AMENDATORY AGREEMENT

This **AMENDATORY AGREEMENT** is made and entered into between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the "City") and **URS CORPORATION,** a Nevada corporation, whose address is 717 17th Street, Suite 1650, Denver, CO 80201 (the "Design Consultant"), jointly ("the Parties").

RECITALS:

1. The City and the Design Consultant previously entered into an Agreement dated August 20, 2012, (the "Agreement").

2. The City and the Design Consultant wish to amend the Agreement to revise the scope of work and consultant billing rates and project budget.

NOW THEREFORE, in consideration of the premises and the Parties' mutual covenants and obligations, the Parties agree as follows:

1. Paragraph 4.01 of the Agreement, entitled "**Term**" is hereby amended as follows:

> "**4.01 Term.** The term of this Agreement commenced on October 1, 2014 and shall terminate on September 30, 2019."

2. All references to "…Exhibit A, Exhibit B and Exhibit C…" in the Agreement shall be amended to read: "…Exhibit A-1, Exhibit B-1 and Exhibit C-1…" as applicable. The revised scope of work and consultant billing rates and project budget, and the certificate of insurance marked as **Exhibit A-1, Exhibit B-1 and Exhibit C-1** are attached hereto and incorporated by this reference. The revised rates in Exhibit B-1 shall apply to work performed after this agreement is executed.

3. As herein amended, the Agreement is affirmed and ratified in each and every particular.

4. This Amendatory Agreement will not be effective or binding on the City until it has been fully executed by all required signatories of the City and County of Denver, and if required by Charter, approved by the City Council.

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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-201205382-01

Contractor Name: URS CORPORATION

By: _____

Name: John O'Connor
(please print)

Title: Vice President
(please print)

ATTEST: [if required]

By: _____

Name: Preston Hopson
(please print)

Title: Secretary
(please print)

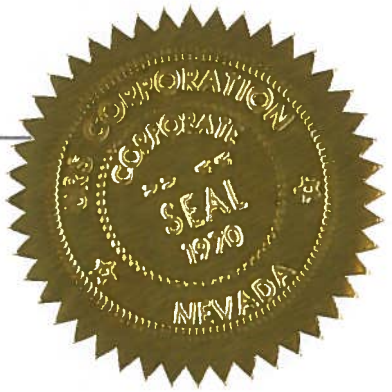

Exhibit A-1

EXHIBIT A-1

STATEMENT OF WORK

PROFESSIONAL ENGINEERING AND ENVIRONMENTAL SERVICES

FOR

56th AVENUE, CHAMBERS ROAD TO PEÑA BOULEVARD
56th Avenue/Peña Boulevard Interchange

CONTRACT NO. 201205382

Final November 2017

PROJECT DESCRIPTION

This Project generally involves professional design engineering, environmental services, and construction management services in connection with the widening of 56th Avenue between Chambers Road and Peña Boulevard. This Statement of Work (Exhibit A-1) focuses on the proposed safety and operational improvements to the 56th Avenue/Peña Boulevard (56th/Peña) interchange within the 56th Avenue, Chambers Road to Peña Boulevard corridor. The Project will be funded with Federal and Local Funds.

Specific elements of the Scope of Services apply as follows:

56th Avenue/Peña Boulevard Interchange – Safety and Operational Improvements

Develop engineering plans, construction documents, a construction cost estimate, conduct a NEPA process and provide appropriate documentation for CDOT/FHWA environmental clearance (anticipated to be a template EA per previous scoping with CDOT and FHWA/FAA), for the improvements to the 56th/Peña interchange.

The interchange improvements will utilize an anticipated $5M savings from the 56th Avenue: Quebec Street to Havana Street construction project (CE12001). For this 56th/Peña interchange improvement project:

A) The CONSULTANT will conduct the NEPA environmental process and prepare clearance documentation, complete the final design and prepare construction documents for the safety and operational improvements to 56th Avenue and Peña Boulevard within the Peña Boulevard Transportation Corridor. The design package will include right-of-way plans and clearances, utility clearances, traffic, geotechnical, landscaping, drainage and any and all necessary clearances to construct the improvements.

SCOPE OF SERVICES

The project scope of services consists of the following phases of work and specific work tasks:

TASK 1.0 - PROJECT MANAGEMENT

1.1 Contract Administration and Project Schedule

- Develop and maintain a project schedule utilizing a Work Breakdown Structure (WBS), which identifies the deliverable item due dates, milestones, reviews, and meetings and which meets the completion date objective. Administer project contract and

subcontracts and monitor progress. Discuss and coordinate project requirements with the CITY's Project Manager and designated project team contacts. Document time delays, scope of work variations, changes in input from entities and coordinate said documentation.

- Prepare and maintain project design files and supporting documentation for correspondence, reports, design details and calculations of quantities that are included in the plans. Maintain an information sheet that documents the name of each electronic file and any information necessary to identify the file and how it relates to the project.
- CONSULTANT will provide all deliverables, including deliverables submitted for review and comment, to CITY in electronic format.
- Project must meet federal funding requirements of substantial completion of construction of the 56th/Peña Interchange Improvements by September 30, 2019 which translates into a required deliverable of this contract to Advertise for Bids for Construction by December 31, 2018.
- Project must be delivered within available 100% local funding by Denver of approximately $650,000.00 (as of PA #20 dated 9/20/17 with balance remaining of $623,757) for Exhibit A-1 scope of services.
- Construction funding per IGA between CDOT and CITY for $4,790,000 with 80% federal funding of $3,832,000.00 and 20% local funding of $958,000.00.

1.2 Conduct Progress Meetings

- Hold informal progress and project related meetings at CONSULTANT's office, or at the CITY's office. The purpose of the progress meetings is to monitor the project schedule, review work, exchange information and ideas, and maintain a close working relationship. At a minimum, progress meetings will take place at biweekly intervals. For all meetings, provide meeting notes documenting the comments, decisions, and action items of responsible parties, to the CITY and for the project file, within 7 days. The meetings will review the following:
  - Recording and distributing meeting minutes by the CONSULTANT
  - Activities completed since the last meeting
  - Problems encountered
  - Activities required by the next progress meeting
  - Solutions for unresolved and anticipated problems and any late activities
  - Information or items required from other agencies and discuss agency coordination
- Other required meetings are described in subsequent sections.

1.3 Monthly Progress Reporting

- Submit a monthly progress report providing a summary of the previous month's activities, overall progress achieved toward completion of the task order, any issues that need to be resolved and activities that will be undertaken during the following month. The progress reports can be submitted with invoices.

1.4 Quality Control/Quality Assurance

- Follow a Quality Control/Quality Assurance (QA/QC) plan, including a process whereby all documents and supporting calculations submitted for review are fully checked by a qualified individual other than the originator prior to each submittal package to the CITY. Provide the QA/QC documentation for CITY review upon request, including any check plans, checked computations, and notes to document the QA/QC activities.

TASK 2.0 - DATA COLLECTION

2.1 Review Project Data

- The CONSULTANT will review the initial concept, all technical issues, and all project requirements with the CITY.
- CONSULTANT will initiate written requests to secure data, maps, plans, and reports that may be available from agencies other than the CITY.
- CONSULTANT will obtain and review in its entirety the Planning and Environmental Linkage (PEL) Study for 56th Avenue from Havana Street to Peña Boulevard which was completed in July 2008.
- Confirm project design criteria, including criteria for design of the Rocky Mountain Arsenal National Wildlife Refuge frontage.
- A report identifying the results of the project data review shall be submitted to the CITY Project Manager within one week of the review.
- To support the proposed Template EA, data collection may need to proceed under the existing contract while the Amendment is being processed for approval.

