

**DESIGN-BUILD CONTRACT  
MAIN CONTRACT FORM**

**16<sup>th</sup> STREET MALL DESIGN-BUILD PROJECT**

**Contract Control Number: 202157899**

**THIS DESIGN-BUILD CONTRACT** (this “Design-Build Contract”) is made and entered into as of the Effective Date (as hereinafter defined) by and between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the “City”), and **PCL CONSTRUCTION SERVICES, INC.**, a Colorado corporation with an address of 2000 South Colorado Boulevard, Suite 2-500, Denver, Colorado 80222 (referred to herein as the “Design-Build Team” or “Contractor”).

**RECITALS**

This Design-Build Contract is made with respect to the following facts:

A. The City has implemented and completed a competitive selection process and has selected a Design-Build Team to design, construct, and provide all other Work to deliver the 16<sup>th</sup> Street Mall Design-Build Project in Denver, Colorado (collectively, the “Project”).

B. The Project includes all professional design, construction, and construction administration services for the reconstruction of the 16<sup>th</sup> Street Pedestrian and Transit Mall in Downtown Denver. Scope of services includes completion of, design development, construction documents, construction, and construction administration necessary to complete the Project.

C. The Project is more particularly described in the Request for Qualifications issued by the City as of January 24, 2019, together with all related materials as identified in Section 1 of **Exhibit A** attached hereto (the “RFQ”), and the Request for Proposal issued by the City as of March 31, 2020, together with all related materials as identified in Section 2 of **Exhibit A** attached hereto (the “RFP”).

D. The City is relying upon the qualifications and information presented in the Design-Build Team’s response to the RFQ, dated January 31, 2020 (the “RFQ Response”), and its response to the RFP, dated September 9, 2020, together with all related materials as identified in Section 3 of **Exhibit A** attached hereto, including, without limitation, the Contract Clarifications set forth in **Exhibit A-1** attached hereto and the final Technical Requirements attached hereto as **Exhibit A-2** (collectively, the “RFP Response”), in entering into this Design-Build Contract. As used in this Design-Build Contract, the term “Proposal” shall mean and refer collectively to the Design-Build Team’s RFQ Response and its RFP Response.

E. The Design-Build Team was selected after a determination that its Proposal (including, without limitation, the Fixed Price Proposal set forth in the RFP Response) provided the best value to the City.

## AGREEMENT

In consideration of the mutual promises and covenants contained herein, the sufficiency of which is hereby acknowledged by the parties hereto, Contractor and the City do each hereby promise and agree as follows:

### SECTION 1 – AUTHORITY; ENGAGEMENT; COORDINATION OF WORK

#### 1.1 Line of Authority

The City's Executive Director (also known as the Manager) of the Department of Transportation and Infrastructure, his designee or successor in function (hereinafter referred to as the "Executive Director" or the "Manager") authorizes all work performed under this Design-Build Contract. The Executive Director hereby delegates to Adam Phipps, as the City Engineer (the "Director" or the "Deputy Manager") authority as the City official responsible for those decisions and actions identified as the responsibility of the Deputy Manager in the General Conditions and delegates to Mark Martinez, the 16<sup>th</sup> Street Mall Program Director, the authority necessary to oversee all Work under this Design-Build Contract. The Director has designated Steve Coggins, as the Project Manager for the day-to-day administration of the Design-Build Team's services under this Design-Build Contract. The Design-Build Team shall submit its reports, memoranda, correspondence and submittals to the Project Manager. On a daily basis, the Project Manager shall report to the Director. The Executive Director and the Director may rescind or amend any such designation of representatives or delegation of authority and designate a different Director or Project Manager, upon written notice to the Design-Build Team. To the extent of any inconsistency between the terms set forth in this Section 1 and the terms set forth in General Condition 112, the terms set forth in this Section 1 shall control.

#### 1.2 Limitation on Delegation of Authority

Notwithstanding any term or provision of the Contract Documents to the contrary, it is expressly understood that although the Project Manager may gather information about proposed changes in the contract time and contract price from the Design-Build Team, only the Executive Director or his designated representative has the authority to legally bind the City to changes in contract time and contract price through a validly executed Change Order.

#### 1.3 Design-Build Team Selection

In accordance with the terms and requirements set forth in Section 20-56 of the Denver Revised Municipal Code (the "DRMC"), the City implemented and completed a competitive selection process to identify qualified Design-Build teams to perform both design and construction services for the Project. The Design-Build Team was selected as the best value proposer to perform such services for the City as set forth in the City's RFQ and RFP and the Design-Build Team's Proposal.

#### 1.4 Engagement of Design-Build Team

The Design-Build Team shall provide and furnish all services and work items necessary to perform the Work for the Project as defined in the final Technical Requirements (**Exhibit A-2**) and all other terms and conditions of this Design-Build Contract and Contract Documents, including but not limited to, the following: all professional services, materials, parts, labor, supervision, coordination, administration, equipment, tools, temporary utilities, shop drawings, studies, reports, permitting documents, preliminary engineering drawings, specifications, design development drawings, construction drawings, material testing, inspection, as-built drawings and all other submittals required by the Contract Documents and desirable for the full completion of the Work and Project, described, or specified in this Design-Build Contract. The terms "Project" and "Work" are synonymous. The Design-Build Team's Project cost

proposal shall include all costs relating to, or associated with, the foregoing, including, but not limited to, material costs, equipment costs, personnel costs, overhead and profit and all other costs associated with the Design-Build Team's performance, including all of the Design-Build Team's errors, omissions and negligence with respect to such performance.

### **1.5 Relationship of the Parties**

- (a) By entering into this Design-Build Contract, the Design-Build Team accepts the relationship of trust and confidence between it and the City. The Design-Build Team shall furnish its reasonable professional skill and judgment and shall cooperate with the officials, employees and agents of the City, including the Project Manager, in furthering the interests of the City. The Design-Build Team will furnish efficient business administration, construction management, and superintendence and will use reasonable efforts to perform the Work in an expeditious and economical manner consistent with the interests of the City. In no event shall the Design-Build Team be considered a fiduciary of the City by reason of this paragraph.
- (b) The parties intend herein to establish a relationship wherein the City relies upon the integrity and fidelity of the Design-Build Team to complete the Project within the time and budget constraints set forth in this Design-Build Contract and in a manner which satisfies the City's longstanding commitment to quality, efficiency, value, innovation, partnering, responsiveness to agency and community needs and compliance with all Applicable Laws (as hereinafter defined) in the performance of general public improvements.
- (c) The Design-Build Team accepts the relationship of trust and confidence established by this Design-Build Contract with the City. The Design-Build Team further agrees to utilize the Design-Build Team's reasonable skills, efforts, and judgment in furthering the interests of the City regarding the Project; to furnish at all times an adequate supply of qualified and competent workers and quality materials; and to perform the Work in the best, most expeditious, and economical manner.
- (d) The Design-Build Team hereby confirms that it is ready, willing and able to design, build and deliver a fully functional and approved (per all Applicable Laws and all requirements and standards set forth in the Contract Documents) Project in accordance with the terms and conditions of this Design-Build Contract on and subject to the terms and conditions set forth herein.
- (e) The Design-Build Team shall accept the designated and authorized representatives of the City identified in the Contract Documents and perform its obligations toward and in response to such representatives in the same manner it would toward and in response to the City, pursuant to such designation and authorization.

### **1.6 Coordination and Cooperation**

- (a) The Design-Build Team agrees to cooperate and coordinate fully with the City in its performance of the Work to meet or exceed the City's time and budgetary objectives and limitations, while maintaining the City's longstanding commitment to quality, efficiency, value, innovation, partnering, responsiveness to agency and community needs and compliance with all Applicable Laws in the construction of general public improvements.
- (b) The Design-Build Team shall, as a continuing work item under this Design-Build Contract, facilitate coordination, communication and cooperation regarding its performance hereunder between the City's Department of Transportation and Infrastructure, the Project Manager, other

City consultants and any affiliated entities. In addition, the Design-Build Team shall coordinate its efforts under this Design-Build Contract with all involved governmental and regulatory entities.

## **SECTION 2 – CONTRACT DOCUMENTS**

### **2.1 Contract Documents**

The following list (Section 2.3) of instruments, drawings and documents which are attached hereto, bound herewith or incorporated herein by reference constitute and shall be referred to collectively as the “Contract Documents.” All such instruments, drawings and documents taken together as a whole constitute the Design-Build Contract between the parties hereto, and they are as fully a part of this Design-Build Contract as if they were set out verbatim and in full herein.

### **2.2 Integration**

The Contract Documents represent the entire and complete integration of all understandings between the City and the Design-Build Team as to the subject matter hereof, and supersede all prior negotiations, representations or agreements. No prior or contemporaneous addition, deletion or other amendment hereto shall have any force or effect whatsoever, 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 or change order properly executed by the parties.

### **2.3 List of Contract Documents**

(a) This main Design-Build Contract document (consisting of pages 1 through the signature page).

(b) The following exhibits to the main Design-Build Contract document:

- Exhibit A: RFQ, RFP and RFP Response Documents
- Exhibit A-1: Contract Clarifications
- Exhibit A-2: Technical Requirements
- Exhibit B: Fixed Contract Price
- Exhibit C: Schedule of Values
- Exhibit D: Payment and Performance Bond Form
- Exhibit E: Federal Requirements
- Exhibit F: CCD ROCIP Insurance Manual and ROCIP Safety Manual
- Exhibit G: Appropriation and Encumbrance Form (see [Section 7.9](#))
- Exhibit H: Civil Rights: Equal Employment Opportunity and DBE Program Requirements
- Exhibit I: Wage Rate Schedule
- Exhibit J: City and County of Denver Equal Employment Opportunity Provisions
- Exhibit K: RFP Response (incorporated herein by reference)
- Exhibit L: Workforce Requirements (RFP Technical Requirements - Section 2.13)
- Exhibit M: General Contract Conditions (index)
- Exhibit N: Special Contract Conditions
- Exhibit O: Notice to Proceed (form)
- Exhibit P: Insurance Certificate

- (c) RFQ (incorporated by reference).
- (d) Design-Build Team's RFQ Response (incorporated by reference).
- (e) RFP (incorporated by reference, including Technical Specifications and Technical Requirements)
- (f) Design-Build Team's RFP Response (incorporated by reference).
- (g) Notice to Proceed (incorporated by reference after issuance by the City).
- (h) Approved Construction Documents.
- (i) Approved Construction Submittals.

#### **2.4 Order of Precedence**

In the event of a conflict between provisions of any of the Contract Documents which cannot be resolved by giving effect to both provisions, the order of precedence of the Contract Documents in descending order, shall be as follows:

- (a) This Design-Build Contract main contract form and Exhibits A through P, as may be modified by amendment or Change Order, with precedence of amendments or Change Orders in reverse order of issuance.
- (b) The Special Contract Conditions.
- (c) The General Contract Conditions.
- (d) The RFP including Technical Specifications and Technical Requirements.
- (e) Design-Build Team's RFP Response.
- (f) The Design Documents (including 100% Construction Documents).
- (g) The RFQ and the Design-Build Team's RFQ Response.

#### **2.5 Documents Complementary**

The intent of the Contract Documents is to include all terms, conditions, work items and services necessary or required for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be binding as if required by all. Work items or services not covered in the Contract Documents will be required unless they are not consistent with the Contract Documents and are not inferable from the Contract Documents as being necessary to produce the result intended by the Contract Documents. Anything mentioned in the Technical Specifications and not shown on the Contract Drawings, or shown on the Contract Drawings and not mentioned in the Technical Specifications, shall be of like effect as if shown or mentioned in both. Words and abbreviations that have well known technical or trade meanings are used in the Contract Documents in accordance with such recognized meaning.

#### **2.6 Documents Following Contract Execution**

Based upon the final Design Documents, the Design-Build Team will prepare and submit construction documents, contract drawings and Technical Specifications to the Project Manager for review and approval by written directive of the Executive Director or the Executive Director's designee. It is contemplated by the parties that numerous exhibits or attachments, including the final approved Design Documents, Construction Documents and final Technical Specifications, will not be accomplished or must be developed after execution of this Design-Build Contract and, as such, must be finalized, incorporated by reference and/or attached to and be made a part of the Contract Documents subsequent to execution of this Design-Build Contract. The incorporation of such exhibits or attachments into this Design-Build Contract shall be accomplished by written directive from the Executive Director or the Executive Director's designee. The parties shall be diligent in accomplishing these exhibits and attachments. To the extent these new exhibits

or attachments conflict with other exhibits or portions of this Design-Build Contract, the greater service, better quality or greater quantity shall be included in the Work. However, nothing contained in this section shall limit the Design-Build Team's ability to seek Change Order time and compensation adjustments for City changes to the Work incorporated into any of these later exhibits and attachments. As used herein, the term "Construction Documents" shall mean and refer to the 100% final and approved set of documents generated by the process described in this Section 2.6.

## **2.7 Construction**

Where reference is made in this Design-Build Contract to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

## **SECTION 3 – SCOPE OF WORK**

### **3.1 Design Documents**

The Design-Build Team shall prepare or provide to the Project Manager for review and approval the detailed plans and specifications for the Project, including, without limitation, those items set forth in Exhibit A (the "Design Documents"). Design services shall be performed by qualified architects, engineers and other professionals selected and paid by the Design-Build Team.

### **3.2 Standard of Care for Professional Design Services**

The Design-Build Team shall perform all services required by this Design-Build Contract with the degree of skill, care and diligence consistent with the professional standards prevailing in the Denver Metropolitan Area for services of comparable scope and magnitude. The Design-Build Team's Design Manager shall be a professional engineer registered in the State of Colorado.

### **3.3 Ownership of Documents**

- (a) The City shall have title and all intellectual and other property rights, in and to all Design Documents and Construction Documents which shall include all phased and final plans, specifications, data and reference materials 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, contract documents, studies, estimates, reports, models, notes, Shop Drawings, reference materials, alternative technical concepts, and any other materials or work products, whether in electronic or hard copy format, created by the Design-Build Team pursuant to this Design-Build Contract, in preliminary and final forms and on any media whatsoever (collectively, the "Project Documents"), whether the Project for which the Project Documents were created is executed or not. The Design-Build Team shall identify and disclose, as requested, all such Project 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 Design Documents are a "work made for hire," and all ownership of copyright in the Design Documents shall vest in the City at the time the Design Documents are created. To the extent that the Design Documents are not a "work made for hire," the Design-Build Team hereby assigns and transfers all right, title and interest in and to the Design Documents to the City, as of the time of the creation of the Design 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-Build Team 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 Design Documents, and shall

provide full information regarding the Design Documents and execute all appropriate documentation in applying for or otherwise registering, in the City's name, all rights to such Design Documents.

- (d) The Design-Build Team agrees to allow the City to review any of the procedures used in performing the Work 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-Build Team shall be permitted to retain reproducible and electronic copies of all of the Design Documents for the information and reference, and the originals of all of the Design Documents, including all electronic files, 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 Design-Build Contract.
- (f) The Design-Build Team's records including the records of direct personnel, Design-Build Team's subcontractors and subconsultants and records of reimbursable expenses pertaining to this Agreement shall be kept on a generally recognized accounting basis. The Design-Build Team agrees that any duly authorized representative of the City, including the City Auditor, shall, until the expiration of five (5) years after the final payment under this Agreement, have access to and the right to examine any books, documents, papers and records of the Design-Build Team, involving transactions related to this Agreement.
- (g) The Design-Build Team shall retain all communications, including but not limited to written communications, emails and texts related to the Project. The Design-Build Team shall produce all such communications upon written request of the City Engineer at no additional cost to the City within ten (10) calendar days of the request in a searchable electronic format. This Section 3.3(g) does not create an affirmative duty on behalf of the City to request documents in response to a request made pursuant to C.R.S. 24-72-201, *et. seq.*

### **3.4 Design-Build Services**

All Work on the Project shall be performed by qualified contractors (licensed and bonded for work in the City and County of Denver), subcontractors and suppliers, selected and paid by the Design-Build Team and acting in the interest of the Design-Build Team. Selection of the Design-Build Team's contractors, subcontractors, consultants, subconsultants, vendors and suppliers shall be at the sole discretion of the Design-Build Team subject to the Contractor's commitment to Major Participants and Key Personnel. As used herein, the term "Major Participant" means any of the following entities: all general partners or joint venture members of the Contractor; all individuals, persons, proprietorships, partnerships, limited liability partnerships, corporations, professional corporations, limited liability companies, business associations, or other legal entity, however organized, holding (directly or indirectly) a 25% or greater interest in the Contractor; any subcontractor(s) that will perform work valued at 20% or more of the overall contract amount; the lead engineering/design firm(s); and each engineering/design sub-consultant that will perform 20% or more of the Work. As used herein, the term "Key Personnel" refers to the key personnel named in the Contractor's Proposal. Key Personnel or Major Participants identified in the Contractor's Proposal may not be removed, replaced, or added without the written approval of the City. The City may revoke an awarded contract if any Key Personnel or Major Participant identified in the Proposal is removed, replaced, or added to without the City's prior written approval. To qualify for the City's approval, the written request must document that the proposed removal, replacement, or addition will be equal to or better than the Key Personnel or Major Participant provided in the Proposal. The City will use the criteria specified in the RFQ, and the qualification submitted by the Contractor in the Proposal, to evaluate all requests. Requests for removals, replacements, and additions must be submitted in writing to City's Project Manager.

### 3.5 Conflict of Interests

- (a) Neither the Design-Build Team nor any of its subcontractors or subconsultants shall have interest that conflict with the interests of the City. Design-Build Team shall make written inquiry of all subcontractors and 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 consultant, subconsultant or subcontractor.
- (b) The Design-Build Team has a continuing duty to disclose, in writing, any actual or potential conflicts of interest including work the Design-Build Team is performing or anticipates performing for other entities on the same or interrelated tasks. If the Design-Build Team fails to disclose in writing actual or potential conflicts, the Manager, in his sole discretion, may terminate this Agreement.
- (c) No employee of the City shall have any personal or beneficial interest in the services or property described herein, and the Design-Build Team 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.
- (d) The Design-Build Team 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-Build Team represents that it has disclosed 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-Build Team by placing the Design-Build Team's own interests, or the interests of any party with whom the Design-Build Team 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-Build Team written notice which describes the conflict. The Design-Build Team 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.
- (e) Design-Build Teams shall not use City resources for non-City business purposes. City resources include computers, computer access, telephones, email accounts, copiers, printers, office space and other City facilities and equipment. If, as a result of access to City resources or as a result of Design-Build Team providing services pursuant to the Agreement, Design-Build Team obtains information about potential City contracts before that information is publicly available, Design-Build Team shall notify the City in writing. The City, in its sole discretion, will determine if Design-Build Team obtained an unfair advantage and is therefore disqualified from proposing or bidding.
- (f) No design consultant, subconsultant or subcontractor, not already approved by the City, shall be engaged to perform work on the Project wherein a conflict exists, such as being connected with the sale or promotion of equipment or material which may be used in the Project, provided, however, that in unusual circumstances and with full disclosure to the City of such interest, the City may provide a waiver, in writing, in respect to the particular consultant, subconsultant or subcontractor.

### 3.6 Completion Obligation

The Design-Build Team shall execute all Work to deliver the Project described in the Contract Documents, except to the extent specifically indicated in the Contract Documents as the responsibility of others. The Design-Build Team agrees to commence and undertake the performance of the Work under this Design-Build Contract within ten (10) days of the date of issuance of a Notice to Proceed in substantially the form attached hereto as **Exhibit O** and agrees to complete said Work within the Contract Time and fully complete said Work in accordance with the Contract Documents.



### 3.7 Phases of Work

The entire Scope of Work shall include the following phases:

- (a) Design Phase Services. The Design Phase Services are comprised of all those services, obligations and responsibilities necessary or required to generate the Design Documents and complete for the City's review a design of the Project that strictly complies with the requirements set forth in all Contract Documents.
- (b) Construction Phase Services. The Construction Phase Services shall include the furnishing of all construction administration, management, supervision and coordination experience and expertise, as well as all construction services, work effort, labor, tools, supplies, manufactured components, equipment, materials, and everything else necessary and required to complete the Work and the construction of the Project on time and within budget; while satisfying the City's longstanding commitment to quality, efficiency, value, innovation, partnering, responsiveness to agency and community needs and compliance with the Design Documents, Construction Documents, Contract Documents and all Applicable Laws in the performance of general public improvements.

### 3.8 The Work

The terms "Scope of Work" or "Work" as used herein shall mean all Design Phase Services and Construction Phase Services required by or reasonably inferable from the Contract Documents, whether completed or partially completed, and includes all labor, management, administration, supervision, materials, supplies, manufactured components, equipment, installation, testing, construction, supervision, professional services, and services provided or to be provided by the Design-Build Team to fulfill the Design-Build Team's obligations under this Design-Build Contract. The Work shall constitute the whole of the Project. The foregoing terms of this Section 3.9 shall supersede and replace the definition of the "Work" as set forth in Section 121 of the General Conditions.

### 3.9 Acknowledgement of Scope of Work

- (a) The Design-Build Team expressly recognizes and acknowledges that this Project must be completed within the time and fiscal constraints as set forth throughout this Design-Build Contract.
- (b) The Design-Build Team further represents to the City that by executing this Design-Build Contract, it has been fully informed of and has thoroughly reviewed the following: the objectives of the Project; the work effort of the City's Consultants performed to date for the Project; all of the Contract Documents attached to this Design-Build Contract or incorporated by reference; and all of the Work required by the Design-Build Team by the Contract Documents. Based upon this thorough review and analysis, the Design-Build Team represents to the City that it will provide or perform all of the necessary Work within the requirements of the Contract Documents.
- (c) Also by execution of this Design-Build Contract, the Design-Build Team covenants and represents that the Design-Build Team has visited the site of the Project (the "Site") and has had sufficient time and opportunity to independently examine and is sufficiently familiar with: the Site, the character and nature of the Site layout and materials, the character and nature of all Site constraints, restrictions and limitations, and limitations on ingress, egress and construction staging and performance; and the local conditions under which the Work is to be performed, including weather conditions and any other factors which may impact the Work. The Design-Build Team further represents that it has taken into consideration and correlated these direct observations, examinations and investigations with the requirements of the Contract Documents and in the pricing of the Work and the formulation of the Fixed Contract Price.
- (d) The Design-Build Team represents that it has reviewed and is familiar with the City's general expectations and scheduling assumptions regarding completion of the Project and use and that these scheduling assumptions are reasonable and achievable. The Design-Build Team further represents

that it has taken into consideration and correlated these assumptions and constraints with the requirements of the Contract Documents and in the pricing of the Work, the Fixed Contract Price.

- (e) The Design-Build Team represents that it has reviewed the Contract Documents and accepts the terms and requirements thereof and affirmatively states that the Project, as expressed by these scoping documents and the Project requirements and constraints is a reasonable and constructible Project, incorporating a reasonable and workable delivery approach, schedule and budget.

## **SECTION 4 – CONTRACT TERM AND TIME OF COMMENCEMENT**

### **4.1 General**

The Contract Term shall begin on the Effective Date, but no work shall be performed prior to the delivery of all bonds and insurance certificates (as required) of the Design-Build Team and until the City issues a Notice to Proceed. The Contract Time for the Project shall be the period of performance beginning on the date of Notice to Proceed. The Design-Build Team is not authorized to commence Work prior to its receipt of the Notice to Proceed, and any Work performed prior to the Notice to Proceed is at the Design-Build Team’s sole risk, cost and expense and with no obligation by the City to pay for any such Work. Upon issuance of the Notice to Proceed all Costs of the Work incurred prior to the issuance date will be reimbursable to the Design-Build Team to the extent included within the approved Fixed Contract Price. Termination shall be pursuant to Title 22 of the General Conditions except as otherwise provided herein.

### **4.2 Contract Time**

The term “Project Contract Time” or “Contract Time” is defined as the period beginning on the date of Notice to Proceed and ending on the date of Final Completion of the Work, subject to Change Orders as provided for in the Contract Documents. The terms “Substantial Completion” and “Final Completion” are defined in the General Conditions and/or the Special Conditions, as applicable.

### **4.3 Liquidated Damages:**

If the Design-Build Team fails to achieve the Contractual Milestone date(s) for the Work within the time set forth in this Section 4.3, the City will suffer substantial damages, which damages would be difficult to accurately determine. The parties hereto have considered the possible elements of damages and have agreed upon the amount of liquidated damages for the Design-Build Team’s failure to achieve either or both of the Contractual Milestone(s) set forth below (the “Liquidated Damages”). The Work shall be prosecuted in accordance with the Project Schedule established in the Scope of Work including the Contractual Milestones as set forth below and as defined by the Contract Documents. The Contractor shall anticipate situations which would cause any subcontractor or other third party difficulty in completing its portion of the Work within the time described in the Construction Schedule. If the Work is not sufficiently completed as necessary to achieve any of the Contractual Milestones described below on or before the date applicable to the corresponding Contractual Milestone as set forth in the table below, then in any of the above described events, the Contractor shall pay to the City as Liquidated Damages, and not as a penalty, an amount to be assessed as follows:

<b><u>Contractual Milestone</u></b>	<b><u>Date</u></b>	<b><u>Liquidated Damages</u></b>
1. Block Substantial Completion	[See Note 1 Below]	\$5,000.00/day/block
2. Project Substantial Completion	October 31, 2024	\$10,000.00/day
3. Final Completion	December 31, 2024	\$10,000.00/day

Note 1: The applicable date for each Project Block (as defined in the Special Contract Conditions) shall be that date which is eighteen (18) months after the Block Start Date (as defined in the Special Contract Conditions) for such Project Block.

As used herein, the terms “Block Substantial Completion” and “Project Substantial Completion” are defined in the Special Contract Conditions. The term “Final Completion” is defined in the General Contract Conditions. Notwithstanding any term or provision of this Design-Build Contract to the contrary, in no event shall the total amount of Liquidated Damages payable by the Contractor hereunder accrue at a cumulative rate of more than \$10,000.00/day.

If the Design-Build Team shall fail to pay such Liquidated Damages promptly upon demand therefore, the Surety on its Performance Bond and Payment Bond shall pay such damages. Also, the City may withhold all, or any part of, such Liquidated Damages from any payment due the Design-Build Team. Additional provisions relating to Liquidated Damages are set forth in the Design-Build Contract General Contract Conditions. The Parties agree that the Liquidated Damages are the sole remedy for the City on the condition that the Design-Build Team does not seek to void the Liquidated Damages provisions in these Contract Documents or on any other basis, and in such event the City reserves all of its rights to seek actual damages from the Design-Build Team for injury or loss suffered by the City from the acts or omissions of the Design-Build Team, including but not limited to any other breach or default of this Design-Build Contract.

#### **4.4 Effective Date:**

As used herein, the term “Effective Date” shall mean the date of the full execution of this Design-Build Contract as reflected by the date set forth on the City’s signature page attached hereto.

## **SECTION 5 – INSURANCE REQUIREMENTS**

### **5.1 General Information:**

The City and County of Denver has arranged for certain construction activities to be insured under a Rolling Owner Controlled Insurance Program (“ROCIP”) that provides certain insurance coverage for the City, the Design-Build Team, subcontractors and consultants and other designated parties (“Enrolled Parties”) for work performed at the Project site. Certain trade contractors and subcontractors are ineligible for this program.

### **5.2 ROCIP Requirements**

The Insurance Requirements for the Project, including participation in the CCD Rolling Owner Controlled Insurance Program (“Insurance Requirements”), are set forth in this Section 5 and **Exhibit F** attached hereto, which consists of the ROCIP Insurance Manual and Safety Manual for the Project. The Design-Build Team agrees to secure, at or before the time of execution of this Design-Build Contract, all insurance required by the Insurance Requirements and to comply with all requirements of the ROCIP Insurance Manual.

### **5.2 Requirements for Non-ROCIP Required Coverage**

For all required coverage not provided by the ROCIP the Design-Build Team shall comply with the following requirements:

- (a) **Proof of Insurance:** The Design-Build Team shall provide a copy of this Design-Build Contract to its insurance agent or broker. Design-Build Team may not commence services or work relating to the Agreement prior to placement of coverage. Design-Build Team certifies

that the certificate of insurance attached as **Exhibit P**, preferably an ACORD certificate, complies with all insurance requirements of this Design-Build Contract. 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 Design-Build Contract shall not act as a waiver of Design-Build Team's breach of this Design-Build Contract or of any of the City's rights or remedies under this Design-Build Contract. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

- (b) **Additional Insureds:** For Commercial General Liability (Off-Site Exposures), Auto Liability, and Excess Liability/Umbrella, Design-Build Team and subcontractor's insurer(s) shall name the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured.
- (c) **Waiver of Subrogation:** For all coverages, the Design-Build Team's insurer shall waive subrogation rights against the City.
- (d) **Subcontractors and Subconsultants:** All subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services required by this Contract) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of the Design-Build Team, but in amounts of at least \$1,000,000 Commercial General Liability, Business Auto insurance of \$1,000,000 combined single limit, statutory Workers' Compensation coverage, and \$2,000,000 professional liability for any subcontractor performing design or engineering work on the Project. Design-Build Team 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 Build Team agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by the City.
- (e) **Workers' Compensation/Employer's Liability Insurance (Off-Site Exposures):** The Design-Build Team shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 for each bodily injury occurrence claim, \$100,000 for each bodily injury caused by disease, and \$500,000 aggregate for all claims. The Design-Build Team expressly represents to the City, as a material representation upon which the City is relying in entering into this Contract, that none of the Design-Build Team's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall affect such rejection during any part of the term of this Design-Build Contract, and that any such rejections previously effected, have been revoked as of the date the Design-Build Team executes this Design-Build Contract.
- (f) **Commercial General Liability (Off-Site Exposures):** The Design-Build Team shall maintain limits of \$1,000,000 for each occurrence claim, \$1,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations for each occurrence, and \$2,000,000 policy aggregate.
- (g) **Business Automobile Liability:** The Design-Build Team shall maintain Business Auto Liability, or its equivalent, with minimum limits of \$1,000,000 combined single limit applicable to all owned, hired and non-owned vehicles used in performing services under this Design-Build Contract. If transporting wastes, hazardous materials, or regulated substances, Design-Build Team shall carry a pollution coverage endorsement and an MCS 90 endorsement on their policy. Transportation coverage under the Contractors Pollution Liability policy shall

be an acceptable replacement for a pollution endorsement to the Business Automobile Liability policy.

- (h) **Professional Liability:** The Design-Build Team shall maintain limits of \$2,000,000 for each claim, and \$5,000,000 aggregate limit for all claims.
- (i) **Excess/Umbrella Liability:** The Design-Build Team shall maintain excess liability limits of \$10 million. Coverage must be written on a “follow form” basis. Any combination of primary and excess coverage may be used to achieve required limits.
- (j) **Additional Provisions:** For all Commercial General Liability and Excess Liability, the policies must provide the following:
  - (i) That this Agreement is an Insured Contract under the policy.
  - (ii) Defense costs in excess of policy limits.
  - (iii) A severability of interests or separation of insureds provision (no insured versus insured exclusion).
  - (iv) A provision that coverage is primary and non-contributory with other coverage or self-insurance maintained by the City.
- (k) **For Claims-Made Coverage:** 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
- (l) **Aggregate Limit Reduction:** If any aggregate limit is reduced by twenty-five percent (25%) or more by paid or reserved claims, the Design Build Team shall notify the City within ten (10) days and reinstate aggregates required.

## SECTION 6 – COMPENSATION AND MAXIMUM CONTRACT AMOUNT

In accordance with the terms of this Design-Build Contract, the amount to be paid by the City to the Design-Build Team under this Design-Build Contract for all Work required to complete the Project shall be the Fixed Contract Price of One Hundred Forty-Eight Million, Nine Hundred Ninety-Two Thousand, Three Hundred Fifty-Four Dollars and NO/100 Cents (\$148,992,354.00) as specifically set forth and detailed in **Exhibit B** and **Exhibit C**. The Design-Build Team guarantees and warrants that the Project will be completed by its performance hereunder for the Fixed Contract Price amount. In no event will the City’s liability exceed the Fixed Contract Price, as adjusted by any duly authorized Change Order(s) executed in accordance with this Design-Build Contract. The parties specifically agree that any performance by the Design-Build Team hereunder shall not subject the City to any cost, charge or fee not specified above.

## SECTION 7 – ADDITIONAL PROVISIONS

### 7.1 Dispute Resolution:

It is the express intention of the parties to this Design-Build Contract that all disputes of any nature whatsoever regarding this Design-Build Contract including, without limitation, any claims for compensation or damages arising out of breach or default under this Design-Build Contract, shall be resolved by administrative hearing pursuant to the provisions of Section 56-106, DRMC or, with respect to appropriate issues involving Disadvantaged Business Enterprise contracting, by Section 28-33, DRMC.

The Design-Build Team expressly agrees that this dispute resolution process is the sole and only dispute resolution mechanism that will be recognized and employed by the parties for any claims put forward by the Design-Build Team, notwithstanding any other claimed theory of entitlement on the part of the Design-Build Team or its subcontractors or suppliers.

### **7.2 Subcontractor Responsibility**

The Design-Build Team shall be responsible to the City for the acts and omissions of its agents, employees, contractors, subcontractors, consultants, subconsultants and suppliers of any tier, and their agents and employees performing Work under this Design-Build Contract.

### **7.3 Title to the Work**

The parties agree that the City shall have title to all components and aspects of the Work and the Project which are in place and title to all materials for which any payment has been made to the Design-Build Team hereunder.

### **7.4 Nondiscrimination in Employment**

In connection with the performance of the Work under this Design-Build Contract, the Design-Build Team 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, gender identity or gender expression, marital status, or physical or mental disability. The Design-Build Team shall insert the foregoing requirement in all subcontracts. Further, the Design-Build Team agrees to comply with the provisions of Section 28-41 to 28-47, DRMC, and all rules and regulations promulgated and adopted by the Executive Director pursuant thereto relating to nondiscrimination in employment by contractors, subcontractors and suppliers receiving compensation for Work performed on the Project.

