole and absolute discretion of the City. In the event any such subcontracting shall occur, with the City's approval, such action shall not be construed to create any contractual relationship between the City and such subcontractor, and the Design Consultant named herein shall in any and all events be and remain responsible to the City according to the terms of this Agreement.

5.06 No Discrimination in Employment. In connection with the performance of work under this Agreement, the Design Consultant agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability. The Design Consultant agrees to insert the foregoing provision in all subcontracts hereunder.

5.07 Insurance.

(a) **General Conditions:** Design Consultant agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Design Consultant shall keep the required insurance coverage in force at all times during the term of the Agreement, or any extension thereof, during any warranty period, and for eight (8) years after termination of the Agreement. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as "A-"VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the above-described policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, Design Consultant shall provide written notice of cancellation, non-renewal and any

reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City's contract number. If any policy is in excess of a deductible or self-insured retention, the City must be notified by the Design Consultant. Design Consultant shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement are the minimum requirements, and these requirements do not lessen or limit the liability of the Design Consultant. The Design Consultant shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

(b) **Proof of Insurance:** Design Consultant shall provide a copy of this Agreement to its insurance agent or broker. Design Consultant may not commence services or work relating to the Agreement prior to placement of coverages required under this Agreement. Design Consultant certifies that the certificate of insurance attached as **Exhibit C**, preferably an ACORD certificate, complies with all insurance requirements of this Agreement. The City requests that the City's contract number be referenced on the Certificate. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Agreement shall not act as a waiver of Design Consultant's breach of this Agreement or of any of the City's rights or remedies under this Agreement. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

(c) **Additional Insureds:** For Commercial General Liability, Auto Liability Professional Liability (if required), and Excess Liability/Umbrella (if required) Design Consultant and subcontractor's insurer(s) shall include the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured.

(d) **Waiver of Subrogation:** For all coverages required under this Agreement, Design Consultant's insurer shall waive subrogation rights against the City.

(e) **Subcontractors and Subconsultants:** All subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services required by this Agreement) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of the Design Consultant. Design Consultant shall include all such subcontractors as additional insured under its policies (with the exception of Workers' Compensation) or shall ensure that all such subcontractors and subconsultants maintain the required coverages. Design Consultant agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by the City.

(f) **Workers' Compensation/Employer's Liability Insurance:** Design Consultant shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of $100,000 per occurrence for each bodily injury claim, $100,000 per occurrence for each bodily injury caused by disease claim, and $500,000 aggregate for all bodily injuries caused by disease claims. Design Consultant expressly represents to the City, as a material representation upon which the City is relying in entering into this Agreement, that none of the Design Consultant's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall effect such rejection during any part of the term of this Agreement, and that any such rejections previously effected, have been revoked as of the date Design Consultant executes this Agreement.

(g) **Commercial General Liability:** Design Consultant shall maintain a Commercial General Liability insurance policy with limits of $1,000,000 for each occurrence, $1,000,000 for each personal and advertising injury claim, $2,000,000 products and completed operations aggregate, and $2,000,000 policy aggregate.

(h) **Business Automobile Liability:** Design Consultant shall maintain Business Automobile Liability with limits of $1,000,000 combined single limit applicable to all owned, hired and non-owned vehicles used in performing services under this Agreement.

(i) **Professional Liability (Errors & Omissions):** Design Consultant shall maintain limits of $1,000,000 per claim and $1,000,000 policy aggregate limit.

(j) **Additional Provisions:**

(a) For Commercial General Liability, the policy must provide the following:

(i) That this Agreement is an Insured Contract under the policy;

(ii) Defense costs are outside the limits of liability;

(iii) A severability of interests or separation of insureds provision (no insured vs. insured exclusion); and

(iv) A provision that coverage is primary and non-contributory with other coverage or self-insurance maintained by the City.

(b) For claims-made coverage:

(i) The retroactive date must be on or before the contract date or the first date when any goods or services were provided to the City, whichever is earlier

(c) Design Consultant shall advise the City in the event any general aggregate or other aggregate limits are reduced below the required per occurrence limits. At their own expense, and where such general aggregate or other aggregate limits have been reduced below the required per occurrence limit, the Design Consultant will procure such per occurrence limits and furnish a new certificate of insurance showing such coverage is in force.

5.08 Defense & Indemnification.

(a) Design Consultant agrees to defend, indemnify, reimburse and hold harmless City, its appointed and elected officials, agents and employees for, from and against all liabilities, claims, judgments, suits or demands for damages to persons or property arising out of, resulting from, or relating to the work performed under this Agreement ("Claims"), unless such Claims have been specifically determined by the trier of fact to be the sole negligence or willful misconduct of the City. This indemnity shall be interpreted in the broadest possible manner to indemnify City for any acts or omissions of Consultant or its subcontractors either passive or active, irrespective of fault, including City's concurrent negligence whether active or passive, except for the sole negligence or willful misconduct of City.

(b) Design Consultant's duty to defend and indemnify City shall arise at the time written notice of the Claim is first provided to City regardless of whether Claimant has filed suit on the Claim. Design Consultant's duty to defend and indemnify City shall arise even if City is the only party sued by claimant and/or claimant alleges that City's negligence or willful misconduct was the sole cause of claimant's damages.

(c) Design Consultant shall defend any and all Claims which may be brought or threatened against City and shall pay on behalf of City any expenses incurred by reason of such Claims including, but not limited to, court costs and attorney fees incurred in defending and investigating such Claims or seeking to enforce this indemnity obligation. Such payments on behalf of City will be in addition to any other legal remedies available to City and will not be the City's exclusive remedy.

(d) Insurance coverage requirements specified in this Agreement in no way lessen or limit the liability of the Design Consultant under the terms of this indemnification obligation. The Design Consultant is responsible to obtain, at its own expense, any additional insurance that it deems necessary for the City's protection.

(e) This defense and indemnification obligation shall survive the expiration or termination of this Agreement.

5.09 Colorado Governmental Immunity Act. The parties hereto understand and agree that the City is relying upon, and has not waived, the monetary limitations (presently $150,000 per person, $600,000 per occurrence) and all other rights, immunities and protection provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*

5.10 Contract Documents; Order of Precedence. This Agreement consists of Sections 1 through 5, which precede the signature page, and the following attachment, which is incorporated herein and made a part hereof by reference:

Exhibit A	Scope of Work/Rates
Exhibit B	Key Personnel
Exhibit C	ACORD Certificate of Insurance

In the event of an irreconcilable conflict between a provision of Sections 1 through 5 and the listed attachments, or between provisions of any attachments, such that it is impossible to give effect to both, the order of precedence to determine which provision shall control to resolve such conflict, is as follows, in descending order:

Sections 1 through 5
Exhibit A
Exhibit B
Exhibit C

5.11 When Rights and Remedies Not Waived. In no event shall any payment by the City constitute a waiver of any breach of covenant or default which may then exist on the part of the Design Consultant. No assent, expressed or implied, to any breach of the Agreement shall be held to be a waiver of any later or other breach.

5.12 Governing Law; Venue. This Agreement shall be construed and enforced in accordance with the laws of the State of Colorado, the Charter and Revised Municipal Code of the

City and County of Denver, and the ordinances, regulations and Executive Orders enacted or promulgated pursuant to the Charter and Code, including any amendments. The Charter and Revised Municipal Code of the City and County of Denver, as the same may be amended from time to time, are hereby expressly incorporated into this Agreement. Venue for any action arising hereunder shall be in the City and County of Denver, Colorado.

5.13. Conflict of Interest.

(a) The parties agree that no employee of the City shall have any personal or beneficial interest in the services or property described herein, and the Design Consultant further agrees not to hire or contract for services with any employee or officer of the City which would be in violation of the Revised Municipal Code Chapter 2, Article IV, Code of Ethics or Denver City Charter provisions 1.2.9 and 1.2.12.

(b) The Design Consultant agrees that it will not engage in any transaction, activity or conduct that would result in a conflict of interest under this Agreement. The Design Consultant represents that it has disclosed any and all current or potential conflicts of interest. A conflict of interest shall include transactions, activities or conduct that would affect the judgment, actions or work of the Design Consultant by placing the Design Consultant's own interests, or the interests of any party with whom the Design Consultant has a contractual arrangement, in conflict with those of the City. The City, in its sole discretion, shall determine the existence of a conflict of interest and may terminate this Agreement in the event such a conflict exists after it has given the Design Consultant written notice which describes the conflict. The Design Consultant shall have thirty (30) days after the notice is received to eliminate or cure the conflict of interest in a manner that is acceptable to the City.

5.14 No Third Party Beneficiaries. Enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the City and the Design Consultant, and nothing contained in this Agreement shall give or allow any claim or right of action by any other or third person under this Agreement. It is the express intention of the parties that any person other than the City or the Design Consultant receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

5.15 Time is of the Essence. The parties agree that in the performance of the terms, conditions and requirements of this Agreement by the Design Consultant, time is of the essence.

5.16 Taxes, Charges and Penalties. The City and County of Denver shall not be liable for the payment of taxes, late charges, or penalties of any nature except as provided in the City's Prompt Payment Ordinance.

5.17 Proprietary or Confidential Information.

(a) City Information: The Design Consultant acknowledges and accepts that, in performance of it work under the terms of this Agreement, the Design Consultant may have access to Proprietary Data or confidential information which may be owned or controlled by the City and that the disclosure of such data or information may be damaging to the City or third parties. As such, the Design Consultant agrees that all information provided or otherwise disclosed by the City to the Design Consultant be held in confidence and used only in the performance of its obligations under this Agreement. The Design Consultant shall exercise the same standard of care to protect such information as a reasonably prudent Design Consultant would to protect its own proprietary or confidential data. "Proprietary Data" shall mean geographic materials or Geographic Information

Systems ("GIS") data owned by the City and County of Denver including but not limited to maps, computer programs, aerial photography, methodologies, software, diagnostics and documents; or any other materials or information which may be designated or marked "Proprietary" or "Confidential" and provided to or made available to the Design Consultant by the City. Such Proprietary Data may be in hardcopy, printed, digital or electronic format.

(b) Design Consultant's Information: The parties understand that all the material provided or produced under this Agreement may be subject to the Colorado Open Records Act, C.R.S. 24-72-201, et seq., and that in the event of a request to the City for disclosure of such information, the City shall advise the Design Consultant of such request in order to give the Design Consultant the opportunity to object to the disclosure of any of its proprietary or confidential material. In the event of the filing of a lawsuit to compel such disclosure, the City will tender all such material to the court for judicial determination of the issue of disclosure and the Design Consultant agrees to intervene in such lawsuit to protect and assert its claims of privilege and against disclosure of such material or waive the same. The Design Consultant further agrees to defend, indemnify and save and hold harmless the City, its officers, agents and employees, from any claim, damages, expense, loss or costs arising out of the Design Consultant's intervention to protect and assert its claim of privilege against disclosure under this Article including, but not limited to, prompt reimbursement to the City of all reasonable attorney fees, costs and damages that the City may incur directly or may be ordered to pay by such court.

5.18 Use, Possession or Sale of Alcohol or Drugs. The Design Consultant, its officers, agents, and employees shall cooperate and comply with the provisions of Executive Order 94 and Attachment A thereto concerning the use, possession or sale of alcohol or drugs. Violation of these provisions or refusal to cooperate with implementation of the policy can result in the City's barring the Design Consultant from City facilities or participating in City operations.

5.19 No Employment of Illegal Aliens to Perform Work Under the Agreement.

(a) This Agreement is subject to Division 5 of Article IV of Chapter 20 of the Denver Revised Municipal Code, and any amendments (the "Certification Ordinance").

(b) The Design Consultant certifies that:

(1) At the time of its execution of this Agreement, it does not knowingly employ or contract with an illegal alien who will perform work under this Agreement.

(2) It will participate in the E-Verify Program, as defined in § 8-17.5-101(3.7), C.R.S., to confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement.

(c) The Design Consultant also agrees and represents that:

(1) It shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.

(2) It shall not enter into a contract with a subconsultant or subcontractor that fails to certify to the Design Consultant that it shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.

(3) It has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement, through participation in the E-Verify Program.

(4) It is prohibited from using the E-Verify Program procedures to undertake pre-employment screening of job applicants while performing its obligations under the Agreement, and that otherwise requires the Design Consultant to comply with any and all federal requirements related to use of the E-Verify Program including, by way of example, all program requirements related to employee notification and preservation of employee rights.

(5) If it obtains actual knowledge that a subconsultant or subcontractor performing work under the Agreement knowingly employs or contracts with an illegal alien, it will notify such subconsultant or subcontractor and the City within three (3) days. The Design Consultant will also then terminate such subconsultant or subcontractor if within three (3) days after such notice the subconsultant or subcontractor does not stop employing or contracting with the illegal alien, unless during such three-day period the subconsultant or subcontractor provides information to establish that the subconsultant or subcontractor has not knowingly employed or contracted with an illegal alien.

(6) It will comply with any reasonable request made in the course of an investigation by the Colorado Department of Labor and Employment under authority of § 8-17.5-102(5), C.R.S, or the City Auditor, under authority of D.R.M.C. 20-90.3.

(d) The Design Consultant is liable for any violations as provided in the Certification Ordinance. If Design Consultant violates any provision of this section or the Certification Ordinance, the City may terminate this Agreement for a breach of the Agreement. If the Agreement is so terminated, the Design Consultant shall be liable for actual and consequential damages to the City. Any such termination of a contract due to a violation of this section or the Certification Ordinance may also, at the discretion of the City, constitute grounds for disqualifying Design Consultant from submitting bids or proposals for future contracts with the City.

5.20 Disputes. All disputes between the City and Design Consultant regarding this Agreement shall be resolved by administrative hearing pursuant to the procedure established by D.R.M.C. § 56-106(b), *et seq*. For the purposes of that procedure, the City official rendering a final determination shall be the Director.

5.21 Waiver of C.R.S. 13-20-802, et seq. The Design Consultant specifically waives all the provisions of Chapter 8 of Article 20 of Title 13, Colorado Revised Statutes (also designated C.R.S. 13-20-802 *et seq.*) relating to design defects in the Project under this Agreement.

5.22 Survival of Certain Contract Provisions. The parties understand and agree that all terms and conditions of this Agreement, together with the exhibits and attachments hereto, which, by reasonable implication, contemplate continued performance or compliance beyond the termination of this Agreement, (by expiration of the term or otherwise), shall survive such termination and shall continue to be enforceable as provided herein. Without limiting the

generality of the foregoing, the Design Consultant's obligations for the provision of insurance and to indemnify the City shall survive for a period equal to any and all relevant statutes of limitation, plus the time necessary to fully resolve any claims, matters, or actions begun within that period."

5.23 Advertising And Public Disclosure. The Design Consultant shall not include any reference to this Agreement or to services performed pursuant to this Agreement in any of its advertising or public relations materials without first obtaining the written approval of the Director, which will not be unreasonably withheld. Any oral presentation or written materials related to services performed under this Agreement shall include only services that have been accepted by the City. The Director shall be notified in advance of the date and time of any such presentation. Nothing in this provision shall preclude the transmittal of any information to officials of the City, including without limitation the Mayor, the Director, City Council or the Auditor.

5.24 Legal Authority. Design Consultant represents and warrants that it possesses the legal authority, pursuant to any proper, appropriate and official motion, resolution or action passed or taken, to enter into this Agreement. Each person signing and executing this Agreement on behalf of Design Consultant represents and warrants that he has been fully authorized by Design Consultant to execute this Agreement on behalf of Design Consultant and to validly and legally bind Design Consultant to all the terms, performances and provisions of this Agreement. The City shall have the right, in its sole discretion, to either temporarily suspend or permanently terminate this Agreement if there is a dispute as to the legal authority of either Design Consultant or the person signing the Agreement to enter into this Agreement.

5.25 Notices. Notices, bills, invoices or reports required by this Agreement shall be sufficiently delivered if sent in the United States mail, postage prepaid, to the Parties at the following addresses:

to the City:	Executive Director of Public Works 201 West Colfax Avenue, Dept. 601 Denver, Colorado 80202
to the Design Consultant:	HDR Engineering, Inc. 1670 Broadway, Suite 3400 Denver, Colorado 80202

The addresses may be changed by the Parties by written notice.

5.26 Severability. It is understood and agreed by the parties hereto that, if any part, term, or provision of this Agreement, except for the provisions of this Agreement requiring prior appropriation and limiting the total amount to be paid by the City, is by the courts held to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

5.27 Agreement as Complete Integration-Amendments. This Agreement is intended as the complete integration of all understandings between the parties. No prior or contemporaneous addition, deletion or other amendment shall have any force or effect, unless embodied herein in writing. No subsequent novation, renewal, addition, deletion or other amendment hereto shall have any force or effect unless embodied in a written amendatory or other agreement executed by the parties and signed by the signatories to the original Agreement. This

Agreement and any amendments shall be binding upon the parties, their successors and assigns.

5.28 Electronic Signatures and Electronic Records. Design Consultant consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

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Contract Control Number:

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of

SEAL

CITY AND COUNTY OF DENVER

ATTEST:

By_____

_____

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By_____

By_____

By_____

Contract Control Number: PWADM-201737759-00

Contractor Name: HDR ENGINEERING INC

By: R. Bradley Martin

Name: R. Bradley Martin
(please print)

Title: SVP
(please print)

ATTEST: [if required]

By: Alison Berry

Name: Alison Berry
(please print)

Title: Quality and Records Coordinator
(please print)

Exhibit A

HDR Scope of Work for
City and County of Denver Department of Public Works
Professional Design Services: Iowa Underpass
Project: PWT2016-063

Overview and Background
The HDR team will work with the City and County of Denver (CCD) to develop preliminary and final engineering plans, as well as secure NEPA environmental clearance, for sidewalk upgrades along the north side of Iowa Avenue (Santa Fe to Acoma Street), the west side of Santa Fe Drive (Florida Avenue to Jewell Ave) and at the intersection of the two streets.

Project Timeline
Assuming a notice to proceed being issued by September 1st, 2017, the bid documents are anticipated to be completed within a 15-month timeframe before the end of 2018. The project schedule identifies the key project milestones and deliverables during the project's duration.

Task 1. Project Management and Administration (HDR)
This task includes the kick-off meeting coordination and attendance along with the day-to-day management of the project.

Task 1.1 Kick-off Meeting
The first step of this project will include planning, initiating, and attending a project kick-off meeting. The primary objectives of this meeting will be to understand the project goals and critical issues and to review the project scope of services and design fee. It is anticipated that this meeting will occur with appropriate PW- Capital Projects and Transportation & Mobility staff, CCD Parks and Recreation staff, and CDOT's representative at CCD's office or in the field at the project area. The HDR team will assemble an agenda for this meeting and distribute it to CCD prior to the meeting for their review. Items on the agenda will include data collection needs, site-specific constraints and safety issues, alternatives discussion, project schedule, communication protocol and deliverables, as well as other project related issues that CCD would like to discuss at this meeting. It is also anticipated that a site visit will be conducted following the in-office portion of this meeting.
Following the kick-off meeting, we will compile and send out minutes. We will also refine the project schedule, as necessary.

Task 1.2 General Project Administration and Coordination
This task also includes the day-to-day, weekly, and monthly tasks associated with managing and coordinating the project. A project management plan (PMP) including a QA/QC plan will be developed and adhered to. A project schedule will be developed, maintained, and updated monthly. HDR will assist the City with items on CDOT's form 1243. Invoices along with progress reports and project schedule will be generated on a monthly basis. In addition to the kick-off meeting, bi-monthly coordination office calls will be held with CCD staff to discuss project status, upcoming deliverables, and project issues.

Deliverables:
- Kick-off meeting agenda

- Attendance at kick-off meeting
- Preparation of kick-off meeting minutes
- Monthly invoices including progress reports and project schedule
- Bi-weekly half-hour long project coordination calls during design (34 in total)

Task 2. Survey and Right-of-Way (ROW)

This project will include topographic and planimetric survey of the project limits necessary to construct the proposed improvements. Approximate survey limits are shown in the attached exhibit.

Task 2.1 Prepare and Coordinate Topographic/Planimetric Survey and ROW Documents (Eugene Lynne)

Within this task, Eugene Lynne will perform a topographic and planimetric survey that will include right-of-way, utility locates, traffic control, property ownership, and topographic data for the project limits.

A. Eugene Lynne will acquire the appropriate CCD right-of-entry permits necessary to work within the intersection and the adjacent properties and provide necessary traffic control to complete the work. CDOT Form 730 may be used for this purpose.
B. Develop ground coordinate Parcel line-work & property ownership map (CAD file) with color aerial background based on GIS & aerial data from CCD. Aid ROW Acquisition with determining & negotiating parcel impacts & right-of-entry permits.
C. Establish project control datum, set & locate monuments, & prepare control diagram. Surveying and installation of monuments shall be in accordance with CCD requirements, the CDOT Survey Manual, and applicable state statutes. Assume 6 primary monuments total (3 - type 5 / 3 - type 2). Differential levels will be run along Iowa for the structural work, but not along Santa Fe for the trail reconstruction work.
D. Conduct/Attend up to 4 coordination meetings with CCD and CDOT R1 Survey.
E. Depict topography, physical features and utilities on the base mapping along with existing right-of-way and property ownership. Prepare survey control map depicting locations of project monuments. S urveying and installation of monuments shall be in accordance with CCD requirements, the CDOT Survey Manual, and applicable state statutes.
F. Development of topographic data shall follow CCD CAD Standards. Electronic information shall be organized using CCD's file directory structure.
G. Locate subsurface investigation test holes in association with geotechnical investigation.
H. Locate utility potholes in association with Task 7
I. Produce a planimetric map of the project area. Features located will include, but not be limited to surface and subsurface drainage features, irrigation ditches/conduits, lawn irrigation, signs, mailboxes, fences, driveways and/or curb cuts, curbs, sidewalks, and edges of pavements (asphalt and concrete).
J. The field survey will locate utility poles, manholes, valves, pedestals, guy wires, and other visible utility features. Underground utilities will be shown as marked by utility companies. Obtain invert elevations of manholes and vaults. Utility surveys will be accomplished within the project limits. Horizontal and vertical locations will be shown in the design plans and cross-sections within Task 7. "Potholing" of utilities will be performed at critical locations. Attend Utility Coordination meetings as requested.
K. Pipe diameters, inlets, pipe flow directions and invert elevations will be surveyed within identified construction limits.

L. Overhead utilities will be surveyed and identified within project limits.
M. Establish existing and proposed Right of Way (ROW) linework – use to identify full or partial takes necessary for completion of the project. Existing right-of-way limits will be based on CCD record information (deeds, right-of-way plans, plats, assessor's maps, subdivision maps, and land survey plats). This task includes the preparation of up to eight legal exhibits and their inclusion within a right of way plan should they be required. The establishment of range points is included and will be provided in a survey control diagram if necessary.
N. The CAD file will be in Civil3D format with the surface created by the obtained information with points and data residing with the file.
O. Survey will be established using CCD control points. The coordinate system will be based on the CCD Local Low Distortion Projection. Vertical datum will be NAVD88.
P. Provide the team with the projection file for conversion from State Plane to project coordinates.
Q. Establish existing Right of Way (ROW) line-work map (CAD file) based on record documents and recovered field evidence. This does not include subsurface search & recover prior to setting said monument. CCD may require to dig a 3' x 3' x 3' hole around a calculate position to try and recover non matellic monuments. Assume that CCD will provide nine title reports on eight parcels with B2 exceptions. CCD will also provide title commitments on the five parcels (four owners) that we are impacting along the north side of Iowa.
R. Develop proposed Right of Way (ROW) line-work.
S. Prepare an Ownership map and tabulation. Assume 1"=100' with cover sheet and 4 ROW sheets, Assume CCD will obtain title policy.
T. Attend four (4) project meetings and coordinate tasks with City and County of Denver, CDOT, project appraisers, and others involved and/or affected by the project.
U. Prepare legal exhibits and descriptions for land acquisitions and remnant parcels, and temporary construction and permanent easements. These will be reviewed and approved by CCD Survey for content and format. Remnant parcel descriptions are not anticipated to be needed.
V. The City and County of Denver will provide the title documentation and encumbrances.
W. Prepare final ROW plans. Assume a cover sheet, an ownership and tabulation sheet with found and set monumentation, ownership map, two plan sheets and a sheet with found and to be set monumentation. Assuming no ROW monumentation set as part of this project. Revise and submit the ROW plans to CDOT and CCD that address revisions resulting from negotiations during the ROW acquisition.
X. Subsurface search & recovery to locate existing range points, if existing. This includes subsurface search & recover (2 monuments = Cherokee and Iowa and Santa Fe and Iowa) prior to setting said monument. Requires traffic control and potholing. If monument at Santa Fe and Iowa is not found, it will be set. If it is found we will put a range box around it and backfill it.
Y. Set CCD range points - assuming 5 monuments to be set. Assuming 5 range points will need to be set at: 1 - Santa Fe and Iowa (set or recovered per above task with range box), 2 - Iowa and Cherokee (witness corner), 3&4 - Iowa and Railroad ROW (2 witness corners) and 5 – Iowa and Acoma. Assuming no range points set at Santa Fe and Jewell or Santa Fe and Florida.