2.2 Design Surveys and Mapping

- Participate in pre-survey conference with CITY and CDOT staff.
- Identify already established vertical and horizontal control points.
- Obtain right-of-way entry permits from property owners where surveys (including environmental surveys and testing) are required outside the existing right-of-way.
- The CONSULTANT will plan and provide any required traffic control for the survey.
- Conduct ground surveys, including:
  - Use City and County of Denver Horizontal and Vertical control to establish a project coordinate system for the project. Prepare a project control diagram.
  - Survey topographic data along the project corridor (limits on 56th Avenue: up to 50-feet outside of the proposed right-of-way). Along side streets the limits will be approximately 150 feet to either side of the intersection with 56th Avenue, and within the existing side street right-of-way or existing building face. Survey limits will be confirmed with CITY staff prior to initiating work.
- Topographic data will be acquired along the corridor including the following:
  - Manhole rim elevations.
  - Stormwater inlet rims and invert elevations and pipe sizes, inverts and directions in inlet. Inlet type and size to be noted.

- Locate curbs, gutters and sidewalks and survey topography at intersections, providing curb return elevations, radius returns and signal equipment information. Locate utility poles, junction boxes and any signs or markers indicating location of underground utilities on the project.
- Incorporate in subsurface utility data from private utility locate/designate consistent with SUE Quality Level B.
- Any visible existing Range Points and Boundary Documentation within the project limits will be tied into the survey and referenced.

2.3 Traffic Data Collection

- Obtain traffic counts along 56th Avenue from Chambers Road to Tower Road (including mainline and ramps) from CITY records to develop the ESALs for the design period.
- Collect AM and PM peak hour turning movement counts at two intersections: 56th Avenue West Ramp/Peña Blvd. and 56th Avenue East Ramp/Peña Blvd., and 24-hour with vehicle class east of Chambers Road and west of Tower Road on 56th Avenue. Traffic patterns and requirements will be coordinated with the CITY Transportation Engineering Department.

2.4 Traffic Forecast

- Previous draft traffic technical memorandum, 56th Avenue, Peoria Street to Tower Road (Nov. 26, 2012) was forecasted through 2035. CONSULTANT will update the traffic forecast through the 2040 planning horizon, and turn them into balanced AM, PM and ADT forecasts. The methodology used to develop the forecast will be presented as part of the traffic technical memorandum. The traffic forecasts will be based on the DRCOG travel demand model. CONSULTANT will not run the travel demand models.

2.5 Traffic Analysis

- AM and PM peak hour levels of service (LOS) estimates will be prepared for the existing and forecast future (2040) operating conditions. The operations analysis will be performed using Synchro 10 following the method described in the Highway Capacity Manual. The study intersections identified for the analysis are: 56th Ave/ Peña Blvd interchange (west ramp) and 56th Ave/Peña Blvd interchange (east ramp).

2.6 Right-of-Way Research and Surveys

- Right-of-way Ownership Maps will be prepared according to the Colorado Department of Transportation's (CDOT) Right-of-Way Manual.
- Identify affected ownerships from records provided by the CITY.
- Check CITY Records for subdivisions plats and vacations of streets.
- Establish basis of bearing and coordinates with CITY.
- Tie land corners which are surveyed for this project into the Colorado State Plane Coordinate System. The closure loop for the horizontal portion of the survey is required to close at a ratio of at least 1:20,000. The State Plane coordinates are to be shown in the plans, if required.
- Compute alignment and coordinates of all found legal monuments within the proposed right-of-way left and right of the centerline, if required.
- Determine opinions of existing right-of-way limits from deeds of record. Previous right-

of-way plans, if available, will be provided by the CITY, if required.

- Determine an opinion of reconciliation overlaps and gaps in ownership, documenting method used, if required.
- Prepare an Ownership Map on 11" x 17" sheets in electronic PDF format at a scale of 1"=400' over the rectified aerial photography showing all adjoining ownerships. CDOT Form 126-R will be used for this purpose. If the entire ownership will not fit on the sheet at this scale, an additional abbreviated Ownership Map may be used at a scale of 1"=1 mile, or other suitable scale, to show the configuration of large ownerships.
- On survey control plan, label all monuments found with descriptions of monument and coordinates. No property corners will be set as a part of this project.
- Number ownerships alternately as they occur along the centerline from south to north or west to east, in the same direction as the stationing.
- Show current recorded names of owners.
- Show seal, number and name of Professional Land Surveyor supervising the work in the lower right corner of the Ownership Map.
- The original Ownership Map will be submitted to the CITY for review.
- Title work, including title commitments, will be provided by the CITY.

2.7 Utility Research

- Identify the utility owners within the project corridor.
- Obtain utility key maps from utility owners to be used in conjunction with the private locate and survey as outlined in Task 2.2.

2.8 Geotechnical Investigation

- Perform soils and pavement investigations, perform laboratory tests and provide preliminary pavement and foundation design recommendations.
- Perform soil corrosivity testing (soluble sulfates, pH, chlorides, and electrical resistivity) and provide recommendations to mitigate corrosion concerns or sulfate related concrete problems.
- Prepare a report summarizing all of the above tests, investigations, analyses, calculations and recommendations and submit to the CITY for acceptance. A Pavement Life Cycle Cost Analysis resulting in a Pavement Selection Report shall be produced by the CONSULTANT.

TASK 3.0 - PRELIMINARY-LEVEL (60%) DESIGN

To support the anticipated NEPA template EA effort, preliminary level design may need to proceed under the current contract while the Amendment is being processed for approval.

3.1 Preliminary-Level Roadway Design

- Review survey data and enter topographic and survey data into computer base.
- Plot utility data on planimetric base sheets.
- Review with CITY staff the proposed roadway and lane widths.
- Prepare preliminary-level plans for the roadway design. Plans will include existing

cultural features, existing utilities, right-of-way and easement information, roadway horizontal alignments and vertical alignments, north arrow, benchmarks and drainage features. Plans (when plotted at 11x17) will be at 1"=40' horizontal scale and 1"=5' vertical scale (for profiles). Typical sections and a cover sheet will also be provided.

- Preliminary-level quantity estimates and cost estimates will be prepared and submitted to the CITY with the preliminary-level design plans.

3.2 Preliminary Drainage Design

- The CONSULTANT shall coordinate with ERA, Wastewater/Drainage, and CPM regarding master planning, drainage activities, design and analysis criteria requirements for the project. Conduct necessary coordination with CDOT, DEN and Urban Drainage & Flood Control District (UDFCD).
- Assumptions: No risk analysis, no engineering value support; utility coordination as required for the project; no alternative drainage designs will be analyzed or designed; erosion/scour countermeasures shall consist of riprap aprons only.
- There are significant wastewater data deficiencies in GIS. It appears that no Peña Boulevard drainage facilities have ever been added to GIS, and the A-Line as-builts must be obtained from RTD. There is likely an extensive track drainage system in place. There are several channels and roadway culverts not shown on the storm drain layers in GIS. All four Peña ramps and parts of the mainline (bridges) drain toward 56th Avenue and/or the unnamed field ditch. The consultant scope must include incorporating all of the offsite tributary runoff into this design and there should be existing drainage reports available from DIA/DEN, RTD, and a previous 56th Avenue project to the east.
- Establish which drainage criteria shall control for the project i.e., CITY (including DEN) or CDOT. CITY criteria should control since the project is located within CITY property (Peña Boulevard Transportation Corridor) and drainage facilities designed and built by project shall be maintained by the City. Determine which State and City (including DEN) permits shall be required for project i.e., SWMP, CASDP, MS4 BMPs, and Water Quality requirements. Develop conceptual drainage and permanent water quality design to comply with current software, methodology and criteria as established above. Design elements include:

Floodplain:

- No floodplain impacts: No Conditional Letter of Map Revision (CLOMR), Letter of Map Revision (LOMR), or No-Rise Certification are required as long as improvements are in accordance with the August 2017 CLOMR & LOMR for First Creek Restoration Project.
- Floodplain Development Permit: Since improvements are located in the regulatory floodplain (flood fringe outside of the floodway), a floodplain permit is required that would show the grading limits as they relate to the regulatory floodplain, as shown on recent LOMR for First Creek Restoration project. If there are wetlands in the area, documentation of either a 404 permit or why the USACE has excused it will also be required. This effort should have minor drainage effort.