### **7.5 Compliance with Disadvantaged Business Enterprise (DBE) Program Requirements**

In performance of all Work hereunder, the Design-Build Team shall be subject to and comply with all requirements and conditions set forth in the document titled "Civil Rights: Equal Employment Opportunity and DBE Program Requirements" attached hereto and incorporated herein as **Exhibit H**. The RTD Small Business Office is authorized to and has established Project goals for expenditures on construction, reconstruction, remodeling, and professional design services for the Project as follows:

- (1) The Contractor hereby confirms that it is committed to, at a minimum, meet the participation goal of eighteen percent (18%) established for the design aspect of this Project.
- (2) The Contractor hereby confirms that it is committed to, at a minimum, meet the participation goal of seventeen percent (17%) established for the construction aspect of this Project.

### **7.6 Compliance with Davis-Bacon Act Wage Rate Requirements**

In performance of all Work hereunder, the Design-Build Team shall be subject to and comply with all requirements, conditions and City determinations regarding the Davis-Bacon Act, as amended (40 U.S.C. Sections 314-3148), as supplemented by the Department of Labor regulations (29 C.F.R., Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"), including but not limited to all Design-Build Contract anniversary date wage rate adjustments, and any determinations made by the City pursuant thereto. The prevailing wage rate schedule applicable to this Design-Build Contract shall be the most current schedule available at the time the Design-Build Team executes this Design-Build Contract and current schedule is attached hereto and incorporated herein as

**Exhibit I.** For purposes of establishing a date for prevailing wage rate anniversary adjustments the contract date should be the date of the attached wage rate schedule (**Exhibit I.**).

### **7.7 Compliance with Workforce Requirements**

In the performance of all Work hereunder, the Design-Build Team shall be subject to and comply with all terms and requirements set forth in the Workforce Requirements document attached hereto and incorporated herein as **Exhibit L.**

### **7.8 Applicable Laws and Certain Federal Requirements**

This Design-Build Contract between the Design-Build Team and the City shall be deemed to have been made in the City and County of Denver, State of Colorado, and shall be subject to, governed by and interpreted and construed in accordance with the laws of the State of Colorado and the Charter, the Revised Municipal Code, Rules, Regulations, Executive Orders and fiscal rules of the City. Contractor shall at all times comply with the provisions, limitations and requirements of the Charter, Revised Municipal Code, Rules, Regulations, Executive Orders and fiscal rules of the City, and all other federal, state, and local laws, codes, ordinances, permits, rules, regulations, and guidelines which in any manner limit, control, or apply to the Work and/or the actions or operations of the Design-Build Team, including any subcontractors, employees, agents or servants of the Design- Build Team engaged in the Work or affecting the materials and equipment used in the performance of the Work, as the same may be, from time to time, promulgated, revised, or amended, including, without limitation, all such laws, rules, and regulations relating to safety and the protection of health and the environment (including the Environmental Requirements, as defined in the Special Conditions) and the laws, rules, regulations, and guidelines known as the Americans with Disabilities Act (ADA) (collectively, the “Applicable Laws”). The Charter and Revised Municipal Code of the City, as the same may be amended from time to time, are hereby expressly incorporated into this Design-Build Contract as if fully set out herein by this reference. Without limiting the generality of the foregoing, In performance of all Work hereunder, the Design-Build Team shall be subject to and comply with all applicable federal programs, requirements and conditions referenced in the document titled “Federal Requirements” attached hereto and incorporated herein as **Exhibit E.**

### **7.9 Appropriation and Encumbrance**

Notwithstanding any other term, provision, or condition herein, all payment obligations under this Design-Build Contract shall be limited to the funds duly and lawfully appropriated and encumbered, or otherwise made available by the Denver City Council, paid into the Treasury of the City and encumbered for this Design-Build Contract. As of the date of this Design-Build Contract, Twenty-Seven Million, Eighty Thousand, One Hundred Seventy Dollars and NO/100 Cents (\$27,080,170.00) has been appropriated and encumbered for this Design-Build Contract. The Project Manager will notify the Design-Build Team when additional funds are appropriated and encumbered for this Design-Build Contract by providing the Design-Build Team with a fully executed Appropriation and Encumbrance Form in the form attached hereto as **Exhibit G.** The Appropriation and Encumbrance Form is only valid when signed by the Project Manager and the Chief Financial Officer of the City or his/her designee. Any work performed, or costs incurred by Design-Build Team exceeding the total amount appropriated and encumbered for this Design-Build Contract as stated or increased by subsequent fully executed Appropriation and Encumbrance forms is done without authorization and at Design-Build Team’s sole risk. The issuance of any form of order or directive by the City which would cause the aggregate amount payable to the Design-Build Team to exceed the amount appropriated and encumbered for the Work to be performed in accordance with the Contract Documents is expressly prohibited. In no event shall the issuance of any Change Order or other form of order or directive by the City be considered valid or binding if it requires additional compensable Work to be performed, which Work will cause the aggregate amount payable for such Work to exceed the amount appropriated and encumbered for the Work, unless and until such time as the Design-Build Team has been advised in writing by the Program Manager that a lawful appropriation and encumbrance sufficient to cover the entire cost of such additional Work has been made. It shall be the responsibility of the Design-Build

Team to verify that the amounts already appropriated and encumbered for the Work are sufficient to cover the entire cost of such Work, and any Work undertaken or performed in excess of the amount appropriated and encumbered is undertaken or performed in violation of the terms of this Design-Build Contract, without the proper authorization for such Work, and at the Design-Build Team's own risk and sole expense.

#### **7.10 City Council Approval**

Approval by the City Council of the City and County of Denver, acting by ordinance, in accordance with Section 3.2.6 of the Charter of the City and County of Denver, is and shall be an express condition precedent to the lawful and binding execution and effect and performance of this Design-Build Contract.

#### **7.11 Assignment Strictly Prohibited.**

The Design-Build Team shall not assign or otherwise transfer, in whole or in part, any of its rights, benefits, claims, obligations, duties or entitlement to monies owed or which may become due under this Design-Build Contract, except upon the prior written consent and approval of the Executive Director to such assignment.

#### **7.12 Taxes, Charges and Penalties**

Except as provided in the City's Prompt Payment ordinance, codified at DRMC Sections 20-107, 20-108 and 20-109, the City shall not be liable for the payment of any taxes, late charges, interest or penalties of any nature arising out of this Design-Build Contract.

#### **7.13 Waiver of C.R.S. 13-20-802 et. seq.**

The Design-Build Team specifically waives all the provisions of Part 8 of Article 20 of Title 13, Colorado Revised Statutes regarding defects in the Work under this Design-Build Contract.

#### **7.14 Proprietary or Confidential Information**

- (a) City Information: The Design-Build Team understands and agrees that, in performance of this Design-Build Contract, the Design-Build Team may have access to private or confidential information that may be owned or controlled by the City and that such information may contain proprietary or confidential details, the disclosure of which to third parties may be damaging to the City. The Design-Build Team agrees that all information disclosed by the City to the Design-Build Team shall be held in confidence and used only in performance of the Design-Build Contract. The Design-Build Team shall exercise the same standard of care to protect such information as a reasonably prudent Design-Build Team would to protect its own proprietary data.
- (b) Design-Build Team Information: The parties understand that all the material provided or produced under this Design-Build Contract may be subject to the Colorado Open Records Act, C.R.S. 24-72-201, et seq., ("CORA") and that in the event of a request to the City for disclosure of such information, the City shall advise the Design-Build Team of such request in order to give the Design-Build Team 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-Build Team agrees to intervene in such lawsuit to protect and assert its claims of privilege against disclosure of such material. The Design-Build Team 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-Build Team's intervention to protect and assert its claims of privilege against disclosure under this Section 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.



### **7.15 Status of Design-Build Team**

It is understood and agreed that the status of the Design-Build Team shall be that of an independent contractor retained on a contractual basis to perform work or services for the Project for limited periods of time, and it is not intended, nor shall it be construed, that the Design-Build Team, or any member of its staff or any consultant, is an employee or officer of the City for any purpose whatsoever.

### **7.16 Rights and Remedies Not Waived**

No payment or failure to act under the Design-Build Contract by the City shall constitute a waiver of any breach of covenant or default which may then exist on the part of the Design-Build Team. No assent, expressed or implied, by either party to any breach of the Design-Build Contract shall be held to be a waiver of any default or other breach.

### **7.17 Notices**

Any notices, demands, or other communications required or permitted to be given by any provision of this Design-Build Contract shall be given in writing, delivered personally or sent by registered mail, postage prepaid and return receipt requested, addressed to the parties at the addresses set forth herein or at such other address as either party may hereafter or from time to time designate by written notice to the other party given in accordance herewith. Notice shall be considered received on the day on which such notice is actually received by the party to whom it is addressed, or the third (3rd) day after such notice is mailed, whichever is earlier. Unless changed in writing, such notices shall be mailed to:

If to the Design-Build Team:

**PCL CONSTRUCTION SERVICES, INC.**  
2000 South Colorado Boulevard, Suite 2-500  
Denver, Colorado 80222

If to the City:

Manager of the Department of Transportation and Infrastructure  
City and County of Denver  
201 W. Colfax, Dept. 614  
Denver, CO 80202

With a copy to:

City Attorney's Office – Director of Municipal Operations  
201 W. Colfax Ave. Dept. 1207  
Denver, CO 80202

### **7.18 Survival of Certain Provisions**

The parties understand and agree that all terms, conditions and covenants of this Design-Build Contract, together with the exhibits and attachments hereto, if any, any or all of which, by reasonable implication, contemplate continued performance or compliance beyond the expiration or termination of this Design-Build Contract (by expiration of the term or otherwise), shall survive such expiration or termination and shall continue to be enforceable as provided herein. Without limiting the generality of the foregoing, the Design-Build Team's obligations for the provision of insurance, for indemnity to the City and for preserving confidentiality of trade secrets and other information 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.

#### **7.19 Contract Binding**

It is agreed that this Design-Build Contract shall be binding on and inure to the benefit of the parties hereto, their heirs, executors, administrators, successors and duly authorized assigns.

#### **7.20 Section Headings**

The captions and headings set forth herein are for convenience of reference only and shall not be construed so as to define or limit the terms and provisions hereof.

#### **7.21 Severability**

It is understood and agreed by the parties hereto that, if any part, term, or provision of this Design-Build Contract, except for the provisions of this Design-Build Contract 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 Design-Build Contract did not contain the particular part, term or provision held to be invalid.

#### **7.22 Use, Possession of Sale of Alcohol or Drugs**

The Design-Build Team shall cooperate and comply with the provisions of Executive Order 94 and its Attachment A 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 contract personnel being barred from City facilities and from participating in City operations.

#### **7.23 Electronic Signatures and Electronic Records**

Contractor consents to the use of electronic signatures by the City. This Design-Build Contract, 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 this Design-Build Contract 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 this Design-Build Contract 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.

**[SIGNATURE PAGES FOLLOW]**

**Contract Control Number:** DOTI-202157899-00  
**Contractor Name:** PCL CONSTRUCTION SERVICES, INC.

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:**

Attorney for the City and County of Denver

By:

By:

\_\_\_\_\_

\_\_\_\_\_

By:

\_\_\_\_\_

**Contract Control Number:**  
**Contractor Name:**

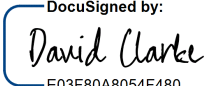
DOTI-202157899-00  
PCL CONSTRUCTION SERVICES, INC.

By:   
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Name: Ryan Schmidt  
(please print)

Title: District Manager  
(please print)

ATTEST: [if required]

By:   
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Name: David Clarke  
(please print)

Title: Assistant Secretary  
(please print)

**Exhibits A through P**

Exhibit A - RFQ, RFP and RFP Response Documents

Exhibit A -1 Contract Clarifications

Exhibit A -2 Technical Requirements

## Exhibit A

Section 1: **Request for Qualifications (RFQ)**: Issued January 24, 2019, including:

- RFQ Addendum 1 issued February 25, 2019
- RFQ Addendum 2 issued March 8, 2019
- RFQ Addendum 3 issued March 15, 2019
- RFQ Addendum 4 issued May 22, 2019
- RFQ Addendum 5 issued June 7, 2019
- RFQ Addendum 6 issued November 5, 2019

Section 2: **Request for Proposal (RFP)**: Issued March 31, 2020, including:

- Instructions to Proposers
- Sample Contract Documents
- Final Technical Requirements (Contract Exhibit A-2)
- Technical Specifications
- Reference Documents

**AND INCLUDING AND INCORPORATING** the following items:

RFP Addendum 1 issued April 30, 2020

RFP Addendum 2 issued May 8, 2020

RFP Addendum 3 issued May 22, 2020

RFP Addendum 4 issued June 5, 2020

RFP Addendum 5 issued June 26, 2020

RFP Addendum 6 issued July 30, 2020

RFP Addendum 7 issued August 11, 2020

RFP Addendum 8 issued November 13, 2020

RFP Addendum 9 issued December 8, 2020

Final Contract Clarifications, Contract Exhibit A-1

Final Technical Requirements, Contract Exhibit A-2

PCL Construction Requests for Information (RFI) 1-44, 80-84

Ames/Swinerton JV Non-Confidential RFIs 1-25, 29-43, 45, 47-50, 54-58, 61, 63, 65, 66

Kiewit Non-Confidential RFIs 3-34, 36-44, 46-63, 65-69, 71-74, 77, 78, 80-86, 88-91

Exhibit A

Section 3: **RFP Response**: Including and Incorporating the following items:

- Proposal dated September 9, 2020
- Revised Price Proposal dated December 17, 2020
- Final Contract Clarifications attached hereto as Exhibit A-1
- Final Technical Requirements attached hereto as Exhibit A-2



## **Exhibit A-1**

### **Contract Clarifications**

Section 1 - The following are clarifications to the Proposal submitted by PCL Construction Services, Inc. (PCL) and added elements resulting from the Contract negotiations.

#### **Proposal Betterments:**

1. Provide full time QC oversight on the Project.
2. During the Warranty period, PCL will hold quarterly Warranty walks with the City.
3. Increased public outreach and communication tools, including the development and maintenance of a mobile application, pop-up activities, mobile digital kiosks, Mall canvassing, construction fence graphics signage and branding.

#### **Additional Contract Clarifications from Negotiations:**

1. Granite sand-set construction application is permitted in the pedestrian walkway and amenity zone. All Technical Requirements apply, except for bonding and permeability which shall be in accordance with industry standards. The Interlocking Concrete Pavement Institute (ICPI) may be used as guidance for design of the sand-set application except as required by the Section 11 Granite Pavement System requirements. As part of this granite sand-set application negotiation, PCL assumed the use of alternative colors other than those provided in the Technical Requirements. If, the alternative colors are not approved for use, the City shall be responsible for any documented cost differential directly attributable to the acquisition of the approved raw granite material for the area within the granite sand-set construction application. – Reduction of \$2.1M.
2. Granite Escalation – PCL issuance of a LOI to vendor – Reduction of \$455,512.
3. Street Occupancy Permits (SOP) – City to waive fees to obtain a SOP permit for project Work. See below for more detail – Reduction of \$469,560.
4. Meter Bagging - City to waive fees to obtain a meter bagging permit for project Work. See below for more detail – Reduction of \$218,250.
5. Tree Maintenance Period – Tree maintenance to occur at Block Substantial Completion – Reduction of \$356,280.
6. Full Cross Street Closures – Allowance of full cross street closures as Approved by the City - See below for more detail – Reduction of \$229,717.
7. Underground Storage Tanks – The City retains financial responsibility of the 2 storage tanks identified outside the ROW in DDPHE Environmental Phase 1 Assessment – Reduction of \$50,000.
8. Historical Lights Vendor Savings – Reduction of \$100,000.
9. Extra Arborist – Reduction of \$45,000.
10. Gateway Fountain – Alignment of proposed scope and intent to replicate historical fountain – Reduction of \$1,019,000. The negotiated gateway fountain as specified in Technical Requirements Section 20.3.3 assumes the following:

## Exhibit A-1

- a. The existing vault is in reasonable condition, is suitable for installation of new equipment, and is of sufficient size for the new equipment.

## 11. Aerial Photos – Reduction of \$30,000.

The results of the above negotiated items reconcile to a revised lump sum bid of \$148,992,354.00.

Section 2 – The following elements have been proposed by PCL and are subject to review and acceptance by the City during final design submittal(s), in accordance with the contract documents, and provisions of the specified Alternative Technical Concept (ATC) and/or Request for Information (RFI) if applicable:

Street Occupancy Permit Fees

Technical Requirement Section 17.14.2 is hereby modified and supplemented as follows:

The City agrees to waive/suspend the SOP permit fees for the Project. The Contractor shall apply for permits, including the estimated construction duration under each permit, submit to inspections in the ordinary course. With regard to SOP permit fees, including fees related to traffic lanes, curb lanes, alleys, sidewalks and meter permits, the Contractor shall adhere to the following procedure: Prior to submitting for a permit, the Contractor shall provide in its TCP, a description of the Work and a good faith estimate of the time period of impact within City right-of-way. The City and the Contractor will mutually determine the time period the Work will impact City right-of-way, which will be defined as the “Reasonable Construction Time Period”. The City, through the normal course of its review, will issue the requisite entity SOP. If the impact of the Work has not ceased or will not cease prior to the expiration of the permitted “Reasonable Construction Time Period” then the Contractor shall apply for a new or amended SOP and any remaining time it occupies the right-of-way shall be charged to and paid by the Contractor at the prevailing rate for the SOP.

The City shall not unreasonably withhold or delay any required permits. Except as otherwise provided, applicable City permitting requirements shall apply to Project elements constructed. Nothing herein shall be construed as committing the City to issue permits or accept any plans for construction or other related Work or Work product that does not meet all applicable codes, ordinances, regulations, or City Standards and Specifications.

Cross Street Lane Closures

Technical Requirement Section 17.14.5 is hereby modified and supplemented as follows:

Full closures are permitted, with the following conditions:

- Any request for multiple closures at once will need to be evaluated on a case-by-case basis and must be Approved by the City.
- The City prefers that the existing bike facilities be maintained on the cross street; however, the use of a dismount zone will be considered on a case-by-case basis and must be Approved by the City.
- Full closures shall be coordinated with adjacent projects.
- Final detours, emergency access, parking impacts, turning movements, signalization, and other components of the full closure shall be Approved by the City.
- The maximum duration for cross street full closures shall not exceed four weeks per cross street.

## **1.0 GENERAL**

### **1.1 GOAL**

The goal of this Section 1 is to provide a 16<sup>th</sup> Street Mall Design-Build Project (Project) overview to ensure Proposer understanding of the overall contractual technical requirements.

### **1.2 PROJECT DESCRIPTION**

The Project will reconstruct the 16<sup>th</sup> Street Mall (Mall) for the entire length of the original 12.5 blocks of the Mall from Market Street to Broadway. The width of the Mall is generally from building face to building face or within the City and County of Denver (City) right-of-way, the plaza at Broadway, and portions of cross streets and alley ways intersecting the Mall. The Project will utilize Downtown Urban Renewal Authority (DURA) and Elevate Denver Bond Program (Elevate Denver) local funds as well as U.S. Department of Transportation (USDOT) and other funds to reconstruct the Mall. The Project construction limits are shown in Reference Document RD-01-01.

The following Project goals and objectives have been established for the Project and documented in the Finding of No Significant Impact (FONSI), Environmental Assessment (EA), and Programmatic Agreement (PA). The following statements define the Project need:

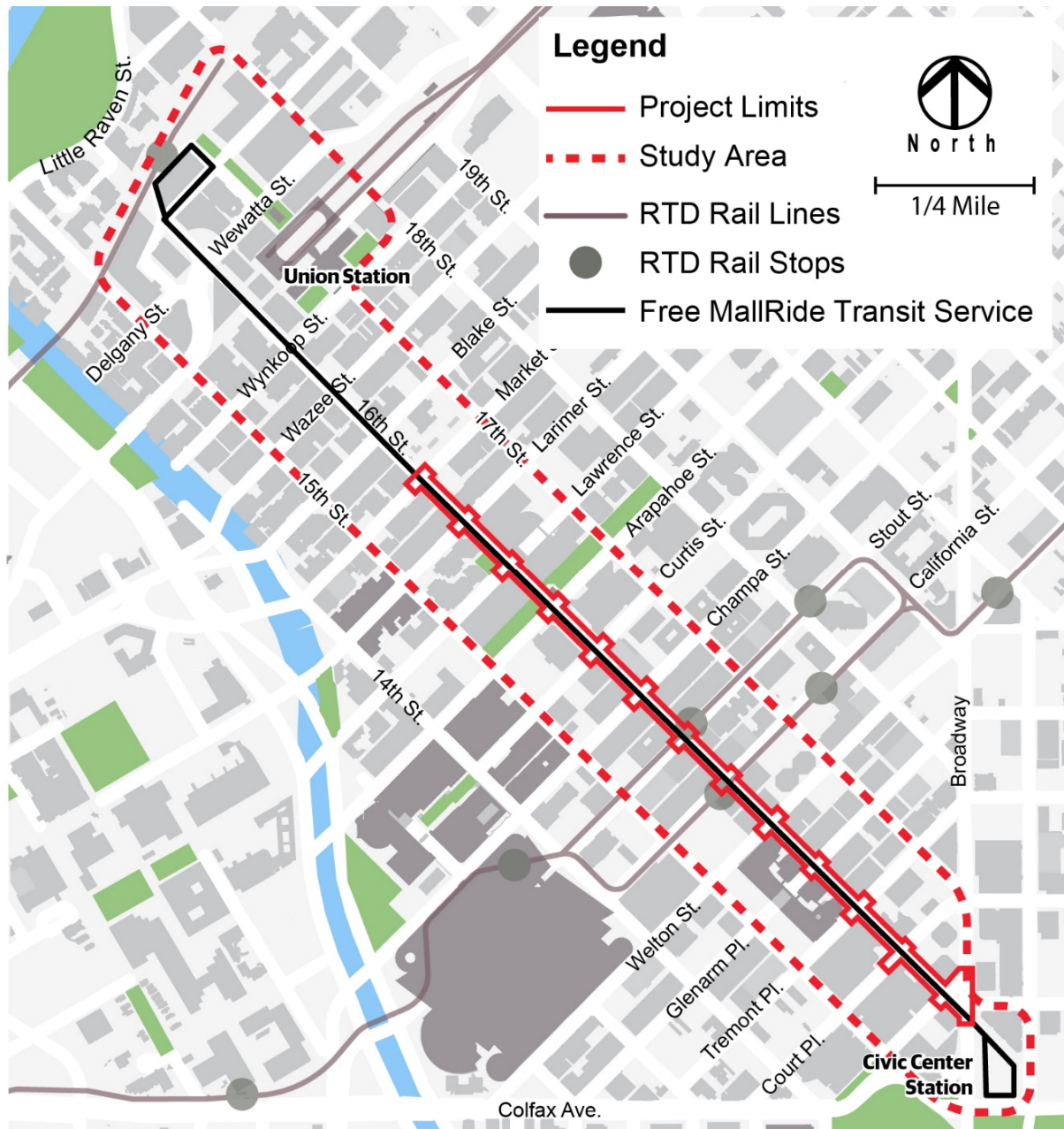
- Address deteriorating infrastructure to allow reasonable maintenance frequency and costs to businesses and taxpayers
- Improve safety for pedestrians and vehicles
- Maintain mobility for desired transit operations and for all users
- Increase opportunities for public use of the Mall as an iconic civil space for leisure, commerce, and tourism
- Maintain and improve transit operations to provide convenient and efficient travel in downtown Denver, including the Free MailRide and Free MetroRide
- Maintain and improve economic viability of businesses on the Mall and on adjacent streets

Additionally, the following are City and Stakeholder objectives for the Project:

- Design and construct the Project on budget and on schedule
- Minimize construction impacts to businesses, transit operations, and the public
- Maintain a high level of final design and construction quality
- Implement a robust Public Information Plan to ensure all users have the latest information on opportunities to provide input on the design as well as construction impacts that may affect them
- Provide a balance of amenities fronting properties on both sides of the Mall
- Improve a sense of security on the Mall
- Enhance the public image of the Mall as one of Denver's primary iconic elements
- Provide a flexible, dynamic space over time of day, season, and year
- Provide a cost-effective solution over the total lifecycle of the Mall
- Honor the Mall's design, building upon its character-defining features

The 16<sup>th</sup> Street Mall Design-Build Project Study Area and Project Limits are shown in Figure 1-1:

**Figure 1-1 16<sup>th</sup> Street Mall Design-Build Project and Environmental Assessment Study Area**



### 1.3 PROJECT DESCRIPTION

The Project Work includes the design and construction of a new realigned Mall transit way, granite pavement system, installation of new Mall trees, Utility relocations, and new underground and surface infrastructure to replace the Mall's failing and deteriorating infrastructure. The Project shall include a Warranty as described in the City General Conditions and the Special Contract Conditions.

The Work includes mimicking the original granite paver pattern with improved surface friction and skid resistance, reuse or replication of the existing replica historic decorative light fixtures, delineating the

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pedestrian walkways from the transit way with an amenity zone, creating wider pedestrian walkways to better accommodate pedestrian volumes, and re-establishment of the transit way between Denver Union Station and the Civic Center Station.

The Project shall be designed and constructed within the existing City right-of-way, cross streets, and alley ways. The horizontal alignment and layout shall meet the prescribed cross section dimensions presented in the Locally Preferred Alternative (LPA). Variance to these requirements could require a re-evaluation under the National Environmental Policy Act (NEPA) process. The asymmetrical section will extend from Market Street to Arapahoe Street and from Tremont Place to Cleveland Place. The symmetrical section extends from Arapahoe Street to Tremont Place. The triangle block from Cleveland Place to Broadway shall maintain its current cross section and alignment. The following sub-sections identify key Project components necessary for a successful Project.

The Area of Potential Effects (APE) are documented in Reference Document RD-01-02.

### **1.3.1. PUBLIC INFORMATION**

A robust, proactive, and well delivered public information plan is critical to the Project success. The City has spent considerable time and energy working with various Stakeholders including the regulatory agencies, business owners, tenants, and the public to determine the Project direction and requirements. The Contractor shall work with the City effectively and succinctly to provide Project updates for design and construction throughout the Project. Consistent and timely design status updates and announcing construction Work impacts to the public and Mall businesses throughout the duration of the Project, in accordance with Section 4 Public Information will be critical. The Contractor will be required to have an on-site presence to react to businesses and the public as the Project evolves. There will be a public process for design including Stakeholders and other special interest groups. Close coordination with the City communications team and the Downtown Denver Partnership (DDP) will be critical to the success of the Contractor during both design and construction.

### **1.3.2. CONSTRUCTION PHASING AND MAINTENANCE OF TRAFFIC**

Critical tasks that will define the Work and Project success include the approach to Maintenance of Traffic (MOT) and communications with businesses, Stakeholders and the public. The Contractor shall be responsible for all construction phasing and MOT during the construction Work. The sequencing of the Project is intended to provide minimal impacts to the efficient flow of the Regional Transportation District's (RTD's) Free MallRide, cross street traffic, and alley way access, and safety of commuters, residents, pedestrians, and bicyclists through and around the Project, as required in Section 17 Construction Phasing and Maintenance of Traffic. Creativity and special attention will be required of the Contractor to maintain Mall business, residential, and emergency response access at all times during construction.

### **1.3.3. PUBLIC LIFE**

As indicated in the NEPA documents, Public Life is part of the Project purpose and need. To date, the City has expended considerable effort to create a pleasing and entertaining public space for the new Mall. The Public Life outcomes are intended to activate the Mall by creating a vibrant attraction the City can program in a multitude of ways. The Contractor shall provide the Public Life elements in accordance with the requirements in Section 20 Public Life.

### **1.3.4. UTILITY RELOCATIONS**

Some of the Utilities within the Mall Project area are expected to be relocated due to the Work required to design and construct the Project. See Section 7 Utility Relocations for specific Utility locations and relocation requirements. Certain Utilities will remain in place and shall be protected from any construction

damage. Any Utilities noted to remain in service that are damaged or affected in any way by the Contractor shall be restored immediately at the Contractor's sole expense.

The Contractor shall coordinate all Utility Work in compliance with the executed Third Party agreements between the City and associated Utility companies.

### **1.3.5. GRANITE PAVEMENT SYSTEM**

The Contractor shall design and construct a Mall granite pavement system that provides solutions to the current issues causing costly annual maintenance. Critical issues include drainage of the granite pavement system, bus load transfer to and durability of the granite pavers, and provision of a surface friction factor to the final granite finish that reduces slippage from pedestrians and vehicles alike.

### **1.3.6. ENVIRONMENTAL**

All environmental requirements are outlined in Section 5 Environmental Requirements. This Project and the Work required shall comply with the NEPA process, specifically as related to implementing the agreed upon LPA as documented in the FONSI. The Contractor shall comply with all requirements of applicable environmental laws, regulation, and all historic preservation requirements of Section 5 Environmental Requirements for construction Work activities impacting noise, air quality, historic preservation, site vibration, groundwater, contaminated substances or materials, hazardous substances or materials, sustainability, erosion control, and stormwater runoff water quality; and all permits, approvals, and City policies, Standards, and Specifications required for the Work.

The City emphasizes a sustainable community and has adopted Executive Order 123, which includes sustainable practices. The Contractor shall comply with Executive Order 123 and incorporate sustainable principles and Best Management Practices (BMPs) in the Project design and construction. The Contractor shall remove and properly dispose, reuse, or recycle all existing Mall trees and granite pavement system materials. Additional sustainability requirements can be found in Section 5 Environmental Requirements.

### **1.3.7. WARRANTY**

#### **1.3.7.1. WARRANTY**

The Contractor shall provide the Warranty for the Work as required by the Special Contract Conditions and the City General Conditions. The Warranty includes all Project Work elements.

#### **1.3.7.2. MALL TREE WARRANTY PERIOD**

The Contractor shall coordinate with the City's Tree Procurement and Contract Growing Nursery (Tree Grower) to prepare, transport, and install the previously purchased trees on the Mall in the modular supported pavement system and soil cell and maintain the Mall trees until Block Substantial Completion. The Contractor shall provide the Mall tree Warranty as required by the City General Conditions, the Special Contract Conditions, and Section 18 Landscape. Mall trees will be maintained by the City during the Mall tree Warranty period.

## **1.4 REFERENCE DOCUMENTS**

The Reference Documents are provided solely for the Contractor's reference and are without representation or warranty by the City, except to the extent it is incorporated by the Technical Requirements of these Contract Documents. Regardless of the level of completion or suitability of any portion of the Reference Documents, the Contractor shall be solely responsible for the Project design and construction to be delivered in compliance with the Technical Requirements, and the City shall have no liability or obligation as a result of the conceptual design Work contained in the Reference Documents.

## **2.0 PROJECT MANAGEMENT**

### **2.1 GOAL**

The goal of this Section 2 is to ensure strong Project management practices for this high profile and critical Project.

### **2.2 ADMINISTRATION**

The Contractor shall be solely responsible for the management and administration of the Work, coordinating all activities necessary to perform the Work, and reporting and documenting all Work.

## **2.3 PROJECT MANAGEMENT PLAN**

### **2.3.1. GENERAL REQUIREMENTS**

The Contractor shall submit a draft Project Management Plan (PMP) that encompasses the terms of the Contract for initial review by the City and County of Denver (City) within 30 Calendar Days following the issuance of Notice to Proceed (NTP). The City will provide review comments and return the Draft PMP to the Contractor within 15 Calendar Days. Once comments are received, the Contractor shall revise and resubmit for Approval within 60 Calendar Days following NTP. The draft PMP shall be a predecessor to any Project design submittals.

The PMP includes a compilation and summary of several topics, each serving as separate plans requiring individual Approvals and updates as the Project proceeds. Each topic and plan shall provide clear detail of the Contractor's overall approach to its team organization, structure, and management processes, and shall describe the scope, goals, and objectives of the Project approach and intended results to be fully compliant with all Contract Document provisions.