Deliverables:

- Topographic/Planimetric Survey including survey control diagram

- ROW electronic file in Autodesk format
- Property descriptions and exhibits for temporary construction easements, permanent easements and fee acquisitions, as applicable
- ROW plans, if permanent easements or fee acquisitions are required (hard copy)

Task 2.2 Right-of Way Acquisition (HDR)

This task includes tasks necessary to acquire up to two land and up to six temporary easements needed for the project, including UPRR, BNSF RR and RTD. The following activities will be performed in strict compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, under the oversight of the Colorado Department of Transportation (CDOT), with direction from the City and County of Denver.

Assumptions:

- Internal permissions for portions of the trail to be located on the golf course property will be handled within CCD.
- The value of acquisitions from the private landowners will be less than $25K and will not affect building structures. Appropriate releases will be obtained so they can be valued by waiver valuations (these used to be called value findings). This means appraisals to determine the amount of the offer will not be needed. If the value of acquisitions exceed $25K or appropriate releases cannot be obtained, a modification of the scope will be needed to allow for CCD to obtain appraisals and have such appraisals reviewed.
- The value of the acquisition from private landowners will be greater than $5K, so these landowners will be advised of their right to get an appraisal and, if it meets certain criteria, CCD will be required to pay for it (as required by §38-1-121, C.R.S.). HDR's estimate does NOT include the cost of these appraisals, if landowners obtain them. CCD will be required to pay for such appraisals.
- CCD will retain a title company to provide title commitments for ROW plans development. CCD's contract with the title company will include fees for closings and costs directly.
- New utility easements requiring ROW agreements are not anticipated.

Tasks:

A. Create and maintain project scheduling information of land activities to show the progress of each parcel and to estimate segment completion against established milestone schedules.
B. Attend project meetings and coordinate tasks with City and County of Denver and CDOT. Advise designers of ROW issues during development of design.
C. Review ROW plans & legal descriptions for parcels. Review documents in preparation for negotiation.
D. Prepare waiver valuations using guidelines established by the CDOT appraisal manual.
E. Prepare the following documents: offer letter and summary of just compensation, final offer letter, conveyance documents, and additional correspondence with property owners. Conduct negotiations with each owner for the acquisition of the property rights to be acquired based on the approved fair market value.
F. Order/coordinate warrant requests, obtain partial releases/subordinations and tax pro-rations; coordinate real estate closings.
G. Prepare Acquisition Stage Relocation Plan (7-B Study) of affected properties. Prepare inventories, obtain moving estimates, and determine benefits for tenant relocations. Settle claims for moving costs.

H. Obtain ROW clearance from CDOT for concurrence to advertise.

Deliverables:

- Waiver valuations for affected properties
- Final acquisition files, including negotiation logs
- Acquisition Stage Relocation Plan
- Final relocation files, including determinations and negotiation logs

Task 3. Geotechnical Investigations and Pavement Design (S&W)

This task includes the subsurface investigation for the purposes of final structural geotechnical and foundation recommendations for the project. The task also includes providing boring log plan sheets and materials related project specifications. Depending on findings of the Phase 1 site assessment, perform additional design as required to address existing hazardous materials removal or remediation.

Assumptions:

- The borings will be performed using 4-1/4" hollow-stem auger, with SPT or California sampling at 2-1/2 to 5-foot depth intervals. Borings will be drilled using a truck-mounted drill rig.
- It is assumed fees associated with permits for the borings will be waived by the City and County of Denver (CCD).
- Groundwater monitoring wells are not part of the geotechnical investigation scope but will be installed under Task 13.
- Roadway pavement design will not be required. We anticipate the trail thickness will be based on typical CCD standards and a specific design will not be required.

Tasks:

A. Obtain soil and water samples for soil categorization and analysis. (6 borings are assumed – 2 for walls up to 40-foot depth, 4 for trail up to 10-foot depth).
B. Perform subsurface investigation and perform applicable laboratory tests in support of providing final sidewalk, wall, and wall foundation design, including necessary lateral and global stability analyses.
C. Provide LRFD design parameters for potential wall types. Finalize and provide the sidewalk, wall, and wall foundation design recommendations. Provide final design for up to one wall.
D. Finalize geotechnical considerations and incorporate them into the plans. Provide draft and final reports to CCD for review.
E. Assist in writing project special provisions.
F. Conduct/Attend coordination meetings with CCD. Assume one kickoff meeting, 2 design coordination meetings, FIR/30% design review meeting, FOR/90% review meeting.

Deliverables:

- Draft and final geotechnical report
- Plans, project special provisions, and cost estimate input pertaining to geotechnical investigation and design elements.

Task 4. Streetscape and Landscape Design (HDR)

This task includes preliminary and final design and construction documents for streetscape features for the project described in the overview.

A. Develop aesthetic treatments and details for structural features such as underpasses and retaining walls. Support Electrical and Lighting Analysis & Design to coordinate light locations with streetscape design.
B. Develop plans, specifications and cost estimate for streetscape as well as landscape or historic mitigation within project limits.
C. Develop streetscape quantity tabulations for FIR, 60%, FOR, final review and bid. Provide unit costs for pay items in the tabulations.
D. Conduct/attend coordination meetings with CCD and CDOT on streetscape.

Deliverables:

- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 5. Sidewalk and Curb Design (HDR)

This task includes preliminary and final design of sidewalk and curb and gutter elements for the project as described in the overview.

A. Input and check horizontal and vertical alignments against design criteria including CDOT's Standard Specification for Road and Bridge Construction, CCD Transportation Standards and Details; CCD Parks and Recreation Planning, Design, and Construction Standards; AASHTO Guide for the Development of Bicycle and Pedestrian Facilities; and ADA/PROWAG compliance requirements.
B. Develop sidewalk typical section for north side of Iowa Avenue and west side of Santa Fe Drive (US 85) based on input from project partners, environmental assessment and geotechnical recommendations.
C. Provide alignments, toes of slope and pertinent design features, including permanent and temporary impacts, to the ROW, Utility and Environmental task leads.
D. Develop intersection geometrics and grading. Develop removal plans where applicable.
E. Develop plans for proposed sidewalk alignment. Develop plans for proposed curb and gutter installation.
F. If necessary, document design variances including justification for each variance. Assist CCD with obtaining concurrence from affected agencies for design variances.
G. Generate cross-sections for the design. Label slopes and grades, station and offset to grade breaks and show locations of existing and proposed utilities.
H. Develop 30%, 60%, 90%, final review and bid plans, specifications and cost estimate for sidewalk design, including landscape restoration.
I. Develop quantity tabulations for FIR, 60%, FOR, final review and bid plans. Conduct/Attend coordination meetings with CCD and CDOT pertaining to design.

Deliverables:

- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 6. Utility Coordination (Goodbee)

This task is in support of the City & County of Denver's efforts to coordinate with utility companies and obtain utility agreements with the affected utility companies for the project described in the overview. Assumes up to ten (10) utility owners.

- Utility maps will be acquired from the appropriate utility companies to aid and verify the mapping data collected.
- Meet one-on-one with utility companies and jurisdictions to discuss project scope, utility conflicts, and relocation and mitigation strategies. Set up meetings, develop agendas, facilitate meetings, and develop meeting minutes.
- Obtain easements, license agreements, and relocation agreements from Utility companies as applicable and provide to CCD and CDOT's R1 Utility Engineer.
- Conduct/Attend utility coordination meetings with CCD, Denver Water, and CDOT, separate from one- on-one utility meetings mentioned above.
- After 90% plan review, conduct as needed coordination/comment resolution meetings with utility owners on wet and dry utility design.
- Prepare the utility specification.
- Prepare, coordinate and obtain utility clearance letters with the affected utility agencies.
- Fill out Xcel Energy work order request form and coordinate relocation of light poles with Xcel. Obtain estimates of probable cost for utility relocations that are a cost to the project.
- Obtain utility clearance from CDOT for concurrence to advertise.

Deliverables:

- Utility meeting minutes
- Utility easements, agreements, and clearances

Task 7 - Utility Design (Goodbee)

This task includes potholing, developing existing utility plans and identifying utilities that will be affected by the final design within the project limits, and relocation design of affected wet & dry utilities within the project limits.

- Identify potential utility conflicts between existing utilities and proposed improvements for coordination with design team and utility companies.
- Conduct supplemental utility potholing. (20 potholes are assumed)
- Create pothole location map and log plan sheet(s).
- Prepare existing utility plan sheets showing existing utility facilities, existing utility easements and conflicts with proposed construction.
- Prepare a summary table of utilities within the project limits, noting utility adjustments, relocations and/ or replacement.
- Create an existing manhole log plan sheet(s). Design utility relocations. Assumes DWMD sanitary conflicts can be mitigated and no design will be required. Assumes up to one (1) Denver water line (under 8") will require relocation and design.
- Develop FIR, 60%, FOR, final review and bid plans, specifications and cost estimate for utility relocations.
- Develop utility relocation quantity tabulations for FIR, 60%, FOR, final review and bid.
- Develop tabulation of utility removals and adjustments.
- Check utility clearances and existing utility locations as they relate to proposed grading.

Deliverables:

- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 8 - Structural Engineering (HDR)

This task includes retrofit of an existing retaining wall and design of new retaining walls along the north side of Iowa Avenue for the project limits from the east side of Santa Fe Drive to the west side of Acoma. In addition to the wall design, a pedestrian/bicycle railing will be designed to be installed along the top of the retrofitted wall separating the new bicycle path and Iowa Avenue.

Assumptions:

- Structural design will be based on AASHTO LRFD Bridge Design Specifications, 7th Edition, with 2016 Interim Changes.
- It is assumed that replacement of full-height sections of the existing retaining walls immediately adjacent to Iowa Avenue will not be required. Thus, no redesign of Iowa Avenue due to wall construction is anticipated.
- Analysis of existing wall will be based off of dimensions shown in available as-built drawings dated January 26, 1926. Verification of dimensions will be performed on elements that are currently visible and accessible. Verification of buried or inaccessible wall components is not included in this scope.
- Rehabilitation of the overpassing Railroad and Light Rail bridge structures is not required.
- Structural design of protective fence separating golf course from bikeway is not included.
- Structural design of the bicycle railing will be per AASHTO LRFD Section 13.9. Smaller walls near Santa Fe Drive consisting of a grade separation of 3 feet or less are not well defined at this time. Our assumption is that a vendor supplied block wall or small cast in place wall can be utilized at these locations if necessary. HDR's fee assumes a small amount of hours to account for the structural design and detailing of these walls.
- Railroad submittal packages per Guidelines for Railroad Grade Separations section 3.10 are not included in this scope.
- Design of temporary shoring for construction is not included. This will be the responsibility of the Contractor.
- Modifications or analysis of the existing wall located along the south side of Iowa Avenue is not included.

Tasks:

A. Participate in structural review meetings with the CDOT and CCD's Structural Reviewers. Assume kickoff meeting, up to 5 design coordination meetings, FIR, 60%, FOR and final submittal review meetings.
B. Review existing wall plans
C. Confirm condition listed in inspection report dated 10/07/15 of existing retaining walls through visual assessment and sounding. Coring and testing of samples is not included in this scope of work. Determine extent of necessary sections of removal and repairs.
D. Design the retaining wall modifications and sections of new retaining wall, including necessary rehabilitation on the underpass wall limits, in accordance with CDOT and CCD requirements. Note that the existing walls are cast-in-place but consultant should consider

alternative wall types and present a structure selection report for consideration for new wall sections. Structure selection report should consider the following items: topography, utilities, Right-of-Way restrictions, preliminary hydraulics and geology information, environmental constraints, lighting requirements, railing types, recommendations for structure type, and architectural recommendations.

E. Coordinate and develop aesthetic enhancement details as required on the walls and pedestrian/bicycle railing. Structural design and detailing of the pedestrian/bicycle railing will be performed.
F. Perform final design calculations for the modified wall portions and the rehabilitation limits. The final design calculations shall be submitted upon the completion of the project. This shall include notes, hand-written calculations, spreadsheet printouts, and design program outputs.
G. Develop FIR/30%, 60%, FOR/90%, final review and bid plans, specifications, quantities and cost estimate for the structural elements.

Deliverables:

- Structure selection report for retaining walls
- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 9 – Electrical and Lighting Analysis & Design (Clanton)

This task includes final design of pedestrian and street lighting within the project limits as described in the overview. ADA/AASHTO compliant lighting for pedestrians and cyclists will be required.

- Prepare electrical and lighting design within project limits with the following information shown on the plan sheets:
    - Circuit type and voltage of power source
    - Luminaire type and lumens
    - Light standard type
    - Foundation details (use of industry standard assumed – no site-specific design is included in this scope of work)
    - Size and location of electrical conduit
    - Locations of power sources(s)/lighting control center(s)
    - Location of direct burial cable
    - Size of wiring and/or direct burial cable
- Coordinate electrical utility design in association with Tasks 4 and 7.
- Develop FIR, 60%, FOR, final review and bid plans and specifications for electrical facilities and lighting, plus associated removals of existing electrical and lighting equipment
- Develop electrical and lighting tabulations for FIR, 60%, FOR, final review and bid
- Conduct/Attend electrical and lighting design coordination meetings with CCD, CDOT and appropriate utility agencies

Deliverables:

- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 10 – Traffic Signal Plan (HDR)

This task includes final design for traffic signal related and signing/striping improvements to accommodate pedestrians and bicycles at the intersection of Santa Fe Drive and Iowa Avenue, along the north side of Iowa Avenue and on the west side of Santa Fe Drive. Trail connection to Florida Avenue and Jewell Avenue/Huron Street will also be incorporated, as will transitional trail-to-street wayfinding at the intersection of Iowa Avenue and Acoma St. The proposed design improvements along Florida Avenue and Jewell Avenue/Huron Street will be limited to signing, striping, and wayfinding elements developed using aerial base files.

Assumptions:

- The proposed design improvements along Florida Avenue and Jewell Avenue/Huron Street will be limited to signing, striping, and wayfinding elements developed using aerial base files.
- Design submittals will be submitted electronically in PDF format.

Tasks:

A. Develop 60% design plans and specifications for signal, signing, and striping design elements and removals if necessary.
B. Develop FOR/90% design plans and specifications for signal, signing, and striping design elements and removals if necessary.
C. Develop 100% design plans and specifications for signal design elements and removals if necessary.
D. Develop signal, signing, and striping and removal quantity tabulations for 90% and 100% design.
E. Prepare the Final traffic signal plans, inclusive of final signal interconnect locations, pull boxes, and other required infrastructure. Prepare the “Tabulation of Signal Quantities”.

Deliverables:

- Plans, project special provisions, quantities, and cost estimate information for 60%, FOR, final review and bid.

Task 11 - Hydrology and Hydraulic Analysis & Design (Eugene Lynne)

This task includes analysis and design as necessary in order to support the overall design of the project.

- Basic hydrologic analysis for Iowa underpass system and surface drainage redesign for Santa Fe trail from Florida to Jewell. Existing systems to be protected in place. If formal collection is required within golf course west of Santa Fe, collection will outfall into inlets in Santa Fe and analysis will be based on information from CCD (as-built plans) and conservative assumptions on capacity. Assume minor drainage analysis primarily for Santa Fe Drive trail redevelopment surface drainage and two sets of comments. Reset of inlet box at low point of underpass is not included in this scope of work. No provisions for updates according to Denver Storm Drainage Master Plan (sump inlet was identified in study as major flooding location). No provisions for inlet modifications along Santa Fe

Drive. No CLOMR or no-rise certification is included in estimation. Project impact is outside of mapped floodway, so no FEMA coordination is anticipated.

- Develop FIR, 60%, FOR, final review and bid plans, specifications, and cost estimate for necessary drainage design elements and removals. Assume 4 sheets (cover and 3 plan sheets) and two sets of comments. Assume minor drainage analysis primarily for Santa Fe Drive redevelopment and two sets of comments. Grate replacement for inlet at low point of underpass is not included in this scope of work.
- Develop drainage quantity tabulations for FIR, 60%, FOR, final review and bid plans and specifications. Prepare final drainage report for drainage facilities within the project limits.
- Conduct/Attend coordination meetings with CCD, Denver Water, and CDOT on drainage analysis and design. (Assume 2 meetings). Prepare meeting minutes.
- No provisions for inlet modifications along Santa Fe Drive. Curb and gutter will be replaced, but no redesign or reconstruction of inlets is included.

Deliverables:

- Meeting minutes
- Draft and final drainage report
- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 12 - Water Quality and Erosion Control Analysis & Design (Eugene Lynne)

This task includes design of water quality features as necessary.

- Develop FIR, 60%, FOR, final review and bid plans, specifications and cost estimate for construction and permanent erosion control and water quality BMP's. Assume 4 sheets (cover and 3 plan sheets) and two sets of comments.
- Develop water quality and erosion control quantity tabulations for FIR, 60%, FOR, final review and bid. Assume bioretention or other water quality features along Santa Fe, erosion control measures for Santa Fe and Iowa and WQ insert for low point of underpass (4 sheets).
- Develop water quality design information for final drainage report in conjunction with Task 11.
- Provide assistance to CCD in obtaining miscellaneous permits from CCD departments and outside entities with regard to construction and permanent water quality features / BMP's. Assume minimal assistance required.
- Assume under 1 acre of disturbance, so no CASDP or erosion control plans necessary.
- Conduct/Attend coordination meetings with CCD and CDOT on water quality facility design. (Assume 2 meetings). Prepare meeting minutes.

Deliverables:

- Meeting minutes
- Draft and final water quality report
- Plans, project special provisions, quantities, and cost estimate information for FIR, 60%, FOR, final review and bid.

Task 13 - Environmental Services (Pinyon)

This task is in support of the City and County of Denver's compliance with the National Environmental Policy Act (NEPA) through CDOT. The design team will assist CCD in obtaining an environmental clearance from CDOT, anticipated to be a Categorical Exclusion (CatEx) Determination.

See attached, from Pinyon Environmental, for a detailed Scope of Work.

Task 14 - Construction Traffic Control (HDR)

This task includes developing a schedule of traffic control items for construction of the project including traffic and multimodal movements.

A. Develop construction traffic control plans and specifications, which includes maintaining access to adjacent properties and multi-modal routes. Develop a schedule of construction traffic control items based on traffic control required for detours and construction phasing.

Deliverables:

- Plans, project special provisions, quantities, and cost estimate information for 60%, FOR/90%, and 100% submittals.

Task 15 - Public Outreach and Information (HDR)

This task is in support of the City and County of Denver's public outreach efforts for the project.

Assumptions:

- The Consultant will secure the venue for one public open house in a school in the area or other no-cost facility; assume the venue will have tables and chairs; Consultant will provide meeting logistical materials (easels, projector, screen, etc., as needed)
- As noted in the direct fees spreadsheet:
    - The Consultant will provide the refreshments for the meeting.
    - The Consultant will print materials needs for outreach efforts.
    - The Client will host the webpage for the project and the social media channel/page for the project; content developed by Consultant.
    - Client will provide Consultant with existing stakeholder lists for the project area; Consultant will supplement and maintain the list through the life of the project.
    - The Client and Consultant should agree upon the number of edits/reviews for the collateral materials; the Client should have one point of contact for the Consultant to receive edits from in order to keep collateral development and finalization streamlined and cost-effective.

Tasks:

A. Prepare a Public Outreach Plan
B. Prepare a Public Communication Contact List and Contact Mgmt.
C. Prepare content for project web page updates and social media content.

D. Prepare and summarize online survey hosted on CCD web page
E. Coordinate project updates with Denver Public Works and Denver Parks and Recreation.
F. Coordinate meetings with adjacent property owners, business owners, Overland Park and Ruby Hill neighborhood associations, Mayor's Bicycle Advisory Committee and special districts. (Assumes 5 meetings)
G. Develop graphics, handouts, and other useful media for Open House. Prepare for, send out announcements for, and attend one Open House. Document comments received at Open House.

Deliverables:

- Public Outreach Plan (electronic deliverable only)
- Call and meeting minutes
- Meeting Plan and Summary for Open House Meeting (1)
- Open House Meeting (1) & Accompanying Online Survey
- Landowner/Business Owner, Neighborhood Association & Key Stakeholder Meetings, including documented recap of the meetings including comments
- Collateral Materials (direct costs includes the printing and the add-ons/amenities, like folding, cutting, etc.):
    - *Design/Construction Impact Packets: ~100 folders dependent on finalizing the identified groups; will include appropriate double-sided full color 8.5"x11" sheets outlining specific elements of the project (~8 per packet)*
    - *Brochures: 3,000 double-sided full color trifold 11"x17" sheets*
    - *Fact Sheet (FAQ) Document: Electronic and can be printed as needed*
    - *Direct Mail Postcards: not included in this scope of work.*
    - *Door Hangers: 3,000 double-sided full color with tear-off mailer; distribution will be sourced out and will include GPS map of buildings that were left a door hanger*
    - *Open House Handouts: 300 double-sided full color 11"x17" sheets*
    - *Display Boards: 24 mounted*

- Collateral materials translated into Spanish and incorporated in to the English version.

Task 16 - Multi Agency Involvement & Coordination, Stakeholder Coordination (HDR)

This task is in support of the City and County of Denver's coordination efforts with outside agencies and area stakeholders (developers) related to the project. Efforts for Task 16 that are specific to a discipline, are contained within that discipline task. Additional Meetings are included under Task 1.

- Coordinate the design and concurrence with CCD Agencies/ Departments, Denver Water, CDOT, CDPHE, DRCOG, UPRR, RTD and others.
- Coordinate with project stakeholders including: Metro and Maintenance Districts within the project corridor.

- Conduct/Attend coordination meetings with coordinating agencies. Submittals to affected agencies will be coordinated with CCD.

Deliverables:

- Documentation of calls or meetings with agencies/stakeholders

Task 17 – Design Progress / Coordination Meetings (All)

This task covers project management coordination meetings, consultant team coordination meetings and miscellaneous meetings with CCD staff and outside entities. Efforts for Task 17 are incorporated under previous Tasks.

- Attend project management meetings.
- Attend consultant team coordination meetings.
- Attend outside agency coordination meetings as described in other tasks.
- Attend pertinent meetings with CDOT including, but not limited to, NEPA Environmental Scoping, Access Coordination, Resource-specific meetings, FIR, FOR, and ROWPR.
- Attend 30%/FIR, 60% and 90%/FOR review meetings.
- Attend 30%/FIR, 60% and 90%/FOR comment resolution meetings. Attend final review meeting.
- Prepare agendas, exhibits, handouts, conduct and write minutes for above mentioned meetings. Minutes will be submitted within 7 days of the meetings.
- Prepare agendas, exhibits, handouts, conduct and write meeting minutes for 30%, 60%, and 90% Design Review Meeting. Minutes will be submitted within 7 days of the meeting.

Task 18 – Construction Services

This task covers services conducted during the construction phase.

A. Review submittals and respond to inquiries from field staff as requested. (assumes 120 hours)
B. Respond to RFI's (Request for Information) within three business days (assumes 40 hours)
C. Conduct and attend project meetings (may be on site) when requested. Participate in Substantial Completion walk-through. (Assumes 8 mtgs – 2 people/mtg @ 2 hrs/mtg)
D. Prepare as-built plans based upon redlines by the Contractor and CCD.
E. Provide Quality Assurance Materials Testing (S&W) (see details and assumptions in attached)
    1. Moisture/Density field testing of embankment, aggregate base course, utility structures and trench backfill materials using nuclear gauge.
    2. Laboratory testing of soil and aggregate materials used on site.
    3. Density testing of placed asphalt.
    4. Laboratory testing of asphalt patching per CCD minimum testing frequency requirements.
    5. Field sampling and testing of Portland Cement Concrete Pavement (PCCP) (including trail and roadway), sidewalk, and curb and gutter.

6. Perform compressive strength testing of concrete cylinder samples.
7. Perform engineering review of testing reports and prepare for distribution.

Miscellaneous Requirements

- CAD files/designs shall be produced in AutoCAD Civil 3D 2016. CAD files shall be produced according to CCD CAD Standards and templates. The CCD Custom profile, which runs within AutoCAD C3D, will be provided.
- Electronic Files shall be transmitted to CCD upon completion of the project organized in accordance with the CCD file directory structure.
- Documents shall be provided in a pdf format in addition to the file created by the original program. Plan packages shall be submitted in accordance with CCD's CPEP Plan requirements and CDOT's final PS&E check list (60% through Construction Bid documents will be required).
- The Consultant will be required to develop design documents that are consistent with CDOT's requirements for FIR, FOR, ROWPR, design variances, and other submittals.