Hydrology:

- Establish per above drainage basin data: delineate, determine size, waterway geometric, vegetation cover, land use.
- Collect historical data; research flood history and previous designs in the proximity; and obtain data from other sources (e.g., UDFCD, Colorado Water Conservation Board

[CWCB], Maintenance, RTD, DEN, and local owners).

- Select a storm frequency based on the CDOT Design Guide criteria or CCD Storm Drainage Design and Technical Criteria. If it is not possible to use the CDOT Design Guide storm frequency criteria for a bridge or culvert design, the CITY should be notified. A risk analysis may be required but will not be accomplished without prior written approval from the CITY.
- Perform a hydrological analysis using existing studies or approved methods (see CDOT Design Guide or CCD Storm Drainage Design and Technical Criteria). For example: Compile precipitation data, select runoff parameters, and predict peak flows. Calculate run-off and design flow rates. Create runoff hydrograph as if storm routing is necessary.

Hydraulics:

- Minor Drainage Structures: Determine location and crossing alignment. Identify channel centerline by highway station or coordinates, as appropriate.
  - Determine the allowable headwater (HW), headwater depth ratio (HW/D) and high water level.
  - Assess the degree of sediment and debris problems to be encountered.
  - Type, size and shape of the structures.
  - Prepare concept-level structure cross-sections to determine the elevations, flowlines, slopes and lengths of the structures. Indicate the flow quantity on the sections.
- Storm Drainage: Determine location and inlet spacing. Ensure that spread and depth criteria are satisfied for the minor and major events.
- Roadside Swales: Analyze proposed ditches for conveyance and freeboard to satisfy criteria.
- Complete the design computations and documentations in accordance with the CDOT Drainage Design Guide and CCD Drainage Design Criteria.

Water Quality:

- Permanent water quality (PWQ) Best Management Practices (BMP) selection analysis in accordance with CDOT's New Development and Redevelopment Program and CITY requirements as established above. One Extended Detention Basin (EDB) will be analyzed and designed to the east of the interchange to treat ninety percent (90%) of the additional impervious area or per CITY (including DEN) requirements. The EDB will have maintenance access, emergency spillway, outlet structure, trickle channel and micropool. CDOT tracking tool inventory will be initiated.
  - Assumes that EDBs are accepted as the PWQ BMP and no other BMPs will be reviewed upon acceptance and in accordance with the above criteria.
  - One EDB or wetland pond may suffice on the north side of 56th Avenue between Peña Boulevard and RTD's commuter rail line. The existing 56th Avenue storm drain system is routed to a small tributary to First Creek (Unnamed Field Ditch per GIS) at this location, as well as Peña Boulevard ramp drainage. Some drainage from the commuter rail south of 56th Avenue appears to also drain under 56th Avenue.

- Stormwater Management Plan (SWMP): Phased SWMP will be provided that combines the Initial/Interim, for a total of 2 sets: Initial/Interim and Final Plans, along with CDOT formatted narrative and CITY requirements.

Prepare a Preliminary Hydraulics Report to include the following:

- Hydrologic & hydraulic (H&H) analysis for storm drainage, ditches, and minor culverts
- Minor structure hydraulic designs
- Structure cross-sections
- Permanent Best Management Practices (BMP) selection analysis in accordance with CDOT's New Development and Redevelopment Program and CITY requirements
- Recommend preliminary permanent BMP locations
- EDB locations, analysis, design
- Appendix: Drainage basin maps, hydrology/hydraulic worksheets

3.3 Landscape Concepts and Preliminary Landscape Plans

- Develop landscape concepts along 56th Avenue and the multi-use trail as shown within the limits described for the interchange. Develop up to three concepts (sketch) which may include native grass seed mix and median cover (i.e., patterned colored concrete) options. Concepts will be presented to the CITY including hand sketch rendering, concept plan view and comparison matrix of rough order of magnitude costs, maintenance requirements, and consistency with existing landscaping along the corridor. The concepts will balance construction cost and aesthetics to provide lower maintenance landscaping concept. The CITY will select their preferred concept.
- Prepare preliminary-level landscape plans (60%). Plans may include native seeding, mulching, and median cover material. Irrigation tap location and square footage of irrigated areas will be included. It is assumed that no planting beds will be required. Plans (when plotted at 11x17) will be at 1"=40' horizontal scale and include a general notes/quantity sheet, 5 plan sheets for each landscape and irrigation and a detail sheet.

3.4 Preliminary Traffic Engineering Plans

- Prepare preliminary traffic signal layouts. Locations to include: 56th/Peña (west ramps) and 56th/Peña Boulevard (east ramps). Proposed signal and signage will be based on current MUTCD requirements. One signal design sheet will be developed for each signal location identifying the proposed traffic signal installation, as well as appropriate signal and signage tabulation sheets.
- Signal design will include proposed signal equipment, poles, heads, vehicle detection zones, existing interconnect connections and the resulting item quantities necessary to complete traffic signal installation. Other signal plan features shown will include radio communication, pedestrian countdown signals, new controller locations, signing and emergency vehicle preemption.
- Prepare preliminary signing and striping design and plans based on MUTCD requirements. Includes appropriate signing and striping tabulation sheets.
- Identify preliminary locations for street lighting.

3.5 Preliminary Construction Phasing Plans

- Review preliminary-level design plans to determine a logical approach for staged

construction.

- Prepare a schematic construction-staging plan to illustrate possible construction staging.
- Prepare preliminary-level quantity and cost estimates for construction traffic control items.

3.6 Initial Utility Coordination

- Develop 60% utility plans showing existing and proposed utilities and preliminary conflicts. 60% utility plans will include 8 sheets (1 notes and 7 plan sheets) at 1" = 40'. Utility project special provisions and utility clearance letters are not provided with preliminary utility plan submittal.
- Provide to utility companies to verify existing and proposed locations. Meet with up to 4 utility owners to confirm impacts and potential relocation plans. Develop a utility conflict summary matrix.
- Develop pothole plan to confirm potential utility conflicts for 80% plans. Manage pothole vendor to test no more than 15 locations.

3.7 Preliminary Design Review

- Arrange and attend a preliminary design review meeting with CITY Staff and other affected parties.
- Prepare and distribute minutes of the preliminary design review meeting.
- Make minor revisions to plans as agreed to by the CONSULTANT and CITY.
- Prepare a list of design recommendations to be incorporated into the final plans.
- Submit a list of all deviations from standard design criteria along with the written justification for each one. Obtain concurrence from affected agencies or utility companies.