An effective approach to Project controls is critical to the overall PMP and shall include approaches to tasks such as budget, schedule, communications, design review/process, National Environmental Policy Act (NEPA) compliance, quality control (QC)/quality assurance (QA), Disadvantaged Business Enterprises (DBE) and workforce development compliance, compliance with Federal requirements, block and Project closeout, document control, and implementation of design/build best practices and effective construction oversight

The PMP shall identify by signature page and date, the title of the qualified professionals who are responsible for planning, reviewing, approving, reporting, monitoring, controlling, implementing, revising, and issuing the PMP, including revisions. At a minimum, the PMP shall include the following (where applicable relating to the Contractor, its subcontractors, and the designer but also, where applicable, clearly identifying the division of roles and responsibilities between the Contractor, the design team, subcontractors, and the City):

- An overall Project organizational chart and description, indicating the Contractor's overall team structure including all Key Personnel, Supporting Personnel, management staff and their reporting relationships with lines of communication for the Work
- A design phase organizational chart and description, indicating the roles, responsibilities, lines of communication, and structure of the Contractor's design staff including discipline leads, clearing indicating how the design team integrates and communicates with the construction team and the City's staff
- A construction phase organizational chart and description, indicating the roles, responsibilities, lines of communication, and structure of the Contractor's construction staff including field

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superintendents, clearly indicating how the construction team integrates and communicates with the design team and the City's oversight staff

- A quality management organizational chart and description, indicating the roles, responsibilities, lines of communication, and structure of the respective quality management organization to demonstrate the independence of this quality staff from the design and construction staff
- A description of the Contractor's quality management approach complying with the Section 3 Quality Management requirements
- The design management process including a description of how design personnel shall interface with the City, construction, and quality management, in accordance with Section 3 Quality Management
- A description of the Contractor's Task Force meeting approach inclusive of expected Project elements requiring Task Force meetings, anticipated frequency, and attendance
- A description of the Contractor's approach to the 30, 60, 90 percent, and Release for Construction (RFC) submittals, including the Contractor's approach to addressing formally submitted comments and resubmittal of all design progress submittals as required by Section 3 Quality Management
- The Contractor's approach to complying with the Finding of No Significant Impact (FONSI), Environmental Assessment (EA), and Programmatic Agreement (PA)
  - Specifically address the Section 106 consultation requirements as stipulated in the PA for design progress reviews and consultation at the 30, 60, and 90 percent design stages
  - Specifically address plans for completing mitigation commitments listed in the FONSI and documentation transfer to the City for reporting to the Federal Transit Administration (FTA)
- Description of the Contractor's key processes and approach to City and third party permitting and approvals
- Description of key processes for control of the Project design and plan development, inclusive of design index sheets
  - Description for making changes to the design during construction and ensuring engineering review of the new design and compliance with the Contract Documents
  - Processes shall include Notice of Design Changes (NDC) and Request for Revisions (RFR) potential needs during the design process
  - Processes shall demonstrate how the City and the Contractor's design team are involved in the review and approval of deviations from the RFC plans
- Description of key processes and their reference location within the Contractor's Public Information Plan (PIP), in accordance with the Section 4 Public Information requirements
  - Key processes include the Contractor's interface with the City, Regional Transportation District (RTD), Downtown Denver Partnership (DDP), Business Improvement District (BID), emergency services and first responders, other governmental authorities, regulatory agencies, Utility Owners, other Stakeholders, and the public
  - Address processes required during the Work, including activities related to design and construction. The design development process shall include the approach to meetings with the Mall Champions Group (MCG), public information open houses, disabled community, City leadership, and other Stakeholders and special interest groups



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- Description of the Contractor's approach and processes to complying with the Section 4 Public Information requirements related to crisis communication and emergency response
  - Description of the Contractor's approach to comply with the business owner, tenant, and resident communication and coordination requirements
  - The Contractor's approach to risk management, including the Contractor's approach to identifying, assessing, analyzing, mitigating, monitoring, reporting risk, and updating the risk register throughout the duration of the Project
    - At a minimum, the Contractor shall hold a risk workshop attended by both the Contractor and the City
    - The workshop shall occur in the beginning of the Project to jointly identify risks, discuss mitigation strategies, and outline the Contractor's overall risk management process and communication
  - Description of the Contractor's key processes and approach to Project controls including schedule management, scope management to ensure all Work within the Contract Documents is performed and change management
  - Definition of escalation and dispute resolution protocols
  - Contractor's approach to complying with the City contractual requirements and FTA Federal Funding Requirements
  - Description of key processes, and their reference location within the Contractor's Environmental Compliance Work Plan (ECWP), in accordance with Section 5 Environmental Requirements, including interface with the City and any other governmental authority
  - The Contractor's approach to vibration monitoring during construction, including an action plan for corrective action required to mitigate vibration concerns during construction
    - Describe the process of how the Contractor will establish the required baseline vibration thresholds, monitor all Mall buildings for vibration during construction, report on construction vibration, and any required mitigations
  - Process for addressing maintenance during construction and environmental compliance of the Work
  - The Contractor's approach to monitoring air quality during construction, including an action plan for corrective action required to mitigate air quality concerns during construction
  - As part of this PMP, the Contractor shall include an Utility Management Plan, including – at a minimum, roles and responsibilities for Utility Work, processes and procedures for managing Utilities during design and construction Work, approach to implementing Subsurface Utility Engineering (SUE) plans and reports, applicable standards and specifications approach to coordination with the City and Utility Owners, considerations for construction phasing, process for implementing Utility related early construction Work packages, process for documenting and submitting As-Built information, and description of the reporting of Utility progress and issues identified during design and construction Work
  - The Contractor's approach to the establishment, control, direction, and implementation of a comprehensive Safety Plan that protects the safety of its personnel and the public affected by the Project through the development of a Safety Management Plan (SMP) as part of the PMP

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- Description of the Contractor's approach to implementing and establishing a safety and certification program in accordance with the FTA *Handbook for Transit Safety and Security Certification – 2002* process
- The SMP shall fully describe the Contractor's policies, plans, training programs, site controls, and Incident Response Plans (IRPs) to ensure the health and safety of Project personnel and the public affected by the Project
- The SMP shall apply to all Work necessary to construct the Project
- All the Contractor's Project staff, including subcontractors and the City, must be trained on the elements of the Approved SMP prior to commencement of construction Work
- A description of the Contractor's construction management process and approach, the construction management structure, approach to QC/QA, identification of potential early construction Work packages and associated process, detailed delineation of Active Construction Zones (ACZs), identification of design and construction packages and their submittal schedule, summary of major Project phases, description of how the Contractor will address and deliver At-Risk Work
- Description of key processes and their reference location within the Contractor's Traffic Management Plan (TMP) in accordance with Section 17 Construction Phasing and Maintenance of Traffic requirements, including interface with the City and adjacent projects. Approach to the requesting, monitoring, and implementing ACZs, as outlined in Section 17 Construction Phasing and Maintenance of Traffic
- The Contractor's approach to quality management including non-compliance reporting, evaluation, and resolution with each of its subcontractors and the methodology for how this information shall be reported to the City
- Description of key processes for managing the Project's DBE firms and their reference location within their respective plans, in accordance with the Contract Documents
- Description of the process to comply with the Workforce Development requirements as outlined in this Section 2
- Incorporation of the Contractor's Document Management Plan
- A description of the Contractor's approach to managing closeout for each block and the Project, in accordance with Section 3 Quality Management. Description shall include approach to maintaining Project documentation, proposed processes, key activities and dates, and other information necessary for successful closeout of each block and the Project
  - The required processes for closeout include the Contractor's approach to meeting Completion Deadlines, such as Block Substantial Completion, Project Substantial Completion, Final Completion, and Warranty periods, As-Built drawings, management of closeout punch lists, and other closeout requirements to complete the Work for any block and for the Project
  - Closeout activities shall be included in the Project Schedule

**2.3.2. PROJECT MANAGEMENT PLAN UPDATES**

The Contractor shall monitor and evaluate the effectiveness of its PMP and resubmit the PMP for Approval by the City should any of the following conditions exist:

- A plan or procedure no longer adequately addresses the matters it was originally intended to address
- A plan or procedure does not conform with the Contract Documents

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- An audit by the Contractor or the City identifies a deficiency in the PMP requiring an update
- Organizational structure changes require revision to the PMP
- The Contractor is undertaking, or about to undertake, activities that are not covered within the current PMP
- The City requires the PMP to be updated at its request

The Contractor shall clearly identify in a cover sheet what changes were made in a PMP update to expedite the City's review. A redline, track changes copy and a final clean copy shall be submitted to the City.

If any such condition as mentioned above is met, the PMP shall be resubmitted within 10 Working Days, unless otherwise agreed to by the City.

## **2.4 COST MANAGEMENT**

### **2.4.1. PROGRESS PAYMENT CALCULATIONS**

The City shall base progress payments on mutually agreed earned value estimate of the percentage of the Work completed, not on measured quantities. The Contractor shall progress the activities identified on the Approved Baseline Schedule or Current Baseline Schedule for determining the Monthly Progress Schedule. The Approved Monthly Progress Schedule shall be consistent with the Contractor's actual Work performed and progress payments. Percent completion shall be calculated using Project scheduling software meeting the requirements of this Section 2, where progress is measured based on percent completion.

No payment shall be made on stored material. The Contractor's pay application shall not include a request for payment for Nonconforming Work documented by the Project Quality Manager (PQM) or the City. The payment to the Contractor shall be in the amount shown on the Contractor's Approved pay application less retainage and any deductions. A draft pay application shall be submitted for initial City input 10 Calendar Days prior to entering into the Textura<sup>®</sup> payment processing system for efficiency of Approval.

### **2.4.2. PAY APPLICATION SUBMITTALS**

The Contractor shall submit to the City for Approval draft monthly pay application as part of the required monthly Project updates. When City comments are addressed, the final pay application submittals shall be completed electronically using the Textura<sup>®</sup> Construction Payment Management System (CPM System) described in the ITP. The data file for the Project Schedule update shall be submitted with the monthly pay application. The final pay application submittal shall also include the pay application in Excel format for applying appropriate funding sources to the individual pay items.

### **2.4.3. PAY APPLICATION DOCUMENT CONTENT**

The requirements for the supporting documents to be included with the pay application form shall be finalized by the Contractor in consultation with the City and shall comply with Federal requirements. The pay application shall incorporate an item description that relates to the Work Breakdown Structure (WBS). After the pay application format has been Approved by the City, the format shall not change unless subsequently Approved by the City.

The pay application documents shall include:

- Pay application Cover Sheet indicating the following information:
  - Project number and title
  - Pay application number (numbered consecutively starting with "1") and the submittal date
  - Period covered by the pay application (specific calendar dates)

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- Total earned to date for the Project and for each WBS activity
  - Identification of Nonconforming Work and amount withheld
  - Authorized signature and title of signatory
  - Date on which pay application was signed
  - Monthly Progress Report including a summary level report with non-confidential Project status to provide the Public Information Officer (PIO) to consider for public distribution
    - The Monthly Progress Report shall be organized such that components of the report can be easily disseminated to the City's subject matter experts for independent review
  - The Monthly Progress Report shall include the following items, as appropriate, for the previous month's activities:
    - Brief narrative description of WBS activity and Project progress as a whole; identify start dates and completion dates for key design and construction Work activities; including a summary for an executive-level audience
    - Summary of QA/QC efforts, including results of design reviews, in accordance with Section 3 Quality Management
    - Design progress status
    - Identification of problems or issues that arose during the period and remaining issues to be resolved
    - Summary of resolution of problems or issues raised in previous Monthly Progress Reports or resolved during the period
    - Summary of Nonconforming Work correction status
    - Summary of any Project accidents (frequency and severity) and corrective actions taken
    - Summary of any public safety issues or concerns occurring or reported, and corrective actions taken
    - Identification of critical path schedule issues and proposed resolution
    - Status of anticipated, proposed, or pending change order
    - Summary of any Utilities not described or located with reasonable accuracy in the Utility Data materials included in Section 7 Utility Relocations and its Reference Documents
    - Update of progress with respect to Utility relocation activities, specifically addressing the block-by-block status
    - Utility Relocations and schedule issues needed to share with the Mall business owners, particularly related to business and resident Utility service changes or temporary service interruptions
    - Summary of any Contractor or its subcontractor-caused Utility damage, the resolution approach and status, and preventative measures to avoid its reoccurrence
    - Summary of any Utility Owner failure to cooperate issues as described in Section 7 Utility Relocations
    - Summary of any archaeological or paleontological resources discovered not disclosed or discussed in the Contract Documents
    - Summary of any Recognized Environmental Conditions (RECs) discovered not disclosed or discussed in the Contract Documents

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- Updates to ECWP as required in Section 5 Environmental Requirements and the Environmental Mitigation Table and Tracking Summary
  - Discussion of schedule variations from Completion Deadlines that have slipped or improved or whether any Completion Deadlines have been achieved
  - Summary of public information during the period, particularly related to business and resident access modifications or impacts in the upcoming construction Work
  - Progress photographs and video files, as required
  - Three-month look-ahead schedule including potential impacts or closures related to business and resident Utility service and access
  - Monthly updated cash flow Project forecasts and drawdown schedules, broken out by funding source – as directed by the City
  - Workforce Report (quarterly)
  - DBE compliance progress
  - Updated Monthly Progress Schedule
    - No pay application shall be Approved, nor payment made if there is not a current Approved Monthly Progress Schedule and Current Baseline Schedule in place
    - The status date of the Monthly Progress Schedule, coinciding with the payment pay application date, is the last day of each month
    - The data date for use in calculating the Monthly Progress Schedule shall be the first Calendar Day of the following month unless otherwise Approved by the City
    - The Monthly Progress Schedule shall be submitted per block with clear identification of the critical path activities per block as required in this Section 2
    - The Contractor shall make all corrections to the Monthly Progress Schedule requested by the City and resubmit the Monthly Progress Schedule as needed
    - If the Contractor does not agree with the City's comments, the Contractor shall provide written notice of disagreement within five Working Days from the receipt of the comments
    - The items in disagreement shall be resolved in a meeting held for that purpose, if necessary
  - Certification by Contractor's PQM – The Contractor shall submit a certification signed by its PQM accompanying each pay application request certifying that:
    - All Contract Work—including that of designers, subcontractors, suppliers, vendors, and fabricators—has been checked and/or inspected by the Contractor's quality management staff, and all Work, except as specifically noted in the certification through an NCR or to the best of the PQM's ability, conforms to the Contract Document requirements
    - The QMP and all the measures and procedures provided therein are functioning properly and are being followed
    - All safety-critical Work, in conformance with the SMP has been reviewed and sealed by the Professional Engineer of responsible charge before construction begins

No pay application shall be Approved (payment made) if there is not completion and implementation of the QMP.

#### **2.4.4. PROGRESS STATUS MEETINGS**

A progress status meeting shall be conducted weekly. One such weekly meeting shall correspond with each time a draft pay application submittal is made. The meetings shall be used to verify, address, and finalize the following:

- Actual start dates of all design and construction activities
- Actual and planned Completion Deadlines
- Activity percent complete
- Incorporation of Approved change orders
- Status of outstanding Nonconforming Work
- Work performance
- Project Schedule, including changes from previous month's schedule
- Critical path(s)
- Earned value of Work that has been accepted and reported in-place, based on installed quantities

### **2.5 PROJECT SCHEDULES**

#### **2.5.1. GENERAL REQUIREMENTS**

All Project Schedules shall:

- Represent a feasible and realistic plan to complete the Work within the Completion Deadlines
- Include the planned execution of the Work in accordance with the Contract Documents
- Be developed consistent with the Approved WBS
- Include all activities required to mobilize an ACZ within a block
- Include the design schedule with corresponding submittals
- Utilize Critical Path Method (CPM) principles for the critical path
- Each block shall have an easily distinguishable schedule

The Work shall be executed in the sequence and duration indicated in the Project Schedules with critical paths clearly identified per block.

The Baseline Schedule and subsequent schedules shall include enough activities for the City to properly evaluate the Contractor's approach to delivering the Contractual Requirements.

All Project Schedule submittals are subject to Approval by the City and require the appropriate detail for design and construction activities to define the Work in accordance with the Contract Documents. The Project Schedules shall represent the requirements of the Contract Documents.

The Contractor's Scheduler shall have Planning and Schedule Professional (PSP) certification from the Association for the Advancement of Cost Engineering (AACE) and have a minimum of five years' experience in Project scheduling on Projects of comparable scope and complexity.

#### **2.5.2. PROJECT SCHEDULE SOFTWARE**

All Project Schedule submittals shall include the electronic output files of the schedule in Primavera P6 format, with its schedule charts and graphs submitted in .PDF format.

Project Schedules shall be in the same master data file, including design, submittals, procurement, and construction schedules. These schedules shall all tie together logically to present a total critical path analysis in the same master data file.

### **2.5.3. PROJECT SCHEDULE LAYOUT**

The Contractor, for all Project Schedules, shall provide Project Schedules in .PDF format with the Gantt Chart displaying the following information, at a minimum:

- Critical activities highlighted in red to distinguish critical activities from other activities
- A diamond, flag, or other symbol to identify milestones
- Activity ID
- Activity name
- Original duration
- Physical percent complete
- Actual duration
- Remaining duration
- Start date
- Finish date
- Total float
- Activity calendar
- Activity responsibility
- Activity cost

### **2.5.4. WORK BREAKDOWN STRUCTURE**

The Contractor shall submit to the City, concurrent with its Baseline Schedule, a detailed WBS for Approval. The Baseline Schedule shall include a detailed, organized hierarchical division of the WBS to complete each element of the Work and the updated Block Substantial Completion dates. The Approved WBS shall be the basis for organizing all Work under the Contract and shall be used as a basis for the Project Schedules and other cost control systems. The WBS and CPM schedule will be the means for structuring Project management controls such as the risk management, scope management, schedule oversight, document control, and quality oversight plans. The WBS shall be based off Exhibit 2, Schedule of Values (SOV) of the Instructions to Proposers (ITP). The WBS shall include a narrative that outlines the Contractor's assumptions and how the WBS is structured with the Work.

The WBS shall be developed such that block-by-block activities and ACZ, as defined in the TMP, are easily identified and tracked.

### **2.5.5. MILESTONES**

Project Schedules shall be developed consistent with the Completion Deadlines. These dates shall be input as finish constraint dates and shall agree with those dates specified in the Contract Documents.

The Baseline Schedule shall include the Contractor's proposed Block Substantial Completion dates to accommodate the proposed construction phasing.

Quality hold points and other key milestones shall be incorporated, as determined by the Contractor and/or City.

### **2.5.6. ACTIVITIES**

#### **2.5.6.1 IDENTIFICATION**

The Contractor, for all Project Schedules, shall use activity identification (IDs) that are unique and reflect the WBS.

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The Contractor, for all Monthly Progress Schedules, can only change an activity ID to clarify an activity's original scope. The Contractor shall provide an explanation for the change in a narrative to be provided with the Monthly Progress Schedule.

The Project's funding sources have various restrictions and are required to be tracked throughout the duration of the Work. Therefore, the Contractor shall coordinate with the City properly code activities to identify and attribute Project scope elements based on their funding source. Activity coding shall align with FTA cost reporting requirements.

**2.5.6.2 DESCRIPTIONS**

The Contractor, for all Project Schedules, shall use activity descriptions that ensure the Work is easily identifiable.

Activity description shall start with an action verb when practicable to clearly communicate what is being performed as well as a noun that clearly communicates the material or item of Work.

All activity identification descriptions for a specific activity created in any Project Schedule shall remain unchanged and connected to its original activity description through Final Completion.

The Contractor, for all Monthly Progress Schedules, shall only change an activity description in the Monthly Progress Schedules to clarify an activity's original scope. The Contractor shall provide an explanation for the change in the narrative to be provided with the Monthly Progress Schedule.

**2.5.6.3 DURATIONS**

Project Schedules shall not use activity durations for Construction Work shorter than one Working Day or greater than 15 Working Days, unless Approved by the City. Fractional days are not permitted.

**2.5.6.4 CONSTRAINTS**

The only constraints permitted in the Project Schedule is NTP and the Completion Deadlines. No intermediate completion constraints or start constraints shall be allowed unless they are included in the Contract Documents, unless Approved by the City.

**2.5.6.5 RESPONSIBLE PARTY**

The Contractor, for all Project Schedules, shall include activities for City and Third Party involvement, coordination, submittal reviews, inspections, and quality hold points, with other contractors, Utility Owners, Public Utility Commission (PUC) review and approval, governmental entities, engineers, architects, subcontractors, vendors, and suppliers, and any Stakeholders.

Project Schedules shall identify (in a separate column) the responsible party that will be performing the Work for the activity.

Project Schedules shall separate submittal activities by Contractor responsibility (such as develop and submit) as well as for the responsible party (including review, approve, and inspect) with a logical tie to the start of Work for that item of activity.

**2.5.6.6 QUANTITIES AND PRODUCTION RATES**

The Contractor shall include the following information in Project Schedules:

- Quantities
- Quantity units that match the Schedule of Values

The Contractor shall provide production rates that are reasonable and feasible and shall align with the activity's duration.



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**2.5.6.7 LONG LEAD PROCUREMENT, FABRICATION, AND DELIVERY**

Project Schedules shall include the fabrication and delivery of key and long-lead procurement activities such as material fabrication and material and equipment shipments.

Project Schedules shall clearly indicate the Contractor's Mall tree preparation, delivery, and installation schedule.

Project schedules shall clearly indicate the Contractor's granite paver material order, delivery, and installations schedule.

**2.5.6.8 PUBLIC MEETINGS AND SPECIAL EVENTS**

As jointly determined with the City, Project Schedules shall indicate public meetings, other communications activities, Special Events and Marquee Special Events, including, but not limited to events from:

- Public meetings
- Mall Champion Group (MCG) Meetings
- Colorado Convention Center
- Denver Center for the Performing Arts
- National Western Center
- Other City sponsored projects or events that may affect the Work schedule

The Baseline Schedule shall include all restrictions for Special Events and Marquee Special Events, as required in Section 17 Construction Phasing and Maintenance of Traffic.

**2.5.6.9 ACTIVITY PROGRESS**

The Contractor, for all Monthly Progress Schedules, shall accurately input actual duration, physical percent complete, remaining duration, remaining float, actual start and actual finish dates.

The Contractor, for all Monthly Progress Schedules, shall provide a narrative to the City requesting Approval to change a date prior to changing or correcting any previous actual dates, or dates required in the Contract Documents. The narrative shall address specifically why the change was made and the potential schedule impacts resulting from the change or correction.

**2.5.7. LOGIC**

Project Schedules shall include at least one predecessor and one successor for all activities, except for NTP (no predecessor) and Final Completion (no successor), unless Approved by the City.

Unless Approved by the City, Project Schedules shall not use negative lags or start-to-finish relationships.

All activities required for completion of a Completion Deadlines and other key Project milestones shall be tied to their respective milestone.

Project Schedules shall utilize phasing that reflects the phasing in the plans, specifications, and Contract Documents.

Monthly Progress Schedules shall include in the narrative the justification for any logic changes (identified by activity ID and activity name, sorted by activity ID). If the City does not agree with the reason for the logic change, the Monthly Progress Schedule shall not be Approved.

Monthly Progress Schedules shall reschedule (corrected logic) all activities that start or complete out of sequence to reflect the actual sequence of events.

**2.5.8. CALENDARS**

For the Baseline Schedule, the Contractor shall provide a narrative, including attachments if appropriate, of all of the Project's calendars. This narrative shall explain each calendar's Work and non-Work days.

The workweek for each calendar shall be reflective of the Work being performed.

Activities shall be assigned to the correct calendar that reflects that aspect of Work.

Monthly Progress Schedules shall include notification of planned Work outside those permitted by Section 5 Environmental Requirements. Requests for such Work shall be per City Standards and Specifications.

The start and finish day and time of day for each activity shall reflect the calendar times in which that activity is assigned.

Project Schedules shall show the no-Work days in the schedule calendars including, City Holidays, planned weather days that reasonably account for weather, and actual weather days. Weather days shall be determined in accordance with National Oceanic and Atmospheric Administration (NOAA) historical weather data.

Monthly Progress Schedules shall include in the narrative the planned versus actual no-Work days.

The Contractor shall include separate calendars for seasonally impacted scopes of Work.

**2.5.9. CRITICAL PATH METHOD REQUIREMENTS****2.5.9.1 GENERAL**

Each block along the corridor shall have a critical path schedule. The critical path shall be sufficiently detailed to accurately depict all the Work, particularly as related to the various block-by-block activities occurring to accommodate the Contractor's specific construction phasing approach and public information notifications. Schedules for the various block-by-block activities shall correspond to the Project's construction phasing, ACZ phasing as required in Section 17 Construction Phasing and Maintenance of Traffic.

The critical path shall have all long lead procurement, fabrication, and delivery activities.

Completion Deadline dates shall be shown on the critical path for each block.

**2.5.9.2 FLOAT**

Float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date for every activity in the schedule. Float shall be for the benefit of all parties to the Contract Documents and not for the exclusive benefit of the Contractor. Suppression or consumption of float by extended activity duration, dummy activities, or preferential sequencing shall not be allowed. Critical activities shall be defined as those with a total float of zero Calendar Days.

**2.5.9.3 NEGATIVE FLOAT**

The Baseline Schedule and Revised Baseline Schedule shall not include negative float.

**2.5.9.4 GAPS**

Project Schedules shall not display gaps in the critical path.

**2.5.9.5 CONCURRENT WORK**

Project Schedules shall ensure that it is feasible to handle concurrent work with similar scope of Work, particularly in the same Work area.

**2.5.9.6 NARRATIVE**

The Baseline Schedule and Revised Baseline Schedules shall include a narrative regarding the sequence of the critical path.

The Contractor, for all Monthly Progress Schedules, shall provide a narrative regarding:

- Sequence of the critical path
- Changes in the critical path, including new activities on the critical path
- Critical or near critical Work not progressing as planned
- Reason, responsible party, and justification for the delay or change to the Work

**2.5.10. PROJECT SCHEDULE LOADING**

All Project Schedules shall be cost and resource loaded. Resources shall include labor, crews, equipment, or materials, as appropriate. Failure to cost and resource load schedules may result in non-payment until such schedules are corrected.

**2.5.11. PROPOSAL SCHEDULE**

The Proposal Schedule is defined as the initial Project Schedule for the purpose of commencing Project Work and commitments to required Completion Deadlines dates as provided in the Contractor's Proposal.

**2.5.12. BASELINE SCHEDULE**

Using the Proposal Schedule as the basis for development, the Contractor shall submit a cost and resource loaded Baseline Schedule to the City for Approval no later than 30 Calendar Days following the issuance of NTP. The Baseline Schedule shall be a CPM schedule with activity detail based on the approved WBS. No Contractor payments will be Approved by the City until the Baseline Schedule is Approved.

The Baseline Schedule shall be developed based upon the Proposal Schedule and shall include the dates for the Proposal Completion Deadlines and shall be incorporated into the Contract Documents (such dates for which shall not be changed except by the City Approval). The Baseline Schedule shall detail the Contractor's Project activities from NTP through Block Substantial Completions, closeout, Project Substantial Completion, and Final Completion. Activities representing Work during this period shall be sufficiently detailed to plan, initiate, monitor, and evaluate the Work progress. The Baseline Schedule shall represent conditions of the Project at NTP. The schedule shall indicate the Contractor's activities through the Warranty.

The Baseline Schedule shall show the sequence and interdependence of activities required for complete performance of the Work per block – beginning with the date of the NTP and concluding with the date of Final Completion. The Baseline Schedule shall comply with the following:

- The actual number of activities in the schedule shall be sufficient to ensure adequate planning of the Work and to permit monitoring and evaluation of progress and the analysis of time impacts
  - Activity durations shall be expressed in Working Days
  - The Work calendar shall clearly identify and include Holidays and other non-Working Days, as well as Special Events and Marquee Special Events, as discussed in Section 4 Public Information and Section 17 Construction Phasing and Maintenance of Traffic
- The Contractor shall schedule deliverable review times by the City and other governmental or third party reviews as separate tasks logically tied to the appropriate activity
- The Baseline Schedule shall be resource loaded to track the schedule performance based off allocated resources

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- Activities that lag may require additional resources to ensure the overall Completion Deadlines are met
- The Contractor shall schedule permit approvals by the City and governmental agencies
- The Contractor shall schedule quality hold points as required in Section 3 Quality Management
- A graphical representation of all activities necessary to complete the Work shall be provided
- All Completion Deadlines set forth in the Contract Documents shall be identified
- Compliance with applicable provisions of the Contract Documents shall be included
- The proposed CPM schedule logic is sound and consistently developed and demonstrates a logical sequencing and interdependence of activities required for the timely and orderly achievement of all Work activities and milestones, including completion of the Work within the Contractual Deadlines

Once Approved, the Baseline Schedule shall be the base Project Schedule against which all progress of the Work and the Monthly Progress Schedule shall be assessed. The Baseline Schedule shall not be modified.

**2.5.13. CURRENT BASELINE SCHEDULE**

The Current Baseline Schedule is defined as the Baseline Schedule with cost, resource, and schedule changes from Approved change orders incorporated. It shall be updated monthly, if required, with only Approved cost, resource, and schedule changes. This schedule shall not show progress but shall maintain the original data date from the Baseline Schedule as a baseline. The Current Baseline Schedule shall be submitted to the City for Approval with each monthly pay application.

**2.5.14. CRITICAL PATH SCHEDULE**

The Critical Path Schedule is defined as the schedule showing only the critical path, incorporating all CPM requirements provided in this Section 2. A Critical Path Schedule shall be provided for each block along the Mall.

**2.5.15. MONTHLY PROGRESS SCHEDULE****2.5.15.1 GENERAL**

The Approved Baseline Schedule or Current Baseline Schedule, as appropriate, shall be used as the basis to establish the Monthly Progress Schedule. It shall be updated every month to show the actual Work progress and the earned value of Work accomplished, including Approved change orders.

The Monthly Progress Schedule shall include a detailed schedule of activities that clearly identifies the critical path, progress for the current period for all activities, appropriate resource allocation, and the actual start and finish dates of activities, including physical percent complete and Calendar Days remaining for activities in progress.

Prior to the Progress Status Meeting, the Contractor shall obtain from the design team, subcontractors, suppliers, and field staff the necessary information required to accurately reflect progress to date.

The Monthly Progress Schedules shall be submitted to the City concurrent with the draft monthly pay application submittals. The Monthly Progress Schedule shall include all information as of the data date.

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**2.5.15.2 NARRATIVE**

The Contractor, for all Monthly Progress Schedules, shall provide a short narrative that discusses Work performed to date and key activities in the coming period, including the following:

- Physical status of all Work as of date of the update for the ACZ and by block
- Status of all Contractual Milestones as compared to the Baseline Schedule or Current Baseline Schedule planned dates
- Coordination and accomplishment of Work associated with Utilities and third parties
- Updates on resource allocation needs to complete the Work within the Contractual timelines
- Actual progress relative to planned progress, organized by WBS
- Design activities and progress
- Design document submittals for the upcoming period
- Critical items for the critical path sorted by activity early start date per block
- All activities with 10 Calendar Days or less float
- List of public information activities for the upcoming month
- List of quality hold points for the upcoming month
- The three month look-ahead sorted by WBS and activity early start dates
- Time-scaled critical path network plot indicating the status of all activities as of the date of the update

**2.5.15.3 THREE MONTH LOOK-AHEAD**

The three month look-ahead component of the Monthly Progress Schedule establishes the WBS activities, and shall be provided in sufficient detail to convey a schedule that provides weekly schedule control and shall specifically identify:

- Completion Deadlines, if any
- Phasing of design, construction, testing, and staging of the Work, with attention given to RFC dates, site availability, construction phasing and staging, ACZs, pre-Work meetings, and maintenance and protection of traffic requirements of the Contract Documents
- Procurement, fabrication, preparation of mock-ups, preparation of prototypes, delivery, installation, testing of materials and equipment, factory testing and demonstration testing, and any long lead time (more than 30 Calendar Days) orders for material and equipment
- Resource allocation appropriate to accomplish the Work including Work to be performed by other contractors and agencies that may affect the schedule
- Public information activities and all required outreach and notifications needed prior to initiating Work in an ACZ, including all required coordination with Special Events, Marquee Special Events, and adjacent project activities
- Quality control hold points

**2.5.16. RECOVERY SCHEDULE**

The Recovery Schedule is defined as the Contractor's program and proposed plan for the recapture of lost schedule progress to achieve key Project milestones, Completion Deadlines, Block Substantial Completions, and/or Final Completion – either for the entire Project or for any individual block. The Recovery Schedule shall be based on the latest Monthly Progress Schedule and shall include equivalent detail.

If the Work is lagging in the Current Baseline Schedule for a period that exceeds the greater of 1) 15 Calendar Days in the aggregate, or 2) that number of days in the aggregate that equals five percent of the Calendar Days remaining until the lagging Completion Deadline(s), the Contractor shall prepare and submit to the City for Approval a Recovery Schedule within 14 Calendar Days after the Contractor first becomes aware of the schedule delay.

The City shall notify the Contractor within 14 Calendar Days after receipt of the Recovery Schedule whether the Recovery Schedule is Approved or shall describe changes that the City believes should be made to the Recovery Schedule. The Contractor shall incorporate and fully include the Recovery Schedule (including the City's comments) into the next scheduled Monthly Progress Schedule (or, if the next scheduled Monthly Progress Schedule is due within seven Calendar Days of Approval of the Recovery Schedule, then the Recovery Schedule shall be incorporated into the subsequent Monthly Progress Schedule) and shall concurrently provide to the City a Current Baseline Schedule.

**2.5.17. CLOSEOUT SCHEDULE**

The Closeout Schedule is intended to be a comprehensive schedule of all activities needed to closeout from Block Substantial Completion to Final Completion, and associated Warranty and establishment periods. The Closeout Schedule shall include all punch list Work, path to close any non-conformances, compliance with all Federal Grant requirements, and compliance with DBE goals and Workforce Development requirements. The Closeout Schedule shall include an accompanying narrative identifying all assumptions, roles, and responsibilities for block and/or Project closeout, key activities, and any other information for the effective closeout of a block and/or Project. The Closeout Schedule shall be submitted as part of the request for Substantial Completion for any portion of the Work.

**2.5.18. AS-BUILT SCHEDULE**

The last Monthly Progress Schedule submitted shall be identified by the Contractor as the As-Built Schedule. The As-Built Schedule shall reflect the exact way the Contractor executed the Work (including start and completion dates, activities, actual durations, sequences, and logic), and shall be signed and certified by the Contractor's Project Manager and the Contractor's scheduler as being a true reflection of how the Work was executed with Substantial Completion dates through Final Completion and closeout. The As-Built Schedule shall be submitted as part of the Contractor's closeout documentation in both electronic Primavera P6 format and .PDF format. Final Completion will not be issued until the As-Built Schedule is Approved by the City.

**2.6 CHANGE MANAGEMENT**

Change management shall be in accordance with the City Standards and Specifications and this Section 2.

For all changes in cost, the City requires the Contractor submit their cost calculation, backup information, vendor quotes, and assumptions. Any cost deviations from the unit costs SOV shall be clearly delineated and justified.

Changes requiring design shall include documentation of proposed hours and rates, or actual hours and rates, as appropriate for the change.

## **2.7 FORCE ACCOUNTS**

The City will justify force account costs based upon Contractor supplied documentation of actual costs. For Work that requires force account, the City will review Contractor progress and to verify that the Contractor is completing the required documentation per the Contract. At a minimum, the Contractor must submit the following documentation for force account Work:

- Labor Costs
- Material Costs
- Equipment
- Government approvals and permit fees
- Other direct costs

Based on the current Project status, the following items are anticipated force account activities:

- Denver Water Utility Relocation Work
- Owner's Contingency

## **2.8 MEETINGS**

### **2.8.1. AGENDAS AND MEETING MINUTES**

Unless notified otherwise by the City, the Contractor shall be responsible for scheduling and conducting meetings; and developing meeting agendas for all Project related meetings between the Contractor and the City. All meeting agendas and meeting exhibits shall be provided to the City no less than one Working Day prior to the scheduled meeting.

Unless notified otherwise by the City, the Contractor shall be responsible for developing meeting minutes for all Project related meetings between the Contractor and the City, between the Contractor and counterparties to third party agreements, and between the Contractor and other governmental agencies and Stakeholders. Minutes shall include information discussed during the meeting, decisions made, action items, and relevant Project facts. All meeting minutes shall be submitted to the City within three Working Days after each meeting.

The Contractor shall notify the City within two Calendar Days of all communications regarding the Project, including all communications with Stakeholders, unless otherwise Approved by the City.

### **2.8.2. PROJECT KICKOFF AND INFORMATION EXCHANGE MEETING**

Within 15 Calendar Days following issuance of NTP, the Contractor and design team shall schedule a Project Kickoff and Information Exchange meeting with the City. The purpose of the meeting is to review the Proposal design for compliance with the Contractual requirements at the conceptual phase and to establish expectations for the Contractor's continued design Work. At a minimum, the following Contractor Key Personnel shall attend the meeting.