City and County of Denver - Iowa Underpass Fee

December 27, 2017

Project Team Member	Project Manager	PIC - QA/QC	Structural Lead	Structural PE	Sr. Project Professional	Design Engineer	Civil EIT	Senior CAD	Civil RR PE	ROW Lead	ROW	ROW	ROW	PI Lead	CADD/PI Graphics	LA	LA	Admin	Controller		
CCD Labor Classification	Sr. PM 2	Sr. PM 2	Des. Eng 3	Des.Eng 2	Proj Prof 2	Des. Eng 2	EIT	Sr Tech	Des. Eng 3	Sr. PM 2	PM - Acq Sup	ROW Acq III	ROW Acq I	PI Specialist	Technician	Sr LA Architect	Site Design Co	PA I	Prj Ctlr	Total Hours	Notes
	Heffron	Nguyen	Sutton	Sweenhart	Plenge	Baker	McPhaul	Kathrineberg	Beasley	Jamieson	Gerondale	Vallard	Pietri	Bettale	Niles/ Langemach	Nesbitt	Strandell	Munch	Cooke		
Billing Rate	$ 195.00	$ 195.00	$ 140.00	$ 125.00	$ 170.00	$ 125.00	$ 95.00	$ 140.00	$ 140.00	$ 195.00	$ 170.00	$ 130.00	$ 85.00	$ 120.00	$ 100.00	$ 200.00	$ 110.00	$ 70.00	$ 80.00		
Task 1. Project Management and Administration																					
a. Project Management- Schedule, Invoicing, Reporting	80																	12	36	128	
b. Meetings and Coordination																					
1. PM mtgs with CCD	24				5															29	
2. Team Coordination Mtgs	30		12	2	6	18	20		2								8			98	
3. Outside Agency Coordination Mtgs	12				5				12											29	
4. Kickoff Mtg	6		2		2	2	2				2						2	2		20	
5. 30% Review/comment resolution Mtg	2		2		1.5	2	2				2						2	2		15.5	
6. 60% Review/comment resolution Mtg	2		2		1.5	2	2				2						2	2		15.5	
7. 90% Review/comment resolution Mtg	2		2		1.5	2	2				2						2	2		15.5	
8. Final Review Mtg	1		1		1.5	2	1				1						1	2		10.5	
Subtotal Project Mgmt	159	0	21	2	24	28	29	0	14	0	9	0	0	0	0	0	17	22	36	361	7%
Subtotal Project Mgmt Fee	$ 31,005	$ -	$ 2,940	$ 250	$ 4,080	$ 3,500	$ 2,755	$ -	$ 1,960	$ -	$ 1,530	$ -	$ -	$ -	$ -	$ -	$ 1,870	$ 1,540	$ 2,880	$ 54,310	
Task 2. Survey and Right-of-Way (ROW)																					
Task 2.1 - Topographic/Planimetric Survey + ROW (Eugene Lynne)																				$ 66,098.20	9%
Task 2.2 - ROW																					
A. Create and Maintain scheduling information											4									4	
B. Coordinate tasks with and advise team										2	8									10	
C. Review ROW plans & legal descriptions	1									2	10									13	
D. Prepare waiver valuations											4	8	8							20	
E. Prepare documents and conduct negotiations											8		24							32	
F. Order/coordinate warrant requests, etc.													4							4	
G. Prepare Acquisition Stage Relocation Plan. Prepare inventories											4	8	8							20	
H. Obtain ROW clearance from CDOT											2									2	
Subtotal Task 2.2	1	0	0	0	0	0	0	0	0	4	40	16	44	0	0	0	0	0	0	105	
Subtotal Task 2.2 Fee	$ 195	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 780	$ 6,800	$ 2,080	$ 3,740	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,595	2%
Subtotal Task 2 Fee																				$ 79,693	11%
Task 3. Geotechnical Investigations & Pavement Design																					
Shannon & Wilson																				$ 41,977.00	6%
Task 4. Streetscape and Landscape Design																					
A. Aesthetic Treament Options & Coordination	4																60			64	
B. Plans, Specs, & Cost Estimate																					
FIR/30%																8	20			28	
60%																	40			40	
FOR/90%																	20			20	
Final																2	20			22	
C. Quantities and unit costs																2	8			10	
D. Coordination Meetings with CCD CDOT	2																8			10	
Subtotal Task 4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	176	0	0	194	
Subtotal Task 4 Fee	$ 1,170	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,400	$ 19,360	$ -	$ -	$ 22,930	3%
Task 5. Sidewalk and Curb Design																					
A. Alignment/Profiles and develop design criteria: Horiz and Veritical alignments, ADA compliance	32				8	12	100													152	
B. Sidewalk Typical Section					1	2	12													15	
C. Coordinate impacts with team	2				1	1	24													28	
D. Develop removals and intersection geometrics					1	4	16													21	
E. Plans for sidewalks and curb & gutter					1	1	52													54	
F. Document design variances	1				1	2	8											2		14	
G. Cross Sections							12													12	
Subtotal	35	0	0	0	13	22	224	0	0	0	0	0	0	0	0	0	0	2	0	296	
1. 30% Design Review																					
a. Prepare 30% Design Submittal	8				2	4	24													38	
c. Opinion of Probable Cost	4				1		4													9	
d. QC		4			1															5	
e. Incorporate City Review Comments						2	12													14	
Subtotal 30% Design	12	4	0	0	4	6	40	0	0	0	0	0	0	0	0	0	0	0	0	66	
1. 60% Design Review																					
a. Prepare 60% Design Submittal	12				2	4	60													78	
b. Draft Specifications	1				1	1	2													5	
c. Opinion of Probable Cost					1		12													13	
d. QC		8			1															9	
e. Incorporate City Review Comments					1	2	12													15	
Subtotal 60% Design	13	8	0	0	6	7	86	0	0	0	0	0	0	0	0	0	0	0	0	120	
2. 90% Design																					
a. Prepare 90% Design Submittal	12				2	4	80													98	
b. Specifications	2				1	1	2													6	
c. Opinion of Probable Cost					1		12													13	
d. QC		8			1															9	
e. Incorporate City Review Comments					1	2	24													27	
Subtotal 90% Design	14	8	0	0	6	7	118	0	0	0	0	0	0	0	0	0	0	0	0	153	
3. 100% Final Bid Documents	4	2	0	0	1	2	24													33	
Subtotal Task 5	78	22	0	0	30	44	492	0	0	0	0	0	0	0	0	0	0	2	0	668	

Subtotal Task 5 Fee	$ 15,210	$ 4,290	$ -	$ -	$ 5,100	$ 5,500	$ 46,740	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 140	$ -	$ 76,980	10%
Tasks 6 & 7 Utility Coordination and Design																					
Goodbee																				$ 40,300	5%
Task 8. Structural Engineering																					
A. Coordination and review meetings (hours under Task 1)																				0	
B. Review existing plans			8	8																16	
C. Confirm condition of existing walls	1		4	16																21	
D1. Design of existing retaining wall modifications			40	32				16												88	
D2. Design of new retaining walls (north side of Iowa)			46	36																82	
D3. Wall selection report	2		52	40																94	
D4. Design of Pedestrian Railing			10	28																38	
D5. Design of new retaining walls (near Santa Fe)	1		10	16				10												37	
E. Coordinate aesthetic enhancements	1		8					2												11	
F1. Compilation and submittal of calculations			8	16																24	
F2. Calculation and Check of Quantities for Estimate			24	24				2												50	
G1. FIR 30% plans, estimate			16	8				24												48	
G2. 60% plans, estimate			36	10				40												86	
G3. FOR/90% plans, specs, estimate			24	16				40												80	
G4. Final plans, specs, estimate			12																	12	
Subtotal Task 8	5	0	298	250	0	0	0	134	0	0	0	0	0	0	0	0	0	0	0	687	
Subtotal Task 8 Fee	$ 975	$ -	$ 41,720	$ 31,250	$ -	$ -	$ -	$ 18,760	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 92,705	12%
Task 9. Electrical and Lighting Analysis & Design																					
Clanton																				$ 37,520	5%
Task 10. Traffic Signal Plans																					
A. FIR 30% plans, estimate					4	36									20					60	
B. 60% plans, estimate					4	16									24					44	
C. FOR/90% plans, specs, estimate					4	12									24					40	
D. Final plans, specs, estimate					4	8									12					24	
Subtotal Task 10	0	0	0	0	16	72	0	0	0	0	0	0	0	0	80	0	0	0	0	168	
Subtotal Task 10 Fee	$ -	$ -	$ -	$ -	$ 2,720	$ 9,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,000	$ -	$ -	$ -	$ -	$ 19,720	3%
Task 11. Hydrology and Hydraulic Analysis and Design																					
Eugene Lynne																				$ 17,635.00	2%
Task 12. Water Quality and Erosion Control Analysis & Design																					
Eugene Lynne																				$ 11,935.00	2%
Task 13. Environmental Services																					
Pinyon Environmental																				$ 30,264.66	4%
Task 14. Construction Traffic Control																					
A. FIR 30% plans, estimate					1	8									16					25	
B. 60% plans, estimate					2	12									24					38	
C. FOR/90% plans, specs, estimate					4	16									16					36	
D. Final plans, specs, estimate					1	8									12					21	
Subtotal Task 14	0	0	0	0	8	44	0	0	0	0	0	0	0	0	68	0	0	0	0	120	
Subtotal Task 14 Fee	$ -	$ -	$ -	$ -	$ 1,360	$ 5,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,800	$ -	$ -	$ -	$ -	$ 13,660	2%
Task 15. Public Outreach and Information																					
A. Public Outreach Plan														2				4		6	
B. Communication Contact List and Contact Mgmt														2				40		42	
C. Content for web page and social media														6	16			18		40	
D. Online Survey														4				10		14	
E. Coordinate project updates with team and CCD departments														16						16	
F. One-on-one mtgs with property/business owners, neighborhood associations, special districts (5 mtgs)	10													20				40		70	
G. Graphics, handouts, media for open house	2													12	80			60		154	
Subtotal Task 15	12	0	0	0	0	0	0	0	0	0	0	0	0	62	96	0	0	172	0	342	
Subtotal Task 15 Fee	$ 2,340	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,440	$ 9,600	$ -	$ -	$ 12,040	$ -	$ 31,420	4%
Task 16. Multi Agency Involvement & Coordination, Stakeholder Coordination																			Covered under previous Tasks		
Task 17. Design Progress / Coordination Meetings																			Covered under previous Tasks		
Task 18. Construction Services - to be included under a future scope of work																					
PROJECT TOTALS	**261**	**22**	**319**	**252**	**78**	**188**	**521**	**134**	**14**	**4**	**49**	**16**	**44**	**62**	**244**	**12**	**193**	**196**	**36**	**2,645**	
HDR LABOR COST	**$ 50,895**	**$ 4,290**	**$ 44,660**	**$ 31,500**	**$ 13,260**	**$ 23,500**	**$ 49,495**	**$ 18,760**	**$ 1,960**	**$ 780**	**$ 8,330**	**$ 2,080**	**$ 3,740**	**$ 7,440**	**$ 24,400**	**$ 2,400**	**$ 21,230**	**$ 13,720**	**$ 2,880**	**$ 325,320.00**	

OTHER DIRECT COSTS		
Mileage	**$**	**-**
Public Info/Mtg Materials	**$**	**5,500.00** boards, h
Spanish Translation	**$**	**1,500.00**
Printing, Other	**$**	**2,000.00**
TOTAL ODC'S	**$**	**9,000.00**
SUBCONSULTANTS		
Clanton & Associates (DBE) - Labor	**$**	**37,520.00**
Clanton & Associates (DBE) - Expenses	**$**	**500.00**
Eugene Lynne (DBE) -- Labor	**$**	**85,065.00**
Eugene Lynne (DBE) - Expenses	**$**	**10,603.20**
Goodbee (DBE) - Labor	**$**	**40,300.00**
Goodbee (DBE) - Expenses	**$**	**19,950.00**
Pinyon Environmental (DBE) - Labor	**$**	**146,169.00**
Pinyon Environmental (DBE) - Expenses	**$**	**30,264.66**
Shannon & Wilson - Labor	**$**	**32,753.00**
Shannon & Wilson - Expenses	**$**	**9,224.00**
TOTAL PROJECT COSTS	**$**	**746,668.86**

CLANTON & ASSOCIATES

LIGHTING DESIGN AND ENGINEERING

August 8, 2017

Tammy C Heffron
HDR Engineering
1670 Broadway, Suite #3400
Denver, CO 80202
Tammy.Heffron@hdrinc.com

Re: City and County of Denver Iowa Underpass
Lighting and Electrical Design Consulting Proposal

Clanton and Associates proposes to undertake the lighting and electrical consulting for the City and County of Denver Iowa Underpass Project in Denver, CO.

Estimated labor:	$37,520
Estimated expenses:	$ 500
Total Fee (labor and expenses):	**$38,020**

The scope of work includes:

1. Iowa Railroad Underpass pedestrian lighting
2. Santa Fe from Florida to Evans Streetlighting

Design services shall include the following:

FIR Design (30%) **$12,900**

- Kickoff meeting
- Site visit to observe existing lighting conditions
- Establish basis of design
- Preliminary lighting design
- Luminaire selection
- Preliminary lighting calculations
- Preliminary electrical design
- Preliminary tabulation of approximate quantities
- Preliminary specifications
- Utility coordination
- Opinion of Probable Cost (Tabulation)
- Up to one submittal (30% set)
- Up to one design meeting
- Attendance at 30% Review meeting in Denver

FOR Design (90%) **$11,450**

- Incorporate comments from 30% Review
- Updated lighting layout
- Updated lighting details
- Luminaire schedule
- Updated lighting calculations

- Updated electrical design
  - Panel schedules
  - One line diagrams
  - Lighting Control Centers, including short circuit calculations and feeder sizing
  - Circuiting and conduit, including voltage drop calculations and conduit sizing
  - Electrical details
- Updated specifications
- Tabulation of Approximate Quantities
- Opinion of Probable Cost (Tabulation)
- Up to one submittal
- Attendance at 90% Review meeting in Denver

Final Design (100%) **$8,585**

- Incorporate comments from 90% Review
- Final lighting layout
- Final lighting details
- Luminaire schedule
- Final electrical design
  - Panel schedules
  - One line diagrams
  - Lighting Control Centers, including short circuit calculations and feeder sizing
  - Circuiting and conduit, including voltage drop calculations and conduit sizing
  - Electrical details
- Final specifications
- Tabulation of Approximate Quantities
- Up to one submittals
- Up to one design meeting
- Attendance at 100% Review meeting in Denver

Bid Set **$4,585**

- Incorporate comments from 100% review
- Lighting plans
- Lighting details
- Luminaire schedule
- Electrical design
  - Panel schedules
  - One line diagrams
  - Lighting Control Centers, including short circuit calculations and feeder sizing
  - Circuiting and conduit, including voltage drop calculations and conduit sizing
  - Electrical details
- Specifications
- Tabulation of Approximate Quantities
- Up to one submittal (Bid Set)
- Up to one (1) design meeting

This scope of work is based upon normal project progress and within the time schedule agreed upon, without major redesign or change order work. Additional fees will be required if project timing is extended or project is put on hold and restarted at later date. If the project timing exceeds one year, additional services rates may increase.

Specific exclusions from this scope are as follows:

- Construction administration and/or services during construction
- Structural engineering
- Any development, design, or detailing of custom luminaires
- Equipment procurement
- Commissioning

Client will supply Clanton and Associates with review materials and backgrounds in AutoCAD or Micro Station format. Reimbursable expenses shall include printing costs, overnight delivery and travel expenses associated with the project and shall be charged in addition to the compensation for professional services. Payment for services is expected within 30 days of invoice unless other arrangements are made in writing.

Additional services shall be charged at the following hourly rates:

Senior Principal	$260 / hr
Senior Designer	$180 / hr
Senior Engineer	$115 / hr
Engineer	$ 95 / hr
Designer	$ 95 / hr
Intern	$ 80 / hr
Production Manager	$115 / hr
Senior CADD Technician	$ 95 / hr
CADD Technician	$ 70 / hr
Administration	$ 65 / hr

This agreement is valid for 60 days.

CLANTON & ASSOCIATES — August 8, 2017 DATE

HDR ENGINEERING — DATE

EUGENE LYNNE

	TASK	Project Principal	$125	Project Engineer	$115	Project Surveyor	$115	Engineer Technician	$90	Survey Technician	$90	Drafting Technician	$75	Field Technician	$115	Field Mileage (0.535/mile)	Traffic Control & Permit Lump Sum	Utility Locates	Monument Material Costs	Coring Costs	Reimbursable Subtotal	Hours Subtotal	Fee Subtotal	Total	Notes
	Task 2 - Survey - As outlined below																								Sub-tasks have been rearranged to better group work and deliverables.
1	Develop ground coordinate Parcel line-work & property ownership map (CAD file) with color aerial background based on GIS & aerial data from CCD.		$0		$0	2	$230		$0	6	$540		$0		$0						$0	8	$770	$770	Aid ROW Acquisition with determining & negiotating parcel impacts & right-of-entry permits.
2	Establish project control datum, set & locate monuments, & prepare control diagram. All work of surveying and installation of monuments shall be in accordance with CCD requirements, the CDOT Survey Manual, and applicable state statutes.		$0		$0	2	$230		$0	20	$1,800		$0	36	$4,140	$43		$600	$200		$843	58	$6,170	$7,013	Assume 6 primary monuments total (3 - type 5 / 3 - type 2). Differential levels will be run along Iowa for the structural work, but not along Santa Fe for the trail reconstruction work.
3	If required, obtain required right-of-entry permits for survey and geotechnical investigation associated with Task 3. CDOT Form 730 may be used for this purpose.					8	$920			8	$720										$0	16	$1,640	$1,640	Eight landowners and nine parcels (public and private) anticipated to coordinate with for right of entry.
4	Conduct/ Attend coordination meetings with CCD and CDOT RI Survey.	2	$250		$0		$0		$0		$0		$0		$0						$0	2	$250	$250	Assume one meeting associated with Task 3 and one with Task 7
5	Develop planimetric & contour map (CAD file) depicting topography, physical surface features and surface utilities of the project area as determined by HDR on 6/14/2017 and depicted on the attached map (kml file). Features located will include, but not be limited to surface drainage features, irrigation ditches, signs, mailboxes, fences, driveways and/or curb cuts, curbs, sidewalks, and edges of pavements (asphalt and concrete). Two days of traffic control are anticipated to allow safe access along the north side of W Iowa Ave (underpass area) and at the intersection of Santa Fe & W Iowa Ave.		$0		$0		$0		$0	24	$2,160		$0	60	$6,900	$75	$3,000				$3,075	84	$9,060	$12,135	Project area as determined by HDR on 6/14/2017 and depicted on the attached map (kmz file). Assuming that storm drain inverts will be located at Iowa northern inlets and Santa Fe western inlets, but no storm drain locates picked up within Santa Fe or Iowa road section.
6	Locate subsurface investigation test holes in association with Task 3.		$0		$0		$0		$0		$0		$0	4	$460	$11					$11	4	$460	$471	
7	Locate utility potholes in association with Task 7.		$0		$0		$0		$0		$0		$0	4	$460	$11					$11	4	$460	$471	
8	Obtain utility location maps from the Utility Companies, which identify utility facility locations in the project area.																				$0				NAP of Scope - Task 6 & 7
9	The field survey will locate utility poles, manholes, valves, pedestals, guy wires, and other visible surface utility features. Underground utilities will be shown as marked by a utility locating company under Task 6 &/or 7. Obtain invert elevations of manholes and vaults. Utility surveys will be accomplished within the project limits as determined by HDR on 6/14/2017 and depicted on the attached map (kml file). Show the horizontal and vertical locations in the planimetric map (CAD file) or separate utility map (CAD file). "Potholing" of utilities will be performed at critical locations. Locate storm sewer pipes and inlets and determine invert elevations in association with Task 7. Attend Utility Coordination meetings as requested.	3	$375		$0		$0		$0	24	$2,160		$0	32	$3,680	$32	$1,500				$1,532	59	$6,215	$7,747	Assume utility locates by others and cost (task 6 & 7) not included. Assume 3 coordination meetings.
	Subtotal Task 2	**5**	**$625**	**0**	**$0**	**12**	**$1,380**	**0**	**$0**	**82**	**$7,380**	**0**	**$0**	**136**	**$15,640**	**$171**	**$4,500**	**$600**	**$200**	**$0**	**$5,471**	**235**	**$25,025**	**$30,496**	
	Task 2A - ROW Documents (5' min. distance from existing wall) This task includes developing final Right-of-Way (ROW) plans in accordance with CDOT policies and procedures for properties along the north ROW line of W Iowa Ave. It is anticipated that 2 temporary easements at the least will be needed, with the potential for 2 acquisitions in the form of a permenant easement &/or fee ROW take.																								Sub-tasks have been rearranged to better group work and deliverables. Assume 3 parcels (5 sheets)
1	Establish existing Right of Way (ROW) line-work map (CAD file) based on record documents and recovered field evidence.				$0	12	$1,380		$0	40	$3,600	8	$600	45	$5,175	$54					$54	105	$10,755	$10,809	This does not include subsurface search & recover prior to setting said monument. CCD may require to dig a 3' x 3' x 3' hole around a calculate position to try and recover non matellic monuments. Assume that CCD will provide nine title reports on eight parcels with B2 exceptions. CCD will also provide title commitments on the five parcels (four owners) that we are impacting along the north side of Iowa.
2	Develop proposed Right of Way (ROW) line-work.		$0		$0		$0		$0	2	$180	8	$600		$0						$0	10	$780	$780	
3	Prepare an Ownership map and tabulation.		$0		$0	4	$460		$0		$0	16	$1,200		$0						$0	20	$1,660	$1,660	Assume 1"=100' with cover sheet and 4 ROW sheets, Assume CCD will obtain title policy.
4	Prepare legal exhibits and descriptions for all land acquisitions and remnant parcels, and temporary construction and permanent easements. These will be reviewed and approved by CCD Survey for content and format.				$0	8	$920		$0	24	$2,160	8	$600		$0						$0	40	$3,680	$3,680	Remnant parcel descriptions are not included in this cost, because CDOT does not typically survey the remainder of impacts.
5	Prepare final ROW plans.		$0		$0	6	$690		$0	8	$720	32	$2,400		$0						$0	46	$3,810	$3,810	Assume a cover sheet, an ownership and tabulation sheet with found and set monumentation, ownership map, two plan sheets and a sheet with found and to be set monumentation. Assuming no ROW monumentation set as part of this project.
	Prepare an initial, rough appraisal if requested.		$0		$0		$0		$0		$0		$0		$0						$0	0	$0	$0	NAP of Scope - HDR 2B (ROW Acquisition) Task
6	Provide field appraisal stakes if requested.		$0		$0		$0		$0		$0		$0	6	$690	$11					$11	6	$690	$701	
7	Conduct/ Attend a ROWPR.	3	$375		$0		$0		$0		$0		$0		$0						$0	3	$375	$375	
8	Revise the ROW plans based on comments received at the ROWPR.				$0		$0		$0	4	$360	16	$1,200		$0						$0	20	$1,560	$1,560	
9	Conduct/ Attend coordination meetings with CCD and CDOT RI Survey.	6	$750		$0		$0		$0		$0		$0		$0						$0	6	$750	$750	Assuming 3 meetings not including ROWPR
10	Revise and submit the ROW plans to CDOT and CCD that address revisions resulting from negotiations during the ROW acquisition.		$0		$0		$0		$0	4	$360	4	$300		$0						$0	8	$660	$660	
11	Subsurface search & recovery to locate existing range points, if existing.		$0		$0	4	$460		$0	4	$460		$0	12	$1,380	$21	$1,500	$800	$150	$1,200	$3,671	20	$2,300	$5,971	This includes subsurface search & recover (2 monuments = Cherokee and Iowa and Santa Fe and Iowa) prior to setting said monument. Requires traffic control and potholing. If monument at Santa Fe and Iowa is not found, it will be set. If it is found we will put a range box around it and backfill it.
12	Set CCD range points - assuming 5 monuments to be set.		$0		$0	5	$575		$0	5	$575		$0	20	$2,300	$21		$1,000	$375		$1,396	30	$3,450	$4,846	Assuming 5 range points will need to be set at: 1 - Santa Fe and Iowa (set or recovered per above task with range box), 2 - Iowa and Cheorkee (witness corner), 3,4 - Iowa and Railroad ROW (2 witness corners), 5 - Iowa and Acoma. Assuming no range points set at Santa Fe and Jewell or Santa Fe and Florida.
	Subtotal Task 2A	**9**	**$1,125**	**0**	**$0**	**39**	**$4,485**	**0**	**$0**	**91**	**$8,415**	**92**	**$6,900**	**83**	**$9,545**	**$107**	**$1,500**	**$1,800**	**$525**	**$1,200**	**$5,132**	**314**	**$30,470**	**$35,602**	
	Task 11 - Hydrology and Hydraulic Analysis & Design																								
1	Basic hydrologic analysis for Iowa underpass system and surface drainage redesign for Santa Fe trail from Florida to Jewell. Existing systems to be protected in place. If formal collection is required within golf course west of Santa Fe, collection will outfall into inlets in Santa Fe and analysis will be based on information from CCD (as-built plans) and conservative assumptions on capacity.	8	$1,000	16	$1,840		$0		$0		$0		$0		$0							24	$2,840	$2,840	Assume minor drainage analysis primarily for Santa Fe Drive trail redevelopment surface drainage and two sets of comments. No provision for resetting of inlet box at low point of underpass. No provisions for updates according to Denver Storm Drainage Master Plan (sump inlet was identified in study as major flooding location). No provisions for inlet modifications along Santa Fe Drive. No CLOMR or no-rise certification is included in estimation. Project impact is outside of mapped floodway, so no FEMA coordination is anticipated.
2	Develop FIR, 60%, FOR, final review and bid plans, specifications, and cost estimate for any necessary drainage design elements and removals	8	$1,000	40	$4,600		$0	24	$2,160		$0		$0		$0							72	$7,760	$7,760	Assume 4 sheets (cover and 3 plan sheets) and two sets of comments
3	Develop drainage quantity tabulations for FIR, 60%, FOR, final review and bid plans and specifications.	1	$125	8	$920		$0	24	$2,160		$0		$0		$0							33	$3,205	$3,205	Assume minor drainage analysis primarily for Santa Fe Drive redevelopment and two sets of comments. Potential for grate replacement on inlet at low point of underpass. No inlet or storm drain replacement on Santa Fe.
4	Prepare final drainage report for drainage facilities within the project limits.		$0	8	$920		$0	24	$2,160		$0		$0		$0							32	$3,080	$3,080	Assume minor drainage analysis primarily for Santa Fe Drive redevelopment and two sets of comments. Potential for grate replacement on inlet at low point of underpass. No inlet or storm drain replacement on Santa Fe.
5	Conduct/Attend coordination meetings with CCD, Denver Water, and CDOT on drainage analysis and design.	6	$750		$0		$0		$0		$0		$0		$0							6	$750	$750	Assume 2 meetings
	Subtotal Task 11	**23**	**$2,875**	**72**	**$8,280**	**0**	**$0**	**72**	**$6,480**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$0**	**167**	**$17,635**	**$17,635**	
	Task 12 - Water Quality and Erosion Control Analysis & Design																								
1	Develop FIR, FOR, final review and bid plans, specifications and cost estimate for construction and permanent erosion control and water quality BMP's.	4	$500	32	$3,680		$0	20	$1,800		$0		$0		$0							56	$5,980	$5,980	Assume 4 sheets (cover and 3 plan sheets) and two sets of comments
2	Develop water quality and erosion control quantity tabulations for FIR, FOR, final review and bid.	1	$125	8	$920		$0	24	$2,160		$0		$0		$0							33	$3,205	$3,205	Assume bioretention or other water quality features along Santa Fe, erosion control measures for Santa Fe and Iowa and WQ insert for low point of underpass (4 sheets).
3	Develop water quality design information for final drainage report in conjunction with Task 11.		$0		$0		$0	12	$1,080		$0		$0		$0							12	$1,080	$1,080	
4	Provide assistance to CCD in obtaining miscellaneous permits from CCD departments and outside entities with regard to construction and permanent water quality features / BMP's.		$0	8	$920		$0		$0		$0		$0		$0							8	$920	$920	Assume minimal assistance required.
5	Prepare the CASDP and supporting plans.		$0		$0		$0		$0		$0		$0		$0							0	$0	$0	Assume under 1 acre of disturbance, so no CASDP or erosion control plans necessary.
6	Conduct/Attend coordination meetings with CCD, Denver Water, and CDOT on drainage analysis and design.	6	$750		$0		$0		$0		$0		$0		$0							6	$750	$750	Assume 2 meetings
	Subtotal Task 12	**11**	**$1,375**	**48**	**$5,520**	**0**	**$0**	**56**	**$5,040**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$0**	**115**	**$11,935**	**$11,935**	
	Totals Tasks 2, 2A, 11 and 12	**48**	**$6,000**	**120**	**$13,800**	**51**	**$5,865**	**128**	**$11,520**	**173**	**$15,795**	**92**	**$6,900**	**219**	**$25,185**	**$278**	**$6,000**	**$2,400**	**$725**		**$10,603**	**831**	**$85,065**	**$95,668**	