TASK 4.0 - ENVIRONMENTAL CLEARANCE

4.1 Agency/Stakeholder Coordination

- The CONSULTANT shall prepare for and attend a Technical Advisory Committee (TAC) coordination meeting every other month as needed (5 meetings). TAC members include staff from the CITY, DEN, CDOT, FHWA, FAA, Rocky Mountain Arsenal National Wildlife Refuge and other affected parties, such as:
  - Denver City Council
  - Other Public Agencies, including Adams County, DRCOG, RTD, and USFWS, USACE
- During the entire duration of the environmental, design and construction of this project, the CONSULTANT shall continually provide a primary public relations contact and coordination person. This person shall be responsible for communicating with individual property owners and users, Neighborhood Groups, the traveling public, and all other interested parties to identify issues and needs to be addressed by CCD. In addition, throughout the duration of design and construction of this project, the CONSULTANT (but not necessarily the public relations contact and coordination person) must work closely with many parties to build support for the project. In addition to the above, these

groups may include, but are not limited to:

- Public and private utility organizations
- Police and Fire Departments
- Win-Win Coalition

4.2 Data Review and Collection

- CONSULTANT will review relevant environmental resources and collect necessary data. Some resources will likely require more evaluation than others. At a minimum, the following resources are anticipated to require evaluation: right-of-way acquisition, Section 4(f) recreation resources, wildlife and T&E species, vegetation, noxious weeds and habitat, visual, water resources and quality, wetlands, hazardous materials, air quality, and noise.
  - A Class III pedestrian survey will be conducted if required given the presence of documented sites that are very close to the project area and the lack of previous survey. If a site is discovered, additional scope and fee would be required. A project description and mapping will be provided to CCD/CDOT to prepare and submit a consultation letter to Native American Tribes that could have an interest in the project area.
  - Assumes no additional ROW acquisition is needed for improvements. CCD is working on an MOU with DEN.
  - Assumes any impacts to the existing trailhead parking area are a *de minimis* finding for Section 4(f). Assumes no Section 6(f) assessment is required and that no other Section 4(f) or 6(f) resources are present. Assumes coordination with one Official with Jurisdiction. Consultation materials will be developed. Process will be documented in the Template EA.
  - CONSULTANT will obtain an updated wildlife and T&E species list and conduct a field survey. Assumes no species or species habitat will be adversely affected. Does not include detailed habitat assessment surveys, or formal agency consultation other than a USFWS concurrence letter. A Biological Resources Memo and draft concurrence letter will be prepared.
  - Visual impact assessment will be prepared consistent with FHWA's 2015 VIA guidance and includes development of VIA questionnaire to determine the level of documentation. This scope assumes that a VIA Memorandum would be the appropriate documentation based on the questionnaire. If other levels of documentation are required, scope and fee will be confirmed with CITY.
  - Assumes field work for wetlands, wildlife, T&E, SB 40 vegetation combined to verify findings from PEL (one field visit). Assumes wetland delineation in accordance with US Army Corps of Engineers (USACE) requirements. Work to be documented in a Biological Resources Memo and the EA. Assumes utilization of a Nationwide Permit (NWP) and preparation of Preconstruction Notification (PCN) to USACE, if required. Impacts to wetlands to be determined by AECOM based on field data collected by Pinyon. Assumes a Wetland Finding Report and individual permit are not required.
  - Vegetation, Riparian Habitat, Noxious Weeds - combined site visit with other natural resources; identification and mapping of noxious weeds. Document in Biological Resources Memo and EA; provide Integrated Noxious Weed Management Plan and design specifications. Assumes no SB 40 application is

required.

- Assumes preparation of a Modified Environmental Site Assessment (MESA) for hazardous materials.
- Assumes hot spot analysis at only one intersection (lowest performing) for 2040 No Action and Proposed Action. An Air Quality Tech Memo will be prepared.
- Noise analysis assumes that this is a Type I project with the potential for impacts to residences near 56th and Memphis, potential residential development on the south side of 56th Avenue between Memphis and Pena, and that the wildlife observation tower is considered a sensitive receptor. Assumes that any sensitive receptors within the noise study area are not impacted by the project and that no noise barriers are required. CONSULTANT will follow CDOT's 2015 Noise Analysis and Abatement Guidelines. A noise technical report will be prepared if it is a Type I project.

4.3 NEPA Documentation

- CONSULTANT will prepare the Environmental Documents for this project, assumed to be a Template Environmental Assessment (EA) and FONSI. CONSULTANT shall provide all services, data and documentation required by CDOT and FHWA/FAA necessary for their approval of the Template EA and FONSI.
  - Purpose and Need will be updated from the PEL to reflect the current project and specific information related to the interchange.
  - Assumes determination of logical termini is complete since the interchange safety and operational improvements are within the Chambers to Pena segment and funds have been allocated to the interchange project within this segment.
  - Assumes the Template EA includes only the No Action and the Proposed Action (safety and operational improvements at 56th and Pena interchange) for analysis.
  - Assumes resources present and impacted will be documented in the Template EA.
  - Assumes that resources that are not present within the study area or are not impacted will not have a technical memo nor be discussed in the Template EA.
- All NEPA Environmental processes shall be performed in accordance with CDOT and FHWA/FAA requirements to obtain appropriate environmental clearance.
- Documentation will be prepared in a format and level of detail acceptable to CDOT and FHWA/FAA. CCD PW will provide oversight of all documentation and research. Figures and resource maps will also be required to be attached to the Template EA and produced or obtained by CONSULTANT.
- CONSULTANT will prepare documents and respond to comments for three review and revision cycles: CCD/DEN, CDOT, and FHWA/FAA.
- To meet federal requirements, the NEPA documentation will be completed by no later than August 1, 2018 to achieve Ad for Bids for Construction by December 31, 2018. This assumes that there are no substantive issues to address and that the EA results in a FONSI. To accomplish this federal funding requirement work may be performed under the current contract while an Amendment is being processed for approval.

4.4 Public Involvement

Public involvement may entail coordinating with the Denver City Council to provide project updates as an agenda item at community neighborhood meetings near the project and/or along 56th Avenue with an interest in the interchange improvements. Assumes preparation for and attendance at three (3) neighborhood or equivalent meetings.

The CONSULTANT will organize, prepare for, conduct, and document one (1) public information meeting during the 30-day public review and comment period on the EA and prior to FONSI approvals. The meeting will be held in a workshop format and may include a technical presentation.

The CONSULTANT will:

- Arrange for meeting location and facilities. Any fees for meeting facilities will be paid directly by the CONSULTANT. No transcriber is required.
- Prepare handouts, exhibits, and a PowerPoint presentation (if needed).
- Provide all public involvement materials, including notifications, advertisements, handouts, exhibits, etc. in advance for approval by the CITY.
- Prepare mailing list for mailing area approved by CITY. Mail public meeting notices to persons or addresses on mailing list. Notices will be mailed at least 10 days in advance of the meetings.
- Coordinate with CITY on project webpage (similar to the Highline Canal project webpage). Provide materials to CITY for posting on the project webpage. This includes schedule, project schedule, project description and other project information as necessary. CITY will develop and make available an online comment form. No public hotline is required.

TASK 5.0 - FINAL DESIGN (80% DESIGN LEVEL)

Upon approval of a FONSI by CDOT and FHWA/FAA, and following the CITY and CDOT review of the preliminary plans, at the direction of the CITY the following final design work will be completed:

5.1 Design Surveys and Mapping

- CONSULTANT will identify and conduct any additional field survey and mapping that is required to complete the design.
- CITY will provide right-of-way entry permits for CITY owned property. CONSULTANT will secure right-of-way entry permits from private property owners where surveys are required outside the existing right-of-way.
- The CONSULTANT will plan and provide any required traffic control for the survey.
- CONSULTANT will prepare Project Control sheet detailing sufficient horizontal and vertical survey control points and coordinates to construct the Project.
- Provide required information to finalize MOU between DEN and PW such as legal descriptions and exhibits for proposed improvements within the Peña Boulevard Transportation Corridor.

5.2 Geotechnical Investigation

- Finalize the Life Cycle Cost Analysis and Pavement Selection Report; Provide geotechnical investigation and final pavement design

- Finalize and provide structure foundation recommendations.
- Prepare a geotechnical design report summarizing all of the above tests, investigations, analyses, calculations and recommendations and submit to the CITY for acceptance.