- Design-Build Project Manager
- Project Quality Manager
- Project Construction Manager
- Design Manager (Engineer of Record)

At the Contractor's option, additional meetings to further discuss Project-specific items, prior to the Task Force meetings initiating Work, may be scheduled. The Design-Build Project Manager shall lead the meeting discussions and be responsible for completing the agenda items and providing follow up meeting minutes.

**2.8.3. TASK FORCE MEETINGS**

The Contractor shall conduct frequent Task Force meetings during the pre-construction phase to further refine and review the Contractor's proposed design with City staff and the City's representatives, and to coordinate the design development within the Contractor's design team. Each major discipline represented in the Technical Requirements shall schedule an initial Task Force meeting kick off during the design phase. In those required Task Force meetings, the frequency needed to fully develop those Technical Requirements will be identified and Approved by the City. Subsequent topic-specific Task Force meetings may be scheduled to review specific design elements with other Project Stakeholders. At a minimum, Task Force meetings shall be held for each of the major disciplines represented in the Technical Requirements at a frequency to allow City input and oversight during design development. Some critical disciplines will require inclusion of regular meetings for the life of the Project. With the City's Approval, less frequent meetings may be conducted or canceled as the design is completed and construction Work begins.

The Contractor shall prepare an agenda and conduct each Task Force meeting to discuss the status of the design, coordinate the design development between design disciplines, discuss constructability issues, and identify any questions associated with the design requirements. The Task Force meetings are intended to create a collaborative environment to exchange design ideas, discuss constructability approaches, review potential solutions, and initiate and deliver the collaborative over-the-shoulder design review process. As part of a Task Force Meeting, the Contractor shall schedule pre-submittal page turn reviews seven Calendar Days prior to required design submittals. Task Force meetings shall be held in person in the Webb Building, at 201 West Colfax Avenue, Denver, Colorado 80202, unless otherwise Approved by the City.

As designs are submitted and comments are provided by the City, the Contractor shall hold Design Comments Resolution Meetings in accordance with Section 3 Quality Management.

**2.8.4. SAFETY MEETINGS**

The Contractor shall conduct regularly scheduled Project safety meetings, tool box talks, daily task walk through, and other safety meetings as specified in its SMP. Given the high pedestrian traffic on the Mall, the Contractor shall provide extra emphasis on public safety adjacent to the ACZ. All safety protocols during construction shall be closely coordinated with the Contractor Public Information Plan as outlined in Section 4 Public Information.

**2.8.5. QUALITY MEETINGS**

The Contractor shall conduct regularly scheduled quality meetings as specified in its QMP, and Section 3 Quality Management.

**2.8.6. PROJECT MEETING SUMMARY**

Based on the City's expectations, Table 2-1 provides an initial summary of the required Project meetings. As required by this Section 2, the Contractor shall prepare the meeting notice, invitation, and agenda distributed in advance of the meetings, and prepare and distribute summary meeting minutes. Other meetings necessary for completion of design Work, Project coordination, and on-going construction Work meetings are the responsibility of the Contractor.



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<b>Table 2-1 Project Meeting Summary</b>	
<b>Meeting Topic</b>	<b>Frequency</b>
Project Kickoff and Information Exchange meeting	Scheduled 15 Working Days following NTP with potential follow up for specific item needs
Progress status meeting	Weekly
Design Comment Resolution Meetings	Following each design submittal
Task Force Meetings	Initial for each major discipline represented in the Technical Requirement with subsequent frequencies at the Approval of the City
Utility coordination meetings	As required to accommodate Utility relocations
Safety meetings	As defined by the Contractor's SMP and QMP
Quality meetings	As defined by the Contractor's QMP
Downtown Construction Coordination Meeting	Bi-weekly and as required
DDP Security meeting	Bi-Monthly and as required
Additional meetings as necessary to coordinate and complete the Work	As required

The Contractor shall review, supplement, or modify this meeting summary and submit to the City for Approval prior to making any modifications to the Project meeting requirements. Public information meeting requirements are outlined in Section 4 Public Information.

## **2.9 PHOTOGRAPHS AND VIDEOS**

The Contractor shall take a sufficient number of Mall pre-construction photographs and a 1080p HD resolution or greater video of the Project, including building facades, building access points and doorways, cross streets, alley ways, any miscellaneous structures and building vaults, canopies, awnings, rails, drainage structures, and all areas necessary and/or anticipated to be impacted by the Work to establish a Baseline Conditions Report to resolve any disputes which may arise regarding the conditions prior to and subsequent to construction.

Subsequent photo and video condition surveys shall be conducted as the Contractor prepares to commence Work in an ACZ or segment of Mall block or blocks. These subsequent photo and video surveys document any changes to the Mall that have occurred since the initial photo and video survey conducted following NTP. The Contractor shall note any changed conditions and submit a summary to the City for Approval to establish an Updated Baseline Conditions Report to resolve any disputes which may arise regarding the Mall conditions initially at NTP and prior to commencing Work on subsequent ACZs or construction phases.

Such preconstruction photo and video surveys shall be submitted to the City within 30 Calendar Days prior to construction Work. If a dispute arises where no or insufficient photographic or video evidence of its existing condition is available, the disputed area shall be restored to the extent directed by the City at no additional cost to the City.

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The Contractor shall establish web cams and a time-lapse video to provide full coverage of the ACZ to share and highlight construction progress. Web cam and time-lapse video information shall be linked to the Project website.

The Contractor shall take professional quality color photographs throughout the Project to support public outreach efforts, as required in Section 4 Public Information.

**2.10 FACILITIES PROVIDED BY THE CITY**

To enhance Project collaboration and facilitate design oversight and reviews, the City will provide joint spaces for the City and the Contractor upon NTP, subject to any health and safety restrictions at that time. These joint spaces may not be in a single location, but in close proximity along or near the Mall. The City will furnish the Contractor's staff with spaces that are in good and serviceable condition (condition comparable to the City's office space). A separate conference room will be provided for the Contractor that can seat 12 individuals. City internet will be provided for Contractor staff, in accordance with Technology Services rules and requirements. The Contractor shall provide all computers, copiers, office supplies, and other necessary technology required for its staff.

The Contractor will have access to 10 spaces during the design phase, upon NTP. This will include nine desks and one office. For the construction phase, the City will provide joint space for the City and the Contractor. The Contractor will have access to 40 spaces, 60 Calendar Days prior to the commencement of the first Mall block's ACZ period. This will include 38 desks and two offices.

Within 30 Calendar Days of NTP, the City and Contractor shall jointly determine protocols for use of the City facility, including access, badging, limitations, technology, etc. Both parties shall participate in a facility condition inspection at the beginning and at the completion of occupancy. The Contractor shall return possession of City-provided facilities to the City in essentially the same condition as when the Contractor initially occupied the facilities, except for reasonable wear and tear. In the event that office spaces or appurtenant facilities are stolen, destroyed, or damaged during the Work by the Contractor, the Contractor shall at its expense repair or replace those items provided to their original condition within five Working Days, or as Approved by the City.

The City shall maintain the City offices until at least 30 Calendar Days following the Project Final Acceptance.

Any other on-site trailers or facilities determined to be necessary for the Work, shall be provided by the Contractor – at its discretion and at its cost.

**2.11 PROJECT DIRECTORY**

The Contractor shall maintain and furnish to the City a Project Directory, listing the names, addresses, and telephone numbers (office, home, cellular, emergency contact, and other required contact information) of the Key Personnel, Supporting Personnel, and critical support staff of the Contractor and each subcontractor. The Project Directory shall be submitted to the City no later than 60 Calendar Days following issuance of NTP. The Contractor shall update the Project Directory quarterly for the duration of the Work and within any Key Personnel or Supporting Personnel changes.

**2.12 DOCUMENT MANAGEMENT**

As part of the PMP, the Contractor shall develop a Document Management Plan. The plan shall include, at a minimum, Document Control System (DCS) requirements, key processes, responsible persons, document labeling, distribution, and access control.

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The Contractor shall establish and maintain its own DCS to store and record all correspondence, drawings, progress reports, technical reports, specifications, Contract Documents, deliverables, calculations, and administrative documents generated under the Contract Documents. The Contractor shall also establish correspondence routing, filing, control, and retrieval methods that are compatible with the City and County of Denver's DCS. Document control, design plans indexing approach, storage, and retrieval methods shall include the use of electronic records. The Contractor's DCS shall handle all Project documents. Data shall be backed up every 24 hours. The City shall have access to the Contractor's DCS with sharing capabilities. The Contractor shall provide a dedicated Document Control Manager to manage the Contractor's DCS.

- Access shall be provided to the City on a real-time basis that can only be attained through the internet
- The Contractor shall maintain industry standards for internet connectivity as determined by the City
- The Contractor shall make available, within 24 hours when requested by the City, copies of its logs indicating the City's outstanding items and a copy of any document requested
- Documents within the Contractor's DCS must be transferable to the City's DCS
- The City shall have read only access to the latest set of drawings that are produced once drawings receive RFC
- The Contractor shall store QC and QA data such as test results, daily inspection records, and non-conformance reports and provide real-time access by the City to QC and QA

All correspondence of the Contractor to and from the City and its representatives with respect to the Contract Documents shall be serialized, and the Contractor shall maintain separate incoming and outgoing correspondence logs.

All correspondence shall include the Project name, Contract name and number, along with the specific subject of the letter, memorandum, or report. All replies shall refer specifically to prior correspondence to which it relates.

The Contractor shall comply with Colorado Open Records Act (CORA) requests and supply information as requested by the City.

### **2.13 WORKFORCE DEVELOPMENT PLAN REQUIREMENTS**

The City is committed to developing and implementing a pilot Workforce Program for the Project with the intent to increase outreach, upskilling and training, career opportunities for United States residents who come from disadvantaged populations. In addition, the City is committed to addressing shortages in qualified construction workers generally by increasing the number of apprenticeship and On-The-Job Training (OJT) opportunities. Implementation of this pilot Workforce Program will offer the opportunity for demonstrating, measuring, and evaluating outreach, training, and engagement efforts across numerous construction industry trades.

The City is currently utilizing a workforce platform, called WORKNOW. The Contractor shall utilize the WORKNOW platform and coordinate its workforce efforts with any supporting program or resource as applicable. The Contractor's strategy shall be compatible with the WORKNOW platform and shall be adaptable over time to adjust to changing labor market conditions.

The Contractor shall provide a Workforce Coordinator that acts as a point of contact for all coordination, workforce activities, and shall implement the Workforce Development Plan (WDP).

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A Contractor Resource Guide, developed by the City, is provided in the Reference Documents as RD-02-01. This guide outlines Denver Construction Careers Pilot including pilot overview, list of partners, WORKNOW overview, goals and objectives of the pilot program, and expectations of the Contractor. Information provided in the guide is not Project-specific.

The Contractor shall identify a qualified Workforce Coordinator responsible for the workforce planning, implementation, and reporting. The Workforce Coordinator must have in-depth knowledge of workforce development with the ability to execute the Approved WDP. The Workforce Coordinator may serve in different functions within their organization. The Workforce Coordinator shall have the following traits and skillsets:

- Strong connection and trust with supervisors and subcontractors
- Exposure to trade training organizations in the Denver area
- Ability to communicate and work effectively with multiple stakeholders
- Ability to forecast talent needs and create and analyze reports

**2.13.1. WORKFORCE COORDINATION AND PLAN DEVELOPMENT**

The Contractor shall submit a WDP that addresses the requirements as defined in the Contract Documents, including the requirements of this Section 2. The WDP shall be based on the Proposal WDP and shall be submitted to the City for Approval. The Contractor shall be responsible for implementation and reporting of its Approved WDP for all performed Work performed to the City.

At a minimum, the WDP shall include the following:

- Identify the number, hours, position, and description of the skilled craft areas where Registered Apprentices and OJT workers shall be used in construction activities
- Describe how the Contractor and subcontractors will collaborate with community organizations, including but not limited to the WORKNOW and other community-based organizations for recruitment purposes
- Provide a flow down provision strategy to ensure hiring at all tiers is addressed and DBE firms are not negatively impacted by the WDP requirements
  - The Contractor shall explain how this flow down provision will be exhibited for the duration of the Project
- Identify the pay rate for program participants in construction/skilled craft positions and identify the pay rates for each classification
- Describe the roles and responsibilities of the identified Workforce Coordinator
- Describe how the Workforce Coordinator will engage subcontractors that will perform the work to fulfill the implementation and reporting requirements of the WDP

The WDP shall be a living document and shall be updated or revised as reasonably deemed necessary by the City during the course of the Project. All subsequent revisions to the WDP shall be submitted to the City for Approval.

**2.13.2. OUTREACH AND ENGAGEMENT**

The Contractor shall describe its outreach and engagement approach (both utilizing the WORKNOW platform as well as other innovative approaches) to include, but not be limited to, the following:

- Develop a detailed communications and outreach strategy, that is adaptable over time to maximize participation
- Conduct and participate in Contractor job fairs and outreach event engagements in coordination with WORKNOW platform partners
- Participate in not less than one job fair per quarter or as agreed to by the City and the Contractor Workforce Coordinator
- Describe additional, innovative outreach and engagement strategies that the Contractor is currently implementing or will commit to implement for the duration of the Project

### **2.13.3. TRAINING AND REGISTERED APPRENTICESHIP UTILIZATION**

The Contractor shall describe its strategy to connect job seekers and incumbent workers with training opportunities to meet requirements as described in Contract Documents. An incumbent worker is a paid, full-time employee of the Contractor, subcontractor, supplier, or an individual with construction employment experience within the last six months. The training strategy shall address training programs the Contractor already has in place, how the Contractor will coordinate with workforce partners (including WORKNOW), and the approach that the Contractor will use with subcontractors. Training strategies shall include, but not be limited to, the following:

- Describe any pre-skilled and pre-employment training, including pre-apprenticeship and basic skills training
- Describe the pre-journey level training associated with employment, including on-the-job training and registered apprenticeships offered to employees prior to reaching journey/licensed status
  - Identify any industry-recognized certifications provided to training graduates and any approaches to utilizing or training first-year construction workers or apprentices
- Describe the journey upgrade, upskilling or other incumbent worker training for experienced construction workers
- Describe any other training mechanisms not otherwise described above, excluding safety training

Due to the multiple federal funding sources of the Project, the Contractor shall explain its strategy to meet or exceed the training requirements and describe the strategy for utilizing OJTs and/or apprentices in registered apprenticeship programs, described as follows:

- Overall Training Requirement: Fifteen percent of construction hours shall be performed by apprentices in registered apprenticeship programs
- Disadvantaged Populations Requirement: Twenty-five percent of the Overall Apprenticeship Requirement that are performed by Colorado residents will be done by apprentices in registered apprenticeship programs that are from Disadvantaged Populations
- First Year Apprentice Requirement: Twenty-five percent of the Overall Apprenticeship Requirement will be performed by first year apprentices in registered apprenticeship programs
- OJT and Apprentices may be counted in all applicable categories for purposes of meeting the requirements of the Contract Documents
- Construction hours are the hours of every worker, mechanic or other laborer employed by Contractor or its subcontractors in the Work of construction, alteration, improvement, maintenance or demolition as documented in LCPtracker

Disadvantaged Populations are the defined as the following:

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- Veterans: Any person who has served any amount of time in any branch of the United States Armed Forces
- Temporary Assistance for Needy Families (TANF) recipients: Individuals who have been TANF recipients within the last two years
- History of unhoused situations: Individuals living in a place not meant for human habitation, in an emergency shelter, in transitional housing or are exiting an institution where they temporarily resided
  - People who lose their primary nighttime residence, which may include a motel or hotel, or a doubled-up situation also have a history of unhoused situations
  - Individuals who are or have in the past two years lived in public or private shelters, transitional housing have a history of unhoused situations
- Exiting the foster care system: Individuals who attest that they have aged out of the foster care system, or who have attained 16 years of age and left foster care for kinship, guardianship, or adoption qualify as having exited the foster care system whether or not they return to their foster families before turning 18 years of age
- Graduates of pre-apprentice programs approved by the City's Office of Economic Development in partnership with WORKNOW

OJT special provision is an implementation of 23 U.S.C, 140(a), a federal requirement to provide equal opportunity and training on federal-aid construction projects. The Contractor shall meet the requirements of Colorado Department of Transportation (CDOT) OJT Manual.

#### 2.13.4. QUARTERLY WORKFORCE REPORT

The Contractor shall describe its metrics and strategies to track and report the progress of meeting the WDP requirements. Reporting metrics and tracking strategies shall be included in a quarterly Workforce Report. Requirements may include, but are not be limited to, the following:

- Number of outreach events, job seeker contacts, and advertisements
- Number of hours worked by workers from Disadvantaged Populations
- Utilization of pre-skill, pre-journey and journey upgrade programs as described above and as applicable, including OJT hours and utilization of first-year construction workers, Disadvantaged Populations, or registered apprentices
- Other training outcomes and metrics proposed by Contractor
- Means and method to track progress toward the Overall OJT/Registered Apprenticeship Requirement, Disadvantaged Populations Requirement, and First-Year Apprentice Requirement as described in Contract Documents
- Clearly describe the Contractor's plan to capture and report lessons learned
- Describe the key indicators that would initiate the need for Contractor to seek the City's Approval of a compliance plan and the implementation of corrective actions, and, if necessary, development of alternative strategies
- A list of WORKNOW participants active on the Project providing the full name, employer, description of services or applicable work code, start date, (if additional training is provided) the skilled craft program that WORKNOW participant is registered in (including verification of

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enrollment), total hours worked in current month, pay rate, total hours worked to date on the Project, supervisor full name, and a description of the performance level

- Any performance problems with the WORKNOW participants and how the problems were resolved, including any reasons for graduates/participants leaving the Project

Reporting format shall be coordinated with the City and included in the WDP for Approval.

### **2.13.5. WORKFORCE DEVELOPMENT PROGRAM REVIEW**

The Contractor and all involved subcontractors shall participate in a progress review of the WDP with the City monthly, or as requested by the City. The WDP review shall assess the effectiveness of the program, identify any areas for improvement, and provide recommendations for improving the program.

### **2.13.6. DEFAULT FOR FAILURE TO MEET THE WORKFORCE DEVELOPMENT PLAN GOALS**

The Contractor shall exercise good faith efforts to meet or exceed the Overall Registered Apprenticeship Requirement. The Contractor's failure to achieve the stated Overall Registered Apprenticeship Requirement, as established by the apprentice work hours reflected in LCPtracker (or its replacement if LCPtracker is replaced), shall result in a reduction in payment to Contractor. If Contractor does not meet or exceed the Overall Apprenticeship Requirement at Project Substantial Completion, the City will reduce Contractor's final payment by \$29 for each hour of apprentice work not achieved as reflected by LCPtracker up to a maximum of \$350,000. Contractor's final payment shall not be reduced if it negotiates and the City Approves a compliance plan.

## **2.14 PARTNERING**

In order to create a Project First mentality, the Project shall utilize partnering best practices with the information summarizing the partnering process requirements listed below. The partnership will be structured to draw on the strengths of all organizations and Stakeholders involved in the Project to identify and achieve mutual goals. The objective is effective and efficient Contract performance with reciprocal cooperation, completion within budget, on schedule, and in accordance with the Contract. The Contractor shall assume responsibility for all costs associated with partnering during implementation of the partnering process. The Contractor shall be responsible for all space requirements, amenities, materials, and coordination necessary for the partnering sessions.

The Contractor shall begin to initiate the partnering initiative within 30 Calendar Days of NTP by setting a Partnering Kick off Meeting with the City to plan the Project approach to partnering. Representation from the City, RTD, DDP, and other Stakeholders identified by the City will be invited to participate.

Following the initial partnering meeting, the Contractor shall prepare and submit for review and comment a schedule of the partnering process for the duration of the Project. The Contractor will be required to hold a partnering session every six months after NTP, at a minimum. At a minimum, Key Personnel and other task discipline leads shall be in attendance. Each partnering meeting shall address, at a minimum, the following:

- Progress to date for design and construction
- Forecast of upcoming Work
- Current issues and concerns
- Schedule milestones upcoming and critical path concerns
- Communications and needed adjustments to the outreach plan
- Post meeting action items

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**2.15 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 2-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Project Management Plan (PMP)	Approval	30 Calendar Days following issuance of NTP
Workforce Development Plan (WDP)	Approval	60 Calendar Days following issuance of NTP
Draft monthly pay applications	Approval	As part of Monthly Report
Final monthly pay applications	Approval	Within five Calendar Days following addressing City comments on Draft Pay Application
Monthly pay application format	Approval	60 Calendar Days following issuance of NTP
Baseline Schedule	Approval	30 Calendar Days following issuance of NTP
Current Baseline Schedule	Approval	As required
Monthly Progress Schedule	Approval	Predecessor to the monthly pay applications
Closeout Schedule	Approval	30 Calendar Days prior to the request for Block Substantial Completion
As-Built Schedule	Approval	Prior to Final Completion
Recovery Schedule	Approval	As required
Work Breakdown Structure (WBS)	Approval	Concurrent with Baseline Schedule
Project Directory	Information	60 Calendar Days following issuance of NTP
Updates to the Project Directory	Information	Quarterly and with changes to Key Personnel and Supporting Personnel
Baseline Condition Report	Approval	30 Calendar prior to commencement of construction Work and updated for each block (per ACZ request)
Meeting Minutes	Information	Five Working Days after each meeting



### **3.0 QUALITY MANAGEMENT**

#### **3.1 GOALS**

The goals of this Section 3 are:

- Ensure strong quality management practices throughout the entire Work effort for this high-profile, critical City and County of Denver (City) Project, through the incorporation of quality processes in every aspect of the Project, including design, construction, communications, procurement, controls, and Project management practices
- Ensure Project requirements and intent are met
- Create an atmosphere of accountability and excellence for Work performed by every individual

#### **3.2 QUALITY MANAGEMENT REQUIREMENTS**

An effective approach to Quality Management will be essential to manage expectations of the Work given the location and expected impact of the Project. As such, the Contractor shall prepare and submit a Quality Management Plan (QMP) for the Work, including but not limited to the oversight of all subcontractors, suppliers, and vendors for City Approval. The QMP shall include the Design Quality Management Plan (DQMP) and the Construction Quality Management Plan (CQMP). The CQMP consists of construction quality control (QC) and construction quality assurance (QA). The DQMP shall be submitted 30 Calendar Days following issuance of Notice to Proceed (NTP). All subcontractors shall comply with the Contractor's CQMP.

The QMP shall be submitted in the format recommended by the International Organization for Standardization (ISO) 9001 series and FTA *Quality Management System Guidelines* and shall contain complete procedures for the implementation of the QMP.

The QMP shall include as a minimum:

- A statement of the Contractor's commitment to quality and provide a clear definition of the scope of activities and detail the methods to ensure the Work meets the Contract requirements
- An approach and plan on how the Contractor will ensure that all disciplines, aspects, and elements of the Work shall comply with the Contract Document requirements, including commitments made in the Contractor's Proposal
- An approach and plan on how the Contractor will ensure that all subcontractors, suppliers, and vendors comply with the requirements of the QMP
- A description of the quality management organization, including an organization chart showing relationships among the parties including the City, additional agencies (as needed), and other company organizational elements
- The name, qualifications, resumes, duties, responsibilities, and authorities of each person assigned a quality management function or a QC/QA function
- A requirement that all QC/QA documentation is signed by a Colorado Professional Engineer, in accordance with State law – as a minimum
  - Digital documentation is acceptable
  - Complete, legible copies of such records shall be furnished in full to the City within three Working Days of completed QC/QA activities, upon request

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- Procedures for preparing and presenting submittals, including those of subcontractors, vendors, offsite fabricators, suppliers, and purchasing agents, for assuring they conform to Contract requirements
- Procedures for the Requests for Information (RFI), Request for Revision (RFR), and Notice of Design Change (NDC) processes, including sufficient review periods by the City, Regional Transportation District (RTD), and other required Third Party reviewers
- The requirement for individual Material Testing and Inspection Plans (MTIP) for each individual construction package
  - Specific tests required, minimum frequency of tests, and test procedures shall be in accordance with the City *Minimum Frequency of Materials Sampling and Testing Standard* and any additional quality requirements of the Technical Requirements and Technical Specifications
- Procedures that address all elements of design, including but not limited to Maintenance of Traffic (MOT) and construction sequencing, wet and dry Utilities, civil, geotechnical, survey, granite pavement system design, drainage and water quality, Public Life FFE products, landscaping, aesthetics, environmental mitigations, traffic control, safety, Americans with Disabilities Act (ADA) certification and compliance, transit way safety and certification process, and temporary Work
- The Contractor shall identify all applicable computer programs to develop and check designs
- Requirements for both temporary and permanent components of the Work
- Procedures for submitting, completing, and performing QC/QA for At-Risk Work
- Procedures for a Nonconformance Report (NCR) corrective action and closeout including who needs to approve the final recommended disposition of the NCR for the Contractor
  - All elements constructed that are not in conformance with the Contract plans and specifications shall be documented with an NCR within two Working Days of occurrence, if not, the City reserves the right to prepare the NCR
  - A recommended corrective action for an NCR must be completed within five Working Days of the occurrence unless agreed upon by the City and the Contractor
- QC/QA staffing requirements, including traffic control oversight, stormwater and erosion control, and granite paver preparation and installation inspectors and material testers needed to thoroughly monitor the Work in progress at all times
  - The Contractor shall provide sufficient QC/QA staffing to adequately monitor the Work according to the demands of the construction schedule
  - QC/QA staff shall be assigned to each Work area, sharing staff for multiple Work areas is not allowed unless otherwise Approved by the City
  - If quality standards or schedules are not being met, the Contractor shall provide additional QC/QA staff as requested by the City and at no additional cost to the City
- The key quality management staff required is the Project Quality Manager (PQM), Design Quality Assurance Manager (DQAM), Construction Quality Control Manager (CQCM), Construction Quality Assurance Manager (CQAM), and a QC/QA document control clerk

The Contractor shall update and resubmit to the City for Approval its QMP when its own quality management organization detects systemic or fundamental breaches of the Contract or deficiencies in the manner the Work is inspected or tested, including breaches or deficiencies that have caused or that may

cause Nonconforming Work to be performed, or when the City advises the Contractor of such a problem. The Contractor shall also revise the QMP should any of the following conditions exist:

- QMP or procedure within the QMP no longer adequately addresses the matters it was originally intended to address
- QMP or procedure within the QMP does not conform with the Contractor
- An audit by the Contractor or the City identifies a deficiency in the QMP requiring an update
- Organizational structure changes require revision to the QMP
- The Contractor is undertaking activities that are not covered within the current QMP
- The City requires the QMP to be updated, at its request

### **3.3 PROJECT QUALITY MANAGER**

The Contractor shall employ a PQM for the Work. The PQM shall be responsible for the Contractor's overall quality program, including both QA and QC, overall design, construction, life-cycle Project quality, quality personnel, quality planning, quality training, quality control activities independent of production, quality system procedures enforcement, development and implementation of the quality program objectives, total system quality and management, quality records and documentation, and review and approval of the QMP prior to submittal to the City. This position shall be independent of the Contractor's and designer's Project management staff, reporting directly to senior principals or officers of each entity and the City. The PQM shall be actively involved as necessary throughout the design and construction phases and shall be available to respond to City requests for information.

### **3.4 DESIGN QUALITY MANAGEMENT REQUIREMENTS**

The Contractor shall prepare a DQMP for the design Work and submit to the City for Approval. The DQMP shall contain complete procedures for the implementation of design QC/QA. No design shall be submitted to the City until the DQMP has been Approved by the City.

#### **3.4.1 DESIGN QUALITY ASSURANCE MANAGER**

The lead design firm in the Contractor's organization shall employ a DQAM for the Work. The DQAM's responsibilities shall be limited to administering contracts with the independent firms, managing and ensuring Contractor compliance with the DQMP, and resolution of quality related issues. Design QC is required at the design manager level, whether for the lead designer or design subconsultants.

#### **3.4.2 DESIGN PACKAGING AND SCHEDULING**

##### **3.4.2.1 DESIGN SUBMITTAL AND REVIEW SCHEDULE**

No later than 30 Calendar Days following issuance of Notice to Proceed (NTP), the Contractor shall submit to the City for Approval, the Design Submittal and Review Schedule incorporating each design phase submittal and deliverable. Each submittal deliverable package shall be identified, and the Contractor shall provide information including:

- Activity number
- Explanation of plan set naming and numbering system to be used
- Submittal and review meeting dates
- Description of the package, its physical location and activity limits
- Listing of engineering and any architecture disciplines used in design
- Required permits

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- Required Approvals
- Status of submittals

Multiple construction phases are anticipated given the location of the Project Limits of construction Work, as discussed in Section 17 Construction Phasing and Maintenance of Traffic. The Contractor's design submittal packages and submittal schedule shall correspond to the Contractor's proposed construction phasing as described in this Section 3. All Contractor plan submittals shall comply with the City's Transportation Engineering Plan (TEP) Submittal Requirements.

As part of the Monthly Progress Status Meeting, the City and the Contractor shall evaluate and determine the progress status of the scheduled design activities. The Contractor shall provide an updated Design Submittal and Review Schedule including a tabular listing of all design submittals sorted by activity, start date, and float to the City at each design progress meeting. The Contractor shall provide the City notice of any changes to the Design Submittal and Review Schedule. The Design Submittal and Review Schedule shall include Third Party submittals and reviews.

The Design Submittal and Review Schedule shall indicate the specific number of concurrent design review submittals the City will be required to review at any one time. A maximum of two concurrent design review submittals, per discipline, are allowed at any one time, unless otherwise Approved by the City.

Any submittals to Third Parties, other City agencies for permits, Utility design and Relocation approvals, or other miscellaneous permits shall be the sole responsibility of the Contractor. Quality of submittals and requirements for resubmittals is the responsibility of the Contractor and shall be scheduled appropriately. The Contractor shall be responsible for coordinating these submittals and adjusting the Project Schedule accordingly based on the time frame required for review and approval of all submittals for permits and construction submittals.

#### **3.4.2.2 DOCUMENT SUBMITTAL**

The Contractor shall submit all design submittals for the City review, as required in this Section 3 and as more specifically outlined in the Technical Requirements. The City will complete the design reviews within 15 Working Days, unless otherwise specified in this Section 3, Section 6 Third Party Agreements, or in any Third Party Agreement. The review period will begin the Working Day following the date of the design review submittal to the City. Design comment resolution meetings shall be held following each design submittal to discuss comments and Contractor draft responses.

#### **3.4.3 REPORTING FUNCTIONS**

The DQAM shall furnish a monthly design quality report. The design quality report shall be submitted each month as part of the Monthly Progress Report. This monthly report shall include, at a minimum:

- Summary of design quality management activities during the month
- Design quality issues and resolutions
- Process to identify, evaluate, and implement preventative solutions to improve upon any identified quality problems

#### **3.4.4 DESIGN DOCUMENTATION**

The Contractor shall maintain records of all independent checking of calculations and independent drawing checking performed and make them available at the City's request throughout the Project. These records shall be under the physical control of the DQAM in a form acceptable to the City. These completed documents shall be submitted to the City as part of each Release for Construction (RFC) Submittal.

Project plans shall be organized according to the standard City format, the TEP submittal requirements, and as outlined in this Section 3. A current electronic copy shall be provided to the City, available at all times.

### **3.4.5 DESIGN VARIANCES**

The City acknowledges certain conflicts that exist within the design as provided, that, without alternations, may require design variances to be requested by the Contractor. Specifically, non-standard features such as sidewalk widths and grades, curb heights, and curb ramp may be necessary to tie into existing conditions. It shall be the responsibility of the Contractor to evaluate the design as provided, identify design conflicts, and make appropriate alterations to the design, or request design exceptions in accordance with the City's design variance process.

The Contractor shall make all efforts in its design to eliminate the need for design variances. If the Contractor has made a reasonable effort to meet City Standards and Specifications or Technical Requirements and resolve regulatory plan review comments and a design variance is still required, the Contractor shall submit a properly documented request for a variance from the City's standards and/or regulatory requirements for the Project in writing to the City. The supporting documentation shall, at a minimum, include a citation of the applicable City Standard and Specification or Technical Requirement, reason for requested variance, other design solutions attempted to eliminate the need for a variance, and proposed variance solution.

### **3.4.6 DESIGN SUBMITTALS**

The Contractor shall submit design submittals, including Utility design submittals, in accordance with this Section 3. City comments on a submittal shall be addressed to the City's satisfaction prior to advancing future submittals. The comments and their resolution shall be recorded on the final version of a Review Comment Summary and Resolution (RCSR) form by the Contractor. These comments, and associated Contractor responses, shall be incorporated in the subsequent submittal. All design submittals shall incorporate the most up to date design and existing information. Plan submittal requirements, specifications, and other documentation shall be as required in this Section 3, unless otherwise Approved by the City. Roll plots and other information necessary to properly facilitate meetings and present the Project to the City and Stakeholders shall be provided by the Contractor. All submittals shall be through the Contractor's DCS, in accordance with the Approved PMP. All submitted PDFs shall be searchable and editable.

The Contractor may, at the Approval of the City, submit separate early construction Work packages. Early construction Work packages shall be defined as Utility Work, due diligence, supplemental survey, potholing, or as otherwise Approved by the City.

#### **3.4.6.1 INITIAL DESIGN SUBMITTAL – 30 PERCENT DESIGN REVIEW**

Within 15 Working days following issuance of NTP, the Contractor shall schedule the Project Kickoff and Information Exchange meeting described in Section 2 Project Management. Within 30 Calendar Days following the Project Kickoff and Information Exchange Meeting, the Contractor shall initiate the design Task Force meetings described in Section 2 Project Management.

After the City has determined the Project design meets the intent of the Technical Requirements, the Contractor shall submit an Initial Design Submittal (30 percent design-level) to the City. The Initial Design Submittal shall be comprehensive enough such that the City can verify that the Project can be designed and constructed in accordance with the Contract Documents. The Initial Design Submittal shall include the design for the entire 12.5 block 16<sup>th</sup> Street Mall (Mall) Project Work and shall include the Contractor's initial construction phasing approach.