General Statement of Work: The project includes upgrades to sidewalks along the north side of Iowa Avenue, the west side of Santa Fe Drive and at the intersection of the two streets. The project will also include removal of existing staircases, installation of ADA-compliant ramps, alterations or new installation of retaining walls, possible ROW acquisition and lighting improvements as necessary. In addition, the project will require environmental analysis, pedestrian/bicycle signal improvements, protective fencing, upgraded light standards along Santa Fe (to match the Florida Street corridor), resetting fences, and the installation ofwayfinding signage and 20 bicycle racks.

831 $95,668.20

$95,668.20

Goodbee and Associates, Inc.
Iowa Underpass
8/7/2017

Task	Description of Activities /Assumptions	*Role*	PM III	PM II	PM II	Designer	Administrator	CAD I/ Coord 1		Total Hrs.	
		GA CCD Attachment 3	$140/hr	$125/hr	$125/hr	$100/hr	$100/hr	$75/hr			
Task 1. Project Mgmt.	Project Meetings (assume 4 meetings at CCD) including kick-off and project management/consultant team meetings as requested			12						12	$1,500
	Monthly progress reports and invoicing. Assume 18 months.			9			18			27	$2,925
Task 6 and 7: Utility Coordination and Design	**Data Collection**: Run UNCC database search to identify current utility owners with facilities in project area. Contact utility owners to confirm presence of facilities in project area and obtain contact information, key maps, easements, license agreements, etc.. Prepare utility contact list. Assume 10 utility owners.			2				10		12	$1,000
	Locates: Hire private locator to mark utilities at critical locations for 30% submittal. Hire private locator to mark utilities along remainder of proposed alignment of MSS alignment. Check locate sketch with key maps. Follow up with locator/utility owner regarding discrepancies. Field check locate sketch. Coordinate with surveyor to have locates surveyed. Field verify utility survey file. Revise existing utility CAD file per locates and new survey.			16				8		24	$2,600
	30% Utility Plan Submittal - Using the utility survey file as a basis, prepare CAD file showing existing wet and dry utilities. Existing utilities shown and potential conflicts identified on 30% plans. Assume no more than 10 sheets. Attend 30% plan review meeting and distribute 30% plans to utility owners.			16	2			24		42	$4,050
	Utility Coordination: Meet one-on-one with utility companies to discuss project scope, potential conflicts, and relocation and mitigation strategies. Set meetings, agendas, facilitate, and provide meeting minutes. Assume 10 utility owners held over 2-3 days.			40				4		44	$5,300
	Utility Test Holes (potholing): Prepare preliminary pothole plan with input from client and design team. Mark preliminary pothole locations for UNCC locates by potholing contractor. Field meet with contractor to mark final pothole locations. Coordinate with contractor during potholing. Field verify pothole logs with pothole markings. Coordinate with project surveyor to have potholes surveyed. Update existing utility CAD file with pothole survey data. Prepare pothole table. Assume 20 potholes over 3 days in one or two phases.			20				8		28	$3,100
	60% Utility Plans: Update utility conflicts based on one-on-one meetings, test hole depths, and revised design. Attend 60% review meeting			16	2			30		48	$4,500
	Draft Denver Water Plans: draft plans and specifications for Denver Water review			1	12			20		33	$3,125
	90% Utility Plan Submittal: Revise 60% plans. Distribute plans to utility owners. Prepare utility project special provisions describing work to be done by Contractor and each utility owner. Attend FOR meeting.			12	2			20		34	$3,250
	Utility Coordination: Coordinate relocation of utilities after 90% comments have been addressed. Assume field meeting required with 6 utility owners, held over 2 days.			20						20	$2,500
	Work Orders/Utility Agreements: Develop Xcel work request for work to be done on Xcel facilities. Prepare draft clearance letters for CDOT utility clearance process.			16	2					18	$2,250
	Final Denver Water Plans: final plans and specifications for Denver Water review			2	12			6		20	$2,200
	100% Utility Plans: Revise utility plans and spec per comments on/design changes to 90% submittal. Update Xcel work request as needed.			2	1			8		11	$975
	Advertisement/Bid Plans for utilities			2	1			2		5	$525
	Provide support during bid process including attendance at pre-bid meeting, responses to bidder questions.			4						4	$500
Task 18: Construction Support Services	Provide utility coordination support during construction - excluded from this SOW			0						0	$0
										0	$0
TOTAL LABOR			**0**	**190**	**34**	**0**	**18**	**140**	**0**	**382**	**$40,300**

Item	# of Units	Units	Unit Price	Subtotal
Private locator - to designate utilities at critical locations where cuts may occur. Private utility locates for entire study area not included.	40	hours	$150	$6,000
Utility test holes (potholing) contractor	20	each	$250	$5,000
Pothole restoration	20	each	$200	$4,000
Traffic Control during potholing/MHTs	3	days	$1,250	$3,750
Review Fees - DW review fee between 301 to 2,500 LF	1	each	$1,200	$1,200
TOTAL ODCs				**$19,950**

TOTAL ESTIMATE **$60,250**

Assumptions and Exclusions:

1. Task 6 Utility Coordination and Task 7 Utility Design for upgraded sidewalk on west side of Santa Fe between Florida and Jewell and sidewalk, ramps, wall upgrades on the north side of Iowa Avenue.
2. Assume a 18 month period of performance.
3. CAD work in AutoCAD. Assumes preparation of separate utility plans (wet and dry) at 30%, 60%, 90%, 100% and Advertisement plans, specification, and cost estimates. Utility plans assumed to be 1"=50' and include 1 cover sheet, 1 pothole table, and 8 plan sheets (total of 10 sheets).
4. Private locator, utility test holes (potholing), and traffic control costs are estimates only. Bid for actual costs to be obtained following NTP. Survey will be provided by others to incorporate utility locate and test hole markings.
5. Coordinate with Task 9 for Xcel power drops.
6. Denver Water relocation plans for review and approval by Denver Water. Goodbee design assumes that no more than one line (under 8") will require relocation. Denver Water relocation plan set assumes cover sheet, water only plan, overall utility plan, typical street cross sections (assuming base cross section provided by prime), water plan (1"=30') and profile sheets (no more than 3 sheets), and details and specifications.
7. Assume that sanitary relocations are show on Denver Water Plan or on other sheets by prime.
8. Assume DWMD sanitary conflicts can be mitigated and no design will be required.

Pinyon Environmental, Inc.

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September 1, 2017

Tammy Heffron
HDR Inc.
1670 Broadway, Suite #3400
Denver, CO 80202

Via eMail: Tammy.Heffron@hdrinc.com

Subject: Proposal to Complete Environmental Documentation Support for a Categorical Exclusion and Limited Subsurface Investigation, Iowa Underpass Improvements Project, South Santa Fe Drive and Iowa Street, Denver, Colorado

Dear Ms. Heffron:

Pinyon Environmental, Inc. (Pinyon), is pleased to present this proposal to complete a limited subsurface investigation of areas located west of South Santa Fe Drive and north of Iowa Street in Denver and to complete environmental documentation to support a Categorical Exclusion (CatEx) for the proposed project. Pinyon understands that the City and County of Denver (CCD) has received funds from the Denver Regional Council of Governments (DRCOG) to upgrade the sidewalks along the north side of Iowa Avenue, west side of Santa Fe Drive, and the intersection of the two streets. The project will have Colorado Department of Transportation (CDOT) oversight. Because Federal funding is being used, a National Environmental Policy Act (NEPA) study is required; it is anticipated that a CatEx utilizing CDOT's Form 128 for environmental clearances will be completed.

Proposed improvements aim to enhance pedestrian safety and mobility through area include upgrading the facilities to be compliant with the Americans with Disabilities Act (ADA) and potential lighting, fencing, and multimodal improvements; the design may require right of way (ROW) acquisition as this project is in a constrained, urban environment.

The following are the tasks needed to for CDOT to complete the Form 128 included in this proposal: historic resources/historic Section 4(f), recreational resources Section 4(f), biological resources including federally and state-listed threatened and endangered species, Senate Bill 40, noxious weeds, prairie dogs, wetlands, migratory birds, and hazardous materials. In addition to the key resources listed, CCD will be responsible for providing CDOT with documentation on the following resources: Section 6(f), archeology, paleontology, air quality, and noise.

An initial action item for the NEPA documentation portion of the project will be to reach out to the CDOT Environmental Project Manager to confirm this scope of work. If there are any substantive changes to this scope based on this initial coordination, Pinyon will discuss those early in order to negotiate a change in scope or fee. Pinyon can complete any other technical environmental evaluations that may be required as part of this project.

For the limited subsurface investigation of areas located west of South Santa Fe Drive and north of Iowa Street, Pinyon will complete the proposed services within three months of notice to proceed, provided that site access can be obtained within one week. This schedule assumes use of standard laboratory turn-around.

The scope of services and schedule details for the proposed project are outlined in Attachment A.

Pinyon estimates the cost to complete this project, in accordance with the outlined services, will be **$176,433.66** (Table 1). Pinyon will invoice on a time and materials basis, in accordance with the attached Schedule of Unit Rates (Attachment B). The authorized amount will not be exceeded without prior approval. If you are in agreement with this scope, please issue a subconsultant agreement for review. Should changes in scope occur that require additional effort, the need for a change order will be assessed and communicated prior to initiating new or augmented tasks. We look forward to working with you on this project.

Should you have any questions or require additional information, please do not hesitate to call. Thank you for considering Pinyon for your environmental consulting needs.

Sincerely,

1ENTAL, INC.

Karen L. Hadley, AICP
Technical Group Manager - NEPA and Planning

Cc: File

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ATTACHMENT A
Detailed Scope of Services

Task 1 - Project Management, Coordination, and Meetings

- Pinyon will attend three in-person meetings (assumed to be a total of four hours including travel time): kick-off meeting, FIR, and FOR. Additionally, Pinyon will be available for meetings via conference call and will review the plan set notes for environmental resources. This scope includes time for coordination with internal and external project team members and project financial management. Pinyon will invoice on a monthly basis.

- An initial action item for the NEPA documentation portion of the project will be to reach out to the CDOT Environmental Project Manager to confirm this scope of work. If there are any substantive changes to this scope based on this initial coordination, Pinyon will discuss those early in order to negotiate a change in scope or fee. Pinyon can complete any other technical environmental evaluations that may be required as part of this project, should they be added to the scope.

- For the limited subsurface investigation, this scope includes site access coordination, project planning, and procurement of subcontractors and laboratory services. Pinyon will prepare a site-specific Health and Safety Plan (HASP) for this work.

- For the limited subsurface investigation, Pinyon will utilize our standard access agreement to obtain access to the properties needing to evaluation. It maybe be necessary to access properties located north of Iowa, particularly if a walk-behind Geoprobe rig is needed to complete the investigation work. It is assumed that site access coordination will be accomplished within six hours for the three potential properties that will require access. If access agreement efforts require additional support, additional funding may be requested.

Based on Pinyon's review of the study area that has been provided by HDR, the information presented in the Request for Proposals, and Pinyon's knowledge of the corridor and environmental context the following are the environmental evaluations that Pinyon will complete to meet CDOT and Federal Highway Administration protocols:

Task 2 - Historic Resources/Historic Section 4(f)/Archaeology

The Overland Golf Course is likely an eligible historic property located west of the improvements along Santa Fe. Additionally, the railroad bridge and existing retaining walls were built in 1926 and there are three properties along Iowa Street with structures older than 50 years.

Upon project initiation, Pinyon will work with CCD and HDR to set up a meeting with CDOT's Region 1 Historian to review the project, potential impacts, and determine a methodology to clear historic resources on the Form 128. A Pinyon staff historian will perform a COMPASS database search and review of CCD's assessor's data. This scope assumes there are six eligible historic resources that need to be assessed for eligibility and will complete Office of Archaeology and Historic Preservation(OAHP) site forms for the following resources: Overland Golf Course, the railroad bridge and existing retaining walls built in 1926, and three parcels with structures older than 50 years. The results will be documented in a Historic Resources Report. Early identification of ROW impacts will be required to facilitate proactive coordination with CDOT to potentially expedite Section 106 and Section 4(f) evaluation processes.

Pinyon's archeologist will review the project area for previously recorded, or potential, archeological resources through a database search of the project area. This scope assumes no archeological resources are present; therefore, a memorandum to the file will be prepared. This scope does not include a site visit.

Impacts to cultural resources are unknown at this time; however, Pinyon assumes that the following deliverables will be required: Area of Potential Effect (APE), up to six OAHP Site Forms, a Historic Resources Report, Archaeological Resources Memorandum, and an eligibility and effects letter.

If the project results in a Section 106 Adverse Effect to the any resource, this scope and project schedule will need to be reassessed, as this coordination could take 12 to 18 months to complete.

Task 2A - Adverse Effect Finding to Historic Resources

Impacts from any easements, ROW acquisitions, or project impacts (i.e., grading, fence or wall construction, and landscape removal) may result in an Adverse Effect finding to a historic property within the project limits. If an Adverse Effects are identified, Pinyon will provide Memorandum of Agreement (MOA) drafting support for agency review [CCD, CDOT, Federal Highway Administration (FHWA), and the State Historic Preservation Office (SHPO)], complete the Documentation for the Finding of Adverse Effect report for CDOT/FHWA submission to the Advisory Council on Historic Preservation (ACHP), complete an Individual Section 4(f) evaluation for the one (1) historic resource and provide mitigation support based on stipulations provided in the MOA. These tasks are dependent on the Section 106 determination of effect and whether the proposed work will result in an Adverse Effect finding to a historic resource within the project limits.

This scope assumes mitigation will be either an OAHP Level II Report or a deliverable requiring a similar level of effort. Should alternate mitigation be identified that exceeds this level of effort, additional scope and fee may be required. Archival Documentation for a Level II Report would be completed in accordance with the standards required for Level II documentation found in the OAHP Form 1595: *Historical Resource Documentation: Standards for Level I, II, III Documentation.* A Level II Report includes:

- Architectural and Historic Context Documentation
- Archival Photography produced on archivally stable paper with archivally stable ink
- Measured Drawings

This scope assumes completion of a Level II or similar mitigation for only one (1) historic resource. Should another form of mitigation be determined during the MOA process, this scope may require re-visitation.

This scope assumes up to one (1) adverse effect. Should additional adverse effects be identified to other resources in the project area, including the road (SH 85) itself, this scope will require re-visitation.

Deliverables for an Adverse Effect Finding include: Attendance at Project Meetings, MOA for agency review; Documentation for finding of Adverse Effect Report; Section 4(f) Individual Evaluation, Level II Report

If the project results in a Section 106 Adverse Effect to a historic resource within the project limits, the project schedule will need to be reassessed, as this coordination could take 12 to 18 months to complete.

Should an adverse effect be identified, this task must be approved by the CCD Project Manager prior to any work being completed. In addition, Pinyon will not bill to this task without prior approval from the CCD Project Manager.

Task 3 - Recreational Section 4(f)

Department of Transportation 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. The Overland Park Golf Course, which is owned and managed by the CCD is located within the project area adjacent to the west of Santa Fe Drive. The public golf course is considered a Section 4(f) resource and will likely be impacted by the project. Impacts to the golf course are assumed to be minor and a *de minimis* Section 4(f) evaluation is anticipated. We assume there will be no impacts to the existing recreational features of the golf course. Pinyon will coordinate with CDOT and the CCD, 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). Pinyon assumes the sidewalks located in the project area are designated for transportation use and are not considered Section 4(f) resources.

Task 4 - Biological Resources

The project is located in an urban setting; therefore, no significant biological resources are anticipated to be present. A 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 within the study area boundary. This information will be presented in a Biological Resources Report (BRR). Pinyon will evaluate habitat for federally listed and state-listed species, and document within the BRR. Pinyon will survey for migratory birds within the prescribed buffer area per CPW guidelines. Only a habitat assessment will be conducted; a species-specific survey is not included in this scope. Pinyon assumes a Biological Assessment will not be required. Pinyon assumes that the impact assessment will reveal a *no effect* to federally listed and state-listed species. Therefore, coordination with the US Fish and Wildlife Service is not anticipated to be required. List A and B noxious weeds to be mapped, as applicable; however, if the density of weeds is significant detailed mapping will be stopped, and recommendations regarding weed controls will be presented in the BRR. This will be documented in a Biological Resources Report.

Task 5 – Paleontology

A paleontologist will review the geologic units and complete a literature search to assess the probability of encountering paleontological resources. This scope assumes there are no eligible features and the results of the search and survey will be documented in a brief memorandum.

Task 6 - Environmental Clearance Summary Memorandum

There are several resources that are either not present or not impacted. These conditions will be documented in a brief Environmental Summary Memorandum that will streamline the CDOT review process.

- ***Air Quality -*** Due to the traffic signal improvements to accommodate pedestrians and bicycles in the project area, a local conformity determination must be included in the environmental clearance. Pinyon assumes that Level-of-Service (LOS) of the intersections within the study area will not be deficient (LOS D or worse) predicted during either current or future years; because of this, Pinyon assumes that carbon monoxide hotspot modeling evaluation is not required. Pinyon will document in the Environmental Summary Memorandum.

  This scope will need to be reassessed if a deficient LOS (D or worse) is predicted during either current or future years. Pinyon will need to complete a carbon monoxide hotspot modeling evaluation for any intersection with a deficient LOS to demonstrate local conformity.

- ***Noise*** - Based on scope of project, no impacts or evaluations are required. Pinyon will document in the Environmental Summary Memorandum.

- ***Section 6(f)*** - Pinyon will review the Colorado Parks and Wildlife database of properties that have received funds from the Land and Water Conservation Fund (LWCF) to determine if Section 6(f) properties will be impacted by the project. Pinyon will document in the Environmental Summary Memorandum. It is assumed that the adjacent properties have not received LWCFs and that no further documentation is required.

Assumptions – NEPA Documentation

- Pinyon assumes that each deliverable will have three rounds of review/revision/comment; the first by HDR and the second by CCD, and the third by CDOT.
- Pinyon assumes the field surveys for hazardous materials, biological resources, and wetlands would occur over one full days by a team of two people. If additional project elements are added, or if the scope of work/design elements change after the field surveys have been completed, then additional costs would be

incurred in order to collect additional data that is pertinent to the revised study area and/or project design.

- HDR will provide up to a scoping level of plans (e.g., 15% that encompasses the maximum project disturbance footprint) so that Pinyon, HDR, CCD, and CDOT can agree on the study area boundaries prior to any field work being completed.
- It is assumed that resource work/clearances will follow CDOT processes unless otherwise noted.
- The project duration is assumed to be 12 months; if the project duration is extended, a change order may be required.
- The schedule assumes that all fieldwork would occur during the growing season when vegetation is growing and can be speciated. Pinyon may be able to do off-season field surveys; however, if not all indicators are present the survey is likely more conservative than it would be during the growing season.
- Some deliverables are design-dependent as an impact evaluation is required, and may not be available until or after design plans have been finalized. After field work is completed, Pinyon will provide GIS or KML mapping of the relevant features to HDR for confirmation that all areas of impact are within the study area and ultimately for impact assessment.
- Pinyon will provide all GIS mapping for incorporation into HDR's design and assumes HDR will quantify impacts.

Limited Subsurface Investigation

Per conversations with the CCD Department of Environmental Health (DEH), Pinyon recommends hand augering in the bermed area on the eastern edge of Overland Park Golf Course, and advancing direct push boreholes to investigate the embankment on the north side of Iowa Street. Depending on the project excavation requirements and depth of groundwater, one groundwater monitoring well is proposed using augered drilling techniques to evaluate groundwater for construction dewatering parameters. It is unclear whether excavated areas will reach groundwater, and if deemed unnecessary, construction dewatering can be removed from the scope. Data collected during the investigation will be used to prepare a subsurface investigation report and Materials Management Plan.

The investigation locations are near a former Denver Radium Superfund Site; therefore, sampling for radium in soil has been included at 20 percent of the investigation locations. However, radium is not anticipated in these locations as the berm was constructed with dredged materials from the aqua golf course and sampling is considered precautionary. It is assumed that no additional radiological sampling will be required for waste characterization, allowing this and/or future excavated material to be transported to the Denver-Arapahoe Disposal Site (DADS) landfill, which is the preferred landfill for CCD projects.