5.3 Final Roadway Design

- Resolve design questions raised in the Preliminary Design Review meeting in cooperation with the CITY. Document the decision and transmit the documentation to the CITY for approval.
- Revise preliminary roadway plans based on preliminary plan review comments.
- Prepare plan and profile sheets, including line drawing of existing topography, survey alignment, projected alignments, profile grades, existing ground lines, existing ROW, structure notes, top and toe of slopes, existing utilities, proposed right-of-way, existing ownerships and soil profile. The original plan sheets shall be 11 inches by 17 inches.
- Prepare cross-sections of the existing ground and proposed roadway subgrade template (at 50-foot intervals) with earthwork volumes and areas.
- Prepare pavement jointing plans (at 1'= 40' half-size scale)
- Prepare detailed intersection plans
- Prepare removals plan.
- Prepare detail sheets for various miscellaneous project components.
- Prepare Summary of Approximate Quantities.

5.4 Final Drainage Design

Upon completion, review and approval of the preliminary design package, proceed with development of the elements listed under the Preliminary Drainage Design task. Advance the Final Drainage Design to an 80% design completion. Additional elements include:

- Tabulation of drainage quantities and drainage removals.
- Storm Water Management Plan (SWMP) Finalize the SWMP in accordance with decisions made at the Preliminary Design Review meeting and on additional investigation since the Preliminary Design Review meeting. Special Provisions applicable to the drainage elements of the project.
- Storm Drain Design. The final design shall include (structural details for special structures, such as PWQ outlet structures for EDB).
  - The final configuration, size and skew of the outfall systems and minor storm sewer systems and culverts.
  - Design water surface elevations in retention ponds.
  - Elevations, flowlines and hydraulic information in accordance with the CDOT Drainage Design Guide and CCD Storm Drainage Design and Technical Criteria.
  - Erosion protection limits and details for the outlets.
- Grading plans and details for permanent water quality features.
- Removals tabulation of drainage quantities.

- Structural details for special structures, such as water quality manholes and outlet structures for detention ponds.
- Prepare final structure sections to determine elevations, slopes and lengths of structures. Indicate the flow quantity and hydraulic grade line or head water depth on sections.
- Prepare NPDES Storm Water Permit for construction activities permit application.
- Prepare a Final Hydraulics Report to include the following:
  - Revisions to the preliminary hydraulics report as necessary to document the final design of the project.
  - Finalize Storm Water Management Plan.
  - The format of the report will be in accordance with Chapter 4 of the CDOT Drainage Design Guide and CCD Storm Drainage Design and Technical Criteria.

5.5 Final Construction Phasing and Traffic Control Plans

- Prepare detailed construction phasing plans (at 1"= 80' half-size scale) showing construction work zones. Coordinate construction phasing plans with roadway jointing/laneage plan to maximize constructability.
- Construction traffic control plans are excluded from this scope of services.

5.6 Final Traffic Engineering Plans

- Prepare signing and striping plans.
- Prepare tabulation of signs and pavement markings.
- Finalize traffic signal plans.
- Prepare tabulation of traffic signal quantities.

5.7 Final Lighting Plans

- After approval of the locations of the lights, the lighting design will be completed with the following information shown on the plan sheets:
  - Circuit type and voltage of power source
  - Location of power source (coordinated with the utility engineer)
  - Luminaire type and lumens
  - Light standard type and mounting height
  - Bracket arm type and length
  - Foundation details
  - Size and location of electrical conduit
  - Locations of power sources(s)/lighting control center(s) (if appropriate)
  - Location of direct burial cable
  - Size of wiring and/or direct burial cable

5.8 Final Landscape Plans (If required by City)

- Prepare 80% landscape and irrigation construction plans incorporating public and staff input from preliminary design phase, and review with CITY. Include preliminary water budget based on irrigation design (i.e., water service, meter, mainline and lateral sizes with locations for water and electric service for identifying sleeves for future irrigation system provisions).
- Incorporate 80% design review comments into 100% plan package for review with CITY.
- Submit 100% landscape and irrigation plans to Denver Water for review and approval.
- Incorporate any Denver Water comments into irrigation plans for bid package.

5.9 Final Utility Coordination

- Prepare the final utility plans following the resolution of the Preliminary Design Review comments. Develop 80% utility plans following the finalization of the roadway horizontal alignment and profile grade and the horizontal location of drainage structures, sewers, and other underground structures. Plans include up to 10 sheets (1 notes/contacts, 2 PH log, 7 plan sheets) at 1"=40'. Develop project specific utility special provisions. Assumes a Denver Water only plan is not required (if required new scope and fee will need to be negotiated).
- Facilitate up to 8 one-on-one utility coordination meetings over 2 days to coordinate with the CITY and utility companies to finalize utility clearances.
- Prepare utility clearance letters for CCD review and signature (or CDOT or other applicable agency) and distribute signed letters to utility owners. Assume no more than 7 letters.
- Develop CDOT utility clearance package including clearance letters, project special provisions, and utility plans. Utility coordination and documentation shall be in accordance with CDOT requirements in order to obtain CDOT utility clearance.

5.10 Final Right Of Way

- Calculate areas of easements in accordance with CDOT Right-of-Way Manual.
- Prepare legal descriptions of easements as directed by the CITY Surveyor's office.
- Prepare Control Survey Plot.
- Prepare ROW plans and ownership map.
- All right-of-way matters shall be in accordance with CDOT requirements in order to obtain CDOT ROW clearance, and the CONSULTANT shall provide required support services to obtain the CDOT clearance.

5.11 Final Design Review Meeting

- The Final Design Review plans shall include the following sheets:
  - Title Sheet
  - CDOT Standard Plans List
  - Typical Sections
  - General Notes
  - Summary of Approximate Quantities

  - Appropriate Individual Quantity Tabulations
  - Special Details
  - Survey Control Diagram
  - Boring Log
  - Geometric Layout
  - Removal Plans
  - Phasing Plan
  - Roadway Plan and Profiles
  - Intersection Plans
  - Jointing Details
  - Structure Plan and Details
  - Drainage Plans, Cross-sections and Details
  - Stormwater Management Plan (CDOT Template) and Erosion Control Plans
  - Traffic Signing and Pavement Marking Plans
  - Traffic Signal Plans and Details
  - Roadway Lighting Plans
  - Landscape Plans
  - Utility Locations/Relocations and Utility Specifications in accordance with CDOT requirements
  - Right-of-Way Plans
  - Roadway/Roadside Cross Sections
- Prepare a list of the Standard Special Provisions that are applicable to the project.
- Provide unique Project Special Provisions for items, details and procedures not adequately covered by CDOT's Standard Specifications and Standard Special Provisions, current edition.
- Coordinate all details related to permits required for the project.
- Prepare the Final Design Review engineer's opinion of probable construction cost. CDOT-format item numbers, descriptions, units and quantities shall be listed and submitted to the CITY.
- Distribute the plans (half-size) to the CITY, utility companies and other stakeholders for review two (2) weeks prior to the Final Design Review meeting.
- The plans and special provisions will be reproduced and distributed by the CONSULTANT.
- Electronic submittals of the deliverables above will be provided by the CONSULTANT to the CITY per City requirements.
- Organize and conduct the Final Design Review meeting. The Final Design Review meeting minutes shall be prepared by the CONSULTANT, approved by the CITY, and distributed by the CONSULTANT as directed.

- Obtain CDOT clearance and approval to advertise for bids for construction by December 31, 2018 to achieve substantial completion of construction by September 30, 2019 to meet federal funding requirements.