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The Initial Design Submittal shall be delivered at least 15 Working Days prior to a scheduled comment resolution meeting date. The comment resolution meeting date shall be agreed upon by the Contractor and the City.

**3.4.6.2 PRELIMINARY DESIGN SUBMITTAL – 60 PERCENT DESIGN REVIEW**

The Initial Design shall be the basis of the Preliminary Design Submittal (60 percent design-level). It is the Contractor's responsibility to verify all elements of the Preliminary Design are in compliance with the Contract Documents. The Preliminary Design Submittal, and subsequent submittals, may be broken down into separate packages consistent with the Contractor's final construction phasing approach and Active Construction Zone (ACZ) sequence.

The Preliminary Design Submittal shall be submitted at least 15 Working Days prior to a scheduled comment resolution meeting date. The comment resolution meeting date shall be agreed upon by the Contractor and the City.

**3.4.6.3 FINAL DESIGN SUBMITTAL – 90 PERCENT DESIGN REVIEW**

The Contractor shall submit a Final Design Submittal (90 percent design-level) review to the City. Evidence of review by all required persons and proof that all necessary governmental and Third Party approvals have been obtained shall be attached, except for submittals which require the City Approval.

As part of the Final Design Submittal, the Contractor shall prepare the draft Operations and Maintenance Manuals required by the Technical Requirements that includes all available information regarding operations and maintenance for the designed scope. Final Operations and Maintenance Manuals shall be submitted prior to Block Substantial Completion. Manuals shall include all items required for the City to assume ownership of the Work installed by the Contractor.

The Final Design Submittal shall be submitted at least 15 Working Days prior to a scheduled comment resolution meeting date. The comment resolution meeting date shall be agreed upon by the Contractor and the City.

The Final Design Submittal and any resubmittal required shall include drawings, details, specifications, index sheets, reports, status memorandum, and supporting data to establish fully the intent of all construction Work to be accomplished. Detailed quantities for the MTIP shall be provided within 10 Working Days of a Final Design Submittal, if not included in the submittal. All Final Design Submittal materials shall be prepared under the supervision of and certified by a Professional Engineer, or Landscape Architect (as appropriate) licensed in the State of Colorado.

The Final Design Submittal shall be resubmitted at the discretion of the City should there be numerous comments that require resolution by the Contractor and reviewed by the City, prior to submission of RFC packages. The quality of the Final Design Submittal and potential schedule impacts for required resubmittals shall be the responsibility of the Contractor.

**3.4.6.4 RELEASE FOR CONSTRUCTION SUBMITTALS**

Following the incorporation of the City comments from the Final Design Submittal, the Contractor shall prepare an RFC package to the City for final review and Statement of No Objection (SONO) determination. The Contractor shall have a Professional Engineer, licensed in the State of Colorado, stamp and sign each plan sheet being requested for RFC. The RFC submittal will be responded to by the City by indicating one of the following decisions or instructions:

- Address provided open comments and revise and resubmit
- SONO

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- Conditional SONO – The conditional SONO releases a design package for construction but is conditional based off a minimal amount of open comments on the design submittal
  - As part of the terms of a Conditional SONO, the City will establish the required timeline to resolve the open comments via the NDC process

The City will complete the RFC Submittal reviews in 10 Working Days. The City will coordinate the comment resolution meeting schedule date with the Contractor. NDCs and emergency packages (one or two drawings) will be handled on a case-by-case basis. The RFC submittal shall be resubmitted at the discretion of the City should there be numerous comments that require resolution by the Contractor and reviewed by the City, prior to SONO. The quality of the RFC submittal and potential schedule impacts for required resubmittals shall be the responsibility of the Contractor.

A plan sheet index shall be developed and included with each RFC submittal package. The plan sheet index shall include the RFC drawings, provide a unique document identification number, the document title, RFC submittal date, original SONO date (if applicable), plan sheet revision date, document revision number, revision type, and all information necessary to ensure proper document control and tracking for construction quality control. The plan sheet index shall be maintained and kept up to date for the duration of the Project. Documentation of plan sheets, specifications, and other documents used for construction shall be included and updated with RFIs, NDCs, and RFRs.

Construction shall not proceed on any element of Work until the completed SONO form accompanying the RFC submittal is received from the City. The SONO will be accompanied by a City date stamped set of the RFC Submittal indicating the individual plan sheets being released for construction. Any Third Party approvals, including construction permits may be additionally required by the Contractor prior to Work being permitted and beginning. Third Party approvals shall be obtained prior to any At-Risk Work. The City's issuance of a SONO does not substantiate the adequacy or acceptability of the design or relieve the Contractor of its obligation to comply with all provisions of the Contract Documents. The signed SONO does not necessarily provide the Contractor clearance to begin construction Work. The Contractor is required to use the signed plans to obtain any necessary construction permits required before beginning field work.

#### **3.4.6.5 PROCEDURES FOR RFC SUBMITTAL AND SONO ISSUANCE**

This procedure for RFC submittal review and SONO issuance by the City is set forth specifically for any RFC submittal. It is understood that RFC submittals will progress through the review process outlined in this Section 3. Requirements for RFC submittals shall include:

- Contractor transmits RFC submittal to the City
- Contractor has responded to all comments provided by the City in the RCSR forms for the Final Design submittal
- Submittal is reviewed, and comments closed out within 10 Working Days
- If comments are not resolved, additional comment resolution meetings will be held to address the specific issues and a resubmittal may be required
- Once all comments are resolved and the RFC submittal has been revised accordingly, a SONO or Conditional SONO will be issued by the City and transmitted back to the Contractor along with the City date stamped plan set from the City and any NDC requirements for a Conditional SONO
- The City date stamped plan set for each RFC submittal needs to be provided by the Contractor as a part of any required permit applications

- The City date stamped plan set is an indication to the City permitting office that the plans have been reviewed and accepted by City design review staff
- Design changes to RFC plans following the issuance of a SONO or Conditional SONO for an RFC submittal shall follow the NDC process and will be issued a SONO independently as part of that NDC process

#### **3.4.6.6 ADA COMPLIANCE AND CERTIFICATION**

The Contractor shall construct an ADA-compliant Project. The Engineer of Record (EOR) shall certify, in conjunction with the Final Design Submittal, that the design is ADA-compliant. As a quality management tool, the Contractor shall implement independent third party reviews throughout design and construction to ensure that the Project meets ADA guidelines and requirements. A letter from the third party reviewer certifying that the Final Design Submittal complies with ADA requirements and guidelines shall be provided with the Final Design Submittal. If determined that any portion of the Mall design does not meet ADA requirements and guidelines, the Contractor shall correct the issue and re-submit plans. Subsequent review(s) shall occur during construction, where the third party reviewer shall validate and document compliance of the Mall granite paver system subbase and base slab prior to installation of the granite pavers. Final review(s) and certification documentation shall occur once the granite pavers have been placed, where the third party reviewer shall validate and document ADA compliance. If there are any portions of the Mall that are constructed and do not meet ADA guidelines and requirements, then the Contractor shall remedy non-compliant Work.

The Contractor shall complete all ADA compliance and certification procedures required by RTD including providing all RTD required ADA compliance certification documentation. See Section 6 Third Party Agreements for additional RTD requirements.

All detours and temporary pedestrian facilities shall be ADA compliant, as required in Section 17 Construction Phasing and Maintenance of Traffic.

### **3.4.7 QUALITY MANAGEMENT PROCESS FOR AT-RISK WORK**

#### **3.4.7.1 PURPOSE**

The purpose of this sub-section is to define the process for initiating At-Risk Work by the Contractor using design documents issued by the design team prior to the completion of the final RFC documents. At-Risk Work is defined as the construction of an element of Work that has not been Approved through the RFC and SONO process and is therefore the complete risk of the Contractor.

#### **3.4.7.2 RESPONSIBILITY**

The PQM shall be responsible for verifying that the Work installed At-Risk meets the requirements expected in the final RFC documents. The CQCM shall be responsible for ensuring that the Work installed At-Risk using the early design documents meets the expected requirements of the final RFC documents and Contractual Requirements. Authorization to proceed with At-Risk Work does not constitute Approval of the At-Risk Work. Any completed At-Risk Work that does not comply with the Approved RFC documents shall be corrected by the Contractor at no cost to the City.

#### **3.4.7.3 PROCEDURE**

The following procedure shall be implemented for controlling At-Risk Work initiated by the Contractor.

- The Contractor's Project Construction Manager shall identify At-Risk Work prior to commencing Work activities



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- The Contractor shall notify the Design Manager/Engineer of Record (DM/EOR), PQM, CQCM, and City of proposed At-Risk Work in writing one week prior to commencing At-Risk Work, unless otherwise Approved by the City
- The Contractor shall prepare and submit one week prior to commencing At-Risk Work a Statement of Work (SOW) for the proposed At-Risk Work for City review and Approval including the following:
  - Proposed means and methods
  - Limits of At-Risk Work inside the ACZ
  - Safety critical considerations
  - Temporary drainage considerations
  - List of design plans, technical requirements, and specifications defining the At-Risk Work
- The DM/EOR, PQM, and CQCM shall provide written approval using an At-Risk Approval Form, as developed in the QMP as part of the submittal to the City
- A pre-Work meeting shall be held for the proposed At-Risk Work once all Approvals have been obtained
- The Contractor and its subcontractors shall not perform any Work not specifically outlined in the At-Risk Work documentation
- The PQM shall coordinate Contractor redline drawings and QA/QC documentation prior to final RFC documents submittal to the City to ensure that the installed Work conforms to the DQMP requirements
- Any deviation from the Approved At-Risk Work observed shall be documented and processed in accordance with the DQMP and incorporated into the final RFC documents by the DM/EOR
- The PQM shall certify that all requirements for construction have been met

**3.4.8 NOTICE OF DESIGN CHANGE PROCESS**

Any revisions to the drawings and specifications desired by the Contractor or required due to not meeting the Technical Requirements after the RFC Plans have been City date stamped will require an NDC. These revisions may involve changes to dimensions and layout, material changes to conform to Contract Documents requirements, or to computational deficiencies that necessitate adjustments to the Work. These revisions shall be resubmitted to the City for a SONO and processed according to this Section 3. All NDCs shall include:

- Justification narrative
- Copies of pertinent correspondence
- Jurisdictional sign-off as necessary
- Any additional Third Party approvals
- Index of impacted agencies with review comments or acknowledgements
- Drawings with required Professional Engineer, or Landscape Architect (as appropriate) stamp
- Engineering calculations
- Specifications, as necessary

**3.4.9 REQUEST FOR REVISION PROCESS**

The RFR is intended to be for City requested changes to the Contract Documents that necessitates a revision to the RFC plans. This process may be followed for additional City requested scope. If the condition is

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considered a minor change by the City, and Approved by the City, the Contractor shall document the alteration in the As-Built Plans after documenting the revision through the RFI process.

If the RFR results in contractual design changes, the item shall be reviewed with the City and Approved by the City before proceeding with any Work. In no event shall the RFR process be used to change the Contract Price, any Guaranteed Dates, Completion Deadlines, or the Contract Scope of Work, unless otherwise Approved by the City.

**3.4.9.1 FIELD INVESTIGATIONS**

Concurrent with the design for an element of construction, the Contractor shall conduct field investigations to resolve design issues and to ensure that the design and subsequent design submittal(s) accurately reflect existing field conditions to ensure design criteria compliance. Contractor failure to conduct appropriate field investigations during the design phase shall not constitute a contractual claim for unforeseen conditions.

**3.4.10 DESIGN COMMENT RESOLUTION MEETINGS**

Design comment resolution meetings are intended to ensure the Contractor correctly understands each formally submitted comment for a design submittal. The Contractor shall prepare and provide to the City, prior to the comment resolution meeting, draft responses to the submitted comments for discussion. The intent is to provide efficiency to the Contractor in the design development phase with clear City direction per the Technical Requirements.

The Contractor shall provide the agendas, provide handouts, lead the meetings, record, and publish the minutes for all Project comment resolution meetings. The design comment resolution meetings are required following the Initial Design Submittal, Preliminary Design Submittal, and Final Design Submittal to review the City issued comments and provide comment resolution. City review comments will be provided to the Contractor on the City's RCSR form. The Contractor shall provide initial disposition codes and responses prior to the design comment resolution meetings. After the design comment resolution meeting the Contractor shall provide the City with one hard copy, one Excel format file, and one electronic .PDF copy of all review comments with revised responses and final disposition codes agreed to at the design comment resolution meeting. Documentation of all Project design comment resolution meetings shall be included as part of the Project closeout documentation.

**3.4.11 AS-BUILT PLANS**

As-Built Plans are required by the City to accurately document the actual as-constructed Project. As-Built Plans provide the City and future Mall businesses or tenants with information critical to understand the actual Mall construction in case any future work is required within the Mall corridor.

As-Built Plans shall be submitted with the final Project documentation included with Project closeout in both CADD and searchable .PDF format. The As-Built Plans shall be an edited version of the RFC plans – consolidated into a single plan set, incorporating all decisions and resolutions related to submitted RFIs, NDCs, RFRs, and NCRs, and any other modifications made during the construction Work. As-Built Plans shall be completed as the construction Work progresses, submitted to the City for review as each construction phase is completed, and shall be submitted as part of Project closeout prior to Final Completion.

**3.5 CONSTRUCTION QUALITY MANAGEMENT REQUIREMENTS**

The Contractor shall prepare and submit for the City Approval, a CQMP for the Work. The CQMP shall contain complete procedures for the implementation of the CQMP. The CQMP, at a minimum, shall be submitted 60 Calendar Days prior to commencement of construction. The City understands this initial

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CQMP may evolve as the final design is reviewed and Approved by the City. If so, the Contractor shall advise the City of any CQMP revisions and submit a revised CQMP for Approval as it is updated during final design review. No construction Work shall commence until the applicable sections of the CQMP have been Approved by the City by utilizing the SONO process.

The Contractor shall establish and maintain procedures for inspection and material testing to assess the quality of Work and to ensure the quality of the Work meets the minimum quality levels required by these Technical Requirements and the Contract. The procedures shall apply to all facets of materials and services procurement and construction. The procedures shall be implemented by the Contractor as CQMP procedures. The procedures shall completely describe all quality management functions and shall contain information as specified herein or required by the City.

The CQMP shall specifically address construction hold points (in consultation with the City) and add all construction hold points to the Approved Baseline Schedule.

The CQMP shall define a process to ensure appropriate resource allocation is provided by the Contractor to ensure quality control and quality assurance are maximized including actions to be taken should the City request those resources be increased due to quality issues identified at no additional cost to the City.

**3.5.1 CONSTRUCTION QUALITY ASSURANCE MANAGER**

The Contractor's organization shall employ a CQAM for the Work who reports directly to executive Project management and shall be responsible for all construction QA activities for the Project. The CQAM cannot be the same individual as the CQCM. The CQAM shall be responsible for verifying and providing confidence that the construction Work meets or will meet the contractual requirements, managing the Contractor's workmanship inspections, implementing quality planning, and overseeing QA testing, inspections, and required resources to deliver the quality program. The CQAM shall ensure design intent is consistent with completed construction, which may require additional oversight and staffing of separate individuals for those associated Project QA activities.

**3.5.2 CONSTRUCTION QUALITY CONTROL MANAGER**

The Contractor's organization shall employ a CQCM for the Work, to be assigned full time on-site during construction. The CQCM shall be responsible for verifying and providing confidence that the construction Work meets or will meet the contractual requirements, managing the Contractor's workmanship inspections, implementing quality planning, overseeing QC testing, inspections, and required resources to deliver the quality program.

**3.5.3 CONSTRUCTION QUALITY CONTROL PERSONNEL**

QC is the Project controls system used by the Contractor, subcontractors, suppliers, and vendors to monitor, assess, and adjust their production or placement processes to ensure that the final product will meet the specified level of quality. QC includes sampling, testing, inspection, and corrective actions (where required) to maintain continuous control over the production and placement process, and to fulfill the Contract Requirements. The Contractor's QC personnel shall be certified in accordance with City and industry standards. The resources allocated for QC shall be appropriate to deliver the quality program as outlined in the QMP.

**3.5.4 CONSTRUCTION QUALITY CONTROL - DOCUMENTATION****3.5.4.1 DAILY RECORDS**

The Contractor shall maintain current daily records of all QC operations performed. The Contractor shall employ a full-time on-site quality administration and document control clerk. These records shall be in a

form acceptable to the City and include a description of subcontractors and vendors working on the Project, the number of personnel working, the weather conditions encountered, any delays encountered, identification of Nonconforming Work, and corrective action taken on current and previous Nonconforming Work. These records shall include factual evidence that required QC activities including material testing and inspection that have been performed, including but not limited to the following:

- Type and number of QC tests performed
- Results of QC tests
- Inspections performed and findings
- Nonconforming Work identified
- Corrective actions taken

Such records shall address both conforming and Nonconforming Work and shall include a signed statement that all supplies and materials incorporated into the Work fully comply with all requirements of the construction documents and the Contract Requirements unless identified as Nonconforming Work. Complete, legible copies of such records shall be available in full to the City within three Working Days of the date of the daily record. Nonconforming Work shall be brought to the attention of the City upon discovery of the Nonconforming Work.

Indexed and searchable electronic .PDF files of all QC documentation shall be provided to the City as part of Project closeout.

#### **3.5.4.2 MONTHLY QUALITY REPORTS**

In addition to the daily reports required and furnished, the Contractor shall furnish a monthly summary construction quality report. The monthly summary construction quality report shall be submitted with the Monthly Progress Report. This monthly quality report shall include at a minimum:

- Summary of construction QC staff on site during the month, including current adequacy of quality staff resources
- Summary of construction QC activities during the month
- Detailed summary of all tests performed by category
- Trend analysis of QC test results
- Log of all outstanding unresolved failing tests
- Nonconforming Work status
- Construction quality problems and resolutions
- Summary of certificates of compliance
- Process to identify, evaluate, and implement preventative solutions to improve upon the identified quality problem

#### **3.5.5 MATERIALS TESTING AND INSPECTION PLAN**

The QMP will include an MTIP describing all of the proposed inspections and test procedures, including products provided by suppliers and vendors during the manufacturing, receiving, and installation process, to ensure the requirements of the Contract Documents are met. The MTIP shall identify all inspections and tests required including, at a minimum, reference to the requirements of the Contract Documents, frequency of the inspections and tests, and the Contractor-developed QA processes. Where no inspections or test standard exists in any of the City Standards or Specifications, the MTIP will develop criteria based on the best-available industry standard information and technology.

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The MTIP shall document procedures for stored items and materials consistent with the expected duration and type of storage and procedures for monitoring special processes utilized in fabrication, assembly, and testing of specified products. Special processes are those requiring qualified and certified production, inspection, and test personnel to perform highly skilled Work, such as welding, brazing, soldering, non-destructive testing, machining, coating, or plating.

The MTIP shall describe all QA inspection and test activities to be carried out, including QA hold-points, and establish authority within the Contractor's organization for releasing Work beyond the hold-point. While the Contractor shall notify the City when Work has progressed to a hold-point, it shall be the responsibility of the Contractor's CQCM to verify that all requirements have been met prior to allowing the Work to progress.

The MTIP shall include a summary of activity-specific material quantities to document that the minimum sampling, testing, and inspection requirements have been met. This summary shall be prepared monthly and submitted to the City.

The MTIP shall include processes to control, calibrate, and maintain test equipment (both field and lab equipment) to ensure equipment meets industry standards and other applicable requirements. Test equipment used by the Contractor will be of a quality and capacity that ensures that measurements made are to levels of accuracy and precision that are required by the test procedure.

The MTIP shall:

- Identify the test required and the accuracy required and select the appropriate test equipment
- Define procedures to calibrate all test equipment prior to initial use and at prescribed maintenance intervals against certified equipment and measurement standards of the National Institute of Standards and Technology, or other similarly recognized and industry accepted technical standards
  - Where no standards exist, the basis for calibration will be developed in writing based on the best-available information and technology
- Identify test equipment with a suitable indicator to show the calibration status of the test equipment
- Maintain current calibration records for test equipment
- Define procedures to ensure that environmental conditions are suitable for calibrating test equipment
- Define procedures to ensure that the handling and storage of test equipment is such that the accuracy and fitness for use is maintained
- Define procedures to safeguard test equipment, including test hardware and test software, from adjustments that would invalidate calibration settings

The Contractor shall submit a list of all equipment to be used, with calibration dates and certifications.

### **3.5.6 QUALITY CONTROL HOLD POINTS**

Hold points shall be identified jointly by the City and Contractor. Hold points shall be incorporated into the Contractor's Baseline Schedule for tracking and monitoring as required by Section 2 Project Management, and this Section 3.

### **3.5.7 NONCONFORMING WORK**

The Contractor shall include in the QMP procedures to develop and maintain a system to identify, control, remedy, and report Nonconforming Work, including Nonconforming Work identified by the City. The QMP will include procedures to identify Nonconforming Work and to withhold progress payment requests on the monthly invoice until the Nonconforming Work is remedied. The Contractor shall remedy Nonconforming Work in accordance with the QMP. The responsibility for review and disposition of Nonconforming Work will be established in the QMP. The Contractor shall identify Nonconforming Work by completing an NCR. An NCR shall include:

- Identification of Nonconforming Work, including tagging Work products
- Evaluation of the Nonconforming Work
- Recommendation for “repair” or “use as is” dispositions
- Cause of Nonconforming Work
- Proposed corrective action to prevent recurrence
- Responsibility for accomplishing corrective action
- Schedule of Work with a date of remedy completion
- Signature lines for the QC Manager and the City verifying the Nonconforming Work recommended remedy has been completed in accordance with the Approved disposition

The Contractor’s EOR shall approve the recommended remedy for the Nonconforming Work prior to its submittal to the City. The Contractor shall not perform the recommended remedy prior to its submittal to the City for review and Approval.

The Contractor shall develop and maintain a Nonconforming Work log to track and identify the status of Nonconforming Work. An updated log will be submitted to the City weekly and will be used by the Contractor to identify Nonconforming Work trends to determine if corrective actions are needed for the Quality Program. All NCRs shall be recorded by the Contractor and submitted to the City.

The Contractor shall include in the QMP procedures for controlling the use of Nonconforming Work, including the tagging of Nonconforming Work products. Nonconforming Work product tags will only be removed by the originator of the NCR or the originator’s supervisor, and only when the Contractor demonstrates to the City that the Nonconforming Work product meets the Contract requirements.

The City reserves the right to withhold payments related to the Nonconforming Work until such Nonconforming Work is corrected to the satisfaction of the City.

All NCR documentation shall be included in indexed, searchable electronic .PDF format as part of Project closeout.

### **3.5.8 CORRECTIVE AND PREVENTATIVE ACTION**

The QMP will describe corrective and preventative action procedures that the Contractor will use to identify and improve processes that produce, or may produce, systemic Nonconforming Work identified by the Contractor or by the City. The Contractor’s corrective and preventative action procedures shall include:

- Methods to investigate the cause of systemic Nonconforming Work and to determine what corrective action is needed to prevent recurrence
- Methods to analyze all processes, Work operations, quality records, service reports, and the City assessments or testing to detect and eliminate the possibility of systemic Nonconforming Work from occurring

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- Methods to prioritize corrective and preventative action efforts based on the level of risk to the quality of the Work
- Controls to ensure that effective corrective and preventative actions are taken when the need is identified
- Methods to implement and record changes in procedures resulting from corrective and preventative actions

### 3.5.9 CONSTRUCTION QUALITY ASSURANCE

The Contractor shall contract with an independent consulting firm with a permanent office within the Denver metropolitan area to provide Construction Quality Assurance (CQA). The firm providing CQA services shall be American Association of State Highway and Transportation Officials (AASHTO) accredited or equal.

The firm shall not be a subsidiary of the Contractor or any of its subcontractors. The firm shall have no principal owners who have any ownership or part ownership in the Contractor or any of its subcontractors. The CQA firm shall not perform any other functions other than those described for the CQA firm.

CQA shall apply to all portions of the Work. All portions of the Work must meet the requirements of the construction documents, the Contract Documents, and City *Minimum Frequency of Materials Sampling and Testing Standard*. Prior to Final Completion, a principal of the CQA firm, licensed as a Colorado Professional Engineer, must certify in writing that all Work meets or exceeds the requirements of the design documents and the Contract Documents.

As a minimum, CQA for all construction Work and material testing shall use the testing frequencies in accordance with City *Minimum Frequency of Materials Sampling and Testing Standard*, and in compliance with Good Industry Practice.

### 3.6 INDEPENDENT ASSURANCE TESTING AND INSPECTION OVERSIGHT

Independent Assurance Testing (IAT) and inspection oversight will be performed by the City. The CQAM shall monitor the progress of the placement of materials and inform the City about an upcoming need for an IAT consistent with the IAT schedule in the City *Minimum Frequency of Materials Sampling and Testing Standard*. The City reserves the right to perform IAT and inspection oversight at any time with or without the Contractor's knowledge. The City may deviate from the IAT schedule at any time.

### 3.7 OWNER DIRECTED TESTING

The City retains the right, but not the obligation, to direct the location and timing of additional testing to be performed at the City's expense for any testing required by the Contract Documents. This additional testing shall be recorded as Owner Directed Testing (ODT) and such testing shall be in addition of that required by the QA schedules detailed in the City *Minimum Frequency of Materials Sampling and Testing Standard*. Such additional ODT effort shall not exceed four percent of the total Project testing including the effort required by the City *Minimum Frequency of Materials Sampling and Testing Standard*. Such additional testing shall not be used by the Contractor to meet the minimum frequencies required by the CQMP or subsequent MTIPs. ODT shall be performed as soon as practical after direction by the City. ODT tests shall be included in the Contractor's quality evaluation and acceptance of the Work. If after the City request for an ODT, the Contractor performs Work which makes the ODT more difficult or expensive; removal and subsequent replacement of Work to allow for testing where directed shall be solely at the Contractor's expense.

### **3.8 PUNCH LIST WORK**

The Contractor shall develop a punch list and punch list log, as required in the Contract Documents. The punch list and punch list log will be completed by QC and QA personnel. The City will be invited by the Contractor to attend walks of the Work to include items on the Punch List. The Contractor punch list and punch list log shall be provided to the City.

All punch list documentation including item, required action, and resolution shall be included in indexed, searchable electronic .PDF format as part of closeout.

### **3.9 CLOSEOUT**

As part of the Contractor's request for Block Substantial Completion and Project Substantial Completion, the Contractor shall submit its Closeout Plan. The Closeout Plan shall include the Contractor's proposed process for closeout, necessary closeout documentation, key activities and dates, and other information required to process the Contractor's Block Substantial Completion request. A Block Substantial Completion request will not be accepted until a Closeout Plan has been Approved by the City.

Closeout documentation shall include items required in the Contract Documents. Final Completion will not be issued until all required closeout documents are received and verified by the City. All closeout materials shall be in CADD format files as directed by the City and electronic indexed and searchable .PDF format files. Hard copy documents shall not be submitted, unless hard copy duplicates of specific items are requested by the City.

Items to be incorporated into closeout documentation shall include, but are not limited to the following:

- Final As-Built drawings
- Final design calculations and back up materials
- Copies of all RFIs submitted and resolution
- Copies of all NDCs encountered and their resolution
- Copies of all QC and QA reports
- Any materials the Contractor determines to be useful to the City
- Copies of all business and resident contact and resolution documentation required by Section 4 Public Information
- Resolution of all open change requests

### **3.10 DISCLAIMER**

No review, implied acceptance or implied Approval, or SONO by the City, of any report or document or other aspects of Contractor's acts or omissions with respect to the quality of the construction Work shall relieve the Contractor of its obligations to complete the Work in accordance with all requirements of the Contract or its obligations of Warranty.



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**3.11 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 3-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Quality Management Plans (QMP) for Design (DQMP) and Construction (CQMP)	Approval	For DQMP, 30 Calendar Days following issuance of NTP For CQMP, 60 Calendar Days prior to commencement of construction Work
Design Submittal and Review Schedule	Approval	30 Calendar Days following issuance of NTP
Material Testing and Inspection Plans (MTIP)	Approval	Submitted with CQMP
Monthly Design Quality Report	Approval	Monthly
Monthly Construction Quality Report	Approval	Monthly
Nonconforming Work log	Approval	Weekly
Documentation of independent checking of calculations and drawings	Approval	Concurrent with all design submittals
Third Party ADA compliance certification	Information	As outlined in this Section 3
RTD ADA compliance certification for design	Approval	Concurrent with the Final Design Submittal
Design Variances	Approval	Prior to issuance of RFC Documents
Closeout Plan	Approval	30 Calendar Days prior to the request for Block and Project Substantial Completion
Closeout Documentation	Approval	Prior to Final Completion

## **4.0 PUBLIC INFORMATION**

### **4.1 GOALS**

The goals of this Section 4 are:

- Provide timely, consistent, relevant information about the Project from start to finish
- Develop a comprehensive strategic Public Involvement Plan (PIP) for Project design and construction Work that utilizes both innovative and traditional methods to create an informative and engaging atmosphere on the 16<sup>th</sup> Street Mall (Mall) during construction, increase awareness of the Project benefits and impacts, and build excitement for completion
- Manage expectations through utilization of a strong communications approach

### **4.2 PUBLIC INFORMATION OFFICER**

The Contractor shall identify a qualified Public Information Officer (PIO) for the Project, who will be a Key Personnel engaged in the community to provide accurate and timely information on Project issues to the City and County of Denver (City), Partners, key Stakeholders, and the public. The PIO shall be fully accessible during Work hours on weekdays and weekends for activities associated with public information for the duration of the Project as it applies to both design and construction Work. The PIO, or City Approved representative, shall also be accessible outside of these hours for special circumstances including public information meetings or presentations, events as described in this Section 4, or other related design and construction Work activities. The PIO shall adhere to protocols established by the City and shall respond quickly, if circumstances warrant, especially during crisis communications such as a public safety issue, emergencies, unintended or unanticipated disruption to businesses or Mall users or the construction Work, a pressing media demand, or other important time-sensitive matters. The PIO shall be responsible throughout the duration of the Project for Working with the City to ensure Mall users, property owners, businesses, nonprofit groups, Partners, and other Stakeholders are informed about and have be the single point of contact for the Project. The PIO shall be responsible for ensuring communications meetings, collateral, responses, and other efforts are consistent, in alignment with the City's strategic marketing plan, branding, and requirements of this Section 4.

The Contractor shall be responsible for all public information required for the Work unless otherwise directed by the City.

### **4.3 PUBLIC INFORMATION PLAN**

The Contractor shall prepare, maintain, and implement a PIP, in coordination with the City, to communicate information to and engage with the public. The PIP shall include an approach to establish and enhance effective working partnerships with the City, Partners, key Stakeholders, and the Contractor. The PIP shall identify target audiences and utilize diverse communications and community outreach tools to reach these specified audiences including Mall users, property owners, business owners and tenants, Mall residents, advocates, City Council and other key Stakeholders. The PIP shall identify the communication approach, innovations, timing/sequence of the communication tools, the anticipated frequency of use of these tools, and their coverage/extent including quantity of all audiences. The PIP shall be submitted to the City for Approval within 60 Calendar Days following issuance of Notice to Proceed (NTP).

The PIP shall include, at a minimum, the following:

- Demonstration of an understanding of the Project, its target audiences and its purpose and community benefits

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- Incorporation of and approach to public and Mall Champions Group (MCG) meetings
  - A clear, timely, relevant communications timeline and approach to communicating the Project construction Work, overall progress and schedule, milestones and activities, and how public information will unfold over the duration of the Work
  - An organization chart of the Contractor's communications staff including contact information, roles and responsibilities between the Contractor, City, and Partners
  - If not provided in the Statement of Qualifications or Proposal, communication staff resumes shall be included in the PIP
  - Anticipated staff availability, including list of days and hours of availability for each communications staff member
  - Contact information that shall include, at a minimum, the name, title, phone number(s), and email address for each communications staff member
  - Approach to maintaining good relationships between the Project and government, Partners, Stakeholders, property owners, business, residents, and the public
  - Approach to design coordination with adjacent development
  - The Project approach to communication strategies and tactics for mobilizing an Active Construction Zone (ACZ)
  - All communications required to implement and communicate the Traffic Management Plan (TMP), as described in Section 17 Construction Phasing and Maintenance of Traffic, including an approach to communication of impacts to vehicular, transit operations, pedestrian, accessible mobility, and bicycle facilities, as well as access to businesses and residences
  - Approach to communications to the public and Mall residents regarding Special Events and Marquee Special Events, as defined in Section 17 Construction Phasing and Maintenance of Traffic
  - Approach to communication of high noise construction Work activities that may impact adjacent properties
  - Approach to communication of construction Work creating any vibration activities that may impact adjacent properties
  - Approach to Project identification and signage
  - Approach to bi-lingual communication
  - Approach to communications with individuals living with disabilities, including specific efforts to communicate with blind and low vision individuals
  - Approach to educating target audiences on the Project, its benefits, timeline, Work impacts, and a detailed listing of the approach and communication tools/contacts to be used
  - Approach to communication of Public Life elements and associated design development and material selection, particularly those elements within the amenity zone
  - Approach to specialized communications to residents, businesses, and other institutions immediately adjacent to the Project Limits
  - Incorporation of a Crisis Communication Plan (CCP) to address emergencies, outlining responsibilities and protocols as required in this Section 4

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- Approach to digital communications including online, mobile device, and text messaging to ensure easy and accurate 24/7 access to Project information
- Media support approach, including assistance to the City with media relations, as requested
- Identification of key performance indicators and regular reporting on measurement of the PIP progress
- Stakeholder coordination, including initial and ongoing coordination meetings with the City
- Approach to data collection and management, as required in this Section 4
- Approach to accommodating the requirements of this Section 4 to address specific audience needs shall be included in the PIP
- Public information collateral, such as Mall kiosks, IKE signs, Project website, informational flyers at businesses and other public locations, potential one-on-one meetings, email blasts, phone hotline updates, and other digital and printed communication tools shall be included in the PIP and shall be delivered compliant with Americans with Disabilities Act (ADA) requirements, at a minimum
- Approach to the provision of renderings and graphical displays to support public information and outreach activities, including meetings, construction fencing, media, and other public information collateral in a way that reaches all audiences, including the ADA community
- Approach to maintaining communications data and the provision of that data in the Monthly Progress Reports required in Section 2 Project Management
- Approach to delivery of all digital, printed, and specialty collateral pieces

The Contractor shall monitor and improve the effectiveness of the PIP and will schedule and hold quarterly PIP review meetings with the City to review, assess, and/or modify the PIP, as required for the first year following NTP. After the first year, these meetings shall be held semi-annually after the final PIP is Approved by the City. If changes are required as a result of the review meetings, the Contractor shall submit the revised PIP to the City for Approval within 10 Working Days of the review meeting.