Task 7 – Modified Environmental Site Assessment (MESA)

The purpose of a MESA is to perform an evaluation for the potential presence of hazardous or toxic materials (otherwise known as "Recognized Environmental Conditions" [RECs]) at the project site. The MESA will generally meet the requirements of the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E 1527-13), with some deviations, and the CDOT MESA Guidance. The MESA will be delivered electronically, and is assumed to undergo three rounds of review/revision (one by HDR, one by CCD, one by CDOT).

Task 8 – Phase I Environmental Site Assessments

Up to two Phase I ESA reports will be prepared for properties (or partial properties) that may be acquired as part of the project. At the time of this proposal, it was not clear what, if any, ROW would be needed to construct the project; however, should acquisition be required, this task would be implemented for up to two properties (i.e., contiguous parcels). The report will follow the ASTM 1527-13 Standard, and be

formatted to meet report format required by the CCD DEH. Pinyon assumes two rounds of review/revisions for these two reports; both will be delivered electronically and that HDR will coordinate right of entry. The proposed cost for the Phase I Environmental Site Assessments assumes that the MESA will be completed and that information gathered in the MESA will be utilized in the Phase I ESA documents.

Task 9 – Iowa Street Embankment Borehole Investigation

Pinyon proposes to advance up to 13 boreholes in the embankment north of Iowa Street to evaluate the for the presence of fill materials and/or urban fill debris. Pinyon will also observe, document, and sample as necessary advancement of two boreholes that will be investigated for geotechnical purposes. A total of 15 locations will be investigated for environmental concerns. It should be noted, that the current regulatory environment has resulted in elevated sensitivity to urban fill material, hence the intensity of this investigation. The final termination depth is planned for 20 feet below ground surface (bgs). The total depth will depend on site conditions observed at the time of soil boring advancement. Boring locations may be modified based on the locations of underground utilities. A Pinyon representative will be on-site during the subsurface investigation. Pinyon assumes the installation of boreholes will be completed during two days of field work.

Pinyon will contract Vista GeoScience (Vista) or an equivalent drilling firm to complete drilling activities. Vista will utilize a walk-behind Geoprobe rig to complete the soil boring. Because of the limited access, the presence of a sidewalk, and the presence of overhead utilities, the smallest possible rig will be needed to investigate this area.

- A Notice of Intent (NOI) will be submitted to the Colorado Division of Water Resources prior to borehole advancement.
- The Utility Notification Center of Colorado (UNCC) will be notified to mark utilities.
- It is assumed that multiple utilities are present in this location; therefore, potholing to clear utilities down to five feet bgs has been included in this proposal.
- Boreholes will be advanced to a total depth of 20 feet or refusal, whichever is first.
- Drill cuttings and investigation derived waste (IDW) consisting of groundwater and decontamination water will be containerized and stored onsite at a location approved by the CCD, pending waste characterization and disposal. For the purpose of cost estimating, five drums of IDW soil is assumed to be generated during well installation and sampling activities. An additional four drums of geotechnical waste will also be profiled and disposed along with the IDW. Disposal of a total of nine drums is assumed in this task.
- The soil borings will be advanced using Geoprobe techniques with soil recovery in plastic sleeves. The soil core will be visually described per the Unified Soil Classification System. Information regarding subsurface conditions and the potential presence of fill/debris will be recorded on a boring log.
- Soil samples collected during drilling will be field screened for non-specific volatile organic compounds (VOCs) using a photoionization detector (PID) in accordance with Pinyon Standard Operating Procedures (SOPs). In the event of a suspected release, Pinyon will notify the project manager immediately upon discovery. Soil samples are assumed to be collected at one out of every two boreholes. If there are no specific indications of impacts within the boreholes, a soil sample will be collected from three- to five-foot.
- Pinyon will oversee this investigation with Certified Asbestos Building Inspector to assist in identifying potential asbestos containing materials (ACMs). If suspect ACM or regulated asbestos containing soils (RACS) is discovered, the borehole will be terminated and suspect materials will be analyzed for asbestos using polarized light microscopy (PLM).
- Soil samples for potential geochemical impacts will be submitted to ESC Analytical Laboratory (or equivalent) for analysis of:
    - VOCs by U.S. EPA Method 8260
    - PAHs by U.S. EPA Method 8270 (SIM)
    - Metals by U.S. EPA Method 6010

- Radium Ra-226 and Ra-228 by U.S. EPA Method 903.1 and 904.0 or suitable alternative

Task 10 – Santa Fe Avenue Hand Augering for Impact Delineation

Pinyon proposes hand augering to further delineate potential urban fill materials and/or asbestos on the western boundary of the Overland Park Golf Course. The work will be completed by Pinyon personnel. The scope includes:

- UNCC will be notified to mark utilities.
- Up to six hand-augered boreholes will be advanced to a depth of approximately four feet to evaluate the potential for urban fill at specific locations where bermed materials located on the eastern edge of the Overland Park Golf Course (Figure 1) will be impacted. No more than three berm locations are anticipated to be impacted and up to two boreholes will be advanced for each of the impacted areas. (total of six samples). Historical information from golf course personnel suggests that the berm is constructed of dredged material from the Aqua Golf facility. The berm material was reportedly sampled at the time of the construction; however, the location of the data has not been identified. Therefore, Pinyon understands that hand augering is considered an acceptable methodology because the source of the berm material is not anticipated to contain ACM or RACs and more extensive evaluation (such as trenching) is not needed.
- Pinyon will avoid augering deeper than the planned project excavation depths such that augered material will eventually be removed as part of the project.
- Augered material will be inspected by a State Certified Asbestos Building Inspector (CABI). Following the completion of visual observations and sample collection, the soil will be placed back in the berm and the surface vegetation replaced.
- If potentially impacted material is encountered, down-hole tooling will be decontaminated before/between borings utilizing industry-standard techniques; water will be collected and transferred to a 55-gallon drum, and managed as IDW.
- One asbestos sample for every two investigation locations (total of three samples) for ACM/RACs, will be collected, as prompted by visual observation. Samples will be submitted to Reservoirs Environmental or EMSL under chain-of-custody protocol and in accordance with Pinyon's SOPs.
- Locations may be modified based on the presence of underground utilities.
- Pinyon assumes hand augering activities will be completed in no more than one day of field work.

Task 11 – Dewatering Well Installation, Sampling, and Permitting

Pinyon proposes to install a total of one temporary monitoring well in the embankment north of Iowa to evaluate groundwater for a potential construction dewatering permit. Groundwater depth is not known, but is assumed to be less than 30 feet bgs. Groundwater interactions are most likely at the Iowa Street underpass where excavation work will be completed. The total depth will depend on site conditions observed at the time of soil boring advancement. Boring locations may be modified based on the locations of underground utilities. A Pinyon representative will be on-site during the well installation.

Pinyon assumes that temporary monitoring well installation will be completed within ½ day of field work. Pinyon assumes the development, sampling, and abandonment of the groundwater monitoring well will be completed over approximately three ½ days of field work, respectively.

Pinyon will contract Vista GeoScience (Vista) or an equivalent firm to complete drilling activities. Vista will utilize a hollow stem auger drill rig to complete the soil boring and well installation.

- An NOI will be submitted to the Colorado Division of Water Resources prior to well installation.
- UNCC will be notified to mark utilities.
- Potholing will be completed to five feet bgs to clear utilities.

- The groundwater monitoring well will be advanced to a total depth of two feet below the groundwater interface, or approximately 30 feet bgs, or refusal, whichever is first. If groundwater is not encountered at the planned depth during drilling, the well will be set to allow for potential delayed groundwater infiltration.
- The soil boring will be drilled using hollow stem auger drilling techniques with either continuous core or split spoon capabilities. The soil core will be visually described per the Unified Soil Classification System. Information regarding subsurface conditions will be recorded on a boring log.
- Down-hole tooling will be decontaminated before/between borings utilizing industry-standard techniques; water will be collected and transferred to a 55-gallon drum, and managed as IDW.
- Drill cuttings (expected to be two 55-gallon drums) and IDW consisting of groundwater and decontamination water will be containerized and stored onsite at a location approved by the CCOD, pending waste characterization and disposal. For the purpose of cost estimating, three drums (two soil and one groundwater) of IDW will be assumed to be generated during well installation and sampling activities.
- Soil samples collected during drilling will be field screened for non-specific VOCs using a PID in accordance with Pinyon SOPs. In the event of a suspected release, Pinyon will notify the project manager immediately upon discovery. A soil sample for this boring location has not been included in this proposal.
- After drilling activities, Vista will construct a temporary groundwater monitoring well. Five feet of two-inch diameter factory-slotted polyvinyl chloride (PVC) screen will be placed in the bottom of the boring, and blank casing will be threaded onto the screen and extended to the ground surface or slightly above ground surface. The well will be completed with 10/20 silica sand from the bottom of the boring to two feet above the top of the screen, and the remainder of the annulus will be filled with hydrated bentonite. As the well will be temporary, a traffic cover will not be installed, but rather the PVC will be capped below with the ground surface and pea-gravel extended to the surface.
- Following installation, the depth to water and the total depth of the well will be measured with an electric water level indicator. The well will be developed using either a foot-valve pump or a disposable bailer of at least five well volumes to remove residual fine sediment from the drilling process (well development) and to facilitate connectivity between the groundwater in the annular space and the aquifer surrounding the well.
- Following development, a groundwater sample will be obtained from the well. Groundwater quality parameters will be monitored and recorded (pH, conductivity and dissolved oxygen), and after stabilization, groundwater samples will be collected. Based on depth to groundwater, purging and sampling may be completed by using disposable polyethylene tubing and a peristaltic pump (groundwater less than 20 feet bgs) or stainless-steel foot valve (groundwater deeper than 20 feet bgs). Groundwater samples will be submitted to ESC Lab Sciences for laboratory analysis of:
    - VOCs by U.S. EPA Method 624
    - SVOCs by U.S. EPA Method 625
    - Metals by U.S. EPA Method 200.7/200.8
    - Radium Ra-226 and Ra-228 by U.S. EPA Method 903.1 and 904.0 or suitable alternative
    - Total Suspended Solids by U.S. EPA Method 160.2
    - Oil and Grease by U.S. EPA Method 1664A (if prompted by visual observation of oil and grease)
- The location of the well casing will be surveyed using a hand-held global position system (GPS), and the elevation of the top of the well casing will be surveyed to a relative benchmark. This data, along with the depth to groundwater data, will be utilized to evaluate groundwater elevations at the project site.

The groundwater monitoring well will remain in place after groundwater sampling, and will be abandoned at a later date. The well will be abandoned in accordance with the Colorado State Engineer's Office rules and reporting requirements.

Due to the proximity of the Site to the Denver Radium Site and the former Shattuck site, a Remediation Permit is anticipated to be required for this project. Using the data obtained during sampling, Pinyon will submit an application for, and obtain a Remediation Activities Discharging to Surface Water Permit (Remediation Permit) that will ultimately be transferred to the Project's Contractor from the CCOD.

Task 12 – Additional Subsurface Investigation

This task has been deleted from the scope.

Task 13 – Task 4, 5, and 7 Reporting

A draft report of the preliminary investigation activities (Task 4 and 5) will be prepared outlining the work performed, the data obtained, boring logs, and figures demonstrating curb and gutter lines and areas where historical urban fill was encountered. Conclusions regarding the potential presence of historical urban fill at the site will be provided. The draft report will be prepared within one month of the completion of field work. The report will be finalized within 72 hours of receipt of comments. In an effort to reduce the use of natural resources, hard copy reports will not be provided unless requested.

Reporting for Task 7 is assumed to be a letter report addendum to the original report. Reporting for subsequent tasks will be scoped and budgeted after the scope of those activities is identified. Reporting assumes one round of comments from HDR, one round of comments from DEH and one round of comments from CDOT for each document.

Task 14 – Materials Management Plan (MMP) Preparation

Pinyon will develop an MMP for this project, and the results of the earlier investigations will be incorporated in the MMP. The purpose of this document is to detail the SOPs for handling potentially contaminated media, specifically soil related to urban fills. It is anticipated that this document would be implemented by the General Contractor. The MMP will be designed to minimize worker exposure to potentially contaminated material, prevent releases to the environment, and ensure proper disposal of contaminated materials, as appropriate. It is the responsibility of the future-selected Contractor to adhere to the MMP, follow all appropriate regulations, obtain the proper permits, and have the trained field personnel to identify potential contamination. It is intended that the MMP would be attached to the project Plans and Specifications, and that bidding Contractors would have an opportunity to review this document as they prepare bids for construction. An electronic copy of the draft MMP will be delivered to the CCD project manager for review and comment. An electronic copy of the Draft Final MMP will be delivered within two days of receipt of the City comments. In an effort to reduce the use of natural resources, hard copy reports will not be provided unless requested.

Pinyon assumes that the City's SOP for asbestos in soils would be utilized for this project, as needed; however, inclusion of verbiage requiring a Project-Specific RACS Management Plan (PSRMP) can be included at the same cost.

Task 15 – Revisions to Standard CDOT Specifications

Pinyon will prepare revisions to Section 250 of CDOT's standard project specifications to communicate the project's environmental requirements and bidding protocols. Pinyon assumes no more than two revisions to the project specification documents based on potential project design changes and/or modified environmental requirements.

Assumptions - Limited Subsurface Investigation

Pinyon has made the following assumptions in preparing this proposal:

ATTACHMENT A (continued)
Detailed Scope of Services

- For properties that require drill rig entry and damage clauses in an access agreement, Pinyon assumes that access can be negotiated with the property owners with no more than six hours' effort and within one week of notice to proceed.
- Costs for the Phase I Environmental Site Assessment assume that the MESA will be completed and information from the MESA will be applicable to the Phase I ESAs.
- Installation of Geoprobe boreholes will be completed in no more than two days of field work.
- Hand augering activities will be completed in no more than one day of field work.
- Well installation and soil boring installation will be conducted in areas not requiring street traffic control.
- Installation of the temporary monitoring well will be completed within ½ day of field work.
- Development, sampling, and abandonment of groundwater monitoring well will be completed over approximately three ½ days of field work.
- Groundwater will be encountered at 30 feet bgs or less.
- If additional investigation is required to evaluate subsurface conditions, including additional sample locations or analytes, additional costs may be incurred.
- Up to six hand-augered locations will be investigated to depths of approximately four feet bgs.
- Pinyon assumes that waste soil can be taken to DADS and liquid will be disposed at a Denver area disposal facility.
- Groundwater well installation and hand augering activities will occur under separate mobilizations; these costs are included in this proposal.
- The City's Standard Operating Procedure for asbestos in soils will be included in the MMP for this project, as needed; however, inclusion of verbiage requiring a Project-Specific RACS Management Plan (PSRMP) can be included at the same cost.

Pinyon Environmental, Inc.

Table 1 Summary of Estimated Costs

Task 1 - Project Management, Coordination, and Meetings				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Principal Engineer/Scientist	1.0	hour	$205.00	$205.00
Project Manager	60.0	hours	$163.00	$9,780.00
Senior Engineer/Scientist	40.0	hours	$183.00	$7,320.00
Project Specialist	6.0	hours	$139.00	$834.00
Staff II Engineer/Scientist	4.0	hours	$106.00	$424.00
Drafting (Graphics)	1.0	hour	$85.00	$85.00
Administration	14.0	hours	$61.00	$854.00
			Task Subtotal	***$19,502.00***
Task 2 - Historic Resources/Historic Section 4(f)/Archaeology				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Project Manager	40.0	hours	$163.00	$6,520.00
Project Specialist	116.0	hours	$139.00	$16,124.00
Project Engineer/Scientist	20.0	hours	$115.00	$2,300.00
Project Specialist	12.0	hours	$139.00	$1,668.00
Direct Expenses (In-House Charges)				
Database Report	1.0	lump sum	$250.00	$250.00
			Task Subtotal	***$26,862.00***
Task 2A - Adverse Effect Finding to Historic Resources				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Project Manager	40.0	hours	$163.00	$6,520.00
Project Specialist	175.0	hours	$139.00	$24,325.00
Project Engineer/Scientist	20.0	hours	$115.00	$2,300.00
Project Specialist	16.0	hours	$139.00	$2,224.00
Direct Expenses (In-House Charges)				
Photo Processing	1.0	lump sum	$100.00	$100.00
			Task Subtotal	***$35,469.00***
Task 3 - Recreational Section 4(f)				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Project Manager	1.0	hour	$163.00	$163.00

Project Specialist	14.0	hours	$139.00	$1,946.00
Project Engineer/Scientist	4.0	hours	$115.00	$460.00
Principal Engineer/Scientist	1.0	hour	$205.00	$205.00
			Task Subtotal	***$2,774.00***
Task 4 - Biological Resources				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Project Manager	4.0	hours	$163.00	$652.00
Project Specialist	40.0	hours	$139.00	$5,560.00
Principal Engineer/Scientist	1.0	hour	$205.00	$205.00
Project Engineer/Scientist	6.0	hours	$115.00	$690.00
Direct Expenses (In-House Charges)				
Biology Services - Day	1.0	day	$50.00	$50.00
Trimble GPS - day	1.0	day	$225.00	$225.00
			Task Subtotal	***$7,382.00***
Task 5 – Paleontology				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Project Manager	2.0	hours	$163.00	$326.00
Indirect Expenses (Outside Charges)				
Rocky Mountain Paleo	1.0	lump sum	$2,788.50	$2,788.50
			Task Subtotal	***$3,114.50***
Task 6 - Environmental Clearance Summary Memorandum - 6(f), Air Quality, Noise				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Project Manager	3.0	hours	$163.00	$489.00
Project Engineer/Scientist	6.0	hours	$115.00	$690.00
Project Specialist	25.0	hours	$139.00	$3,475.00
Principal Engineer/Scientist	2.0	hours	$205.00	$410.00
			Task Subtotal	***$5,064.00***
Task 7 – Modified Environmental Site Assessment (MESA)				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Principal Engineer/Scientist	1.0	hour	$205.00	$205.00
Senior Engineer/Scientist	5.0	hours	$183.00	$915.00
Project Specialist	52.0	hours	$139.00	$7,228.00
Drafting (Graphics)	5.0	hours	$85.00	$425.00

Administration	1.0	hour	$61.00	$61.00
Direct Expenses (In-House Charges)				
Field Visit	1.0	day	$40.00	$40.00
Indirect Expenses (Outside Charges)				
Database Research Service	1.0	lump sum	$500.00	$500.00
			Task Subtotal	***$9,374.00***
Task 8 – Phase I Environmental Site Assessments				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Principal Engineer/Scientist	2.0	hours	$205.00	$410.00
Senior Engineer/Scientist	3.0	hours	$183.00	$549.00
Project Specialist	24.0	hours	$139.00	$3,336.00
Drafting (Graphics)	3.0	hours	$85.00	$255.00
Administration	1.0	hour	$61.00	$61.00
Indirect Expenses (Outside Charges)				
Database Research Service	2.0	lump sum	$350.00	$700.00
			Task Subtotal	***$5,311.00***
Task 9 – Iowa Street Embankment Borehole Investigation				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Senior Engineer/Scientist	6.0	hours	$183.00	$1,098.00
Staff II Engineer/Scientist	35.0	hours	$106.00	$3,710.00
Direct Expenses (In-House Charges)				
Soil Boring	15.0	each	$105.00	$1,575.00
Asbestos Sampling	7.0	each	$45.00	$315.00
Field Visit	2.0	each	$40.00	$80.00
Indirect Expenses (Outside Charges)				
Drilling Contractor	1.0	lump sum	$8,200.00	$8,200.00
Waste Management	1.0	lump sum	$1,650.00	$1,650.00
Potholing	13.0	well	$247.50	$3,217.50
Laboratory Rates				
PLM - 6 Hour TAT (EMSL)	7.0	samples	$16.50	$115.50
Soil - VOCs	7.0	samples	$115.50	$808.50
Soil - PAHS (SIM)	7.0	samples	$104.50	$731.50
Soil - Radium	3.0	samples	$137.50	$412.50
Waste- Reactivity, corrosivity, ignitability	1.0	sample	$82.50	$82.50
Point Count - 6 Hour TAT (EMSL)	1.0	sample	$42.08	$42.08

			Task Subtotal	***$22,038.08***
Task 10 – Santa Fe Avenue Hand Augering for Impact Delineation				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Senior Engineer/Scientist	2.0	hours	$183.00	$366.00
Staff II Engineer/Scientist	6.0	hours	$106.00	$636.00
Direct Expenses (In-House Charges)				
Soil Boring	6.0	each	$105.00	$630.00
Asbestos Sampling	3.0	each	$45.00	$135.00
Field Visit	1.0	each	$40.00	$40.00
Laboratory Rates				
PLM - 6 Hour TAT (EMSL)	3.0	samples	$16.50	$49.50
Soil - VOCs	3.0	samples	$115.50	$346.50
Soil - PAHS (SIM)	1.0	sample	$104.50	$104.50
Soil - Radium	3.0	samples	$137.50	$412.50
Waste- Reactivity, corrosivity, ignitability	1.0	sample	$82.50	$82.50
Point Count - 6 Hour TAT (EMSL)	1.0	sample	$42.08	$42.08
			Task Subtotal	***$2,844.58***
Task 11 – Dewatering Well Installation, Sampling, and Permitting				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Senior Engineer/Scientist	4.0	hours	$183.00	$732.00
Project Specialist	10.0	hours	$139.00	$1,390.00
Staff II Engineer/Scientist	12.0	hours	$106.00	$1,272.00
Direct Expenses (In-House Charges)				
Well Development	1.0	each	$55.00	$55.00
Field Visit	3.0	each	$40.00	$120.00
Indirect Expenses (Outside Charges)				
Waste Management	1.0	lump sum	$1,375.00	$1,375.00
Well Installation	1.0	well	$2,640.00	$2,640.00
Well Abandonment	1.0	well	$660.00	$660.00
Permitting	1.0	each	$275.00	$275.00
Laboratory Rates				
Water - Radium	1.0	sample	$203.50	$203.50
Water - Construction Dewatering Suite	1.0	sample	$1,210.00	$1,210.00
			Task Subtotal	***$9,932.50***

Task 12 – Additional Subsurface Investigation				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
			Task Subtotal	***$0.00***
Task 13 – Task 4, 5 and 7 Reporting				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Principal Engineer/Scientist	3.0	hours	$205.00	$615.00
Senior Engineer/Scientist	12.0	hours	$183.00	$2,196.00
Project Specialist	76.0	hours	$139.00	$10,564.00
Drafting (Graphics)	12.0	hours	$85.00	$1,020.00
			Task Subtotal	***$14,395.00***
Task 14 – Materials Management Plan (MMP) Preparation				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Principal Engineer/Scientist	2.0	hours	$205.00	$410.00
Senior Engineer/Scientist	8.0	hours	$183.00	$1,464.00
Project Specialist	40.0	hours	$139.00	$5,560.00
Drafting (Graphics)	4.0	hours	$85.00	$340.00
			Task Subtotal	***$7,774.00***
Task 15 – Revisions to Standard CDOT Specifications				
Description	**Quantity**	**Unit**	**Rate**	**Extension**
Labor Rates				
Principal Engineer/Scientist	1.0	hour	$205.00	$205.00
Senior Engineer/Scientist	24.0	hours	$183.00	$4,392.00
			Task Subtotal	***$4,597.00***
			Project Total	**$176,433.66**

ATTACHMENT B
SCHEDULE OF UNIT RATES
2017

ACTIVITY	HOURLY RATE
Expert Witness - Expert Witness Preparation and Deposition	$225
Principal Engineer/Scientist - QA/QC by Principal or Senior Technical Reviewer, Meetings with Regulatory and Oversight Agencies	$205
Senior Engineer/Scientist - Remediation, Engineering Design, Investigation Design, Development of Work Plans, Database Design, Training, Industrial Hygiene	$183
Project Manager - Project Management, Coordinates Multi-Disciplinary Teams, Response to Agency Questions, Project Meetings with Clients/Regulators	$163
Project Specialist - Reports to Regulatory and Oversight Agencies, Preparation of Permits, GIS Library Development and Data Analysis, Industrial Hygienist, Technical Review of Documents	$139
Project Engineer/Scientist - Phase I ESA Site Visits/Reporting, Interpretation of Data, Collection of Non-Field Data, Development of Logs and Maps, Pilot Testing, Biological and Wetland Field Mapping, Preparation of Reports to Clients, GIS Data Collection/Processing/Presentation, Asbestos Designer/Air Monitoring Specialist/Project Manager, Technical Review of Documents	$115
Staff II Engineer/Scientist - Soil Logging, Monitoring Well Installation Oversight, Water-Level Surveying, Slug Tests, Field Oversight, Lead Driller, Miscellaneous Field Services, Asbestos Building Inspector	$106
Regulated Materials/Industrial Hygiene Project Manager/Specialist – Completes asbestos O&M plans, project designs, bids and specifications, or manages asbestos/IH projects	$106
Regulated Materials/Industrial Hygiene Specialist III – Completes complicated asbestos/IH-related building surveys	$93
Staff I Engineer/Scientist - Groundwater Sampling, Sampling During UST Removals, Surveyor's Assistant	$93
Regulated Materials/Industrial Hygiene Specialist II – Completed simple to typical asbestos/IH-related building surveys	$85
Drafting (Graphics) – AutoCad or Microstation Drafting	$85
Regulated Materials/Industrial Hygiene Specialist I – Completes field services, including air clearances for asbestos/IH abatement or remediation projects, or field oversight for soil remediation projects such as asbestos with soil removal	$78
Field Specialist/Project Assistant - Data management and administrative support, maintain field equipment, data management	$78
Administration - General project administration, contract control, invoicing	$61

EXPENSE OR SERVICE	BILLING RATE
Mileage outside the Denver metropolitan area	Current IRS rate
Project Initiation Fee	$125 (flat fee)
Xerographic Copies or Printing (larger format sheets)	$ N/A
Photographic Reproduction on Mylar	$ N/A
Outside Materials / Services / Supplies	Cost + 10%
Subcontractor/Subconsultant/Laboratory Fees	Cost + 10%
LUMP SUM EQUIPMENT CHARGES	
Field Visits (General Projects)	$ 40/day
Field Visits (Wetland Delineations and Other Biology Field Activities)	$50/day or $100/wk
Soil Logging (during drilling)	$105/boring
Monitoring well development	$55/well

Monitoring well sampling	$67/well
Asbestos Sampling Kit	$45/day
Asbestos Air Monitoring Field Kit	$110/day
Other Reimbursables	
Dual Interface Probe	$70/day
Groundwater level indicator	$30/day
Photoionization Detector / FID or similar	$75/day
Automated Samplers, Monitors, and Data Loggers	Cost + 10%
PID / FID / multi gas meter (or similar)	$75/day
Groundwater sampling kit	$201/day
Soil Sampling kit	$315/day
Rental Vehicle	Cost + 10%
Support Vehicle	$150/day

SCOPE OF WORK

IOWA UNDERPASS

Geotechnical explorations are required for the proposed reconstruction of the sidewalks along the north side of Iowa Avenue, the west side of Santa Fe Drive, and at the intersection of the two streets in Denver, Colorado. We understand that the project will generally consist of constructing new retention system(s) along the north side of Iowa Avenue on both sides of the UPRR/RTD bridges. The existing sidewalk and staircases at this location will be replaced with ADA-compliant ramps for pedestrian and bicycle use. Under the bridges, the existing sidewalk, walls, and abutments will remain in place. Along the west side of Santa Fe Drive, between Florida and Jewell Avenues, the current attached sidewalk will be upgraded to a multi-use facility for pedestrians and bicyclists. Minor cast-in-place (CIP) concrete walls may be constructed at the northeast corner of Santa Fe Drive and Iowa Ave, and at the southwest corner of Santa Fe Drive and Florida Ave.