TASK 6.0 - PRECONSTRUCTION (100% DESIGN LEVEL)

- Construction Plan Package - Revise the Final Design Review plan sheets and the specifications in accordance with comments received at or prior to the Final Design Review meeting and submit to the CITY within two (2) weeks after the Final Design Review meeting.
- Upon the completion, review and approval of the final design package, proceed with development of the elements listed under the Preliminary Drainage Design task. Advance the Final Drainage Design to 100% design completion.
- The bid plan construction contract package shall consist of the revised Final Design Review plans and will completely describe the work required to build the project including project dated special provisions and detailed quantities.
- One paper (half-size) set of the plans and one original set of special provisions will be submitted by the CONSULTANT to the CITY for reproduction and distribution by the CITY.
- One copy of the revised engineer's opinion of probable construction cost will be submitted by the CONSULTANT to the CITY
- Submit design data in electronic format.
- CITY will prepare and assemble the bid package, including bid forms, contract documents and general conditions of the construction contact. Standard CITY and CDOT forms and formats will be utilized for contract documents and general conditions.
- Record Plan Sets - Produce two (2) record plan sets (half size) for final design of roadways and structures which bear the seal and signature of the responsible Colorado Registered Professional Engineer on each sheet. One (1) set shall be retained by the CONSULTANT for three (3) years. The other set shall be submitted to the CITY.

6.1 Pre-Bid Meeting

- The CONSULTANT will attend the pre-bid meeting and site visit (if held) to respond to inquiries and requests for interpretation by prospective bidders.

6.2 Bid Evaluation and Assistance

- The CONSULTANT will assist the CITY in preparing written responses or addendum material as required.
- The CITY shall distribute such responses and addenda to prospective bidders.
- The CONSULTANT will assist the CITY in reviewing, checking, evaluating and tabulating bids.

PROJECT DELIVERABLES

The CONSULTANT shall deliver to the CITY the designated number of copies of the following documents at the appropriate times during the project, as outlined in this Scope of Services:

TASK 1.0 - PROJECT MANAGEMENT

- One (1) copy of each:
  - Original Minutes of Meetings and Phone Conversations

TASK 2.0 – DATA COLLECTION

- Ten (10) copies each:
  - Traffic Technical Memorandum

TASK 3.0 - PRELIMINARY-LEVEL DESIGN

- One electronic copy of Preliminary Drainage Report
- Preliminary Construction Drawings with Cross Sections (11x17)
- One electronic copy of Preliminary Traffic Report
- Fifteen (15) copies each:
  - Half-size Preliminary-level Design Plans
  - Grading and Drainage sheets
  - Preliminary-level Construction Cost Estimate

TASK 4.0 – NEPA ENVIRONMENTAL ASSESSMENT/FONSI

- Ten (10) copies with CDs each:
  - NEPA Template EA AND FONSI Documents, including Technical Reports

TASK 5.0 - FINAL DESIGN

- Ten (10) copies each:
  - Half-size Final Design Review Plans
  - Final Design Engineer's Opinion of Probable Construction Cost
  - Special Provisions
- One (1) copy each:
  - Original hard copy of bid package and project special provisions
  - Original Half-size Final Plans
  - Utility Clearance Letter
  - Right-of-Way Clearance Letter
  - Advance Final Drainage Report
  - Final Drainage Report
  - Final Drainage Quantities and Cost Estimate
  - Final electronic hydraulic models
  - Final SWMP

- Final Project Specifications
- Final Construction Drawings with cross-sections (11x17 plan set)
- Miscellaneous Design Calculations
- Original Minutes of Meetings and Telephone Conversations

TASK 6.0 - PRECONSTRUCTION

- One (1) copy each (hard copy and electronic version):
  - Half size preconstruction plans
  - Special Provisions
  - Preconstruction Drainage Quantities and Cost Estimate
  - Preconstruction electronic hydraulic models
  - Preconstruction electronic design drawings
  - Preconstruction SWMP
  - Preconstruction Project Specifications
  - Preconstruction Construction Drawings with cross-sections (11x17 plan set)
  - Engineer's Opinion of Probable Construction Cost

Exhibit B-1

56th Avenue, Chambers Road to Peña Boulevard - Peña Interchange Project
Workhour Estimate (2012 + 5% Rates)

			URS/AECOM											
			Principal	Proj Mgr/Sr Mgr	Design Mgr	PE/ Scientist 1	Proj Enr/ Scientist	Staff Enr/ Scientist	Tech 3/Sr Drafter	CADD/ Tech 2	Project Controls	Admin/ Tech 1	Total Hours	% of Project
TASK 1.0 -	**PROJECT MANAGEMENT**													
	1.1	Contract Administration and Project Schedule		120	15						15	15	165	5%
	1.2	Conduct Progress Meetings (biweekly)		100	60								160	5%
	1.3	Monthly Progress Reporting		15	8					30		12	65	2%
	1.4	Quality Control/Quality Assurance	8	15	15								38	1%
TASK 2.0 -	**DATA COLLECTION**													
	2.1	Review Project Data		8			8	6	8	12			42	1%
	2.2	Design Surveys and Mapping (Merrick)							16				16	1%
	2.3	Traffic Data Collection (ADT)					4						4	0%
	2.4	Traffic Forecast (AECOM)					40						40	1%
	2.5	Traffic Analysis (AECOM)		4			48						52	2%
	2.6	Right-of-Way Research and Surveys (Merrick)												
	2.7	Utility Research (Goodbee)												
	2.8	Geotechnical Investigation (Geocal)												
TASK 3.0 -	**PRELIMINARY-LEVEL DESIGN (60%)**													
	3.1	Preliminary-Level Roadway Design			80		80						160	5%
	3.2	Preliminary Drainage Design					88			140			228	7%
	3.3	Preliminary Landscape Concepts (Goodbee)												
	3.4	Preliminary Traffic Engineering Plans		4			32			80			116	4%
	3.5	Preliminary Construction Phasing Plans			24		48		40	16			128	4%
	3.6	Initial Utility Coordination (Goodbee)												
	3.7	Preliminary Design Review		8	24		32						64	2%
TASK 4.0 -	**ENVIRONMENTAL CLEARANCE**													
	4.1	Agency/Stakeholder Coordination (TAC meetings, etc)		50	20							10	80	3%
	4.2	Data Review and Collection		16		8		40	108	40		40	252	8%
	4.3	NEPA Documentation (NEPA, Tech Memos)		80	24	20	6	112	100	60		88	490	16%
	4.3	Public Involvement (3 neighborhood, 1 public)		24	20					40		8	92	3%
TASK 5.0 -	**FINAL DESIGN (80% DESIGN LEVEL)**													
	5.1	Design Surveys and Mapping (Merrick)			4								4	0%
	5.2	Geotechnical Investigation (Geocal)			4								4	0%
	5.3	Final Roadway Design			60				120				180	6%
	5.4	Final Drainage Design					68			120			188	6%
	5.5	Final Construction Phasing and Traffic Control Plans		4	16		60			30			110	4%
	5.6	Final Traffic Engineering Plans					40			30			70	2%
	5.7	Final Lighting Plans (Clanton)			2								2	0%
	5.8	Final Landscape Plans (Goodbee)			2								2	0%
	5.9	Final Utility Coordination (Goodbee)			4								4	0%
	5.10	Final Right-of-Way (Merrick)			4								4	0%
	5.11	Final Design Review Meeting	2	4	32		24		8	8			78	3%
TASK 6.0 -	**PRECONSTRUCTION (100% DESIGN LEVEL)**													
	100% Design		2	4	40		80		60	40			226	7%
	6.1	Pre-Bid Meeting			8								8	0%
	6.2	Bid Evaluation and Assistance			24		18						42	0.013487
		Sub-total Hours	12	456	490	28	676	158	460	646	15	173	3,114	100%
			0%	15%	16%	1%	22%	5%	15%	21%	0%	6%		
		Hourly Rate*	$205.80	$205.80	$ 173.25	$ 151.20	$ 130.20	$ 108.15	$ 102.90	$ 92.40	$ 86.10	$ 75.60		
		Sub-total $	$ 2,470	$ 93,845	$ 84,893	$ 4,234	$ 88,015	$ 17,088	$ 47,334	$ 59,690	$ 1,292	$ 13,079		

Total Labor Cost (URS)	$411,938		
URS Reimbursable Direct Expenses (1% of direct labor)	$ 3,998		
URS Fee on subconsultants (0%)	$ -		
Total - URS	**$415,936**		
Subconsultants			
All Traffic Data Services (DBE)	$ 1,600	0.2%	
Clanton & Associates (DBE)	$ 24,055	2.7%	
Geocal Inc (DBE)	$ 20,009	2.2%	
Merrick & Company	$ 24,330		3.9%
Pinyon Environmental (DBE)	$ 54,757	6.1%	
Previously Spent by Pinyon	$10,656	1.2%	
Goodbee/PKM Design (DBE)	$ 69,711	7.7%	
	$194,462	**20.1%**	
Project Subtotal	$610,398		
Other ODCs (Goodbee)	$ 13,350		
Project Total	**$623,748**		
Contract Total	$900,000		

*Estimated average rates. See rate schedule.