#### **4.4 COMMUNICATIONS MEETINGS**

##### **4.4.1 GENERAL**

Design of the Mall is important to the community and providing public design information is critical to the Project success. To date, the City has spent considerable time and resources on public outreach and engagement, including design input from all Stakeholders to assist with the design criteria in these Contract Documents. Additional materials, including public input documentation developed during the environmental process are provided on the Project website.

The Contractor shall be responsible for all public information and outreach meetings for the Project. Meetings shall be coordinated with design and construction schedules to make the meetings effective and timely for attendees. Meeting schedules and content shall be coordinated with City's overall Project communications strategy. The PIO shall attend all Mall Communications Team (CT), Mall Champions Group (MCG), and public open house meetings.

The City has spent considerable time and energy working with various Partners and Stakeholders, including RTD, Federal Transit Administration (FTA), DDP, regulatory consulting parties, property owners, business owners and tenants, Mall users, and the public to determine the direction and requirements of this Project, especially as it relates to preserving the Mall's historic design and character. The Contractor shall maintain

good relationships with Stakeholders and shall be responsive to concerns about the Project approach, design, and Project impacts while balancing Project schedule considerations.

Meetings shall provide a forum where adjacent businesses, Mall users, and other Stakeholders are heard and receive a high-level of responsiveness by the Contractor.

#### **4.4.2 MALL COMMUNICATIONS TEAM**

The Contractor's communications team shall participate in ongoing community engagement and communications efforts in coordination with the City, Partners, and Stakeholders. The City established a CT comprised of representatives from the City, Regional Transportation District (RTD), Denver Urban Renewal Authority (DURA) and the Downtown Denver Partnership (DDP). The PIO will participate in, lead and/or facilitate CT meetings, providing regular, timely, relevant updates during design and construction phases. As part of the City's strategic marketing plan, the City will lead all marketing outreach, community engagement, legislative outreach, and overall communications strategy for the Project. The PIO and Contractor's communications team shall support the City's overall communications strategy and coordinate all Project communications to be in alignment with the City's overall communications strategy. The PIO will coordinate with the CT for communications with the media, public, City, RTD, DDP, Denver Downtown Business Improvement District (BID), property and business owners and tenants, Partners, and other identified Stakeholders.

#### **4.4.3 MALL CHAMPIONS GROUP**

The City and its Partners have established the MCG to be "champions" for the Project by promoting engagement opportunities to various constituencies; advising on key elements of the Project; and representing various organizations' or communities' points of view. The MCG is comprised of residents, property owners, tenants, business owners, advocates, City Council representatives and other key Stakeholders. To date, the MCG has worked with the City and its Partners to discuss Project information and the design criteria contained in these Technical Requirements. The Contractor shall continue meetings with the MCG, as leader and facilitator, upon Notice to Proceed (NTP) as indicated in this Section 4.

The Contractor shall be required to conduct quarterly meetings with the MCG. The first meeting shall be conducted within 90 Calendar Days of NTP to introduce the design/build team and the initial design resulting from the Initial Design Submittal. Meetings shall be conducted after key design submittals, at key milestones, Completion Deadlines, ACZ requests, and other key dates. The scheduling of the meetings shall be at the Approval of the City.

The Contractor shall present the design status, follow up information from previous MCG action items, any changes from the last design update and the status of the timing, duration, and sequencing of construction Work. At MCG meetings during construction Work, the Contractor shall solicit input from all attending MCG members on the construction impacts and associated mitigations. All MCG items will be made available in ADA compliant format at least 24 hours prior to the meeting for those with special needs. Additionally, all meeting invitations and notices shall offer ADA and language accommodations.

#### **4.4.4 OPEN HOUSES**

The Contractor shall conduct three public open houses during the design phase. The first public open house shall be conducted within 30 Calendar Days of the first MCG meeting to introduce the design/build team and Initial Design Submittal to the community. Subsequent open houses shall occur after the Preliminary Design Submittal and the Final Design Submittal.

After major design efforts are complete, the Contractor shall conduct annual public open houses. The meetings shall be scheduled with the Approval of the City.

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### 16<sup>th</sup> Street Mall Design-Build Project Section 4 Public Information

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The Contractor shall present similar information as that presented at the MCG, with a view towards the wider audience. The Contractor shall utilize innovative methods to advertise the meeting, present the content, maintain interest, and engage Mall users and Stakeholders. Materials, at the open house, shall be ADA compliant with a specific focus on communicating with blind and low vision individuals and, as required in this Section 4, and shall be presented in English and Spanish with translation services provided.

The Contractor shall coordinate with the City to develop a contact, mailing, and email list of all business owners, tenants, and Stakeholders to be notified and invited. The dissemination of the invitation shall be done by the Contractor through multiple means including Partner assets, digital channels, local media, paid advertisements, email, inserts in local media, door-to-door flyers, and mailers.

The Contractor shall manage and implement door-to-door flyer distribution and mailings for all public open house meetings during the duration of the design and construction Work. These contacts shall be conducted within the area bounded by 15<sup>th</sup> and 17<sup>th</sup> Streets and two blocks either side along the Mall of the activity or directly affected properties. The Contractor shall include door-to-door distribution and mailings, as necessary, for multi-story and high rise buildings.

During design, whether part of an open house or separate meeting(s), the Contractor shall develop a mock-up of the granite pavement surface to educate and inform blind and low vision individuals on the design. The mock-up shall be of sufficient size to permit users to experience the tactile surfaces, edge delineation, and surface friction.

#### **4.4.5 MATERIAL PREPARATION FOR MEETINGS**

Run of show, agendas, and content for meetings shall be submitted to the City for Approval 15 Working Days prior to the scheduled meeting date. CT, MCG, and public open house meetings shall be held along or adjacent the Mall, unless otherwise Approved by the City.

The Contractor shall provide the City announcements for the meetings no less than 45 Calendar Days in advance of the scheduled meeting date.

Project displays and other presentation materials used at meetings shall be of professional quality and design to clearly convey accurate Project information to a non-technical audience. Materials shall include Project renderings, photographs, and other display information. MCG and public open house meetings shall meet ADA requirements for access, including blind, low vision, deaf or hard of hearing.

#### **4.4.6 ADDITIONAL MEETINGS**

Meetings, other than those listed in this Section 4, may be required at the request of Partners, Stakeholders, neighborhood organizations, nonprofit groups, business associations, special interest groups such as the disabled community, historical community, property owners, City Council updates, and City management updates. The Contractor shall be available to reasonably accommodate these requests.

### **4.5 PUBLIC INFORMATION UPDATES DURING CONSTRUCTION**

#### **4.5.1 GENERAL**

The Contractor shall provide clear, consistent, and timely information to help the public, Mall users, businesses, tenants and other Stakeholders navigate the Project, and understand how the infrastructure upgrades will create a safe, welcoming space for all. The Contractor shall disseminate information to the public, unless the Contractor is specifically directed not to do so by the City. During construction, the Contractor shall provide weekly updates to the City. Update information includes access, closures, route changes, Work progress, service changes, and other pertinent information for Mall users and Stakeholders. Such weekly updates may be utilized for the Project website, social media, and coordination efforts.

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Communications collateral and materials including newsletters, illustrations, flyers, and public facing schedules, shall be updated at key milestones, ACZ requests, Completion Deadlines, major detour updates (pedestrian, bicycle, vehicular, or transit) or when substantive changes occur to the sequencing of the Work. Updates shall illustrate the Project's progress, and timely, consistent information regarding impacts of the Work. The Contractor shall also prepare answers to questions regarding to Work sequencing and schedules.

Stakeholders shall be provided information about the design progress, construction schedule, Mall construction phasing, potential Utility and access modifications or disruptions, transit operational impacts, cross street and alley way closures and detours due to construction Work, noise and dust mitigation efforts, vibration causing Work, and construction Work hours. Likewise, commercial vehicle operators shall be notified if construction Work activities will restrict or prevent commercial vehicles from using cross streets and alley ways for business deliveries and shall be shown how their access is affected by construction Work. Emergency response providers shall be notified and coordinated with if designated routes for emergency vehicles are altered or affected by construction. All Stakeholders will require reliable, accurate, accessible, and timely information on when and where construction Work is taking place.

The Contractor shall utilize creative ways to advertise the Project within the ACZ, including the use of construction fencing, temporary walkways, signage, and other means as identified by the Contractor.

#### 4.5.2 ACTIVE CONSTRUCTION ZONE REQUESTS

As part of the Approval process prior to mobilizing in an ACZ, the Contractor shall be responsible for the following activities, at a minimum. The PIP, Traffic Management Plan (TMP) and Construction Quality Management Plan (CQMP) shall provide additional details for requirements and protocols for requesting an ACZ. Activities listed below shall be completed prior to requesting an ACZ, and shall include at a minimum:

- Notifications associated with those construction impacts for all required Method for Handling Traffic Plans (MHTs), detours, and access plans for businesses and residents shall be issued
- Social media, website, and other media updates to describe the impacts of the requested ACZ on Stakeholders shall be submitted to the City
- Affected Utility Owners shall have received coordination and notification
- Affected users from Utility service changes shall be notified
- All transit operational impacts shall be determined, coordinated, and communicated to RTD, DDP, businesses, RTD patrons, and the public
- Communication with the CT, MCG, and DDP on construction Work impacts and the associated schedule for any individual block ACZ request
  - Communication of impacts, schedule, and summary of construction Work activities shall be for a non-technical audience
- Documented face to face notifications for each business or entity within the requested ACZ
- Updates, submitted to DDP, for IKE sign notifications along the Mall outside of the ACZ

The Contractor shall, at the request of the City, be available to participate in all media, business and government official tours of the construction areas. The Contractor shall participate in the coordination and delivery of communication events such as groundbreaking or grand opening events.

See Section 17 Construction Phasing and Maintenance of Traffic for additional requirements.

**4.5.3 SUPPORT OF THE CITY'S STRATEGIC MARKETING PLAN**

The City will develop a strategic marketing plan to identify and promote the Mall reconstruction and renovation. The strategic marketing plan is intended to work with Partners and key Stakeholders to continue activation of the Mall during construction and to provide consistent, innovative marketing in the downtown area. Marketing efforts will include planning and implementation of Special Events and Marquee Special Events on the Mall both during and following construction Work. A current list of potential annual Special Events is included as Reference Document RD-04-01.

To inform Mall users of the opportunities during construction for shopping, dining, and entertainment on the Mall, the Contractor's communications team shall coordinate with and support the Mall marketing plan and efforts and shall accommodate existing Special Events. Additionally, pop-up events will be planned. The PIO shall participate in the planning of these pop-up events and provide information regarding the construction Work activities to sustain and enhance the events.

**4.5.4 DEVELOP AND COORDINATE PROJECT DATA**

The Contractor shall prepare a monthly communications report, as part of the Monthly Progress Report required in Section 2 Project Management, during the construction phase providing Project Schedule information, Work progress, traffic impacts, business accessibility, a detailed summary of activities performed during the preceding quarter, press inquiries, Project tours, and updated FAQs.

The Contractor shall collect and provide construction information to the City and CT for use on City digital assets such as social media and the Project website, and for other uses.

The Contractor shall include, as part of its data collection activities that will arise during the Project, detours, cross street and alley ways closures, Mall transit way closures, dust mitigation, and other maintenance work.

In all events, the Contractor shall be responsible for the accuracy and reliability of the information it forwards to the City as soon as it becomes available.

The Contractor shall track changes, including changes to short-term construction-related closures, unexpected construction Work activities, emergency closures, and scheduled construction Work activities, and report on all changes as quickly as possible. The Contractor shall update the construction Work information and make the information available to the City for its use. The Contractor shall update the Project telephone hotline and provide information to the City immediately to update the website and media outlets, as required in Section 4.

In addition to the photography and videography requirements of Section 2 Project Management, the Contractor shall take and submit photos and videos of the Work at regular intervals. Photos and videos may be included for use in reports, the City's digital channels, flyers, media releases, and other marketing materials. Photos and videos shall be of professional quality at a frequency necessary to support the ongoing communication efforts of the Project and shall be submitted to the City for Approval.

The Contractor shall maintain basic information, contact names, and phone numbers for other construction projects that may impact traffic conditions on the Project. To support media relations the Contractor shall provide information to the City, upon request, to be used in updates on the design, Mall construction phasing, Mall transit way construction impacts, traffic advisories, or other media notices. The Contractor shall provide media releases to the City two Calendar Days in advance of the release.



#### **4.6 PARTNERS AND STAKEHOLDERS**

The City has developed the Project with the following Partners:

- Regional Transportation District (RTD)
- Downtown Denver Partnership (DDP)
- Federal Transit Authority (FTA)
- Denver Urban Renewal Authority (DURA)
- Denver Regional Council of Governments (DRCOG)

The City has identified Stakeholders, some listed below, as audiences requiring coordinated Project information and frequent communication by the City and the Contractor. Identified Stakeholders, other than the City, include, but are not limited to:

- Denver Business Improvement District (BID)
- Mall Champions Group (MCG)
- Mall residents
- Mall businesses and tenants
- Mall users
- Property owners and property management companies
- Neighborhood Groups
- Historical Consulting Parties
- Denver Police Department (DPD)
- Emergency responders
- Utility Owners
- Commuters
- Nonprofits
- Special Interest Groups including ADA, individuals with mobility restrictions, and unhoused people
- Visit Denver

#### **4.7 CRISIS COMMUNICATION PLAN**

The Contractor shall develop and maintain an Approved CCP which shall be used to address unanticipated disruption of Utilities, damage to property, flooding, environmental concerns, an accident or collision between equipment or material and the public, construction employee injuries, incidents, or other emergencies or related events.

In the event of a crisis, the City will designate a lead for communications with the media, public, City Council, City staff, or other information outlets. The Contractor shall be readily available to help coordinate with the City and provide necessary information in a timely manner to respond to the crisis. These procedures and protocols shall be documented in the CCP. The Contractor shall coordinate this approach with the Contractor's overall Incident Management Plan (IMP), Project Management Plan (PMP), and other items in the PIP.

As part of the CCP, the Contractor shall establish and manage an emergency response phone and email contact list. All appropriate personnel shall be included on this list for immediate response in the event of an emergency, including emergency service providers. The list shall be divided into areas of expertise, so the appropriate individuals are called for specific emergency situations. As part of the CCP, the Contractor shall submit an Emergency Response Contact Plan (ERCP), which includes the emergency response telephone list. This list shall be distributed to all supervisory personnel with active crews on the Project and the City. The Contractor shall keep this list complete, accurate, accessible, and current. Any changes to the

list shall be immediately redistributed. No construction Work shall commence until the CCP has been Approved by the City.

#### **4.8 PUBLIC CONTACT TRACKING**

The Contractor shall track all public contacts made from residents, businesses, government offices, or other entities. At a minimum, this shall include and document as available the names, organizations, addresses, email addresses, and phone numbers, as well as the questions, comments, concerns, date of contact, and the response provided, date provided and individual that provided it. A public contact log detailing public contacts shall be submitted to the City as part of the monthly communications update.

#### **4.9 PROJECT IDENTIFICATION AND SIGNAGE**

Clear communication with the public is critical when wayfinding through a construction zone and providing the required access to businesses and residents. Public information and warning signage shall be maintained throughout the duration of the Project to reduce confusion and ensure safety. The Contractor shall describe its approach to implementing variable message signs, if necessary, and static signage to notify users of cross street impacts and closures, alley way impacts and closures, Mall transit way closures, transit operations impacts, and lane shifts, along with durations of these construction phasing measures. All signage shall be coordinated and comply with the requirements outlined in Section 17 Construction Phasing and Maintenance of Traffic and City Standards and Specifications. Signage shall be maintained to a clean, well maintained, and acceptable appearance and updated as required by the City throughout the Project duration. Project identification signs shall include Project name; start and estimated completion dates; and the Contractor's name and Project public information hotline number, email address, and/or website.

Project signage shall identify that the Mall is "open for business" through effective wayfinding due to detours, closures, and other construction Work activities. Signage shall be coordinated with the City and DDP.

#### **4.10 WEBSITE INFORMATION**

The City will host the Project's public website on the City server. The Contractor shall submit for Approval, all website content throughout the duration of the Project. Website content shall include, at a minimum, public meeting information and materials; final design information and/or renderings and drawings; construction information including lane closures, access restrictions, and duration of impacts; calendar of Special Events; public meetings or Completion Deadlines; and other relevant information. Website content updates shall be, as defined in this Section 4, and at major milestones and whenever the construction Work activities impact the public including lane closures, driveway access impacts, and major traffic impacts, or as requested by the City. All content shall be provided in ADA compliant formats.

#### **4.11 TELEPHONE HOTLINE**

The Contractor shall provide a public telephone hotline for the Project, the number of which shall appear on custom signs as well as all other written communication material distributed to the public. The telephone hotline shall be available in both English and Spanish and shall be answered by a person with direct knowledge of the Project or by an answering service with current Project information. The telephone hotline shall be available to the public 24 hours a day, seven days a week. An immediate response is preferable during normal business hours. Voicemail answering is permissible after normal business hours. All other calls shall be returned by the Contractor within 24 hours, including weekends and Holidays. The telephone hotline shall be ADA-accessible and shall include options for text telephone. A written record of the calls and status of providing information to the caller shall be documented and made available to the City monthly or upon request. The telephone hotline shall be operational no later than 60 Calendar Days

following NTP and shall be updated each week, or each day if necessary, with relevant impacts, completion dates and forthcoming activities during construction.

#### **4.12 EMAIL COMMUNICATION AND SOCIAL MEDIA**

Throughout the Project, the Contractor shall prepare and distribute a newsletter monthly or at key milestones, email blasts, text alerts/updates which provide current information about the Project Work, construction impacts such as closures and traffic shifts, and duration of the construction Work. The Contractor shall submit newsletter and other relevant content to the City for Acceptance prior to dissemination. Concurrent with email communication, the Contractor shall develop and provide to the City, content for dissemination through social media. The Contractor shall coordinate with the City to develop the initial email list. The messages shall be accurate, informative, and provide at least five Working Days advance notice of major traffic changes such as changes to an ACZ, lane closures, lane reductions, traffic shifts, pedestrian movements, and business access. The Contractor shall maintain the email list, and shall provide a copy quarterly, or upon request, to the City.

#### **4.13 EVENTS**

The City may opt to hold a Project/block groundbreaking, Project/block completion event, and other Project milestone events. The City will provide oversight of planning event details, speakers, and media releases. If such an event is held, the Contractor shall support the City, complete assigned tasks, be present, and prepare the Project site accordingly.

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**4.14 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 4-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Public Information Plan (PIP)	Approval	60 Calendar Days following issuance of NTP
Crisis Communications Plan (CCP)	Approval	Concurrent with the PIP
Website updates	Approval	As needed and upon request
Public Contact Tracking Log	Information	As part of the monthly communications update
Draft public notices and communications, newsletters, email blasts, and/or media responses	Approval	As scheduled or upon request
Mall Champions Group (MCG) and Open House meeting announcements	Approval	45 Calendar Days prior to scheduled meeting
Communications Team (CT), Mall Champions Group (MCG), and Open House meeting content	Approval	15 Working Days prior to scheduled meeting
Telephone hotline	Approval	60 Calendar Days following issuance of NTP
Telephone hotline records	Information	Monthly and upon request
Media Releases	Approval	As needed, two Calendar Days prior to release
Newsletters	Approval	As needed, five Working Days prior to the scheduled distribution date
Flyers, posters, or other public material	Approval	As needed, five Working Days prior to the scheduled distribution date
Photos and videos	Approval	As needed to support communications efforts, meetings, and collateral

## **5.0 ENVIRONMENTAL REQUIREMENTS**

### **5.1 GOALS**

The goals of this Section 5 are to:

- Minimize the risk of environmental impacts to the 16<sup>th</sup> Street Mall (Mall), users, and adjacent businesses/residents through best management construction practices
- Fulfill environmental mitigation commitments specified in the Environmental Assessment (EA), Finding of No Significant Impact (FONSI) and associated Programmatic Agreement (PA)
- Design and construct a sustainable Project to enhance the environmental, economic, and social quality of life on the Mall
- Conduct Work in compliance with Federal, State, and Local requirements

### **5.2 GENERAL REQUIREMENTS**

The City and County of Denver's (City's) environmental goals include minimizing negative impacts on the environment, protecting public health and environment, and complying with all requirements of all applicable environmental laws and regulations. The Contractor shall comply with the City's Environmental Policy, including all applicable environmental laws and regulations issued thereunder, whether a permit is obtained by the City or the Contractor. The Contractor shall prepare an Environmental Compliance Work Plan (ECWP) for the Project based on the requirements specified in this Section 5 specifically identifying all environmental compliance requirements, including the Contractor's approach, record keeping, and schedule for complying with those requirements. All post-construction monitoring requirements shall be identified.

At a minimum, the ECWP shall include or describe:

- Roles, responsibilities, and communication protocol
- Strategies for implementation and oversight of the Approved Materials Management Plan (MMP)
- Training and experience requirements
- All permits and approvals required to complete the Work and which the Contractor shall obtain
- Procedures, protocols, and schedule for achieving environmental compliance, including Contractor design reviews, and compliance with Applicable Law
- Tracking documents for all environmental-related elements
- Detailed approach for a compliance protocol of all National Environmental Policy Act (NEPA) mitigations, including coordination with RTD to facilitate reporting to FTA, as documented in the EA, FONSI, and PA
- Detailed approach for sustainability strategy and tactics material reuse, energy consumption reduction, other commitments to maintain a sustainable Project, and a monitoring plan to track sustainability performance throughout design and construction Work

The ECWP shall be submitted to the City for Approval no less than 60 Calendar Days prior to commencement of any construction Work.

The Contractor shall employ and utilize an Environmental Compliance Manager (ECM), and Erosion Control Supervisor (ECS). It is acceptable for the ECM to serve as the ECS. The ECM shall lead a field

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review with the City to discuss environmental issues at a minimum every month and will notify the City within 24 hours of environmental findings other than those encountered during the environmental investigation (Section 5.5) during active construction periods and shall have the authority to stop construction Work if activities jeopardize environmental laws, policy, or human health and safety. The ECWP shall be reviewed and updated and monthly, as necessary, to document any pertinent discussions that occur during the environmental field reviews or completion of environmental requirements. Any monthly updates shall be included in the Monthly Progress Report, as required in Section 2 Project Management.

### **5.3 NEPA REQUIREMENTS**

The Contractor shall comply with all environmental mitigation requirements included in the FONSI and PA and shall specifically implement and comply with all the NHPA Section 106 consultation review requirements stipulated in the PA, Section 2 Project Management, and Section 3 Quality Management.

The Contractor shall provide an Environmental Mitigation Table and Tracking Summary to the City for compliance with all NEPA mitigations, as documented in the EA, FONSI, and PA. The document shall be updated monthly as part of the Monthly Progress Report, as required in Section 2 Project Management. The Project EA, FONSI and Appendices, and FONSI Errata Sheet documents are included as Reference Documents RD-05-01, RD-05-02, and RD-05-03, respectively.

Modifications to the EA, FONSI, and PA will require re-evaluation of the impacts and amendments. The Contractor is solely responsible for completing these re-evaluations and securing any required approvals for the proposed modifications with no additional Project cost or impact to the Project Schedule.

### **5.4 ENVIRONMENTAL RESOURCES REQUIREMENTS**

#### **5.4.1 NOISE**

The Contractor shall develop and submit to the City a Noise Control Plan (NCP) that outlines allowable daytime and nighttime construction, Project noise levels, and locations and types of noise abatement measures required to meet specific noise limits for the associated construction Work. The NCP shall comply with City Standards and Specifications, specifically *Denver Revised Municipal Code* Chapter 36 Noise.

Normal construction hours (in reference to construction noise) in the City are defined as between 7:00 a.m. and 9:00 p.m. Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturday and Sunday. If construction Work will be completed outside of these hours, the Contractor shall secure the necessary construction noise variances from the City prior to commencement of construction Work or shall perform activities under the allowed noise thresholds.

Work immediately adjacent to residents and hotels shall be between 8:00 a.m. to 5:00 p.m., seven days per week.

#### **5.4.2 VEGETATION AND TREES**

The Contractor's activities related to removal of any existing Mall landscape materials shall comply with the requirements of Section 12 Earthwork and Removals and Section 18 Landscape.

#### **5.4.3 AIR QUALITY**

The Contractor shall submit an Air Pollution Emission Notice (APEN) to the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD). The Contractor shall obtain and comply with all air quality permits, which may include but are not limited to a Land Development Air Pollutant Emission Notice (APEN) and Application for Construction Permit.

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The Contractor shall prepare a Fugitive Dust Control Plan which is a required part of the APEN application and implement a Construction Air Quality Plan which outlines how various Best Management Practices (BMPs) will be utilized and monitored throughout the construction Work. The Construction Air Quality Plan shall cover all construction Work activities. The Contractor shall minimize dust and emissions to the extent practicable and prevent visible fugitive dust from leaving the site. The plans will be a tool to control activity and deploy BMPs consistent with, but not limited to, the following:

- Require construction vehicle engines to be properly tuned and maintained
- Use water or wetting agents to control dust
- Use sweepers to remove dirt tracked onto the Mall, alley ways, and cross streets
- Use a binding agent for long-term excavated materials
- Have a wheel wash station and/or crushed stone apron (tracking pad) at egress/ingress areas to prevent dirt being tracked onto public roads, alley ways, and cross streets

The Contractor shall minimize excessive idling of inactive equipment or vehicles. If construction equipment is creating excessive air quality emissions that have a potential to affect air quality for operators or persons working and living in the area, equipment will be taken out of operation until fixed, repaired, or replaced. The Contractor also shall locate stationary emissions equipment with consideration of public health and environment and minimize excessive idling of inactive equipment or vehicles.

As part of the Construction Air Quality Plan, the Contractor shall provide an approach to minimize dust and address reasonable concerns of businesses and neighbors, above and beyond regulatory requirements for Work performed immediately adjacent to business and residential properties. This approach shall be specific to each block along the corridor. The Contractor shall provide an approach to monitoring air quality during construction, including an action plan for corrective action required to mitigate air quality concerns during construction.

**5.4.4 WATER QUALITY**

A Stormwater Management Plan (SWMP) shall be prepared during the design phase, as per CDPHE-Water Quality Control Division (WQCD) guidelines. Permits may include the Master General Permit for Stormwater Discharges Associated with Construction Activities (COR400000) and the City's Construction Activity Stormwater Discharge Permit (CASDP). The Contractor shall be responsible for adhering to the City's Municipal Separate Storm Sewer System (MS4) permit #COS-000001. Refer to Section 13 Drainage and Water Quality for additional requirements.

**5.4.5 PROTECTION OF BIRDS**

The Contractor shall comply with the Technical Specifications and Section 240 Protection of Migratory Birds Biological Work Performed by the Contractor's biologist.

Trees shall be removed outside of nesting season dates of April 1 to August 31 per the Migratory Bird Treaty Act (MBTA). If tree and shrub removal or trimming will occur between April 1 and August 31, a survey for active nests shall be conducted by a wildlife biologist within the seven days immediately prior to the beginning of construction Work in each area of tree and shrub removal or trimming. The survey shall be conducted for each phase of tree and shrub removal or trimming.

Raptor nest surveys shall be conducted to evaluate the presence of active raptor nests within the Project Limits. If an active nest is located within the Project Limits, the City, Colorado Parks and Wildlife, and U.S. Fish and Wildlife Service (USFWS) shall be contacted regarding use of seasonal buffers to prevent disturbance to nesting birds. Human encroachment is restricted to 1/3-mile radius of active red-tailed hawk nests beginning February 15 to July 15. Clearing activities shall be timed to avoid the breeding season to avoid active bird nests.

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It shall be the Contractor's responsibility to Work around the bird nesting seasons provided in this Section 5.

**5.4.6 THREATENED AND ENDANGERED SPECIES**

The Contractor shall comply with the Endangered Species Act of 1973 at all times. The Contractor shall coordinate the Project such that any species identified during the Project are protected pursuant to Federal law. No known threatened or endangered species are known to be within the Project Limits.

**5.4.7 WATERS OF THE U.S.**

No jurisdictional waters of the U.S. are known within the Project Limits.

**5.4.8 HISTORIC PRESERVATION**

The Contractor shall refer to and comply with the historic preservation and consultation requirements stipulated in this Section 5 and the EA, FONSI, and PA. See Section 2 Project Management and Section 3 Quality Management for additional requirements.

**5.4.8.1 CULTURAL RESOURCES PERSONNEL REQUIREMENTS**

The Work to complete the mitigation for historic properties shall be carried out by a person or persons meeting the Secretary of the Interior's Professional Qualification Standards for History or Architectural History as published in 36 CFR 61, Appendix A Historic Resources and Mitigation.

Historic resources eligible for the State Register of Historic Places are found within the Project Limits. Documentation of potential historic properties is included in the EA.

The Contractor shall review each design submittal for impacts to historic properties. The Contractor shall be responsible for coordinating any historic impacts and associated mitigation with the City, who will assist with coordination with the SHPO.

The Contractor's ECWP shall describe the process for overseeing and documenting compliance with the SHPO consultation process and the State Register Act (CRS 24-80.1-104).

**5.4.8.2 VIBRATION MONITORING**

Given the age and historic nature of many of the Mall buildings, vibration during construction is a critical activity to be monitored and mitigated. The Contractor shall solicit a third party to monitor vibrations caused by construction and shall submit a Vibration Monitoring Plan to the City for Approval no less than 60 Calendar Days prior to commencement of construction Work. The Vibration Monitoring Plan shall set thresholds through baseline monitoring information to be provided by the Contractor and Approved by the City prior to starting Work. The plan shall address vibration monitoring per block.

The Contractor shall perform continuous vibration assessments and monitoring within and adjacent to the Active Construction Zone (ACZ), in accordance with the Technical Specifications and the PA for all construction Work performed on the Mall.

The PA contains specific requirements related to continuous vibration monitoring the Contractor shall implement, summarized as follows:

- Include an independent certified or registered third party vibration monitoring consultant expert on the Contractor's team
- Provide continuous vibration monitoring within and immediately adjacent to the ACZ during all construction work



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- Report any baseline vibration exceedances immediately to the City and provide a mitigation or corrective plan to address the cause of the vibration exceedance within 24 hours of the exceedance
- Prepare monthly vibration monitoring reports indicating the vibration level during construction compared to the established baseline vibration level, the date and time of any exceedance, any observed impacts or damage due to any exceedance, the repair plan to correct any damage due to the exceedance, and the corrective action to mitigate the exceedance or prevent further exceedances
- Provide the monthly vibration reports to the City to post on the Project website by the first day of each month, including a Contractor summary presenting their interpretation of all data received

The City shall have real time access to all vibration monitoring data inclusive of a Contractor summary including interpretation of all data received. If the vibration monitoring exceeds the allowable thresholds, the Contractor shall immediately stop Work and consult with the City as to what mitigations may be allowed to resume Work under the established thresholds.

**5.4.9 ARCHEOLOGICAL OR PALEONTOLOGICAL DISCOVERY**

In the event of discovery of historic or archaeological objects, features, sites, or human remains, the Contractor shall:

- Immediately suspend construction Work in the vicinity (minimum 50-foot buffer around the perimeter) of the discovery if a suspected historic, archaeological, or paleontological item, feature, or site is encountered or if suspected human remains are encountered
- Notify the City orally and in writing of the location and nature of the discovery and to assess the nature of the discovery and determine the necessary course of action
- Protect the discovered objects or features and provide written confirmation of the discovery to the City within two Calendar Days
- Work with the City to determine the necessary course of action

The Contractor shall not resume construction Work in the area until receiving formal notification from the City allowing construction Work to re-commence.

Identification or discovery of any archaeological or paleontological resources shall be included in the Contractor's Monthly Progress Report as described in Section 2 Project Management.

**5.5 HAZARDOUS SUBSTANCES OR MATERIALS**

Hazardous Substances or Materials, and non-hazardous but environmentally impacted media or materials may exist on the surface, within the subsurface, or in the groundwater, and may be mixed with soil, water, and other waste materials, or may be free-standing such as piping or tanks. A Subsurface Investigation (SI) Report has been completed and is included as Reference Document RD-05-04.

The City will pay, through the Owner's Contingency Force Account, the removal of two underground storage tanks identified in the SI Report – if necessary.

The SI provides a summary of conditions encountered during the investigation. The Contractor, as part of its Project Schedule, shall reasonably assume the conditions described in the SI and any other Hazardous Substances or Materials identified in the Contract Documents, including the scheduling of identification of

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the Hazardous Substances or Materials and remediation in accordance with this Section 5. Conditions are summarized as follows:

- At several locations throughout the Project Limits, field indications of environmental impact were noted including odors, staining, or slightly elevated field measurements in soil
- These areas were tested and found to meet state guidelines, with one exception as noted following:
  - Hazardous levels of lead in soil along with debris were detected on private property near the northeast corner of Market Street and 16th Street
  - This material does not appear to extend onto the City right-of-way
- Debris in soil was encountered at several locations within the Project Limits along the Mall right-of-way, which was tested and found to not contain asbestos
- There may be other debris that will be encountered during construction Work that may contain asbestos
- Depth to groundwater, where encountered, ranged from 21 to 29 feet below ground level; if encountered, it shall be properly managed

The SI recommended preparing a site-specific MMP, which was completed, avoiding groundwater if possible, and determining how much excess soil will be generated and how it will be managed.

The MMP, Reference Document RD-05-05 addresses the known and potential environmental conditions that may be encountered during the Work so that human health and the environment may be protected. It also includes the SI, the City's Regulated Asbestos Contaminated Soil (RACS) Standard Operating Procedures (SOP), and the City's Guidance for Reuse of Soil on City Projects, which includes the criteria that soil may not be reused offsite if it contains debris, staining, or odors regardless of analytical results. These City background documents may be found at:

<https://www.denvergov.org/content/denvergov/en/environmental-health/our-divisions/environmental-quality/land-use-and-planning.html>

Discovery or identification of any additional environmental conditions as noted in the MMP requiring additional evaluation shall be included in the Contractor's Monthly Progress Report as described in Section 2 Project Management.