HDR has requested Shannon & Wilson complete exploratory borings in support of design for the proposed project. Shannon & Wilson's scope of work will include subsurface explorations, laboratory testing, geotechnical engineering analyses, development of geotechnical engineering design recommendations, and preparation of a geotechnical report. In addition, we understand that the City and County of Denver (CCD) has requested the scope of services to include final design. Therefore, Shannon & Wilson's scope of work will also include design services for a retention system along the north side of Iowa Avenue.

Geotechnical Scope

Our geotechnical exploration program will include completion of six (6) geotechnical borings for the proposed retentions systems and multi-use path upgrades. Two (2) borings, one on each side of the UPRR/RTD bridges, will be drilled for the proposed walls and four (4) borings will be drilled along the proposed trail.

A geologist or geotechnical engineer from our staff will log the 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. A geotechnical design report will be prepared, and signed and sealed by a professional engineer registered in the state of Colorado. Draft and final reports will be provided for review.

As previously indicated, we will also provide design services for a retention system along the north side of Iowa Avenue.

The scope will include the following:

- Review available existing information.
- Coordinate subcontractors for drilling borings and providing traffic control.
- Prepare health and safety plan and drilling plan.
- Stake the boring locations.
- Contact the Utility Notification Center of Colorado (UNCC) and other utilities to mark underground utilities.
- Obtain right-of-way (ROW) permits required to complete the field work.

- Drill six (6) exploratory borings for the proposed project. Boring locations may be moved due to underground utilities or existing structures.
    - The borings for the proposed walls on the north side of Iowa Avenue will be drilled up to a depth of 40 feet.
    - The borings for the proposed trail will be drilled to depths of 5 or 10 feet.
    - The borings will be completed using 4-1/4" hollow-stem auger, with SPT or California sampling at 2-1/2 to 5-foot depth intervals.
    - Borings will be drilled using a truck-mounted drill rig.
- The borings for the proposed trail may be located on an existing sidewalk and the boring on the west side of the UPRR/RTD bridges for the proposed wall may be located on an existing concrete slab. We have assumed concrete coring will be required for these borings.
- Coordinate with Pinyon Environmental, Inc. (Pinyon) for environmental testing during drilling and testing and disposal of drill cuttings.
- Prepare a geotechnical report summarizing the field exploration program, groundwater observations, and geotechnical analyses and recommendations. The report will include:
    - a site plan showing the exploration locations;
    - field and laboratory test results, including boring logs;
    - a general description of subsurface soil/rock conditions and groundwater levels below the site;
    - a discussion on potential geologic hazards;
    - design recommendations for foundations and lateral earth pressure parameters for retaining walls;
    - recommendations for sidewalks; and
    - recommendations for earthwork and other construction considerations.
- Final design services for one retention system along the north side of Iowa Avenue. These services will include the following:
    - analysis and design of the wall type selected by CCD;
    - preparation of a calculation package;
    - preparation of a geology sheet; and
    - assisting HDR with the development of the design plans and specifications.

The scope will not include design services during construction and QA materials testing services.

Geotechnical Assumptions

- Borings will be surveyed by others after the completion of drilling.
- If required, private utilities will be located and marked by others.
- Any fees associated with permits for the borings will be waived by the City and County of Denver (CCD).
- One day of traffic control will be necessary for the trail borings.
- Work will be allowed during the hours of 9:00 am to 3:00 pm Monday through Friday for the trail borings.
- The borings for the proposed walls will need to be drilled on private property north of Iowa Avenue. Right-of-entry will be provided by others.

- Suitable soil or rock will be encountered within the proposed drilling depths and the subsurface conditions are appropriate for hollow-stem auger drilling methods. Rock coring will not be completed.
- Boreholes will be backfilled and repaired according to the CCD permit.
- Groundwater monitoring wells will not be installed.
- The soil cuttings generated during drilling will be drummed and taken to the driller's yard. Based on the maximum total drill footage (120 feet), we anticipate four (4) 55-gallon drums will be required. After the completion of drilling, waste profile parameters testing will be completed on samples from the drums. Pinyon will collect the samples from the drums and complete (or have others complete) the appropriate testing.
- Once the waste profile parameters testing results are available, Pinyon will coordinate with a subcontractor to properly dispose of the drums.
- Pavement design will not be required. We anticipate the trail thickness will be based on typical CCD standards and a specific design will not be required.
- We will attend up to four meetings, which will include one kickoff meeting, two (2) design coordination meetings, and the FIR/30% design review meeting.
- The design of one retention system along the north side of Iowa Avenue will be done for the system selected by CCD. HDR will develop the plans and specifications and Shannon & Wilson will provide review markups and assistance as needed.

GEOTECHNICAL COST ESTIMATE
IOWA UNDERPASS - EXPLORATIONS AND FINAL DESIGN

TASKS/SUBTASKS	HOURS							DOLLARS						SUB TOTAL	ODC	TOTAL
	S.V.P.	Sr. Prof III	Sr. Prof I	Prof III	Drafter III,IV	Admin I,II	Total	S.V.P.	Sr. Prof III	Sr. Prof I	Prof III	Drafter III,IV	Admin I,II			
								$250	$145	$115	$95	$95	$70			
1.0 PROJECT SETUP			0.5			0.5	1.0			$58			$35	$93		$93
2.0 EXPLORATIONS															$5,964	$5,964
2.1 Review Existing Information			2.0				2.0			$230				$230		$230
2.2 Coordinate with Subcontractors & Pinyon, Prepare Subcontracts			0.5	3.0			3.5			$58	$285			$343		$343
2.3 Prepare Health & Safety Plan, Drilling Plan			0.5	1.0			1.5			$58	$95			$153		$153
2.4 Stake Borings/Utility Locates				10.0			10.0				$950			$950		$950
2.5 Obtain ROW Permits				4.0			4.0				$380			$380		$380
2.6 Drilling Observations & Travel		1.0		20.0			21.0		$145		$1,900			$2,045	$390	$2,435
3.0 LABORATORY TESTING															$2,870	$2,870
3.1 Geotechnical Laboratory Testing			1.0	2.0			3.0			$115	$190			$305		$305
4.0 SUBSURFACE CHARACTERIZATION																
4.1 Draft Boring Logs			1.0	2.0			3.0			$115	$190			$305		$305
4.2 Finalize Boring Logs		0.5	0.5	1.0			2.0		$73	$58	$95			$225		$225
5.0 GEOTECHNICAL ANALYSIS																
5.1 Subgrades	0.5	1.0	2.0				3.5	$125	$145	$230				$500		$500
5.2 Lateral Earth Pressure Parameters/Retaining Walls	1.0	4.0	8.0				13.0	$250	$580	$920				$1,750		$1,750
6.0 GEOTECHNICAL REPORT																
6.1 Draft Report	2.0	8.0	32.0	8.0	8.0	2.0	60.0	$500	$1,160	$3,680	$760	$760	$140	$7,000		$7,000
6.2 Final Report	1.0	2.0	8.0	2.0	2.0	2.0	17.0	$250	$290	$920	$190	$190	$140	$1,980		$1,980
7.0 FINAL DESIGN SERVICES																
7.1 Analysis and Calculation Package	2.0	4.0	60.0				66.0	$500	$580	$6,900				$7,980		$7,980
7.2 Assist HDR with Plan Development	1.0	2.0	16.0				19.0	$250	$290	$1,840				$2,380		$2,380
7.3 Geology Sheet	0.5		2.0		12.0		14.5	$125		$230		$1,140		$1,495		$1,495
7.4 Specifications Review	1.0	2.0	4.0				7.0	$250	$290	$460				$1,000		$1,000
8.0 PROJECT MANAGEMENT/MEETINGS/CONFERENCE CALLS		14.0	14.0				28.0		$2,030	$1,610				$3,640		$3,640
TOTAL	***9.0***	***38.5***	***152.0***	***53.0***	***22.0***	***4.5***	***279.0***	***$2,250***	***$5,583***	***$17,480***	***$5,035***	***$2,090***	***$315***	***$32,753***	***$9,224***	***$41,977***

LABORATORY TESTING					
Moisture Content	18	tests	$9	$	162
Gradation	6	tests	$100	$	600
Percent Passing No. 200 Sieve	6	tests	$48	$	288
R-Value	-	tests	$420	$	-
Atterberg Limits	6	tests	$100	$	600
Corrosion Suite	4	tests	$190	$	760
One-dimensional Swell	4	tests	$115	$	460
Standard Proctor Compaction	-	tests	$190	$	-
Total - Laboratory Testing				***$***	***2,870***

Other Expenses					
Per Diem	-	day	$46	$	-
Hotel	-	day	$100	$	-
Field Supplies	1	ls	$200	$	200
Vehicle - Drilling and Utility Locates, Meetings	4	day	$35	$	140
Office Supplies	1	ls	$50	$	50
Other Expenses				***$***	***390***

SUBCONTRACTORS					
Drilling Subcontractor					
Mobilization	2	day	$145	$	290
Truck-mounted Drill Rig	18	hour	$165	$	2,970
Support Truck	2	day	$250	$	500
55-gallon Drums	4	drums	$55	$	220
Drilling Materials	1	lump sum	$500	$	500
Traffic Control Subcontractor					
Plans, Signage, Traffic Control	1	day	$1,200	$	1,200
Subcontractor Markup	5	%		$	284
TOTAL - Subcontractors				***$***	***5,964***

COST ESTIMATE - SUMMARY		
Tasks/Subtasks (subtotal)	$	32,753
Laboratory Testing	$	2,870
Subcontractors	$	5,964
Other Expenses	$	390
TOTAL	***$***	***41,977***

Exhibit B

Team Members

PROJECT MANAGER - POINT OF CONTACT | TAMMY HEFFRON, PE, ENV SP

Tammy is a project manager with **20 years of experience** specializing in multidisciplinary transportation projects and structural design. She excels in dealing with geometrically constrained sites, intricate stakeholder processes and passionate communities.

Education: MS Civil Engineering Structures– Purdue University 1996
BS Civil Engineering – Lehigh University 1994
Relevant Project Experience: CDOT: Colfax over Tollgate Creek Bridges | Colorado Springs: Chestnut St. Underpass | CCD: Speer Blvd Bridges, Highland Pedestrian Bridge

PRINCIPAL IN CHARGE/QA MANAGER | CHAU NGUYEN, PE

Chau Nguyen is a project manager and engineer with **18 years of experience** in civil engineering. Her project work includes design of interchanges, roads, transit facilities, parking lots, intersections, and multi-use trails in urban settings.

Education: BS Civil Engineering, Colorado School of Mines, 1996
Relevant Project Experience: CCD: Inca Bike Pedestrian Bridge over 38th Avenue | Larimer County: Fish Creek Flood Recovery Project | CCD: Quincy Bike Avenue Improvement

CIVIL/TRAFFIC/TRAFFIC CONTROL | RICK PLENGE, PE, PTOE

Rick Plenge is one of HDR's National Complete Streets Technical Leaders and has over **20 years of transportation engineering experience** in planning, designing, and implementing a variety of innovative multimodal facilities including numerous multi-use path projects throughout the Denver area and country.

Education: BS Civil Engineering, University of New Hampshire, 1997
Relevant Project Experience: CCD: Garfield Street Bikeway Study, Syracuse Street Corridor Study | Casper: Wyoming Boulevard Pedestrian Sidepath Feasibility Study

STRUCTURES | JIM SUTTON, PE

Jim is a bridge engineer with **11 years of experience** in bridge design and rehabilitation projects of both highway and rail structures. His experience includes the design, rehabilitation and load rating of steel and concrete girder bridges, load rating and rehabilitation of steel truss bridges, analysis of truss gusset plates, and rehabilitation of suspension bridges.

Education: MS Engineering, Structures - University of Texas at Austin, 2007; BS Civil Engineering, Villanova University, 2005

Relevant Project Experience: CDOT R2: I-25/Ilex Bridges | Port Authority of NY and NJ: George Washington Bridge-Suspender Replacement and Main Cable Rehabilitation

PUBLIC/STAKEHOLDER ENGAGEMENT LEAD | TARA BETTALE

Tara, who has **11 years of experience,** worked as a public information lead for RTD. In addition to producing strategic communication plans, press releases, blog writing and crisis communications, Tara provides leadership and guidance during challenging stakeholder issues.

Education: Bachelor of Science, Journalism/News Editorial University of Colorado, Boulder, May 2007
Relevant Project Experience: RTD: FasTracks Eagle P3 Commuter Rail Infrastructure Project and Union Station Redevelopment Project | Wheat Ridge: Wadsworth Redevelopment

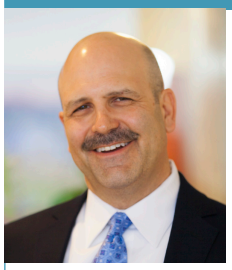
ENVIRONMENTAL | KAREN HADLEY, AICP (PINYON)

Karen has over **18 years of experience** focused on environmental planning, natural resource compliance, National Environmental Policy Act (NEPA) studies and documentation, long range planning, corridor planning, and public involvement/agency coordination.

Education: B.A., Geography, University of California, Santa Barbara; B.A., Environmental Studies, University of California, Santa Barbara

Relevant Project Experience: CDOT: R1 Environmental Staff Extension | Larimer County: Namaqua Bridge Replacement Categorical Exclusion | CDOT: US 85 PEL

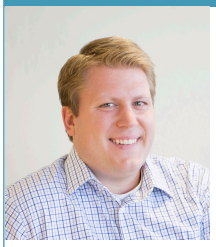
RIGHT-OF-WAY | GREG JAMIESON



Greg, HDR's Senior ROW Manager, has **33 years of experience** effectively managing the federal-aid ROW process in support of Colorado projects. He has led groups that have delivered timely ROW clearances for many high-profile projects. While at CDOT, he was responsible for oversight and approval of local government's ROW acquisition for Federal-aid transportation projects. In this role, he assisted CCD in its ROW acquisition and clearance for several Federal-aid projects.

Education: BS Civil Engineering, Colorado State University, 1984
Relevant Project Experience: CCD: Peoria Crossing Grade Separation, Colorado Blvd Capital Signal ADA Ramp Upgrade, Federal Widening (with CDOT) | CDOT: US 6 Bridges DB

STREETSCAPE/LANDSCAPE DESIGN | DAN STRANDELL, ASLA



Dan has **7 years of experience** and leads the Denver office's landscape visualization and construction implementation. His role on projects is to generate design concepts, to interface with clients and contractors, and to manage the production of construction documents and design graphics. He is highly skilled at transforming ideas into cost-effective solutions to enhance projects.
Education: B.S. in Landscape Architecture, South Dakota State University, 2010
Relevant Project Experience: Collinwood Pedestrian Bridge, SH 2 Corridor Design

PROPOSED SUBCONSULTANTS

Subconsultant	Project Role
Karen Hadley (Pinyon) ***DBE***	Environmental Lead
Elly Weber (Pinyon) ***DBE***	Hazardous Materials
Ashley Bushey (Pinyon) ***DBE***	Historic
Robyn Kullas (Pinyon) ***DBE***	Section 4(f) / 6 (f)
Dana Bijold (Goodbee) ***DBE***	Utilities
Amara Hildebrand (Eugene Lynne) ***DBE***	Hydrology & Hydraulics/Water Quality/Erosion Control
Heath Hilderbrand (Eugene Lynne) ***DBE***	Survey
Greg Fischer (Shannon & Wilson)	Geotechnical Engineering
David Roederer (Clanton) ***DBE***	Lighting and Electrical Design

Tammy Heffron, PE, ENV SP

Project Manager - Point of Contact

Tammy Heffron specializes in the design and management of transportation projects during all phases. She has successfully designed and managed projects in both remote locations with environmentally sensitive areas and highly urban areas negotiating stakeholder interests. Her background in structural design makes her an ideal project manager for transportation projects that have structures as critical project elements. Tammy's proactive management approach enables projects to meet schedule and budget by identifying critical path tasks early on and developing strategies for success.

Education:

Master of Science, Civil Engineering (Structures), Purdue University, 1996

Bachelor of Science, Civil Engineering, Lehigh University, 1994

Registration:

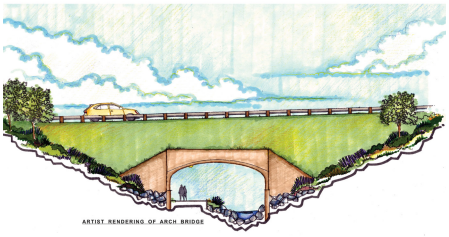
ISI Envision Sustainability Professional, National Registration

Professional Engineer, Colorado, No. 34323

Industry Tenure: 21 Years

HDR Tenure: 12 Years

Colfax over Tollgate, Denver, CO



Chestnut St. over Multi-Use Trail and Creek, Colorado Springs, CO

Relevant Experience:

Colfax over Tollgate Creek Bridge Replacements, CDOT Region 1
Aurora, CO

"We are writing this letter to highly recommend the HDR staff for their responsiveness, professionalism and collaboration on the Colfax over Tollgate Creek Bridge Enterprise Design Project. The project consisted of the replacement of parallel bridges spanning Tollgate Creek, directly east of I-225 interchange. Being located in a highly congested area with high traffic volumes the project required creativity from the design team to reduce impacts to the traveling public and minimize the construction schedule. The project required close and consistent coordination with numerous stakeholders including RTD's I-225 LRT Project, the City of Aurora, and the seven affected utility companies. The result was a complex and challenging project that showcased the skills, innovation, and technical expertise of the HDR team.

Ms. Tammy Heffron was a remarkable project manager who consistently worked to ensure that the project remained focus, efficient, and well-integrated. Tammy's efforts were instrumental in moving the project forward and resolving the varied interests of the numerous stakeholders. Even during difficult moments, she remained well composed and continually insightful, while promoting CDOT's interests in a professional, collaborative manner. Her ability to effectively and professionally lead was critical to the project's success."

- Anthony Stewart, PE and Katie Dawson, PE (CDOT Region 1 Project Managers)

Chestnut Street Underpass, City of Colorado Springs | *Colorado Springs, CO*
On the evening of August 10, 2015, a 96" corrugated metal pipe (CMP), carrying South Douglas Creek beneath Chestnut Street, collapsed creating a 20-foot hole in the roadway. The culvert failure exposed 8 different utilities and closed the roadway. The City of Colorado Springs called upon Tammy to help them respond to this emergency. Tasks for the new structure included alternatives analysis; roadway and structural design; and a hydraulic analysis. The preferred alternative resulted in a pedestrian underpass that would not only accommodate the creek but also allow for the Sinton Trail to pass beneath the roadway when realigned in the future.

I-76 over UPRR Bridge Replacements, CDOT Region 1 | *Denver, CO*
Tammy managed the design of the replacement bridges that carry I-76 over the UPRR adjacent to the interchange with US 85.

I-76 UPRR

"This project involved extensive coordination with two major utility owners, the union Pacific Railroad Company and Suncor Industries. Tammy was instrumental in successfully coordinating with both of these utility companies and provided complete and timely information to both CDOT and utility owner staff. She always anticipated the needs of both groups and did not just react to request for information

As far as general project management is concerned, Tammy and her team provided very high quality work products, on time and under budget. She responded to requests quickly and thoroughly and was always a very enjoyable person to work with. She always put the interests of the project first and has the technical and professional skills needed to successfully deliver any transportation project: but especially bridge design projects."
- David Kosmiski, PE (CDOT Region 1 Project Manager)

Snowmass Village Skier Bridge, CO

Snowmass Village Skier Bridge, Intrawest Snowmass Base Village Development, *Snowmass Village, CO*
As a subconsultant to Ames Construction, HDR was brought on board to design two bridges and associated retaining walls. Tammy served as the design engineer for these high-visibility structures. Each accommodates vehicular and skier/pedestrian connectivity and incorporates aesthetic elements to match in with the community.

Highland Pedestrian Bridge, Denver, CO

Highland Pedestrian Bridge, City and County of Denver and CDOT Region 1
Denver, CO
Modeled and checked the triple-arch truss and deck structure of the main span. Provided structural design and detailing of the elevated approach span. The post-tensioned concrete slab of the approach span is irregular in shape and supported by abutments and the main arch's foundations.

I-70 Mountain Express Lane, CDOT Region 1
Clear Creek County, CO
This controversial project added a tolled lane to EB I-70 during peak period travel times and included two bridge replacements, ***trail coordination and design, and park improvements***. Tammy served as deputy project manager leading the design of this CM/GC project. Project success required close coordination with CDOT, FHWA, City of Idaho Springs, Clear Creek County, regulatory and permitting agencies, contractor, utility companies, citizen groups, and the surrounding communities.

Point Bonita Lighthouse Pedestrian Bridge Replacement, CA

Speer Boulevard over South Platte River Bridge Replacement, City and County Denver | *Denver, CO*
Provided structural design for the approach spans and substructures of two, 3-span adjacent bridges. The approach spans consist of steel plate girders. Both the approach spans and the center tied-arch are supported by rigid-frame, concrete piers.

Point Bonita Lighthouse Pedestrian Bridge Replacement, CFLHD FHWA | San Francisco, CA
Tammy served as the project manager for this National ACEC award-winning, CM/GC project. The project site is located 100' above the Pacific Ocean at the end of a narrow trail. Working with the contractor through challenging site constraints and early procurement of specialty materials allowed for completion of this project on time and under budget.

Chau Nguyen, PE

Principal in Charge / QA Manager

Chau Nguyen is a project manager and engineer with 18 years of experience in civil engineering. Her project work includes design of interchanges, roads, transit facilities, parking lots, intersections, multimodal facilities, and multi-use trails in urban settings. She has completed numerous bike path and alley projects for CCD, and her overall experience includes numerous street and intersection projects.