EXHIBIT B-1

56th Avenue Corridor

URS CORPORATION
MODIFIED 2017 RATE SCHEDULE (2012 + 5%)

Personnel Classification	Billing Rate Per Hour ($)
Principal	$205.80
Project Manager/Sr. Manager	$205.80
Consultant	$194.25
Professional Engineer/Scientist 3	$178.50
Design Manager	$173.25
Professional Engineer/Scientist 2	$162.75
Manager	$151.20
Professional Engineer/Scientist 1	$151.20
Senior Engineer/Scientist	$140.70
Resident Representative	$135.45
Project Engineer/Scientist	$130.20
Technician 4/Field Supervisor	$118.65
Staff Engineer/Scientist	$108.15
Technician 3/Senior Drafter	$102.90
CADD/Technician 2	$ 92.40
Project Controls	$ 86.10
Technician 1/ Tester	$ 75.60
Admin	$ 75.60
Clerical	$ 70.35

Reimbursable Expenses

Item	Charge Rate
Mileage (Field Vehicles)	$ IRS rates
Deliveries/Courier	At Cost
Outside - Materials/Supplies/Services (including reproduction)	At Cost
Subconsultants	At Cost

EXHIBIT B-1

56th Ave/Pena Blvd

Modified 2017 Rates (2012 +5%)

SUB-CONSULTANT TEAM MEMBERS

Firm Name: All Traffic Data Services

List **ALL** potential firm personnel titles/classifications 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.

Title/Classification	Responsibilities	Rate/Hr.
President		$75.00
Project Manager		$62.50
Technician		$50.00

Multiplier, which when multiplied by the direct labor rate yields the above hourly billing rate: 1.

The City will not compensate the Consultant for expenses such as postage, mileage, parking, or telephone costs. Reproduction 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.

Modified 2017 Rates

Additional services shall be charged at the following hourly rates:

Title	2012 Hourly Rates	2012 + 5% Hourly Rates
Chief Executive Officer	$180	$189
President	$180	$189
Principal	$180	$189
Associate	$180	$189
Senior Engineer II	$100	$105
Senior Engineer I	$100	$105
Engineer II	$ 90	$ 95
Engineer I	$ 90	$ 95
Senior Designer II	$100	$105
Senior Designer I	$100	$105
Designer II	$ 90	$ 95
Designer I	$ 90	$ 95
Intern	$ 65	$ 68
Production Manager	$100	$105
Senior CADD Technician	$ 90	$ 95
CADD Technician	$ 60	$ 63
Office Manager	$ 50	$ 53

EXHIBIT B-1

Goodbee and Associates, Inc.

Modified Rate Schedule for 56th and Pena (October 2017)

Title/Classification*	Responsibilities	2012 Rate/Hr.	2012 rate with 5% Increase Rate/Hr.
Owner/Principal	Direct all aspects of firm operations	$140	$147
Project Manager III	Leads and reviews technical work	$140	$147
Project Manager II	Leads and reviews technical work	$125	$131
Project Manager I	Leads and reviews technical work	$110	$116
Landscape Architect (Principal)	Leads and reviews technical work	$140	$147
Landscape Architect II	Leads and reviews technical work	$105	$110
Landscape Architect I	Leads and reviews technical work	$80	$84
Designer III	Completes technical work under direction of a PM/LA	$108	$114
Designer II	Completes technical work under direction of a PM/LA	$105	$110
CAD II	Completes technical work under direction of a PM	$94	$99
CAD I	Completes technical work under direction of a PM	$75	$79
Administrator	Bookkeeping and HR	$90	$95
Administrative Assistant	Filing, documentation, and administrative support	$70	$74

*Note that prior to 2017, Goodbee did not have all classifications listed in this table

EXHIBIT B-1

GEOCAL **Modified 2017 Rates for 56thAve/Pena Blvd**

Geosciences & Engineering

PERSONNEL FEES	**2012 Rates**	**2012 Rates +5% for 56th Avenue**
Principal Engineer, per hour	$ 170.00	$ 178.50
Project Manager, per hour	$ 135.00	$ 141.75
Senior Engineer or Scientist, per hour	$ 115.00	$ 120.75
Project Engineer or Scientist, per hour	$ 100.00	$ 105.00
Staff Engineer/Geologist, Structural Steel Insp. per hour	$ 90.00	$ 94.50
Civil Inspector, per hour	$ 75.00	$ 78.75
Field Eng, per hour	$ 75.00	$ 78.75
Materials Testing Supervisor, per hour	$ 77.00	$ 80.85
Senior Technician, per hour	$ 67.00	$ 70.35
Field or Laboratory Technician, per hour	$ 59.00	$ 61.95
Laboratory Manager, per hour	$ 85.00	$ 89.25
Graphics/Cadd, per hour	$ 50.00	$ 52.50
Clerical, per hour	$ 55.00	$ 57.75
DRILL RIG, TRAFFIC CONTROL & OTHER DIRECT COSTS - ALL AT COST		
Drilling		
Backfill materials		
Traffic Control		
Pavement patch materials		
Monitoring Well materials		
LABORATORY TESTING		
Swell/Consolidation (ASTM D 4546), per test	$ 65.00	$ 68.25
Swell/Consolidation (remolded, ASTM 4546), per test	$ 110.00	$ 115.50
One Dimension Time Consolidation (ASTM D 2435), per load	$ 95.00	$ 99.75
Gradation Analysis to the No. 200 sieve (ASTM D 422), per test	$ 60.00	$ 63.00
Percent minus No. 200 sieve (ASTM D 1140), per test	$ 50.00	$ 52.50
Hydrometer Analysis (ASTM D 422), per test	$ 90.00	$ 94.50
Plastic and Liquid Limits (ASTM D 4318), per sample	$ 65.00	$ 68.25
Natural Moisture Content & Dry Unit Weight (ASTM D 2216)	$ 25.00	$ 26.25
Specific Gravity (ASTM D 854), per test	$ 75.00	$ 78.75
Permeability Test - Undisturbed (ASTM D 2434), per sample	$ 350.00	$ 367.50
Permeability Test - Remolded (ASTM D 2434), per sample	$ 400.00	$ 420.00
Permeabilty Test - Triaxial, per sample	$ 475.00	$ 498.75
Unconfined Compression (ASTM D 2166), per test	$ 75.00	$ 78.75
Triaxial Testing (ASTM D 2850):		
Unconsolidated - Undrained, per point (Quick Test)	$ 200.00	$ 210.00
Consolidated - undrained, per point (R-Test)	$ 275.00	$ 288.75
Consolidated - drained, per point (S-Test)	$ 375.00	$ 393.75
Direct Shear Tests (ASTM D 3080)		
Unconsolidated - Undrained (Quick Test)	$ 125.00	$ 131.25
Consolidated - Undrained (R-Test)	$ 175.00	$ 183.75
Consolidated - Drained (ASTM D 3080)	$ 300.00	$ 315.00
California Bearing Ratio (ASTM D 1883)	$ 350.00	$ 367.50
Resistance R-Value (ASTM D 2844)	$ 375.00	$ 393.75
Water Soluble Sulfates, per sample	$ 35.00	$ 36.75
PH Level	$ 25.00	$ 26.25
Standard Proctor (ASTM D 698/AASHTO T-99), per sample	$ 105.00	$ 110.25
Modified Proctor (ASTM D 1557/AASHTO T-180), per sample	$ 115.00	$ 120.75
Check Point on Modified or Standard Proctor, per sample	$ 55.00	$ 57.75

EXHIBIT B-1
56th Ave/Pena Blvd.