Under all circumstances, the Contractor shall comply with City General Condition 808.

When any suspected Hazardous or Contaminated Substances or Materials are encountered, the Contractor shall immediately stop Work in the suspected area, protect the area from any further Work or worker or public access, and contact the City for direction. Once the immediate actions have been taken, the Contractor shall reallocate resources to continue Work in other areas of the Project to minimize and reduce impacts to the Project Schedule. The cost for subsequent removal and remediation shall not be included in the Contractor's Proposal. Rather, such removal and remediation work shall be performed by a third party contractor or the Contractor as Force Account Work in compliance with the City Standards and Specifications.

If authorized by the City, the Contractor shall provide all qualified staff and equipment to respond to Hazardous Substances and impacted material in accordance with and to the extent required by such requirements. The Contractor shall be responsible for all coordination with appropriate government agencies, and for any approvals or permits required for the management, transportation, and/or disposal of any Hazardous Substances and impacted material. The Contractor shall haul any material required to be

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disposed at the Denver Arapahoe Disposal Site (DADS). Tickets and manifests for DADS will be obtained and paid for by the City. The Contractor shall maintain a log of all loads sent to DADS with composition of load, load size, date, time, and ticket or manifest number.

The Contractor shall either adopt the City MMP or develop their own MMP for City Approval. The Contractor shall:

- Comply with all final MMP requirements
- Assign qualified staff to manage and document the MMP requirements
- Develop a Health and Safety Plan (HASP)
- Adopt the City's RACS SOP

These documents shall be submitted to the City for Approval no later than 60 Calendar Days prior to commencement of construction Work. The Contractor shall comply with all provisions set forth within the MMP, RACS SOP, and HASP. The Contractor shall maintain documentation of all activities during construction Work and shall make all documents available for review upon request. The Contractor shall not discuss or negotiate with any regulatory agencies or Third Parties on behalf of the City. The Contractor shall notify the City within 24 hours if contacted by any regulatory agencies or Third Parties concerning Hazardous Substances or Materials or impacted material associated or potentially associated with the Project.

The Contractor shall comply with Colorado Solid Waste Regulations CCR 1007-2 Part 1, Section 5.5 (Colorado Solid Waste Regulation [CSWR] §5.5; CDPHE, 2014), and the Air Quality Control Commission's Regulation 8, Part B.

## 5.6 GROUNDWATER

Groundwater is not anticipated to be encountered during the Project's construction Work. If encountered, the Contractor shall be responsible for obtaining all appropriate permits and controlling and disposing of all water during construction Work with no additional Project cost or impact to the Project Schedule. The Contractor shall provide a detailed Dewatering Plan for Approval no later than 30 Calendar Days prior to commencement of construction Work.

## 5.7 ENVIRONMENTAL PERMITS AND APPROVALS

The Contractor shall be responsible for identifying, obtaining, and complying with all governmental and agency permits, approvals, and City policies, guidance, Standards, and Specifications required for the Work, as expanded in this Section 5, and for complying with all Applicable Environmental Laws. A list of potential environmental permits is provided in Table 5-1, Environmental Permits. This list shall be verified for accuracy by the Contractor and is not a complete list of potential permits that will be required based on the final design.

<b>Table 5-1 Environmental Permits</b>	
<b>Permits/Approvals</b>	<b>Permitting Agency</b>
United States Fish and Wildlife Service (USFWS) Depredation Permit	USFWS
Section 7 Endangered Species Consultation & Migratory Bird Act Compliance	USFWS & Colorado Parks and Wildlife (CPW)
Clean Water Act Section 401 – Water Quality Certification	CDPHE-Water Quality Control Division (CDPHE-WQCD)

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<b>Table 5-1 Environmental Permits</b>	
<b>Permits/Approvals</b>	<b>Permitting Agency</b>
CDPHE General Permit for Stormwater Discharges Associated with Construction Activity, CORO30000	CDPHE-WQCD
CDPHE Remediation Activities Discharging to Surface Water Permit COG315000	CDPHE-WQCD
CDPHE Subterranean Dewatering Permit COG603000	CDPHE-WQCD
CDPHE Subterranean Dewatering Permit COG603000	CDPHE-WQCD
CDPHE Air Pollution Emission Notice and Construction Permit (APEN)	CDPHE
Land Development Air Pollutant Emission Notice – and – Application for Construction Permit	CDPHE
Fugitive Dust Control Plan	CDPHE
CDPHE APEN stationary Source Permit	CDPHE
CDPHE Asbestos Abatement Permit-Regulation 8	CDPHE
CDPHE Regulated Asbestos Contaminated Soil Regulation 5.5	CDPHE
Solid and Hazardous Wastes Generator/Storage CDPHE EPA Form 8700-23 (RCRA)	CDPHE
Spill Prevention, Control, and Countermeasure (SPCC) Plan	Environmental Protection Agency (EPA)
Colorado Division of Water Resources (CDWR) Water Well, Observation, Monitoring, Testing or Recovery Well Permit(s) or Dewatering Well Permit(s)	CDWR
Cultural Resources (Section 106 of National Historic Preservation Act)	State Historic Preservation Office-History Colorado
Historical, Prehistorical, and Archaeological Resources 8 CCR 1504-7 (per CRS 24-80-401-411 and 1301-1305)	State Historic Preservation Office-History Colorado
City Construction Activities Stormwater Discharge Permit (CASDP)	City- Department of Transportation & Infrastructure
City Sewer Use and Drainage Permit (SUDP)	City- Department of Transportation & Infrastructure
City Forestry Permit	City - Parks & Recreation Forestry Division
Sewerage Charge, Fees and Management of Wastewater; Storm Drainage Planning & Design	City - Stormwater
Noise Variance	City – Denver Department of Public Health and Environment (DDPHE)
Hazardous Waste Generator, Used Oil Generator, Universal Waste Generator	Denver Fire Department-Fire Prevention Division
City Executive Order 115	City - DDPHE

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<b>Table 5-1 Environmental Permits</b>	
<b>Permits/Approvals</b>	<b>Permitting Agency</b>
City Executive Order 123	City – Office of Sustainability
City Soil Reuse Guidance	City - DDPHE
Flammable/combustible liquid storage/use including ASTs, USTs and use/storage at construction sites (CCD Policy-IFC 34& 27 and NFPA 30,33 and 704)	Denver Fire Department
Installation of Stationary Emergency and/or standby generators	Denver Fire Department

## 5.8 CONSTRUCTION DEWATERING PERMIT

If groundwater is encountered, the Contractor shall obtain a Construction Dewatering Permit from CDPHE for any dewatering of groundwater during construction in accordance with CDPHE-WQCD requirements. The Contractor shall apply for this permit at least 90 Calendar Days prior to the start of discharge. Permits may include the CDPHE Water Quality permit COG070000 - Construction Dewatering, COG315000 - Remediation Activities Discharging to Surface Water, or COG316000-Remediation Activities Discharging to Groundwater.

Authorization to discharge to the City storm sewer system shall be obtained through the City’s Sewer Use and Drainage Permit (SUDP) prior to any dewatering discharge.

The water quality standard that governs this discharge is that of the receiving water, as evaluated by CDPHE – WQCD. The Contractor shall provide all information needed to assist CDPHE – WQCD in their evaluation and setting of a water quality standard for this permit, which may include treatment and monitoring of the discharged water.

The Contractor shall monitor adjacent buildings, cross streets, alley ways, roadways, and appurtenances for any settlement caused by dewatering. The Contractor shall survey any private property or buildings that may be affected by dewatering to establish existing conditions and prepare and submit an Existing Site Surface Distress Conditions Report indicating any existing surface distress 30 Calendar Days prior to commencing any dewatering Work. The Contractor shall promptly report any such settlement to the City and repair any damage to roadways, or private property or buildings caused by dewatering operations.

## 5.9 SUSTAINABILITY

The Contractor shall comply with Executive Order 123 and incorporate sustainable principles and BMPs in the design and construction of the Project. The City encourages practices including recycling or re-purposing materials removed from the Project Limits, multiple use and recycling of construction materials rather than single use and disposal, fuel efficient equipment, energy minimization practices, and alternate energy equipment.

The following requirements have been identified to advance the City’s sustainability efforts during design and construction Work, including:

- The highest priority for sustainability during the Mall construction is maintaining a viable, vibrant, and vital business environment that encourages walkers, diners, shoppers, and visitors to continue to enjoy the Mall during active construction Work

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- The Contractor shall recycle or re-purpose materials removed from the Project Limits, including granite pavers, base slab concrete and reinforcing steel, Mall trees, and miscellaneous metals, to the extent practical
- Requirements on existing Mall replica historic light fixtures reuse is outlined in Section 19 Mall Lighting and Electrical
- The Contractor is encouraged to apply energy consumption minimization techniques to the fullest extent
- The Contractor is encouraged to use fuel efficient or alternative fueled vehicles to the extent possible to minimize air quality impacts during construction Work
- The Contractor shall collaborate with the City and Stakeholders to identify creative opportunities for implementing sustainability strategies
- The Contractor is encouraged to consider options to reuse the existing Mall trees in lieu of their removal and disposal, engage local artists and educational institutions and provide the removed Mall trees to be used as tree art materials either on the new Mall or around the City

**5.10 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City.

<b>Table 5-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Environmental Compliance Work Plan (ECWP)	Approval	60 Calendar Days prior to commencement of construction Work and monthly thereafter
Environmental Mitigation Table and Tracking Summary and Updates	Approval	90 Calendar Days following issuance of NTP and monthly thereafter
Environmental Permits and Tracking Log	Approval	30 Calendar Days prior to commencement of construction Work
Noise Control Plan	Approval	60 Calendar Days prior to commencement of construction Work
Air Pollution Emission Notice	Approval	30 Calendar Days prior to commencement of construction Work
Vibration Monitoring Plan	Approval	60 Calendar Days prior to commencement of construction Work
Construction Air Quality Control Plan	Approval	60 Calendar Days prior to commencement of construction Work
Fugitive Dust Control Plan	Approval	60 Calendar Days prior to commencement of construction Work
Stormwater Management Plan (SWMP)	Approval	60 Calendar Days prior to commencement of construction Work
Materials Management Plan (MMP) updates as required	Approval	60 Calendar Days prior to commencement of construction Work

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<b>Table 5-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Health and Safety Plan (HASP)	Approval	60 Calendar Days prior to commencement of construction Work
Dewatering Plan	Approval	30 Calendar Days prior to commencement of dewatering Work
Existing Site Surface Distress Condition Report	Approval	30 Calendar Days prior to commencement of dewatering Work

## **6.0 THIRD PARTY AGREEMENTS**

### **6.1 GOAL**

The goal of this Section 6 is to effectively deliver the Project addressing Third Party Stakeholder requirements through City and County of Denver (City) negotiated Third Party agreements.

### **6.2 GENERAL**

The Contractor shall be responsible for obtaining all Third Party approvals required to complete the Work. Utility Owner approvals and other requirements are provided in Section 7 Utility Relocations. Any such approvals shall be submitted to the City within five Working Days of obtaining the approval from the Third Party.

### **6.3 THIRD PARTY AGREEMENTS**

The Project requires implementing several City-negotiated Third Party agreements granting the Contractor rights to Work adjacent to or with facilities owned by other Third Parties. Available Third Party agreements are included as Reference Documents. Additional agreements will be provided as the City completes negotiations, either during the RFP or subsequent to Notice to Proceed (NTP).

Currently identified Third Party agreements include:

- Regional Transportation District (RTD) Project Funding Intergovernmental Agreement (IGA)
- RTD Maintenance Agreement
- Colorado Public Utilities Commission (PUC) Applications for California Street and Stout Street light rail crossings
- Denver Urban Renewal Authority (DURA) Project Funding Agreement
- Downtown Denver Business Improvement District (BID) Maintenance Agreement
- Colorado Department of Transportation (CDOT) Funding IGA
- Utility Agreements as identified in Section 7 Utility Relocations

### **6.4 REQUIREMENTS OF THE RTD IGA**

The Contractor shall comply with the requirements of the RTD IGA and all associated federal requirements.

### **6.5 WORK ADJACENT TO AND UNDER RTD TRACKS**

The Project includes Work adjacent to and under the RTD light rail tracks as they intersect the Mall. Anticipated Work include the jacking or boring of relocated Mall longitudinal Utilities and Utility relocations in California and Stout Streets under the existing RTD light rail tracks. Additional Work adjacent the existing RTD tracks include reconstruction of the cross streets, reconstruction of the Mall approaching the intersection.

The Contractor shall be required to comply with all RTD protections, standards, and requirements while performing any construction Work adjacent to rail properties or that may affect operations. The Contractor shall perform all Work adjacent to the RTD tracks in accordance with the Approved plans and the RTD requirements, as well as those requirements specified in these Contract Documents. The Contractor shall be responsible for all construction permits and all costs required to perform the Work.



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The Contractor shall comply with all rules and regulations prescribed by RTD as to the proper manner of protecting the tracks, and other property of RTD or their tenants at and in the vicinity of the Project Limits during the time of any construction Work is being performed. RTD shall be consulted for any additional safety requirements to complete the construction Work.

No surface Work shall be completed within the RTD track envelope without approval from RTD. RTD light rail operations shall not be affected unless Approved by the City and RTD.

**6.5.1 NOTIFICATION OF BEGINNING WORK**

The Contractor shall provide a minimum of 60 Calendar Days written notice to RTD prior to beginning any construction Work adjacent to or under the RTD tracks.

**6.5.2 CONSTRUCTION REQUIREMENTS**

The Contractor is advised that RTD may be conducting on-going maintenance or track replacement work during the Project. The Contractor shall coordinate with RTD to confirm any scheduled maintenance work and schedule the Contractor's work accordingly.

It is the Contractor's responsibility to field verify the location of all Utilities prior to the commencement of any construction Work.

The Contractor shall identify the horizontal location and vertical depth of RTD underground electric and communication ducts without compromising the integrity of the RTD tracks or dynamic envelope.

**6.6 REQUIREMENTS OF THE MAINTENANCE AGREEMENT WITH RTD**

The Maintenance Agreement with RTD will be developed after final design. The Contractor shall be responsible for preparing design information and supporting documentation for the City and RTD to jointly determine maintenance requirements, frequencies, and approximate annual costs.

**6.7 COLORADO PUBLIC UTILITIES COMMISSION APPROVAL**

Two locations are anticipated to require PUC approval:

- Existing RTD light rail tracks at California Street crossing the Mall
- Existing RTD light rail tracks at Stout Street crossing the Mall

The City will submit a preliminary PUC application, which will be made available in the Reference Documents. The City will submit for a final application at the completion of final design. All additional design detail, design changes, and amendments shall be the responsibility of the Contractor to prepare. At a minimum, the Contractor's roles and responsibilities, with respect to the PUC shall include the following:

- The Contractor shall be responsible for preparing all applications to be submitted to the PUC, including developing the application text and all supporting documentation, calculations, estimates, and preparing exhibits to the satisfaction of the PUC and for the Approval by the City
- The Contractor shall attend meetings with appropriately qualified staff and cooperate with the PUC as reasonably requested by the City
- The Contractor shall prepare and coordinate any post application exhibits and/or information requested by the PUC, including providing technical expertise at any PUC legal proceedings, as requested by the City
- The Contractor shall allow for adequate review and comment response periods with the City to review application materials and documentation prior to submission to the PUC

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Section 6 Third Party Agreements

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- The Contractor shall allow for appropriate PUC review and approval durations in the Project Schedule and shall provide the applications and supporting documentation in a timely fashion to the City to prevent delays to the construction Work
- The Contractor shall allow at least three Working Days for review by the City to review any responses necessary, should the PUC have any clarifying questions, comments, or deficiencies to the amendments once they are filed; the Contractor shall meet these timeframes and prepare the responses
- Any delays or increase in costs of the completion of the Project caused by the failure of or delay by the Contractor to provide the PUC applications and supporting documentation to the City shall be the responsibility of the Contractor at no cost to the City
- The Contractor shall prepare the final PUC application by the final plans and drawings submittal date stipulated in the preliminary PUC application, with sufficient time allocated to permit a thorough City and PUC review and comment response period
- The Contractor shall prepare and coordinate any post-construction documentation, exhibits, and/or information requested by the PUC

The Contractor shall abide and comply with the standard and requirements of the Colorado PUC in performing the construction Work.

#### **6.8 REQUIREMENTS OF THE DURA PROJECT FUNDING AGREEMENT**

The Contractor shall comply with the requirements of the DURA Project Funding Agreement.

#### **6.9 REQUIREMENTS OF THE PROGRAMMATIC AGREEMENT**

The Contractor shall comply with the requirements of the Programmatic Agreement, as required in Section 5 Environmental Requirements.

#### **6.10 REQUIREMENTS OF THE MAINTENANCE AGREEMENT WITH BID**

The Maintenance Agreement with BID will be developed after final design. The Contractor shall be responsible for preparing design information and supporting documentation for the City and BID to jointly determine maintenance requirements, frequencies, and approximate annual costs.

#### **6.11 REQUIREMENTS OF THE CDOT IGA**

The Contractor shall comply with the requirements of the CDOT IGA.

#### **6.12 REQUIREMENTS OF THE UTILITY AGREEMENTS**

The Contractor shall comply with the requirements of the Utility Agreements, as required in Section 7 Utility Relocations.

**6.13 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 6-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Copies of agreements, notices, and correspondence	Information	Within five Working Days of completion of agreements, notices, and correspondence
PUC applications	Approval	Prior to commencement of construction Work
Design information and documentation to support the development of maintenance agreements	Approval	As requested

## **7.0 UTILITY RELOCATIONS**

### **7.1 GOALS**

The goals of this Section 7 are to:

- Relocate Utilities in a way that places manholes, pull boxes, and other surface expressions outside of the granite pavers
- Perform necessary Relocations as efficiently as possible to reduce Project Schedule and avoid rework
- Minimize temporary Utility impacts to the adjacent businesses, residents, and public users

This Section 7 addresses Utility company (Utility Owner) requirements. This Section 7 does not apply to existing stormwater facilities, which shall be installed, removed, relocated and/or protected in place by the Contractor and/or the Utility Owners pursuant to Section 13 Drainage and Water Quality of this Request for Proposal (RFP).

### **7.2 GENERAL UTILITY WORK OBLIGATIONS**

The Contractor shall coordinate and cooperate with the City and County of Denver (City) and the Utility Owners to ensure that all Utility Work (whether performed or furnished by the Utility Owners or by the Contractor) is performed in accordance with the Utility specifications and executed Utility Agreements and existing franchise agreements. The physical limits of the Contractor's obligation for the performance of Utility Work shall extend to the existing right-of-way (considering the requirements of the Utility Owners, governmental persons with jurisdiction, and adjacent property owners). The Contractor is responsible for all Utility related construction Work self-performed and performed by its subcontractors.

The Contractor shall use reasonable efforts both during design and construction Work to anticipate and avoid Utilities, and to otherwise minimize and/or mitigate the consequences of the Utility Relocations.

Replacements for any existing Utilities shall be designed and constructed to provide service at least equal to that offered by the existing Utility, unless the Utility Owner approves a lesser replacement.

Except as otherwise stated in this Section 7, the Work shall include all Utility Work, including temporary service and pumping, related to existing Public and Private Utilities that is necessary or advisable to accommodate or permit construction of the Project.

The Contractor shall perform all Utility Work necessary to maintain existing or establish new Utility services for lighting, traffic signal equipment, HALO Cameras, intelligent transportation system (ITS), landscaping, irrigation, pump stations, Special Events, and all other electrical devices that, in each case, form part of the Work. All cost charges from the service provider, and all necessary materials, including meter (if required), labor, and coordination required to maintain existing or establish new Utility services shall be the Contractor's responsibility unless otherwise specified in this Section 7.

The Contractor shall be responsible for the coordination of power source work to be performed by Xcel Energy (Xcel). The Contractor is responsible for any additional power source requirements to the Project site by Xcel. The Contractor shall request, and process to completion, the required coordination to establish the Utility service for lighting, traffic signal equipment, ITS, landscaping, irrigation, pump stations, 16<sup>th</sup> Street Mall (Mall) Special Events, and other electrical devices that, in each case, form part of the Work. All power connections to devices shall include a quick disconnect.

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The Contractor shall obtain approval of the design from the Utility service provider and coordinate and meet all requirements as specified by the Utility service provider for the complete and operational service to all required locations.

### 7.2.1 UTILITY WORK RESPONSIBILITY MATRIX

Table 7-1 lists the Project's known Utility Owners and the responsible parties for design Work, construction Work, and payment of such design and construction Work.

<b>Table 7-1 Utility Work Responsibility Matrix</b>			
<b>Utility Owner</b>	<b>Design Responsible Party</b>	<b>Construction Responsible Party</b>	<b>Financial Responsible Party</b>
ATT	ATT	ATT	ATT
CenturyLink	CenturyLink	CenturyLink	CenturyLink
Comcast	Comcast	Comcast	Comcast
Denver DOTI Traffic & ITS	Contractor	Contractor	Contractor
Denver Wastewater	Contractor	Contractor	Contractor
Denver Water	Contractor	Contractor	Denver Water
Level 3 Communications	Level 3 Communications	Level 3 Communications	Level 3 Communications
MCI/Verizon	MCI/Verizon	MCI/Verizon	MCI/Verizon
RTD FasTracks	Contractor	Contractor	Contractor
Unite Private Networks	Unite Private Networks	Unite Private Networks	Unite Private Networks
Viaero Wireless	Viaero Wireless	Viaero Wireless	Viaero Wireless
Windstream	Windstream	Windstream	Windstream
Xcel	Xcel	Xcel	Xcel
Zayo	Zayo	Zayo	Zayo

### 7.2.2 UTILITY WORK

The Contractor shall carry out all Utility Work in accordance with the requirements of the Utility Agreements and this Section 7. Utility Work includes, but is not limited to the following activities:

- Performance of all tasks, obligations, and duties assigned to the Contractor in the Utility Agreements
- Identification, ownership, and field verification of Utility locations by investigating all Utilities located within or adjacent to the existing City-owned property or otherwise affected by the Project
  - Potholing for field verification of Utilities is required by the Contractor prior to construction Work
- Develop and maintain a Subsurface Utility Investigation/Engineering set of plans and records for the existing Utilities to be incorporated into the signed and stamped project As-Built plans

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- 
- Create and update the Contractor's Utility Conflict Matrix
  - Prepare and execute the Utility No-Conflict Closeout Form for appropriate Utilities
  - Cooperation with the City at the Contractor's expense, as reasonably requested by the City, in connection with negotiating and preparing of the Utility Work Order for each Utility Relocation by the Private Utility Owner, as needed
  - Cooperation with the City shall include preparing and providing such written information concerning the Project (such as reports, drawings, and surveys) as requested by the City
  - Accommodation of the Utility connections to the proposed Mall restroom project anticipated to be installed on Champa Street (between 15<sup>th</sup> Street and 16<sup>th</sup> Street) by the end of 2020, as shown in Reference Document RD-17-03
  - Review each Private Utility Relocation Design (URD), then verify and accept that each Utility Relocation by the form of Design Relocation Acceptance Letter (DRAL) that each Utility Relocation is compatible with the Project
  - Preparation of the URD for each required Public Utility Owner and obtaining design acceptance from the Public Utility Owner
  - Construction of the Public Utilities Relocations, including service lines and temporary Relocations, and obtaining the construction acceptance by the form of Construction Relocation Acceptance Letter (CRAL) from the Public Utility Owner
  - Remove abandoned existing Public Utilities in conflict with the Contractor's final design
    - If impractical to remove and Approved by the City, flow-fill abandoned (pipe) or crush in-place and backfill existing Public Utilities in accordance with City Standards and Specifications
    - The Contractor shall provide verification of abandonment and notification to the Public Utility Owner
    - The Contractor shall refer to the Approved Material Management Plan (MMP) for requirements for the removal of asbestos-containing and other associated Hazardous Materials and/or Substances
  - The Contractor and its subcontractors shall coordinate their construction to minimize any delays to Utility Owners and their Relocation subcontractors
  - Inspection of the Utility Relocation construction for each Private Utilities Relocation, then verification and acceptance by the form of CRAL that each Utility Relocation is compatible with the Project
  - Resurfacing and restriping of streets and parking areas and reconstruction of curb, gutter, ramps and sidewalks where necessary due to Utility Work performed by Contractor, if required in the Work Order
    - All resurfacing and restriping of streets and parking areas and reconstruction of curb, gutter, ramps and sidewalks shall comply with the requirements of City Standards and Specifications; Section 10 Geotechnical and Pavements; Section 15 Cross Street and Intersection Layout; and Section 16 Permanent Signing, Pavement Marking, Traffic Signals, and Street Lighting
  - Showing each Utility Relocation on the Contractor drawings for all Public and Private Utility Work Orders

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- Verification that all Utility Work performed by the Contractor or by the Utility Owner has been accomplished in accordance with the Work Order, this Section 7, and the Contractor drawings
- Coordination and schedule verification with all Utility Owners as necessary for all Public and Private Utility Work Orders
- Providing public information for Utility Work performed by Contractor or performed by the Utility Owner
- Performing traffic control for all Utility Work performed by Contractor or performed by the Utility Owner as necessary and as defined in the Work Order
  - All applicable traffic control permits and Method of Handling Traffic (MHT) shall be submitted in accordance to Section 17 Construction Phasing and Maintenance of Traffic
- All necessary Work as required in the City / Denver Water Interagency Agreement, as provided in Reference Document RD-06-06 and as required under this Section 7
- Providing survey coordinates to the URD and in the field for construction of the Utility Relocations
- Performing Incidental Utility Work
- Coordination with the appropriate Utility Owners regarding service disconnects and/or removals per Utility Owner's procedures as needed for demolition, Relocation, or removal of existing connections
- All necessary Utility permitting through the City review process
- All necessary Work associated with Utility Work

**7.2.3 EXCLUSIONS FROM UTILITY WORK**

Utility Work excludes the following:

- Issuance of any Utility Permit to any Utility Owner
- Provision and maintenance of any insurance in excess of the Contractor's obligations in this RFP
- Any Work expressly required to be undertaken by the City or a Utility Owner in accordance with Utility Agreements or the terms of any Work Order
- Construction of the Private Utilities Relocations, with the exception of Denver Water, and including service lines and temporary Relocations unless identified as a Requested Relocation
- Abandonment of existing Private Utilities, unless identified in the terms of the Work Order for a Requested Relocation
- Utility removal Work outside of the Project Limits
- Providing traffic control when Utility Work is outside of the Project Limits
- Reimbursement to Utility Owners for, or acquisition of, replacement easement required for Utility Work as set forth in the Work Order

**7.2.4 CONTRACTOR'S RESPONSIBILITY TO PERFORM**

The Contractor shall perform all efforts included in the Utility Work with respect to each impacted Utility regardless of the following:

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- Whether or not the Utility was indicated in the Reference Documents, or if indicated, whether the Utility was accurately indicated, in accordance with this Section 7
  - All Utility locations in the Reference Documents are at a preliminary level and can be relied upon based on the various quality levels identified in the City provided SUBSURFACE UTILITY ENGINEERING (SUE) Plans
  - The Utility geophysical scan CAD files and the Utility Geophysical Scan Summary Report are provided as Reference Document RD-07-17 and RD-07-18, respectively
  - The Contractor shall be responsible for taking the Utility Data provided in the RFP and supplementing with additional due diligence to provide its own SUE Plans, in accordance with this Section 7
  - In the event Utilities are determined in the field to be an Unidentified Utility or located significantly different than information represented in the City provided SUE Plans, other Utility Data, other Reference Documents showing existing conditions (e.g., RD-14-04), or as part of the Contractor's due diligence during design Work; or such different locations are determined to negatively impact the critical path schedule then the Contractor shall be permitted to remedies in accordance with the Contract Documents
  - All due diligence, coordination, design Work, and construction Work for Utility laterals and service lines shall be the responsibility of the Contractor and is not considered a change condition, differing site condition, or Unidentified Utility
  - Minor changes of material, size, etc. from Utility Data provided by the City is not considered a change condition, differing site condition, or Unidentified Utility and shall be determined as part of the Contractor due diligence
  - Utilities that could reasonably have been identified or discovered by an appropriately qualified and experienced Contractor, Surveyor, or Engineer exercising due care and skill and Good Industry Practice in the same or equivalent circumstances, including the Contractor's Utility investigations described in this Section 7 is not considered a change condition, differing site condition, or Unidentified Utility
  - All Utility locations shall be field verified by the Contractor prior to any construction Work
  - Both the City and the Contractor shall implement a fair and reasonable partnership in all Utility Work
- The type of action, if any (such as Relocation or protection-in-place), feasibility, estimated duration of Work time or any other characteristic of any Relocation concept(s) proposed for the Utility in the attached appendices
  - Protection in place or as directed or specified by the Utility Owner, of all Utilities not being Relocated, abandoned, or removed is the responsibility of the Contractor
  - The Contractor is responsible for all Utility damages caused by the Contractor and/or its subcontractors
  - Any repairs shall be at the Contractor's sole expense

The allocation of responsibility for any Utility Work to a Utility Owner pursuant to this Section 7 or to a Utility Agreement shall not relieve the Contractor of the obligation to coordinate with the Utility Owner as necessary for such Utility Work to be timely performed, or of the obligation to perform any other Utility Work not specifically assigned to such Utility Owner.



### **7.3 PERFORMANCE STANDARDS**

Except as otherwise provided in the applicable Utility Agreement or Work Order – all URDs and construction of Relocations furnished or performed by the Contractor shall be consistent with the Utility Owner’s written specifications, standards of practice (which may include design format) and construction methods, that are current at the Proposal due date. The Contractor shall obtain all such written specifications, standards of practice, and construction methods from the Utility Owners. In the event of a conflict between the requirements of the Utility Owner or requirements of these Contract Documents, the City in its sole discretion, shall determine which shall govern unless otherwise set forth in the Work Order.

The Contractor shall be responsible for resolution of any unresolved ambiguity prior to proceeding with any Utility Work.

### **7.4 UTILITY DATA**

See Reference Document RD-07-05 for a list of known Utility Owners within or adjacent to the existing City owned property.

The City has completed an initial Utility data collection and investigation, including some SUE information, and has identified the Utilities that may be impacted by the Project. The City provided Utility Data may be relied upon by the Contractor at the quality level presented and shall be verified/supplemented by the Contractor in the development of its own SUE Plans during the design Work. The City has not performed a complete investigation of service lines. The results of the investigations are indicated in the Utility Data included in Reference Document RD-07-01 and CAD files presenting the existing Utility Data in Reference Document RD-07-02. The Utility Data effort has collected existing Utility data from Utility Owners and various available As-Built drawings. Additional GIS records of the City’s storm and sanitary facilities are available at <https://www.denvergov.org/maps>. Search this site using the keywords “storm” or “sanitary.” Utility Data shall not be exclusively relied upon for existing Utility location, size, and depth, in accordance with this Section 7. The Contractor shall verify, to its own satisfaction, all information required for the design and construction of Utilities.

### **7.5 BUILDING VAULT AND MALL ENCROACHMENT DATA**

Prior to the Mall reconstruction project in 1982, a Building Vault Survey was completed in 1978. The results of the survey are included in Reference Document RD-07-09. Existing Mall encroachments on record with the City are included in Reference Document RD-07-16.

The survey and encroachment summary shall not be exclusively relied upon for existing building vault or encroachment location, size, and depth. The Contractor shall verify, to its own satisfaction, all information required for the design and construction Work. In the event vaults or encroachments are determined in the field to be unidentified or located significantly different than information presented in the City provided Utility Data, other Reference Documents showing existing conditions, or as part of the Contractor’s due diligence during design Work; or such different locations are determined to negatively impact the critical path schedule then the Contractor shall be permitted to remedies in accordance with the Contract Documents.

### **7.6 CONTRACTOR’S INVESTIGATIONS**

The Contractor shall take all actions necessary to identify and confirm the existence, ownership, exact location, size, and type of all Utilities within the Project Limits, whether or not such Utilities are shown in the Utility Data, including all potentially impacted service lines. All such information shall be transferred to the Contractor developed SUE Plans and shall meet the requirements of SB18-167. Such actions shall include making diligent inquiry at the offices of the Utility Owners, consulting public records, reviewing

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As-Built information, and conducting field studies (such as Subsurface Utility Engineering) as appropriate, taking into consideration the possibility that Utility Owners may provide inaccuracies or inexact information regarding their Utilities. If the Contractor's investigations identify Utilities (excluding service lines) not described in the Utility Data, the Contractor shall create a new conflict number to document and track, or if the Contractor determines that any Utility was not indicated with reasonable accuracy in the Utility Data or other Reference Documents, the Contractor shall notify the City immediately upon discovery, then the information will be entered into the final SUE Plans submittal. Any such Utility issues shall be included in the Contractor's Monthly Status Report required in Section 2 Project Management.

The Contractor shall determine and document the condition of all existing Utilities, in accordance with the Utility Owner's standard practice, prior to and following the commencement of construction Work.

**7.6.1 UTILITY WORK ORDERS**

The Contractor may prepare a single Work Order covering more than one Relocation, Betterment, or Requested Relocation with the consent of the City and the relevant Utility Owner. Any necessary changes to the Work Order requested by the Contractor shall be submitted in writing to the Utility Owner and the City and be Approved by all parties before any change can be executed. The Contractor, Utility Owner, and the City, in that order, shall execute a Utility Work Order prior to commencement of any Utility Work.

Prior to executing any Utility Work Order, the Contractor, the City shall meet with the relevant Utility Owner to negotiate the draft Utility Work Order, including the following:

- In accordance with procedures set out in the applicable Utility Agreement, the scope of Work, the implementation schedule and any exhibits
- In accordance with paragraphs below, cost and payment responsibly

Based on the meetings held in accordance with this Section 7, the Contractor shall submit each draft Utility Work Order to the City for Approval.

The City will provide comments or Approve within 10 Working Days of delivery of the draft Utility Work Order by the Contractor, provided that the Contractor shall not execute or otherwise commit to enter into any Utility Work Order or perform any work in respect of any Utility Work without the prior written acknowledgement by the City.