Education:

Bachelor of Science, Civil Engineering, Colorado School of Mines, 1996

Registration:

Professional Engineer, Colorado, United States, No. 36769

Industry Tenure: 19 Years

HDR Tenure: 2 Years

Relevant Experience:

Inca Bike Pedestrian Bridge over 38th Avenue, City and County of Denver *Denver, CO*
Provided project management and coordination, preliminary design, and final design for this bridge and associated bike/pedestrian path connection. This was a local agency project with design and clearance completed for Advertisement in 6 months to meet the funding schedule while meeting budget. Project Manager

"She has displayed the perfect mixture of an open and engaging personality, a fundamental understanding of and willingness to learn inter-discipline constraints, manage and prioritize conflicts through precise communication within the team and carefully weave practical and creative solutions."
- Kyle Arend, Larimer County Project Engineer

Damage from the Fish Creek Flood

29th & Valmont Intersections Improvements, City of Boulder | *Boulder, CO*
The purpose of the project is to provide preliminary and final design services for intersection improvements at 29th Street and Valmont Road, with approximate project extents from 250 feet west and 500 feet east of the intersection. Valmont Road will be widened to accommodate left turn lanes and increased on-street bike lane widths. Other improvements include an improved sidewalk, impacts to existing driveways with the proposed widening, and a traffic signal. This is a local agency project. Project Manager and Roadway Design Lead

Fish Creek Flood Recovery Project, Larimer County | *Larimer County, CO*
Severe flooding hit the Estes Park Valley in September 2013. During the flood, Fish Creek jumped its banks and caused substantial damage to the road system, trails, utilities and homes and businesses. This project includes conducting public involvement activities, secure needed environmental permits, and design the utilities, roads, channel, and trail. Project Manager and Roadway Design Lead.

Colorado Boulevard

Quincy Bike Avenue Improvements Final Design, City and County of Denver
Denver, CO
Project manager and engineer for bike path design paralleling West Quincy Avenue between Sheridan Avenue and Pierce Street. Provided extensive stakeholder coordination with the Pinehurst Country Club to address the bike path crossing their access and the wall along the right-of-way.

On-Call Civil Design for Denver International Airport, City and County of Denver | *Denver, CO*
Project manager and design engineer for the 2004, 2006, and 2009 On-Call Civil Design contracts for over two dozen task orders for their landside improvements. Managed multiple task orders concurrently with concurrent deadlines. Task orders included widening of Pena Boulevard, parking lot civil design, bus queuing improvements, and drainage and erosion control.

Colorado Boulevard Reconstruction, City of Idaho Springs | *Idaho Springs, CO*
Program and project manager for a $21.9M effort to design and construct 2 miles of former state highway removed from the state system and put on the City of Idaho Springs' local system. Over 3 years, the scope included program planning and oversight; financial management; scheduling; procurement of engineers and contractors; design oversight; construction administration; public involvement; and Right-of-Way support. Improvements include roadway, drainage, multiuse path, access, utilities, and traffic.

DEN

South Terminal Redevelopment Program (DEN), City and County of Denver
Denver, CO
Task manager responsible for the overall drainage, stormwater management and erosion control, utility design, and coordination of the design of the AVI gates.

Final Design SH14: Riverside to Lemay, CDOT R4 | *CO*
Provided management and coordination with the CDOT Project manager, CDOT designers, and subconsultant staff for the bridge reconstruction over the Poudre River and roadway improvements between two major intersections. Facilitated heavy stakeholder involvement integrating urban design elements late in the design to maintain Advertisement schedule.

Arapahoe Road/Dayton Road Street Intersection Improvements, CDOT R6
CO
Provided project management, final intersection/roadway, traffic, utility, and construction phasing. Completed a Traffic Analysis Report and coordinated multiple disciplines. Revised design scope after DOR which was then combined with an overall corridor project impacting the construction package and schedule. Project Manager and Roadway Design Task Lead

Arapahoe Road/Parker Road Interchange Final Design, CDOT R6 | *CO*
Project manager for multi-disciplinary blended team and Engineer of Record for final interchange/roadway design. This project was phased in multiple design packages. Provided extensive coordination efforts with multiple stakeholders including various CDOT agency staff, water and drainage authorities, parcel developers, the cities of Aurora and Centennial, the Town of Foxfield, and Arapahoe County.

Rick Plenge, PE, PTOE

Civil/Traffic/Traffic Control

Rick Plenge is one of HDR's National Complete Streets Technical Leaders and has over 20 years of transportation engineering experience in planning, designing, and implementing a variety of innovative multimodal facilities including numerous multi-use path project throughout the Denver area and country. Rick serves as a national presenter for both ITE and ASCE on innovative bicycle facility design and was recently selected by the National Complete Streets Coalition and Association of Pedestrian and Bicycle Professionals to become a National Complete Streets Instructor.

Education:

Bachelor of Science, Civil Engineering, University of New Hampshire, 1997

Registration:

Professional Traffic Operations Engineer, Colorado, United States, No. No. 2098

Professional Engineer, Colorado, United States, No. No. 36333

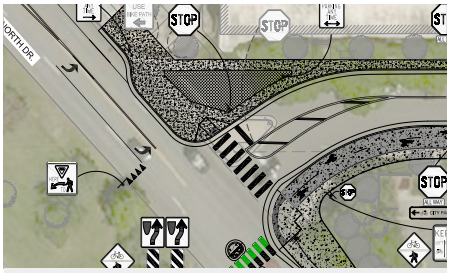
Industry Tenure: 20 Years

HDR Tenure: 2 Years

Relevant Experience:

SH 2 Corridor Design, Commerce City
Commerce City, CO
Rick served as the multi-modal design lead on the SH 2 Corridor project which included the design of a 7 mile long enhanced multi-modal trail facility that included a combination of shared use path along with enhanced on-street bicycle facilities as the facility transitioned through five distinct land use areas. The design included extensive coordination with the adjacent BNSF railroad and the incorporation of raised crosswalks within the existing channelized right turn lane designs to provide enhanced trail crossings through these high conflict locations.

"I would recommend HDR Engineering, especially Rick Plenge, to your potential clients who need qualified, experienced leadership on their consulting team."
-Jeff Townsend, Resort Concepts Manager



Garfield Street Bikeway Intersection Designs, Denver, CO

Garfield Street Neighborhood Bikeway Intersection Designs, *Denver, CO*
Rick led the final design for the Garfield Street neighborhood bikeway which included development of final design plans at the intersections with Alameda Avenue and Cherry Creek N. Drive. These two intersection design projects involved the design and development of raised protected bikeways, trail design, bicycle signalization, drainage improvements, roadway design, ADA ramp layout, ITS design, landscaping, and construction traffic control. Based on the high profile nature of these projects with the Cherry Creek Neighborhood, HDR helped facilitate numerous public involvement meetings with area stakeholders.

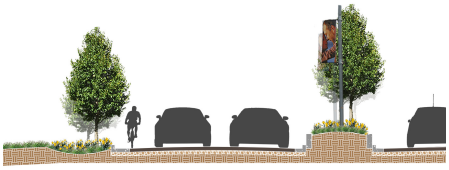
Garfield Street Neighborhood Bikeway Feasibility Study
Denver, CO
Rick managed the feasibility study and implementation plan for a neighborhood bikeway along Garfield Street between E. 17th Avenue and E. Dakota Avenue. The neighborhood bikeway will provide an on-street bike route that offers a comfortable shared roadway for bicyclists of all abilities through the strategic design of signage, striping, and intersection improvements that improve safety for all modes of transportation while giving bicyclists travel priority. The plan

Modoc National Wildlife Refuge | *Alturus, CA*
Rick led the technical design of a two-mile Class III multi-use path that will provide a direct connection between the town of Alturus, CA and the Modoc National Wildlife Refuge. The design developed innovative trail alignment strategies to mitigate potential environmental constraints along with an at grade rail crossing. Senior Technical Advisor and Traffic/Multimodal lead.

SH-2 Corridor Design

Rivers Edge Development | *Garfield County, CO*
As part of the River's Edge development team, Rick led the integration of the community multi-use path network into the Rio Grande Trail. The design included developing details for a raised trail crossing of the Rio Grande along with advanced signing and striping plans for both the trail and roadway approaches to the crossing.

Wyoming Boulevard Pedestrian Sidepath Feasibility Study, Casper MPO *Casper, WY*
Responsible for developing the conceptual design of an 8 mile long multi-use trail along a perimeter road in Casper, WY. He oversaw the development of three alternative alignments and intersection crossing details and prepared construction cost estimates and project details. He also presented the project alternatives and preferred alternative to the Casper MPO technical advisory committee.



SH-2 Corridor Design

Twin Lakes Trail Feasibility Study | *Boulder County, CO*
Rick managed the feasibility study of one mile extension of the LOBO trail along Twin Lakes Road in Boulder County. The study included the development of multiple trail alignments that balanced right of way, parking, landscaping, environmental and utility impacts. The project involved extensive stakeholder involvement to help identify the preferred trail alignment. Once the preferred alignment was chosen, a detail cost estimate and summary memo were developed which summarized the study process and estimate of probable cost.

US 85 PEL and NEPA Reevaluation | *Douglas County, CO*
Rick led the multi-modal planning effort for the US 85 PEL and NEPA Reevaluation that looked to develop off-street multi-use path facilities along the US 85 corridor. The effort helped identify the preferred location for the multi-use path facility along the corridor including which side, treatment at intersections, connections to other adjacent multi-modal facilities, and separation techniques from the US 85 corridor.

15th Street Protected Bikeway, Denver, CO

15th Street Protected Bikeway, *Denver, CO*
Lead Bikeway Designer. Rick served as the lead senior designer of a 1-mile section of protected bike lane along 15th Street in downtown Denver. The design included development of a leading bicycle interval phase, multiple two-stage turn boxes, bicycle signal detection, bicycle signal heads, and flexible delineator layout.

Grant Avenue Promenade | *Ogden City, UT*
Bicycle and pedestrian facility design for the redevelopment of Grant Avenue in downtown Ogden City. He led the development of 30% design plans for protected bicycle lane and pedestrian crossing enhancements associated with the project.

Jim Sutton

Structures

Jim Sutton is a structural engineer with a wide range of experience in bridge design and rehabilitation projects. His experience includes the design, rehabilitation and load rating of steel and concrete girder bridges, load rating and rehabilitation of steel truss bridges, analysis of truss gusset plates, rehabilitation of suspension bridges, and design of movable bridges. His experience includes design and analysis of both highway and rail structures.

Education:

Master of Civil Engineering, Structural Engineering, University of Texas at Austin, 2007

Bachelor of Civil Engineering, Civil/ Structural, Villanova University, 2005

Registration:

Professional Engineer, Colorado, US, #PE.0049189

Professional Engineer, New York, US, #089675

Professional Engineer, Wyoming, US, #15988

Industry Tenure: 11 Years

HDR Tenure: 2 Years

I-25/Ilex Truss Rehabilitation

Relevant Experience:

Flatiron Construction, Colorado Department of Transportation (CDOT) Region 2, I-25/Ilex Bridges D-B with Flatiron, *Pueblo, Colorado*

CDOT selected Flatiron/HDR team for the design-build contractor of the I-25/Ilex Bridges project with Flatiron Constructors Inc. as the prime contractor and HDR as lead designer. Key elements include: building new structures to the ultimate width improving the design speed of the I-25 curves upgraded recreational trails drainage improvements permanent water quality elements and rehabilitation of other bridge structures in the area. Jim acted as one of the lead engineers on the project and is the Engineer of Record for four structures: a new prestressed concrete adjacent box girder bridge, two steel girder bridge rehabilitations (including substructure), and a steel through truss bridge rehabilitation. Jim also acted as the Structural Lead for the project during the latter stages of the design phase and during the design services during construction phase.

NON-HDR EXPERIENCE

Delaware County Dept. of Public Works, Bridge 2-2 Inspection & Load Rating, *Delancey, NY*

Jim acted as the lead design engineer for this project to load rate Bridge 2-2 and provide a rehabilitation method which would allow the steel truss bridge to retain no load posting. His responsibilities included field inspection, structure analysis and load rating, and structure design and detailing.

Delaware County Dept. of Public Works, Load Rating & Rehabilitation of County Route 28 over E. Branch Delaware River, *Hancock, NY*

Jim acted as the lead design engineer for this project to evaluate significantly deteriorated truss gusset plates, truss verticals, and truss floorbeam connections. His responsibilities included structure analysis and preparation of a letter report, which included analysis results and repair recommendations, as well as preparing cost estimates for a number of rehabilitation and replacement alternatives. His responsibilities also included structure detailing, directing plan preparation, cost estimating, and specification preparation for the selected bridge cleaning and painting alternative. He also developed steel repair details for a number of deteriorated truss members and provided construction support services.

Hawk Engineering, Court Street Bridge, *Binghamton, NY*
Jim acted as a design engineer for this project to analyze the existing pier caps that had been "red flagged" during a NYSDOT biennial inspection. His responsibilities included analyzing and rating the pier caps, developing rehabilitation alternatives, and preliminary cost estimating.

Port Authority of New York & New Jersey, George Washington Bridge-Suspender Replacement and Main Cable Rehabilitation, *New York, NY*
This project involved performing engineering design services related to the replacement of suspender ropes and the rehabilitation of the main cables and cable strands on the George Washington Bridge. Jim acted as a design engineer during the final design stage in order to develop the plans and estimate for the replacement of the GWB sidewalks, including the sidewalk railings and traffic barrier. His responsibilities included structure analysis, structure design and detailing, directing plan preparation and cost estimating.

George Washington Bridge, New York, NY

Port Authority of New York & New Jersey, Lincoln Tunnel Bus Ramps Priority Repairs, *New York, NY*
Jim acted as a design engineer to assist in the development of repairs for the Lincoln Tunnel approach bus ramps. His responsibilities included on-site field inspection, structure design and detailing, assisting in plan preparation, cost estimating, and construction support services.

Triborough Bridge & Tunnel Authority, RK-23 - Reconstruction & Rehabilitation of RFK Bridge Manhattan Approach Ramps, *New York, NY*
The RK-23 project involved the study and design for the reconstruction and rehabilitation of the three Manhattan approach ramps on the Robert F. Kennedy Bridge. Jim acted as a design engineer during the preliminary and final design stages of the project. In the preliminary design stage, his responsibilities included load rating, developing replacement alternatives, preliminary structure analysis and design, preliminary cost estimating, and preparing sections of the Design Brief. In the final design stage, his responsibilities included the design of new continuous steel stringers, new concrete abutments, and new expanded polystyrene fill. He also designed and detailed a method to jack and reset an existing steel span that had shifted due to the rotation of an existing pier.

Tara Bettale

Public Outreach & Agency/Stakeholder Coordination

Tara recently joined HDR in our Strategic Communications department. She previously served as a public information manager for the Regional Transportation District (RTD) in Denver, working on the FasTracks Eagle P3 Commuter Rail project. Along with producing strategic commmunication plans, press releases, blog writing and crisis communications,Tara provided leadership and guidance during challenging stakeholder issues. She is effective in addressing concerns with local agencies, business owners, and residents alike. Tara knows public involvement processes and strategies to keep the client's goals in her frame of reference, yet she also has the objectivity to hear, understand, and address the public's perspectives without prejudice. Tara's HDR team provides clients with stakeholder engagement strategy and tools, high-end visual marketing tools (brochures, fact sheets, websites, online meetings, and interactive public outreach maps, publicly-consumable videos, and much more), facilitation and event/meeting planning and logistical coordination.

Education:

Bachelor of Science, Journalism/ News Editorial, University of Colorado, Boulder, May 2007

Professional Memberships:

American Public Transportation Association

Women in Transportation (WTS) Colorado Chapter

Industry Tenure: 11 Years

HDR Tenure: Less than 1 year

Relevant Experience:

RTD: Eagle P3 Commuter Rail Infrastructure Project

Denver, CO

Tara was employed by RTD as the public information manager for the FasTracks Eagle P3 commuter rail infrastructure project (East Rail Line to airport, Gold Line to Arvada/Wheat Ridge and first segment of Northwest Rail Line to Westminster). Tasks include press release writing, media interviews (TV, print and radio), social media post development, newsletter and blog articles, website updates, daily stakeholder communications, crisis communication, internal communications, monthly federally-required report writing, presentation development, meeting and event planning/logistics, and conduction of public and stakeholder tours.

Eagle P3

"I worked with Tara for a number of years and always appreciated her efficient ability to convey complex situations in a clear, direct and concise manner. Tara possesses the unique ability to simultaneously satisfy the questions of both kids and technical professionals with the same message. Tara genuinely cared about our stakeholders, always listened attentively and was tenacious with her efforts to completely fulfill everyone's desire for information."

- Greg Straight, RTD FasTracks Eagle P3 Project Director, Denver

Denver Union Station

RTD: Denver Union Station Redevelopment
As an RTD employee, Tara led the strategic communications and stakeholder outreach during construction and after opening of the new Denver Union Station. In both roles, Tara led a consistent and transparent communication strategy in order to limit the political and social risk of the projects and show the public and key stakeholders the true benefits of the infrastructure improvements.

Wadsworth Boulevard Widening Environmental Assessment
Wheat Ridge, CO
Wheat Ridge has been working for several years to upgrade Wadsworth Boulevard and improve multi-modal transportation options. In 2015, HDR helped the City complete a Planning and Environmental Linkage (PEL) study and secured a DRCOG TIP grant providing the majority of the funding for construction. HDR is now leading a team to complete topographic survey, conceptual design, preparation of a template EA and 30% plans. Tara is leading the Public Information efforts.

I-70 Westbound Peak Period Shoulder Lane Project
CDOT, Clear Creek County
HDR was recently selected to lead environmental clearance and design for the I-70 Westbound Peak Period Shoulder Lane project. Tara is leading Strategic Communications for the project, which involves coordination with Clear Creek County, the City of idaho Springs, and CDOT.

Karen Hadley, AICP (Pinyon)

Environmental

Karen has over 18 years of experience focused on environmental planning, natural resource compliance, National Environmental Policy Act (NEPA) studies and documentation, long range planning, corridor planning, and public involvement/agency coordination. She is experienced in the oversight and management of multi-disciplinary project teams that include professional planners, archeologists, historians, biologists, and field personnel. Karen excels in project development and management, data and technical analysis, graphic design, field investigation, and has authored or co-authored numerous planning and environmental documents. She has extensive knowledge of resource planning principles, practices, and procedures necessary complete projects successfully. Karen has led numerous projects that required coordination with local, state, and federal public and regulatory agencies to obtain necessary clearances and permits for successful project implementation.

Education:

B.A., Geography, University of California, Santa Barbara

B.A., Environmental Studies, University of California, Santa Barbara

Certifications:

American Institute of Certified Planners

Memberships:

American Planning Association, Member

WTS International, Advancing Women in Transportation, Member

Industry Tenure: 18 Years

US 85 PEL, Douglas County, CO

Relevant Experience:

Region 1 Environmental Staff Extension, Colorado Department of Transportation, *CO*

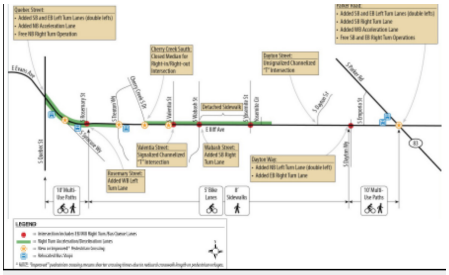
Karen is currently serving as an extension of Colorado Department of Transportation (CDOT) staff as an Environmental Project Manager on behalf of CDOT's Region I Environmental Office. Ms. Hadley works out of the South Holly Street office once a week and regularly attends project meetings (e.g., Scoping, FIR, FOR) as needed for specific projects. The primary goal of the contract is to help the Region provide environmental clearances to allow projects to progress into construction. To avoid any potential conflict of interest, Pinyon does not provide resource related environmental services on projects that are assigned to Ms. Hadley to manage on CDOT's behalf.

Namaqua Bridge Replacement Categorical Exclusion, *Larimer County, CO*

Karen is currently serving as the Project Manager responsible for the completion of the Categorical Exclusion (CatEx) document and obtaining any certifications or other relevant documents required to satisfy NEPA and CDOT Region 4 environmental clearance process. Ms. Hadley is managing the evaluation of all resources including noise, hazardous materials, natural resources, historic resources, and non-historic 4(f) properties.

US 85 Planning and Environmental Linkages Study, CDOT Region 4, *Weld County, CO*

CDOT is completing a Planning and Environmental Linkages (PEL) study for approximately 60 miles of US 85 to develop a program of improvements, identify environmental constraints, and gain consensus on implementation. Pinyon is providing the Environmental Resource Evaluation for the entire project. Ms. Hadley is serving as part of technical QC team for the environmental review of the PEL.



Illif Avenue, Arapahoe County, CO

Iliff Avenue Corridor Design, *Arapahoe County, CO*
The project consists of full reconstruction and widening of Iliff Avenue from Parker Road to Quebec Street. The reconstruction includes the addition of turn and acceleration/deceleration lanes at several intersections, a protected eight-foot pedestrian/bike facility, the widening of the bridges over Cherry Creek and High Line Canal, and drainage improvements throughout the corridor. Right of way is required for 75 properties along the corridor. Karen is managing the evaluation of the following environmental resources: natural resources including SB 40, wetlands and waters of the US (WUS), threatened and endangered species (TES), historic resources, paleontology, archeology, and air quality.

I-70 East Vail Landscape and Water Quality Improvements, *Town of Vail, Vail, CO*
The Town of Vail is using TAP Grant funding for water quality improvements along I-70 from MP 179 to MP 182. The project involves the improvement of storm water runoff from I-70 at the East Vail interchange (exit 180) and the historic I-70 bridge structures at MP 181.9. Karen is serving as the Project Manager providing overall project coordination with the internal and external project team to ensure the appropriate level of effort is implemented for each resource and the report was completed by the project deadline, within budget. Karen is managing the environmental evaluations for the CatEx which include: natural resources including SB 40, wetlands and WUS, TES, noxious weeds, historic resources, paleontology, archeology, and hazardous materials.

Landscape and Water Quality Improvements, Vail, CO

Colorado Department of Transportation Statewide Transportation Plan, *Multiple Locations, CO*
As a senior planner, Karen worked directly with the project manager and CDOT to coordinate all aspects of the team's work to deliver this plan. She worked directly with CDOT to develop the highly visual executive summary, a suite of informational graphics for use in the plan and other CDOT public facing materials and to incorporate CDOT's other modal plans and the 10 regional and five Metropolitan Planning Organization (MPO) plans into the statewide plan. Karen worked closely with CDOT to develop the public outreach materials for public meetings and a series of Telephone Town Halls; and to develop an innovative documentation delivery method for the various elements of the statewide plan, which was delivered in a web-based format including the use of videos, interactive presentations, and summary documents.

Quincy Avenue and SH 30 Categorical Exclusion, *Aurora, CO*
The project consists of the implementation of a partial continuous flow intersection (PCFI) for South Gun Club Road and widening East Quincy Avenue to four lanes through the intersection. A new trail system will be located under the southern leg of the intersection and run adjacent to the proposed regional water quality/detention pond east of South Gun Club Road. Construction is planned for 2017. Karen is managing the environmental clearance process on behalf of CDOT Region 1 and is responsible for review and approval of the technical studies. Additionally, Pinyon was involved in scoping the project with the County, Aurora, and CDOT.

Greg Jamieson

Right-of-Way

Greg Jamieson is a senior Right of Way manager with comprehensive knowledge and experience managing public multi-million dollar right of way projects and programs. Greg's leadership, expertise and proven track record of meeting aggressive right of way project schedules while ensuring the considerate treatment of affected property owners, results in more effective delivery of right of way services supporting transportation projects. Prior to joining HDR, Greg had over 14 years of experience as a CDOT Right of Way Manager, wherein he lead a diverse team providing cradle to grave right of way services, including surveying, right of way plans preparation, appraisal/appraisal review, acquisition negotiation, relocation, management of condemnation litigation and property management.

Education:

Juris Doctor, Juris Doctorate, University of Denver, 1990

Bachelor of Science, Civil Eng/ Construction Mgmt, Colorado State University, 1984

Industry Tenure: 27 Years

HDR Tenure: 2.3 Years

Relevant Experience:

CDOT R1, Colfax Curb Ramps, *Denver, CO*

Greg's HDR ROW team valued and negotiated the acquisition of property interests needed from 20+ owners in a short time frame for construction of ADA-complaint curb ramps to support an overlay project for Colfax Boulevard, from Galapago Street to Colorado Boulevard. A ROW incentive program, wherein landowners were offered additional funds if they signed agreements in certain time frames was used as an innovation to reduce acquisition negotiation time.

"Greg, you brought to our projects your experience, diplomacy, and expertise in right-of-way, and the Region and I are very appreciative of your extremely capable and competent performance. Thoee projects are under construction and we could not have gotten there without your assistance and significant management skills."