MERRICK® & COMPANY

Modified 2017 Rates (2012 + 5%)

Schedule of Standard Hourly Billing Rates

Personnel Work Class	Effective January 1, 2017 Per Hour
PROJECT MANAGEMENT:	
Principal	$246.75
Senior Project Manager	$194.25
Project Manager	$173.25
PROJECT ENGINEERING:	
Senior Project Engineer	$157.50
Project Engineer	$126.00
Senior Design Engineer	$105.00
Design Engineer	$89.25
Designer	$78.75
FIELD ENGINEERING:	
Senior Construction Manager	$157.50
Construction Manager/Construction Administrator	$141.75
Senior Field Engineer	$126.00
Field Engineer	$94.50
Field Engineering Technician	$78.75
DRAFTING:	
Senior Technician	$94.50
Technician	$78.75
SURVEYING:	
Survey Manager	$157.50
Professional Land Surveyor	$94.50
Survey Party Chief	$84.00
Survey Technician (office)	$89.25
Two-Person Crew	$162.75
One-Person Crew	$115.50
ADMINISTRATION:	
Clerical	$78.75

Rates will be negotiated for personnel with qualifications not identified in the above schedule. Monthly rates can be furnished for full-time Inspectors.

BILLABLE EXPENSES:	
Subconsultant	Cost
Courier	Cost
Printing/Reproduction	Cost
Vehicle Mileage	Current Allowable IRS Rate
Other Materials or Equipment	Cost

This Schedule of Hourly Billing Rates is considered "CONFIDENTIAL" information. Release of any information contained herein to third parties is prohibited without consent from Merrick & Company.

EXHIBIT B-1

Pinyon Environmental, Inc.

Corporate Headquarters
9100 West Jewell Avenue Lakewood, CO 80232
TEL 303 980 5200 FAX 303 980 0089
www.pinyon-env.com

MODIFIED SCHEDULE OF UNIT RATES FOR 56TH AVENUE PROJECT - 2017 (2012 +5%)

ACTIVITY	HOURLY RATE
Expert Witness - Expert Witness Preparation and Deposition	$217.35
Principal Engineer/Scientist - QA/QC by Principal or Senior Technical Reviewer, Meetings with Regulatory and Oversight Agencies	$178.50
Senior Engineer/Scientist - Remediation, Engineering Design, Investigation Design, Development of Work Plans, Database Design, Training, Industrial Hygiene	$157.50
Project Manager - Project Management, Coordinates Multi-Disciplinary Teams, Response to Agency Questions, Project Meetings with Clients/Regulators	$136.50
Project Specialist - Reports to Regulatory and Oversight Agencies, Preparation of Permits, GIS Library Development and Data Analysis, Industrial Hygienist, Technical Review of Documents	$102.90
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	$97.65
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	$88.99
Staff I Technician - Groundwater Sampling, Sampling During UST Removals, Surveyor's Assistant	$80.33
Drafting (Graphics) – AutoCad or Microstation Drafting	$71.40
Field Specialist/Project Assistant - Maintain Field Equipment, Data Management	$67.20
Word Processing, Clerical	$52.50

LUMP SUM EQUIPMENT CHARGES

Field Visits (General Projects)	$31.50/day
Field Visits (Wetland Delineations and Other Biology Field Activities)	$50/day or $100/week
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 FEES

Mileage (passenger car)	Current IRS rate
Outside Expenses (e.g., shipping, rental equipment, travel)	Cost + 10%
Subcontractor/Subconsultant/Laboratory Fees	Cost + 10%

Specialty In-House Equipment Billed as Indicated in Site-Specific Proposals

EXHIBIT B-1

Key Staff

URS Corporation	Rate Classification
Tracey MacDonald	Project Manager
Margie Krell	Design Manager
Kevin Bernhardt	Project Engineer/Scientist
Scott Bressler	Staff Engineer/Scientist
Lisa Candelaria	CADD/Technician 2
Tom Damiana	Professional Engineer/Scientist 1
Tammy Eggers	Project Engineer/Scientist
Steve Ensley	Technician 3/Senior Drafter
Collin Ferris	CADD/Technician 2
Daniel Follett	CADD/Technician 2
Lindsey Freytag	CADD/Technician 2
Steve Graber	Staff Engineer/Scientist
Mike Heugh	Technician 3/Senior Drafter
Don Holloway	Project Manager/Senior Manager
Meagan Jones	Technician 1/Tester
Amanda Lemig	Technician 3/Senior Drafter
Susi Marlina	Project Engineer/Scientist
Alexa Molthen	CADD/Technician 2
Tiffany Samuelson	CADD/Technician 2

All Traffic Data Services
Eric Boivin

Clanton & Associates

Annie Kuczkowski	Dane Sanders

Geocal
Ron Vasquez

Goodbee & Associates

Patti Miers	Dana Bijold
Adam Barnard	Andi Barendt
Elissa Roselyn	Julia Gibson
Doug Smith	

Merrick & Company

Michael Martin	Todd Beers

Pinyon Environmental

Robyn Kullas	Mark Fletcher
Tom Wilson	Chris Funk
Tom Carr	Matt Santo

Exhibit C-1

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/27/2017

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
Marsh Risk & Insurance Services
CA License #0437153
777 South Figueroa Street
Los Angeles, CA 90017
Attn: LosAngeles.CertRequest@Marsh.Com
06510 -STND-GAUE-17-18 04 2019

CONTACT NAME:
PHONE (A/C, No, Ext): **FAX (A/C, No):**
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Zurich American Insurance Company	16535
INSURER B : N/A	N/A
INSURER C : Illinois Union Insurance Co	27960
INSURER D : SEE ACORD 101	
INSURER E :	
INSURER F :	

INSURED
AECOM
URS Corporation
8181 E. Tufts Avenue
Denver, CO 80237

COVERAGES **CERTIFICATE NUMBER:** LOS-002159303-10 **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			GLO 5965891 09	04/01/2017	04/01/2018	EACH OCCURRENCE	$ 2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 2,000,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY			BAP 5965893 09	04/01/2017	04/01/2018	COMBINED SINGLE LIMIT (Ea accident)	$ 2,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N			SEE ACORD 101	01/01/2017	01/01/2018	X PER STATUTE OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N / A						E.L. EACH ACCIDENT	$ 2,000,000
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 2,000,000
							E.L. DISEASE - POLICY LIMIT	$ 2,000,000
C	ARCHITECTS & ENG.			EON G21654693	04/01/2017	04/01/2018	Per Claim/Agg	$1,000,000
	PROFESSIONAL LIAB.			"CLAIMS MADE"			Defense Included	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Contract #: 201205382

The State of Colorado, The City and County of Denver, its elected and appointed officials, employees and volunteers are named as additional insured for GL & AL coverages, but only as respects work performed by or on behalf of the named insured and where required by written contract.

CERTIFICATE HOLDER

City and County of Denver
201 W. Colfax Ave
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
of Marsh Risk & Insurance Services

James L. Vogel