- Kathy Freeman, Manager, Region 3 Right-of-Way

Colfax Curb Ramps, Denver, CO

CDOT R4, US 34 Big Thompson Canyon Permanent Repairs Project, *Loveland to Estes Park, Frisco, CO*

Assisted Region 4 ROW team, working with CM-GC team, on significant project making permanent repairs to the Big Thompson Canyon for better resiliency for future flooding events. Developed budgets, scheduling and resources allocation to define, value and acquire ROW needed from numerous owners to support aggressive preconstruction schedules for construction packages. Solved numerous complex ROW problems. Negotiated possession and use agreements with City of Loveland and Larimer County critical for early construction. Greg's HDR ROW team is also negotiating the acquisition of many parcels needed for two of the construction packages.

CDOT R3, SH 9 Iron Springs, *Frisco, CO*
Assisted Region 3 with the management of all phases of the ROW process for a project to construct a 4 lane section of SH 9 on a new alignment, and relocate the Blue River Bikeway to the existing highway alignment adjacent to Dillon Reservoir. Greg negotiated complex right of way agreements with the United States Forest Service, Summit County, the Town of Frisco, the Continental Divide Land Trust (CDLT) and Denver Water. Innovations included a land trade agreement between CDOT, Summit County and CDLT that included removing a conservation easement on right of way needed for the new SH 9 highway alignment and moving it to the right of way upon which the realigned bike path will be located.

CDOT R3, I-70 Vail Underpass, *Vail, CO*
This project constructed a new underpass under I-70 between the Main Vail Ski Area and West Vail exits connecting the north and south frontage road, inclusive of two new roundabouts for each frontage road/underpass connection. Greg assisted the CDOT Region with all aspects of the ROW process. Greg's effective project management helped the timely completion of ROW plans, appraisals, appraisal review and acquisition negotiations from all but one ownership needed for the project, which led to CDOT issuing a conditional right of way clearance that allowed for an early enough construction start to meet the aggressive construction schedule. Greg also worked effectively with CM-GC design and construction team to coordinate ROW requirements so they successfully accommodated design and construction considerations.

NON-HDR EXPERIENCE

CDOT, Right of Way Acquisition for US 6 Bridges Design-Build Project
Project management for acquisition of $9+M of right of way for CDOT's $100M design-build project that significantly improved a1.5 mile segment of US 6 in downtown Denver, including replacement of 6 bridges and reconstruction of a new US 6/Federal Boulevard interchange and two Denver City Parks. Negotiated a functional replacement that provided property and funding for the Denver School District to reconstruct a major school bus maintenance facility that was significantly impacted by a partial acquisition. Negotiated a land trade with the City and County of Denver to mitigate impacts on two Denver Parks from partial acquisitions, and included reconstruction of major new park amenities.

CDOT, Negotiated CDOT/RTD Right of Way Reciprocity Agreement
Negotiated agreement between the CDOT and RTD whereby each agency allowed the other to use their right of way for transportation projects for free with common use agreements. This agreement streamlined project development for both agencies by allowing project-specific right of way decisions to be made at staff level that were previously elevated to executive levels. The agreement proved especially beneficial to RTD on its multi-billion dollar FasTracks project.

Dan Strandell, ASLA

Streetscape/Landscape Design

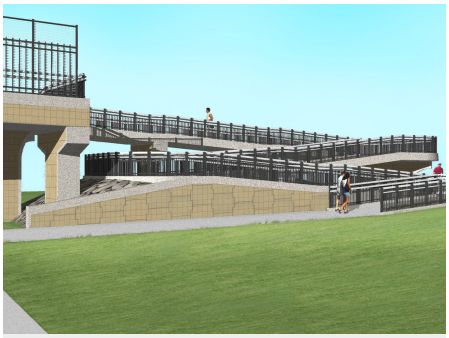
As a Landscape Architectural Coordinator at HDR, Dan leads the Denver office's landscape visualization and construction implementation. His role on projects is to generate design concepts, to interface with clients and contractors, and to manage the production of construction documents and design graphics. He is highly skilled at producing digital 3D models and photorealistic design renderings. Dan is passionate about the details of his projects and strives to produce the most well-crafted and clear construction documents possible.

Education:

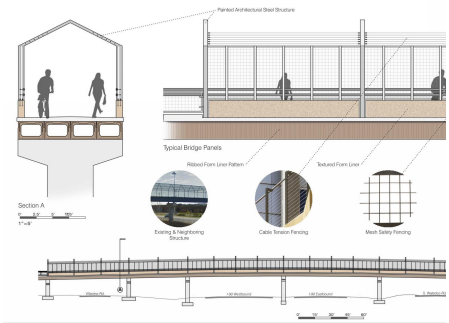
Bachelor of Science in Landscape Architecture, South Dakota State University, 2010

Industry Tenure: 7 Years

HDR Tenure: 2 Years



Collinwood Pedestrian Bridge



Collinwood Pedestrian Bridge

Relevant Experience:

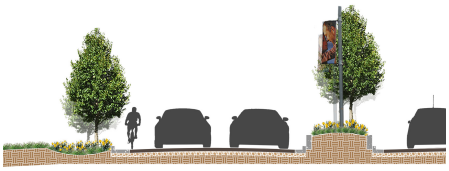
SH 2 Corridor Design, *Commerce City, CO*
As site design coordinator, led digital production of landscape design and implementation of over 7 miles of roadway improvements along state highway 2 in Commerce City. Design solutions emphasize creating unique streetscape character along the Town of Derby and roadway edge design that creates visual enhancement as well as improved stormwater management. The project also included the design of a new park along the highway.

I-225 LRT Corridor & Stations, *Denver & Aurora, CO**
As landscape designer and member of a multidisciplinary design team, Dan aided in development of light-rail –transit stations and rail corridor design and delivery. He worked with multiple clients, sub-consultants, and contractors to coordinate the design of 10.5 miles of light rail expansion connecting existing rail with commuter rail. The scope of the project included planning and design of eight elevated or at-grade LRT stations, pedestrian and bicycle connectivity, intersection design, vertical circulation, bridge aesthetics, wayfinding, station area and parking layout, platform canopies, public art integration, and optimization of future land use and developmental potentialAs the client's representative, Dan worked alongside the contractors on a daily basis to ensure the clients' needs were being met. Special considerations had to be made for federal and state safety regulations as well as major property ownership and right-of-way coordination.

**Work preformed prior to HDR*

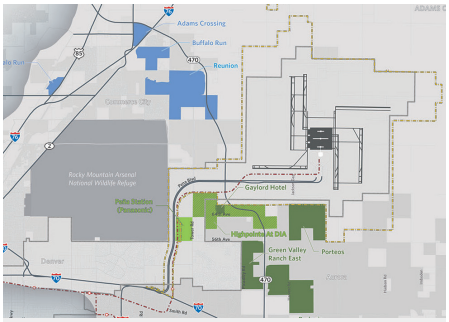
SH-2 Corridor Design

Quebec Street Alternatives Analysis, *Denver, CO**
Dan worked on an interdiciplinary team to help the City of Denver evaluate multi-modal enahncements for Quebec Street. As landscape designer, Dan developed ROW expansion alternatives and streetscape design concepts along with 3D graphic visualizations for those concepts. The study was charged with not only alleviating vehicular congestion, but also with addressing sub-standard pedestrian and bicycle conditions and preserving or enhancing neighborhood value and character. The team developed six alternatives including a no-build alternative. Options included nodal widening at intersections, corridor widening, and diversion of traffic from a two-way street to a couplet configuration.



SH-2 Corridor Design

CDOT R1 Task 1 Aerotropolis Study, *Denver, CO*
As site design coordinator, Dan is assisting in research and production of inventory mapping. HDR is the lead consultant assisting the Colorado Department of Transportation in preparing a study regarding the land use and infrastructure requirements to enhance economic development surrounding Denver International Airport. The Colorado Aerotropolis Visioning study, funded by a grant from the Federal Highway Administration, collaboratively engages local jurisdictions and DEN Real Estate to examine the benefits and impacts of proactively planned Aerotropolis infrastructure surrounding DEN. (2015-Present)



CDOT R1 Task 1 Aerotropolis Study

State of Wyoming, Capitol Square Rehab and Renovation, *Cheyenne, WY*
As site design coordinator, assisted in design implementation including construction documentation and administration. HDR is leading the renovation of the Wyoming State Capital and adjacent Herschler Building. The total project cost is estimated at $259 million over the next several years including modernization and repair to the historical landmark as well as right-sizing space.

Parker Mainstreet Master Plan, *Parker, CO**
Dan worked on a team of landscape designers and architects to assist the Town of Parker with identifying strategies to expand the Town's treasured pedestrian core into a larger mile-long corridor that would lend new vibrancy and attract new development. The plan considers necessary policy changes, potential catalytic projects, land use, multi-modal circulation, streetscape, parking and urban design. Dan's role in the project was to provide streetscape design conecpts and generate all of the graphic visualizations including 3D renderings, informational diagrams, and site analysis and planning maps.

State of Wyoming, Capitol Square Renovation

Westminster CRT: Bus Transfer & Public Parking Structure, *Westminster, CO**
As part of a multi-disciplinary team, Dan worked to provide the City of Westerminster with horizontal site layout and vertical site structure for a new commuter rail station's bus transfer and commuter parking facility. Key considerations for the facility include separation of bus and private vehicular traffic, bay geometry and optimization of transit routing to reduce delays. Dan preform all of the landscape construction documentation as well as hardscape design, planting design, and graphic visualization.

**Work preformed prior to HDR*

Gregory R. Fischer, PhD, PE (Shannon & Wilson)

Geotechnical

Greg has more than 30 years of experience providing geotechnical engineering services on municipal and transportation projects. He has planned and managed subsurface exploration programs and directed engineering studies for new and rehabilitated pavements, bridges, retaining walls, tunnels, and utilities. Greg's experience in retaining wall design includes mechanically stabilized earth walls, reinforced soil slopes, tieback walls, soil nail walls, conventional concrete cantilever walls, and noise barrier walls. His bridge foundation experience includes spread footings and all types of deep foundations. Greg has experience with performing in-situ tests to evaluate pavement subgrades, developing exploration and laboratory testing programs for subgrade evaluation, mitigation of unstable subgrades and high groundwater conditions, and designing pavements using several techniques, including those developed by the Colorado Department of Transportation (CDOT), the American Association of State Highway and Transportation Officials (AASHTO) and the Metropolitan Government Pavement Engineers Council (MGPEC).

Education:

PhD, Civil Engineering, University of Washington, 1994

MS, Civil Engineering, University of Illinois, 1986

BS, Civil Engineering, University of Illinois, 1984

Certifications: Professional Engineer, Colorado (34461) plus 24 other states

Industry Tenure: 24 Years

Relevant Experience:

City and County of Denver, Colorado Center Pedestrian Bridge, Denver, CO. Greg oversaw geotechnical services for this single span arch bridge over I-25, which included approach bridge spans and raised grade approach retaining walls. The west approach structure was constructed within 10 feet of a 25-foot tall existing drilled shaft retaining wall for the RTD southeast corridor light rail line. Analyses were performed to estimate the range of lateral stresses that would result from the approach structure and provided recommendations to mitigate the stress increase. The substructure recommendations included drilled shafts for the bridge and spread footings for the raised approach structures.

Inca Street Bike/Pedestrian Bridge, Denver, CO

City and County of Denver, Inca Street Bike/Pedestrian Bridge Over 38th Avenue Underpass, Denver, CO. Greg was the Project Manager for the investigation for a single span bridge over 38th Avenue associated with a new transit rail project. The structure included MSE walls for the approaches constructed above an existing cast-in-place retaining wall. Analyses were performed to estimate the range of lateral stresses to the existing wall that would result from the approach structure. The substructure recommendations included drilled shafts for the bridge and spread footings for the raised approach structures.

City and County of Denver, Colfax and Sheridan Intersection Improvements, Denver, CO. Principal-in-Charge for performing subsurface explorations, laboratory testing, and preparing a brief geotechnical engineering letter report.

City and County of Denver, Morrison Road Median Pedestrian Improvements, Denver, CO. This project involved an 'open' median with landscaping on Morrison Road between the intersections of South Stuart Street and South Perry Street. Greg oversaw the assessment of the swell potential of the clay subgrade soils below the existing pavements adjacent to the proposed vegetated median.

City and County of Denver, Traffic Signal Foundations, Denver, CO. Principal-in-Charge for new traffic signal poles at two Denver intersections: 8th Avenue and Speer Boulevard and 6th Avenue and Lincoln Street. The signal foundations were located within a few feet of existing structures, necessitating geotechnical evaluation. One signal foundation was located adjacent to a retaining wall and bridge abutment, while the other was located adjacent to the slurry wall of the Speer Boulevard Tunnel under Broadway. Greg oversaw subsurface investigations and testing, analyses, and recommendations for traffic signal foundations.

South Street and Bullhead Gulch Underpasses, Louisville, CO. Greg was the Principal-in-Charge for this project, which consisted of two pedestrian underpasses beneath the BNSF Railway. Greg provided senior oversight for both crossings, including geotechnical explorations and a review of potential geologic constraints such as swelling soils, abandoned coal mine subsidence, corrosion potential of soils, and seismic ground motion design parameters. Recommendations for driven pile bridge foundations, cast-in-place concrete retaining walls, pavements, and construction considerations were provided.

W. 72nd Avenue and UPRR Underpass, Arvada, CO. Greg is the Principal-in-Charge for roadway improvements along 72nd Avenue and included an underpass at the UPRR main line and roadway widening improvements from Oak Street to Kipling Street. Work included: subsurface investigations; laboratory testing; pavement evaluation and design; and geotechnical analysis and design recommendations for roadway subgrade and earthwork, retaining walls, and bridge foundations.

W. 72nd Avenue and Indiana Street, Arvada, CO. Greg is the Principal-in-Charge for roadway improvements at the intersection of 72nd and Indiana. Work includes subsurface investigations; laboratory testing; pavement evaluation and design; and geotechnical analysis and design recommendations for roadway subgrade and earthwork, retaining walls, and bridge foundations.

CDOT Region 6 Intersections, Denver, CO. Principal-in-Charge for geotechnical services for three major intersections in south Denver: Hampden Ave. and University Blvd., Arapahoe Road and Dayton St., and Belleview Ave. and University Blvd. Work included geotechnical investigations and design recommendations for new asphalt and concrete pavement, cut and fill retaining walls, and new signal structures.

ATTACHMENT 2

CONSULTANT TEAM

MEMBERS

PRIME CONSULTANT: HDR Engineering, Inc.

List **ALL** potential firm personnel titles/classification that may be utilized under the Agreement, and their respective hourly rate. Do not list names of personnel, only titles (i.e. Project Manager). Provide additional sheets as necessary.

LABOR CATEGORY	RESPONSIBILITIES	HOURLY BILLING RATE
Project Principal	A senior officer of the company; Signature authority; Authority to dedicate resources; Extensive knowledge of engineering practices; Knowledge of vast resources available within HDR	$225
Senior Technical Expert	Extensive knowledge of individual transportation disciplines; Internal and/or national expert and presenter on transportation specialty; Oversees mid-level staff and provide technical quality review of their work; 15-30 years of experience	$205
Senior Project Manger, Level II	Works to develop scopes and budgets; Manages multi-discipline task orders and coordinates between technical disciplines; Provides day-to-day technical management of task orders; Develops assignments for staff; Coordinates directly with the client task order manager on a day-to-day basis; More than 12 years of experience	$195
Senior Project Manger, Level I	Works to develop scopes and budgets; Manages multi-discipline task orders and coordinates between technical disciplines; Provides day-to-day technical management of task orders; Coordinates directly with the client task order manager on a day-to-day basis; 8-12 years of experience	$175
ROW Project Manager	Works collaboratively with design team to develop ROW scopes, schedules and budgets; Manages all aspects of the ROW process including surveying of ROW features, ROW plans development, valuation, negotiation and closing of all acquisitions. Provides day-to-day technical management of ROW specialty; Coordinates with design	$180

	team and client; 8-12 years of ROW experience	
Senior Project Professional	Handles or directs the most complex issues within their discipline; Coordinates between technical disciplines; Performs technical work and manages technical staff; Often performs QC review and solve complex problems; More than 8 years of experience	$185
Project Professional II	A registered professional engineer or accredited position; Fully trained within their discipline; Direct the work of junior staff; 10-15 years of experience	$170
Project Professional I	A recent graduate who has technical training in design, planning, CAD and GIS; Capable of working productively under the direction of senior staff; Well trained within their discipline; 6-12 years of experience	$160
Design Engineer, Level IV	A registered professional engineer; Fully trained within their respective discipline; Works to develop scopes and budgets; Manages technical resources and task orders; Directs the works of junior and mid-level staff; 15-20 years of experience	$150
Design Engineer, Level III	A registered professional engineer; Manages technical resources and individual work tasks; Works to develop scopes and budgets; Well trained within their respective discipline; Directs the works of junior and mid-level staff; 10-15 years of experience	$140
Design Engineer, Level II	A registered professional engineer; Manages individual work tasks; Works to develop scopes and budgets; Well trained within their respective discipline; Directs the works of junior staff; 5-10 years of experience	$125
Design Engineer, Level I	A recent registered professional engineer; Performs work assigned by mid-level and senior staff; 4-6 years of experience	$105
EIT	A recent college graduate; Performs work assigned by licensed mid-level and senior staff; 1-3 years of experience	$95

Senior Transportation Planner	Manages individual task orders; Works to develop scopes and budgets; Directs technical work with junior staff and coordinates directly with CCD; 8+ years of experience	$100
Transportation Planner II	Manages individual task orders; Works to develop scopes and budgets; Directs technical work with junior staff and coordinates directly with CCD; 4-8 years of experience	$85
Transportation Planner I	Manages individual task orders; Works to develop scopes and budgets; Performs work assigned by mid-level and senior staff; Prepares technical reports, GIS maps, graphics; 0-4 years of experience	$75
Principal Environmental Scientist	A graduate engineer or scientist with advanced experience in biological, historic, economic and social sciences. Typically requires more than 25 years of professional experience and an industry expert in knowledge of NEPA and other applicable agency regulations.	$320
Senior Environmental Scientist, Level II	A graduate engineer or scientist with applicable training in biological, historic, economic and social sciences. Typically requires more than 15 years of professional experience and an in-depth knowledge of NEPA and other applicable regulations.	$220
Senior Landscape Architect	A registered landscape architect with extensive knowledge of their respective discipline. Coordinates between technical disciplines. Oversees mid-level staff and provides technical quality review of their work. More than 10 years of experience.	$200
Appraisal/Appraisal Reviewer	Prepares appraisals, completes review of appraisals for compliance with the CDOT ROW Manual and federal Uniform Act, assists with preparation of waiver valuations. Appraiser with Colorado Certified General Real Estate Appraisal License who is on CDOT approved list of eminent domain appraisers and appraisal reviewers, 6+ years of experience.	$130
Right of Way Acquisition/Relocation Specialist II	Prepares waiver valuations, offer packets, final letters, closing packets and other required acquisition forms; Negotiates the acquisition of parcels needed for projects, works with title companies on closings, or closes	$100

	transactions, as needed; Provides all relocation benefits to displaced occupants. Well trained within the ROW discipline; Provides QA/QC of all ROW deliverables; 4+ years of experience	
Right of Way Acquisition/Relocation Specialist I	Prepares waiver valuations, offer packets, final letters, closing packets and other required acquisition forms; Negotiates the acquisition of parcels needed for projects, works with title companies on closings, or closes transactions, as needed; Provides all relocation benefits to displaced occupants. Trained within the ROW discipline; 1+ years of experience	$85
Senior Environmental Scientist, Level I	A graduate engineer or scientist with applicable training in biological, historic, economic and social sciences. Typically requires more than 8 years of professional experience and an in-depth knowledge of NEPA and other applicable regulations.	$190
Environmental Scientist II	Works to develop scopes and budgets; Well trained within their respective discipline; Directs the works of junior and mid-level staff; Provides QA/QC of all environmental deliverables; 10+ years of experience	$160
Environmental Scientist I	Manages individual work tasks; Works to develop scopes and budgets; Well trained within their respective discipline; Directs the works of junior staff; 5-10 years of experience	$135
Public Involvement Manager	A senior professional who will develop and manage the outreach strategy for key stakeholders and the public; including content development, QA/QC, facilitation of meetings, oversight of public meeting development; innovative outreach techniques; 10+ years experience.	$125
Environmental Technician	Performs work assigned by mid-level and senior staff; Performs field reconnaissance; 2-6 years of experience	$95
Technical Writer	Interprets engineering plans and concepts to prepare written materials and specifications to be used during the design or construction phase of a project. Typically requires a B.S. degree and working knowledge of graphics and word processing software.	$95

Senior Technician	A senior professional with specific experience in CAD design, mapping, technical graphics, GIS, and computer applications for transportation projects; Works on multi-discipline projects and leading the development of complex plan sets; 10-20 years of experience	$120
Site Design Coordinator	A recent graduate who has training in landscape design, planning, CAD and 3D digital design. Capable of working productively under the direction of senior staff. Well trained within their discipline. 5-10 years of experience.	$110
Technician	A professional with specific experience in CAD design, mapping, technical graphics, GIS, and computer applications for transportation projects; 2-10 years of experience	$100
Transportation Intern	Performs work assigned by mid-level and senior staff; Preforms research and data collection; Supports others in the preparation of technical reports, GIS maps, graphics; 0 years of experience	$65
Project Controller	Project support personnel who provides support for invoicing, accounts payable/receivable, project controls, budgeting and scheduling	$110
Public Involvement Coordinator, Level II	A professional with specific experience in agency and stakeholder outreach including public meetings and communications materials; 6+ years experience	$115
Public Involvement Coordinator, Level I	A public involvement support staff with experience running public meeting logistics, public comment tracking, content development; 0-3 years experience	$65
Public Involvement Graphics Coordinator	A professional graphic artist who transforms technical information into publicly-consumable visuals for meetings, websites, outreach events and other collateral; 8+ years experience	$95
Project Administration, Level II	Administrative support personnel who provides support for work processing, spreadsheets, graphics, scheduling, budget control and communications; Develops project controls and leads internal project set up and review meetings; 8-15 years of experience	$85

Project Administration, Level I	Administrative support personnel who provides support for work processing, spreadsheets, graphics, scheduling, budget control and communications; 0-8 years of experience	$70

Multiplier, which when multiplied by the direct labor rate yields the above hourly billing rate: 2.9.

The City will not compensate the Consultant for expenses such as postage, mileage, parking, or telephone costs. Reproduction and travel costs, if requested by the City, shall be reimbursed at actual cost if approved in advance by Project Manager. Such costs are, in all such instances, included in the hourly rates paid by the City. Reproduction of submittals requested by the City including such items as end-of-phase reports, drawings, bid documents, record drawing reproducibles, etc. are not included in the hourly rates, and will be itemized as a not-to-exceed reproducible expense and will be reimbursed at actual cost.

REIMBURSABLE EXPENSES

PRIME CONSULTANT: HDR Engineering, Inc.

(Consultant may copy this page or modify it to conform to the services being offered.)

The additional expenses of the Consultant reimbursable by the City shall include:

1. Actual cost of reproduction of drawings and specifications, requested by the city.
2. Travel cost for sub consultants not local to the project. Travel shall be pre-approved by the City PM.

Actual Costs

Item	Charge Rate
Copies (8 1/2 x 11")	$.45/ each
Copies (8 1/2 x 14")	$.75/ each
Red-line copies	$.14/ S.F.
Reproducibles	$.25/ page

Exhibit C

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 09/13/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis of Minnesota, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA	CONTACT NAME: PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378 E-MAIL ADDRESS: certificates@willis.com
INSURED HDR Engineering, Inc. 8404 Indian Hills Drive Omaha, NE 68114	INSURER A: Liberty Mutual Fire Insurance Company — NAIC # 23035 INSURER B: Liberty Mutual Insurance Company — NAIC # 23043 INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER:** W3499441 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:	Y	Y	TB2-641-444950-037	06/01/2017	06/01/2018	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 4,000,000 $ 4,000,000
B	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY	Y	Y	AS2-641-444950-047	06/01/2017	06/01/2018	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 2,000,000 $ $ $
B	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $	Y	Y	TH7-641-444950-067	06/01/2017	06/01/2018	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: No (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	Y	WA7-64D-444950-017	06/01/2017	06/01/2018	X PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Professional Design Services: Iowa Underpass.

Certificate Holder is named as Additional Insured on General Liability, Automobile Liability and Umbrella/Excess Liability on a Primary, Non-contributory basis where required by written contract. Waiver of Subrogation applies on General Liability, Automobile Liability, Umbrella/Excess Liability and Workers Compensation where required by written contract. Umbrella/Excess policy is Follows Form over General Liability, Auto Liability and Employers Liability.

CERTIFICATE HOLDER

City and County of Denver
Department of Capital Projects Management
201 W Colfax Avenue, Dept. 506
Denver, CO 80202

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

SR ID: 15053265 BATCH: 445119