The Contractor shall revise any Utility Work Order if and when necessary in accordance with the terms of the applicable Utility Agreement. Such a revised Utility Work Order shall be drafted and executed in accordance with the same procedures applicable to the drafting and execution of the original Utility Work Order under this Section 7.

**7.6.1.1 DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR**

The Contractor shall be responsible for any damage caused by the Contractor or its subcontractors, employees, or agents to property, Utilities, structures, or subcontractors, employees, or agents of the Utility Owners. The Contractor shall immediately notify the affected Utility Owner and the City of any Utility damaged by the Contractor during performance of the Work. Such Utility damage shall be included in the Contractor's Monthly Progress Report as required by Section 2 Project Management.

Promptly after the Contractor's discovery of such damage, or the Contractor's receipt of notice of any such damage from the Utility Owner or from any other source: (a) the Contractor shall repair the damage itself to the Utility Owner's satisfaction; or (b) at the Utility Owner's election, the Utility Owner may make such repairs at the Contractor's expense. The Contractor shall make payment to a Utility Owner within 60 Calendar Days after receipt of the Utility Owner's invoice.

## **7.6.2 MULTIPLE MOVES**

The Contractor shall be responsible for all costs incurred by the City, the Contractor, or the Utility Owner to subsequently relocate any Utility already relocated to accommodate the Project through an executed Work Order, DRAL, CRAL.

## **7.7 UTILITY COORDINATION**

### **7.7.1 GENERAL**

The Contractor shall be responsible for coordination of all activities and coordination with the Utility Owners and the City to accomplish all Utility Work. In the discharge of its coordination responsibilities, the Contractor shall:

- Keep Utility Owners fully informed of schedules regarding Utility Work
  - The Contractor shall provide to the Utility Owners, as soon as practicable, an estimated schedule for their respective Utility Work and shall notify the Utility Owners of any significant changes to the schedule as soon as practicable
- Keep Utility Owners fully informed of changes that affect their Utilities
- Consider, to the extent possible, Utility Owners' needs for the allocation of resources to perform their respective Utility Work in a timely manner
  - The Contractor and/or its subcontractors shall coordinate with the Utility Owners to minimize delays
- Keep Utility Owners involved in making decisions that affect their Utilities so Utility Owners can provide uninterrupted service to their customers, or to the extent possible to be subject to the least interruption as approved by the Utility Owner
- Avoid multiple Relocation of the same Private Utility

### **7.7.2 UTILITY MEETINGS**

#### **7.7.2.1 BETWEEN THE CITY AND THE CONTRACTOR**

The Contractor shall be available to meet at the request of the City, as necessary, to discuss and resolve matters relating to the Utility Work.

#### **7.7.2.2 BETWEEN THE UTILITY OWNERS AND THE CONTRACTOR**

The Contractor shall be responsible for all coordination with the affected Utility Owners to accomplish each Utility Relocation in accordance with the applicable Utility Agreement. The Contractor shall schedule regular meetings with the relevant Utility Owner to discuss the progress of the Utility Work and any Utility Relocation being performed by the Contractor or Utility Owner. The Contractor shall not unreasonably deny any request by a Utility Owner to meet regarding any Utility Work being performed by the Contractor or Utility Owner. The Contractor shall provide the City a minimum of five Working Days' notice of any meeting with a Utility Owner.

#### **7.7.2.3 MINUTES**

The Contractor shall produce minutes of all meetings with Utility Owners and the City within five Working Days and shall distribute copies of the minutes to the attendees and individuals as requested by the City.

### **7.7.3 REVIEW SCHEDULES**

Estimated schedules for reviews are as follows:

- 15 Working Days for Utility Owner or Contractor to review and accept or provide comments on the Utility Work Order developed by the other party
- 10 Working Days for the Utility Owner or Contractor to re-review any Utility Work Order that is revised by the other party
- 15 Working Days for Utility Owner or Contractor design reviews, unless otherwise required in the Utility Agreements

Failure to respond to a Work Order or design review submittal in a timely manner does not constitute an acknowledgement.

For Utility Work performed by the Utility Owner, a reasonable schedule required for each activity shall be negotiated between the Utility Owner, Contractor, and City which shall be reflected in the Utility Work Order. The times noted in the Utility Work Order for Utility Work shall prevail over the estimated times noted in this Section 7 or in the applicable agreement. In developing its Project Schedule, the Contractor shall allow for appropriate time for the performance of Utility Work assigned to the Utility Owners and/or the Contractor pursuant to the Utility Agreements.

### **7.7.4 COST ESTIMATES**

If the City will be reimbursing a Utility Owner for any costs in connection with Utility Work, (including providing power source for lighting or other eligible Relocation costs) the Contractor shall obtain a definitive cost estimate from the Utility Owner in accordance with the Utility Owner's standard practice and with the requirements of the applicable Utility Agreement and shall submit such estimate to the City. After Approval of the estimate by the City, the estimate shall be incorporated into the applicable Work Order.

All reimbursements shall be determined on an actual cost basis, unless otherwise Approved by the City.

### **7.7.5 NOTICES**

#### **7.7.5.1 NOTICES TO UTILITY OWNERS**

To maintain the Project Schedules the Contractor shall issue all notices, in writing, to the Utility Owners called for under the Utility Agreements, with copies submitted to the City.

A 10 Working Day minimum notice shall be given to respective Utility Owners when the Contractor is working adjacent to their Utilities. The Contractor shall be solely responsible for and liable for any damage to any Utilities that are damaged due to any activities associated with the Work.

Utility Clearance Letters advising Utility Owners of the upcoming Project are included for the Contractor's information in Reference Document RD-07-19.

#### **7.7.5.2 NOTICES TO THE CITY**

The Contractor shall be responsible for verifying progress of Utility Work performed by the Utility Owner and for notifying the City shall the Contractor have cause to believe that the Utility Owner will not meet the specified time frame(s) in the Utility Work Order. The Contractor shall provide such written notice to the City immediately after discovery.

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If the Utility Owner is performing Utility Work that requires a City Utility Permit, the Contractor shall verify to the City that the Utility Permit has been obtained and is being complied with. If the Contractor determines that the Utility Owner does not have the required City Utility Permit or is in violation of the terms and conditions of such permit, the Contractor shall provide such written notice to the City immediately after discovery.

**7.7.5.3 NOTICES TO THE PUBLIC**

The Contractor shall be responsible for informing the public (including property owners, tenants, and other affected Stakeholders) of potential Utility disruptions no less than 10 Working Days prior to the scheduled disruption or as required by the Utility Owner, whichever is greater. See Section 4 Public Information for additional requirements for public information updates during construction Work.

**7.7.5.4 UTILITY NOTIFICATION CENTER OF COLORADO**

The Contractor shall arrange for the Utility Notification Center of Colorado (UNCC) to provide software and training for the Contractor to order call tickets to have Utility field locates performed. Contractor shall make arrangements for the training. The Contractor shall call 811 and coordinate directly with non-member Utilities for Utility locations.

**7.8 FAILURE OF UTILITY OWNER TO COOPERATE**

The Contractor shall use reasonable efforts to obtain the cooperation of each Utility Owner as necessary for carrying out the Utility Work. The Contractor shall notify the City immediately if:

- The Contractor becomes aware that any Utility Owner is not cooperating in identifying Utilities, negotiating or executing Work Orders, performing or approving any Utility Work, or delivering DRALs or CRALs
- A Utility Owner fails to complete design and/or construction for which it is responsible on or before the deadline established in the applicable Work Order
- Based on the progress made by the relevant Utility Owner, the Contractor believes that there is a possibility that the Utility Owner will not complete the Relocation of a Utility Owner-relocated Utility or any other Utility Work as required pursuant to a Utility Work Order to the extent and in the manner shown on the Utility Plans within the time limits set out in the applicable Work Order
- If, in each case of the items listed in this Section 7, the Contractor has complied in all respects with the requirements of this Section 7, including compliance with the applicable Utility Agreement and the applicable Utility Work Order with respect to the relevant portion of the Utility Work

After delivery of such notice, the Contractor shall continue to diligently pursue the Utility Owner's cooperation and shall assist the City in any attempts to reach a solution through the dispute resolution procedure outlined in the applicable Utility Agreement. The Contractor shall document any incurred costs as a direct result of the Utility Owner's failure to cooperate or perform its obligations under the applicable Utility Work Order in a timely manner. Such Utility Owner failure to cooperate issues shall be included in the Contractor's Monthly Progress Report as required by Section 2 Project Management.

If the City pursues legal action against a Utility Owner per the Utility Agreement, the Contractor shall cooperate as reasonably requested by the City in connection with such lawsuits, including having the Contractor and its subconsultants act as witnesses in such lawsuits and providing information, reports, graphs, photos, plans, renderings, and similar materials to the City Counsel, if requested by the City.

## **7.9 UTILITY WORK PROCEDURE**

For Utility Relocations performed by the Utility Owners, those Utility Owners with an existing franchise agreement and with Utilities located within right-of-way shall relocate within the timeframes specified in the respective franchise agreements upon notification via an executed Work Order. Utility Owners without an existing franchise agreement located within right-of-way shall relocate its Utilities within 90 Calendar Days upon notification via an executed Work Order. Work performance durations specified elsewhere in this Section 7 supersede these general performance durations in this Section 7.9.

### **7.9.1 UTILITY AGREEMENTS**

See Section 6 Third Party Agreements for additional information regarding Utility Agreements.

If the Contractor identifies Utility Work belonging to a Utility Owner without a Utility Agreement, the City may enter into a Utility Agreement with such Utility Owner. The Contractor shall assist the City with the development of the Utility Agreement, but the Contractor shall not be responsible for negotiating such Utility Agreement. The City will be responsible for drafting and negotiating the Utility Agreement.

### **7.9.2 UTILITY MATRIX**

The Contractor shall create and continually maintain the Project Utility Matrix. The Utility Matrix shall be up to date and current at all times, with the best information available. The Utility Matrix shall be submitted to the City monthly and as otherwise requested by the City.

The Utility Matrix shall include all Utility Data and any additions from Contractor investigations for each existing Utility located within the Project Limits or otherwise potentially impacted by the Project. Information to be included shall, at a minimum, consist of Utility identification, location, Utility type, Utility Owner, property interest including easement and right-of-way, size, material, conflict description, proposed resolution, restrictions, required notifications, Utility Work procedure status including DRAL and CRAL dates, Work Order status, As-Built Status, comments, and any addition information necessary for tracking of the Utility Work for the Project.

See Reference Document RD-07-10 for a Utility Matrix template.

### **7.9.3 UTILITY WORK ORDER**

The Contractor shall create a Utility Work Order per this Section 7 and expand the Utility Matrix to document and track Utilities.

### **7.9.4 UTILITY NO-CONFLICT CLOSEOUT FORM**

Once the Contractor has determined that a Utility shown on the Contractor's Utility Matrix is not in conflict, the Contractor shall provide a Utility No-Conflict Closeout Form to the respective Utility Owner to review and sign. A copy shall be submitted to the City.

### **7.9.5 DESIGN RELOCATION ACCEPTANCE LETTER**

The Contractor shall obtain design acceptance from the Utility Owner for each Public URD prepared in the form of a DRAL.

The Contractor shall review, then accept each Private URD to verify compatibility with the Project and provide acceptance to the Utility Owner in the form of a DRAL.

All completed DRALs shall be submitted to the City for Information.

## **7.9.6 CONSTRUCTION RELOCATION ACCEPTANCE LETTER**

### **7.9.6.1 WORK BY CONTRACTOR**

Each Utility Owner shall have the right to inspect the Utility Work performed on its Utilities by the Contractor. The Contractor shall not unreasonably refuse such Utility Owner inspection requests and shall coordinate the schedule and scope of such inspections with the Utility Owner.

The Contractor shall perform all construction of the Relocations in accordance with the executed Utility Work Order, the requirements of the Contract Documents, the Utility Agreements, and the standards and construction methods of the respective Utility Owners. The Contractor shall document acceptance of the Utility Work from the Utility Owner by obtaining a CRAL and submitting a copy to the City. In the event of a conflict between the requirements of the Utility Owner or requirements of the Contract Documents, the City, in its sole discretion, shall determine which shall govern.

### **7.9.6.2 WORK BY UTILITY OWNER**

To evidence its acceptance of construction of the Utility Work performed by the Utility Owner, the Contractor shall review and accept, or provide comments to the Utility Owner as appropriate, that the construction of the Relocation is compatible with the Project. The Contractor shall submit an executed CRAL to the Utility Owner and to the City. The Contractor shall immediately notify the Utility Owner and the City in writing of any noncompliance or inconsistency with the executed Utility Work Order.

## **7.9.7 UTILITY CONTACT LIST**

A list of known Utility Owners within and/or adjacent to the existing City owned property, including known contact information is provided in Reference Document RD-07-05.

## **7.9.8 UTILITY PERMIT APPLICATION AND OTHER PERMITS**

The Utility Owner will be responsible for obtaining all City Permits for Utility Work. The Contractor shall verify that the Utility Owner has obtained these permits prior to installing traffic control. In the event the Contractor determines that a Utility Owner does not have the required permits, the Contractor shall immediately notify the City in writing.

Utilities within right-of-way shall follow the Utility Owner plan review and standard City review processes.

## **7.9.9 AS-BUILT PLANS**

All Utility As-Built information shall be surveyed prior to trench backfilling to ensure accuracy of constructed information. The City's intent is to be provided detailed and accurate As-Built Utility location data to ensure and facilitate compliance with SB18-167 requirements for future projects.

Where the Utility Owner performs the Utility Work, the Utility Owner shall provide signed and stamped As-Built Plans of the Relocation to the City and to the Contractor as soon as practicable, but not later than 30 Calendar Days after execution of a CRAL. The As-Built Plans may be in the form of redlining changes that deviate from the Approved URD attached to the Utility Work Order. The Contractor shall show the Utility As-Built information on the final signed and stamped Project As-Built Plans and include the results of the 3D laser scans.

Where the Contractor performs the Utility Work, the Contractor shall provide signed and stamped As-Built Plans of the Relocation to the City and the Utility Owner as soon as practicable, but not later than 30 Calendar Days after execution of a CRAL. The As-Built Plans may be in the form of redlining changes that deviate from the Approved URD attached to the Utility Work Order. The Contractor shall show the Utility As-Built information on the final Project As-Built Plans.

As-Built Plans shall be signed and stamped by a Professional Land Surveyor or Professional Engineer, licensed in the State of Colorado.

## **7.10 ADDITIONAL REQUIREMENTS**

### **7.10.1 UTILITY ZONES**

The City has developed several Utility typical sections for the Project illustrating the allowable and restricted zones or areas for Utilities. These Utility zones were developed as a result of cross discipline efforts to reserve certain areas in the Mall typical section and to eliminate placing Utilities near Mall trees, suspended pavement modular unit areas, or areas that should be avoided for design coordination reasons. See Reference Document RD-07-03 for the Utility zone typical sections. Utility zone requirements are for Relocated and proposed Utilities and are not applicable for those Utilities that are protected-in-place or abandoned.

### **7.10.2 EXPRESSION OF UTILITIES IN THE GRANITE PAVERS**

When relocating or installing new Utilities, the Contractor shall avoid placing Utility appurtenances in locations where the Utility will penetrate multiple granite pavers. Additionally, all Utility penetrations shall be centered in the granite paver to avoid potential paver cracking issues. Where penetration of multiple granite pavers cannot be avoided, then Utility appurtenances shall be located in such a manner to cause the least disruption to the granite paver pattern.

For existing Utilities that are to remain, the Contractor shall adjust the existing Utility to minimize the number of granite pavers impacted and shall center the Utility penetration in the granite paver.

See Section 11 Granite Pavement System and Section 20 Public Life for additional granite paver penetration requirements and limitations. All granite paver penetrations shall be Approved by the City.

### **7.10.3 CITY TRAFFIC, HALO SECURITY CAMERAS, AND ITS CONDUITS**

The Contractor shall evaluate, design, and construct a series of conduits and pull boxes for the Project that will connect into the existing and proposed traffic signals equipment, lighting systems, HALO Security Cameras, and ITS systems. Additionally, the Contractor shall provide a minimum of four 3-inch conduits on each side of the Mall. The conduit runs shall extend the full Project length at locations Approved by the City and complying with these Section 7 requirements. The Contractor shall avoid placing the proposed pull boxes within the proposed granite paver surface. All conduits, pull boxes, and equipment shall be in accordance with City Standards and Specifications. See Section 16 Permanent Signing, Pavement Marking, Traffic Signals, and Street Lighting for additional Traffic, HALO Camera, and ITS requirements.

See Reference Document RD-07-14 for the existing City Traffic & ITS conduit and fiber optic system map.

### **7.10.4 DOWNTOWN DENVER PARTNERS**

Downtown Denver Partners (DDP) and the Denver Business Improvement District (BID) owns and maintains various Mall lighting and electrical facilities within the Project Limits. The Contractor shall be responsible for the removal, temporary storage, procurement, delivery, and installation of all Project Mall lighting and electrical products in accordance with the requirements of Section 19 Mall Lighting and Electrical.

### **7.10.5 DENVER WATER**

The City and Denver Water are entering into an Interagency Agreement (IAA) for the proposed waterline Work. The limits of the waterline replacement as well as the proposed design exhibits from Denver Water



**Exhibit A-2**

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are included in Reference Document RD-07-06. The Denver Water relocation schedule of values is included as Reference Document RD-07-20. The Contractor is responsible for final design and construction of the Denver Water Utility Work.

The City acknowledges certain conflicts exist within the conceptual design sketches from Denver Water's layout as provided. It shall be the Contractor's responsibility to design and construct the waterlines, as well as to evaluate the design as provided, identify design conflicts, evaluate if design variances are required, and make appropriate alterations to the design or to request design variances in accordance with this Section 7 to fit in the Project's identified Utility zones. The Contractor shall make all efforts in its design to eliminate the need for design variances, where feasible and to the extent possible.

The Initial Design Submittal for Denver Water shall be for the entire Project. Subsequently, Denver Water design submittals may be broken out into packages consistent with the construction phasing approach of the Denver Water Work.

**7.10.6 DENVER WASTEWATER**

The City has determined that sections of the existing sanitary sewer in the Project area will require to be relined. The Contractor shall be responsible for the construction Work associated with sewer relining, as identified in the City developed final engineering plans Reference Document RD-07-08. It shall be the Contractor's responsibility to evaluate and reline the existing sanitary sewer as identified in the Reference Document, identify design conflicts, adjust manhole lids, complete the Work as identified in the final engineering plans, and to minimize the impacts to the existing sanitary sewer system in the Project area.

**7.10.7 XCEL ENERGY**

Xcel and the City have been in discussions to coordinate and minimize the impacts to Xcel's electric network lines and underground vaults in the Project area. The City acknowledges that certain conflicts exist within the Project Limits with the existing electrical network, the proposed Mall trees, and the proposed suspended pavement modular unit system. The Contractor shall coordinate with Xcel on the existing electric network lines and underground vaults, identify design conflicts, and make appropriate alterations to the design that can be constructed in a single sequence and not requiring additional moving or Relocation of the network lines or underground vaults. The Contractor shall meet with Xcel within 60 Calendar Days, or sooner, after Notice to Proceed (NTP) to begin Utility Work coordination. Network line relocations should assume a six-month schedule for design and procurement, with an additional 18 weeks for construction, at a minimum. The City anticipates the Relocation will be for approximately 1.5 blocks, between Curtis Street and Champa Street mid-block to the intersection of Arapahoe Street.

Xcel electric (non-network line) relocations should assume a 14-week schedule for design and procurement. Construction durations will be determined through the scope defined in the Work Order.

Xcel owns and operates several gas lines in the Project area. The location of the existing gas line is shown in the Utility Data. Xcel has indicated that several of the existing gas lines may be relocated outside of the Project Limits, based on the final design. The Contractor shall coordinate with Xcel on the existing and Relocated gas lines, identify design conflicts, and make appropriate alterations to the design to fit in the Project's identified Utility zones, or request design exceptions. See the Utility Data for additional information on the existing electrical network lines, underground vaults, and gas lines. Xcel gas Relocations should assume an eight-week schedule for design and procurement. Construction durations will be determined through the scope defined in the Work Order.

The City has issued a work request to Xcel to initiate Relocation design for the network line and for several gas lines as shown in the work request (RD-07-23). Following NTP, the Contractor shall be responsible for

coordination with Xcel to review their Relocation design for conformance with the Contractor's proposed Utility Relocation Work and continuing the Relocation Work requirements of this Section 7.

### **7.10.8 XCEL DISTRICT**

Xcel District owns and operates several underground steam lines, chiller lines, fiber optic lines, and underground vaults in the Project Limits. Relocating or impacting the active steam and chiller lines shall be avoided. The Contractor shall coordinate the design and construction Work efforts to avoid impacts to the existing active steam and chiller systems in the Project area. Protection of the existing active underground steam lines, chiller lines, fiber optic line, and Utility vaults in place are included in the Franchise Agreement with Xcel. The Contractor shall coordinate all Work to protect-in-place. The cost of repairing any impact or damage to these facilities as a result of the Contractor's Work shall be at the Contractor's expense. The Contractor shall not pass any repair or replacement costs on to the City, Xcel, or Xcel District. If the steam line is impacted Xcel anticipates a 22-week schedule for design and procurement and an additional eight weeks for construction of the steam line. Manhole adjustments for grading and granite paver pattern considerations are permitted. Inactive lines shall be removed or abandoned if in conflict with the design.

See the Utility Data for additional information on the existing underground steam and chiller lines and vaults.

### **7.10.9 REGIONAL TRANSPORTATION DISTRICT (RTD)**

RTD owns and maintains several electrical and communication Utilities near the existing light rail lines at Stout Street and California Street. Due to rail loading, and for conditions associated with the catenary system, Utilities crossing the rail require special detailing, and metallic objects in the vicinity may need grounding. RTD standards, specifications, and design criteria shall be used for design and construction Work of these Project elements.

The Contractor shall coordinate the design and construction Work to avoid impacts to the existing RTD Utilities and light rail lines. RTD Utilities shall be located and potholed by the Contractor prior to construction Work.

Utilities shall not be abandoned under the tracks unless this abandonment meets all RTD LRT Design Criteria for abandonment. All new Utilities shall meet RTD LRT Design Criteria. All metallic Utilities shall be cathodically protected to meet RTD LRT Design Criteria. All Utilities (metallic and non-metallic) shall have tracer wire as per UNNC law.

Refer to RTD's Construction Engineering website for RTD protections, standards, and requirements while performing any construction Work adjacent to rail properties: <https://www.rtd-denver.com/business-center/construction-engineering>.

### **7.11 UNIDENTIFIED UTILITY CHANGE ORDER**

In the event an Unidentified Utility is identified or Utility is determined to be located significantly different than information represented in the City provided SUE Plans, other Utility Data, other Reference Documents, or as part of the Contractor's due diligence during design Work, in accordance with this Section 7; then the Contractor shall perform the following:

- If the Contractor discovers any Unidentified Utilities, then it shall notify the City, in writing, and the relevant Utility Owner of such Unidentified Utility as soon as practicable, but no later than within two Working Days

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- Additionally, the Contractor shall leave such Unidentified Utility untouched, except where necessary to assure safety, for two Working Days unless otherwise directed by the City
- Unidentified Utilities may be considered a change condition only if the Work effort associated with the Unidentified Utility has a material adverse cost or critical path schedule delay impact and is not excluded by this Section 7
  - Upon receiving the Contractor's notice to the City that it believes it has discovered an Unidentified Utility, the City will investigate such Unidentified Utility and if it determines that such Unidentified Utility fits the criteria, as defined in this Section 7, and cause a materially adverse cost or critical path schedule delay impact required for the performance of the Work
  - The City will issue a Field Order / Change Directive or the Contractor shall submit a Potential Change Order – following the procedures set out in the General Contract Conditions
- The Contractor shall bear the burden of proving that the Unidentified Utility meets the criteria of an Unidentified Utility as defined in this Section 7 and that it could not reasonably have Worked around the Unidentified Utility so as to avoid additional cost or schedule delay
  - Each request for a Change Order under this Section 7 shall be accompanied by a statement setting forth all relevant assumptions made by the Contractor with respect to the Utility Data, justifying the basis for such assumptions and explaining exactly how the discovered Unidentified Utility differs from those assumptions, and stating the efforts undertaken by the Contractor to find alternative design or construction solutions to eliminate or minimize the problem and the associated contractual impacts

**7.12 DELIVERABLES**

All plan deliverables, as required by the Technical Requirements, shall show the most up to date and best possible Utility information.

At a minimum, the Contractor shall submit the following to the City:

<b>Table 7-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Utility Matrix	Approval	Monthly and upon request
SUE Plans	Approval	Concurrent with Final Design Submittal
Utility Work Order	Approval	Five Working Days after Utility Owner obtained signature
Utility No-Conflict Closeout Form	Information	Five Working Days after Utility Owner obtained signature
URD Review	Information	Five Working Days after Utility Owner and Contractor obtained signature
CRAL	Information	Five Working Days after Utility Owner and Contractor obtained signature
DRAL	Information	Five Working Days after Utility Owner and Contractor obtained signature

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 7 Utility Relocations

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<b>Table 7-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Non-standard design features and Design Variance Requests	Approval	Prior to issuance of RFC documents
As-Built Plans	Approval	30 Calendar Days after execution of CRAL
Written notice of meeting with Utility Owner	Information	Five Working Days prior to meeting
Meeting minutes	Information	Five Working Days after each meeting
Estimated Utility Relocation costs to be reimbursed by the City	Approval	Immediately upon discovery
Written notice of Utility Owner not meeting Work Order time frame	Information	Immediately upon discovery
Written notice of Utility Permit violation	Information	Immediately upon discovery
Written notice of failure of Utility Owner to cooperate or timely perform	Information	Immediately upon discovery

### 7.13 APPENDICES

- Appendix A – Utility Work Order
- Appendix B – Utility No-Conflict Closeout Form
- Appendix C – Design Relocation Acceptance Letter (DRAL)
- Appendix D – Construction Relocation Acceptance Letter (CRAL)

# Appendix A – Utility Work Order

## 16TH STREET MALL DESIGN-BUILD PROJECT

<b>FORM OF UTILITY WORK ORDER</b>			
Owner: _____			
URA No.: _____	Utility Identification No.: _____		
Work Order No.: _____	Work Order Revision No.: _____		
Work Breakdown Structure No.: _____			
<b>LOCATION:</b>			
<b>DESCRIPTION:</b>			
<b>OPERATING RIGHTS:</b>			
<b>DESIGN</b>			
	<input type="checkbox"/>	No Design Required	
Performing Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
Responsible Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
The Project pays Owner	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Utility Owner pays The Project	Lump Sum: _____	Actual Cost Not to Exceed: _____	
The Project pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Comments _____			
<b>CONSTRUCTION</b>			
	<input type="checkbox"/>	No Construction Required	
Performing Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
Responsible Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
The Project pays Owner	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Utility Owner pays The Project	Lump Sum: _____	Actual Cost Not to Exceed: _____	
The Project pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Comments _____			
<b>CONSTRUCTION INSPECTION</b>			
	<input type="checkbox"/>	No Construction Inspection Required	
Performing Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
Responsible Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
The Project pays Owner	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Utility Owner pays The Project	Lump Sum: _____	Actual Cost Not to Exceed: _____	
The Project pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Comments _____			
<b>PROPERTY ACQUISITION</b>			
	<input type="checkbox"/>	No Property Acquisition Required	
Performing Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
Responsible Party	<input type="checkbox"/>	Utility Owner	<input type="checkbox"/> Project Contractor <input type="checkbox"/> The Project
The Project pays Owner	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Utility Owner pays The Project	Lump Sum: _____	Actual Cost Not to Exceed: _____	
The Project pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed: _____	
Comments _____			

Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
 Section 7 Utility Relocations

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<b><u>SCHEDULE (THIS WORK ORDER ONLY)</u></b>	
<b><u>Design</u></b>	<b><u>Construction</u></b>
Start Date: _____	Start Date: _____
Completion Date: _____	Completion Date: _____
Comments:	
<b><u>WORK ORDER TERMS AND CONDITIONS</u></b>	
<p>SCOPE OF WORK ORDER. This Work Order is entered into by and among Owner and City and County of Denver (City) and the Project Contractor, in order to implement in part, the Utility Agreement identified herein, as the same may be amended from time to time, and which is incorporated herein by this reference. All Work undertaken pursuant to this Work Order shall be performed in accordance with the requirements of the Utility Agreement, unless otherwise set forth herein. The Work Order shall govern to the extent of any conflict between the terms of the Utility Agreement and the terms of this Work Order. Unless otherwise defined herein, all initially capitalized terms and conditions shall have the meaning prescribed to them in the Utility Agreement.</p> <p>WORK ORDER ATTACHMENTS. This Work Order and any attachments hereto contain information specific to the Relocation to be performed hereunder. Attached and/or referenced Relocation Standards are incorporated herein by this reference and shall be considered a part of this Work Order. This Work Order governs only the Utility Work specifically identified herein and shall be conclusive as to all matters represented herein.</p> <p>ORDER OF EXECUTION. This Work Order shall be executed first by Utility Owner, then by the Project Contractor, and then finally by the City.</p> <p>IN WITNESS WHEREOF, the City, the Utility Owner, and the Project Contractor have executed this Work Order, which shall be effective as of the last date signed by all Parties.</p>	
Utility Owner:	_____
By:	_____
Print Name:	_____
Title:	_____
Date:	_____
Project Contractor:	_____
By:	_____
Print Name:	_____
Title:	_____
Date:	_____
City Project Manager:	_____
By:	_____
Print Name:	_____
Title:	_____
Date:	_____

Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
 Section 7 Utility Relocations

RFP March 31, 2020

<b>FORM OF UTILITY WORK ORDER (cont.)</b>			
		Utility Identification No: _____	
<b>SECTION A</b>	<b>SCOPE</b>		
<b>SECTION B</b>	<b>REQUIRED PERMITS</b>		
	<u>Permit Type</u>		<u>Permit Responsibility</u>
	_____		_____
	_____		_____
	_____		_____
	_____		_____
	_____		_____
<b>SECTION C</b>	<b>LIST OF ATTACHMENTS</b>		
<input type="checkbox"/>	Exhibit 1:	Owner Design Sheet	[date & description] _____
<input type="checkbox"/>	Exhibit 2:	The Project Design Sheet	[date & description] _____
<input type="checkbox"/>	Exhibit 3:	Cost Estimate	[date & description] _____
<input type="checkbox"/>	Exhibit 4:	Property Rights	[date & description] _____
<input type="checkbox"/>	Exhibit 5:	Other	_____

## Appendix B – Utility No-Conflict Closeout Form

This Utility No-Conflict Closeout Form (No-Conflict Form) is executed by the Owner and the Project Contractor in connection with the 16<sup>th</sup> Street Mall Design-Build Project Utility Agreement entered into by the Utility Owner and the City. Unless the context clearly otherwise requires, initially capitalized terms shall have the meaning prescribed to them in the Utility Agreement.

A fully-executed No-Conflict Form indicates the undersigned’s concurrence that, as of the Project plans dated \_\_\_\_\_, no Relocation is required for Owner’s Utility referenced herein. Owner and the Project Contractor acknowledge that future modifications to the Project plans may require Relocation of the references Utility in accordance with the Utility Agreement. Two originals shall be executed, and a copy shall be forwarded to the City, by the Contractor.

Utility Owner	
Utility Identification No.	
Location	
Comments (attach pages as necessary)	

**FOR UTILITY OWNER**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**FOR PROJECT CONTRACTOR**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

If this form is not signed by the Utility Owner, the Utility Owner shall state below its basis for disagreement with the No-Conflict designation for this Utility:


(attach pages as necessary)



# Appendix C – Design Relocation Acceptance Letter (DRAL)

This DESIGN RELOCATION ACCEPTANCE LETTER (“DRAL”) is executed by the non-Designing Party in connection with the 16<sup>th</sup> Street Mall Design-Build Project Utility Agreement, entered into by the Utility Owner and the City. Execution of this DRAL indicates the non-Designing Party’s acceptance and approval of the design of the Relocation, as attached to this DRAL, performed and completed by the Designing Party. Unless otherwise defined herein, initially capitalized terms shall have the meaning prescribed to them in the Utility Agreement. Two originals shall be executed, and a copy shall be forwarded to the City, by the Contractor.

Utility Owner:	
Utility Identification No.:	
Work Order No.:	Work Order Date:
Work Order Rev. No.:	Rev. Date:
Designing Party:	

Now, therefore, the non-Designing Party executes this DRAL to indicate that it has reviewed the design of the Relocation completed by the Designing Party and has found the design of the Relocation to have been designed in accordance with the non-Designing Party’s Relocation Standards duly provided to the Designing Party:

**Non-Designing Party**

By: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: \_\_\_\_\_

The non-Designing Party declines execution of this DRAL at this time for the following reasons:


(attach pages as necessary)

# Appendix D – Construction Relocation Acceptance Letter

This CONSTRUCTION RELOCATION ACCEPTANCE LETTER (“CRAL”) is executed by the non-Constructing Party in connection with the 16<sup>th</sup> Street Mall Design-Build Project Utility Agreement entered into by the Utility Owner and the City. Execution of this CRAL indicates the non-Construction Party’s inspection and acceptance of the construction of the Relocation performed and completed by the Constructing Party. Unless otherwise defined herein, initially capitalized terms shall have the meaning prescribed to them in the Utility Agreement. Two originals shall be executed, and a copy shall be forwarded to the City, by the Contractor.

The construction of the Relocation inspected and accepted by execution hereof is described below:

Owner:	
Utility Identification No.:	
Work Order No.:	Work Order Date:
Work Order Rev. No.:	Rev. Date:
Constructing Party:	

Now, therefore, the non-Constructing Party executes this CRAL to indicate that it has inspected the construction of the Relocation completed by the Constructing Party and has found the construction of the Relocation has been performed in accordance with the Relocation Plans:

### Non-Constructing Party

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

The non-Constructing Party declines execution of this CRAL at this time for the following reasons:


(attach pages as necessary)

## **8.0 RIGHT-OF-WAY**

### **8.1 GOALS**

The goals of this Section 8 are to:

- Keep improvements within the existing City and County of Denver (City) owned right-of-way
- Minimize impacts to adjacent businesses that possess a revocable permit for encroachments within the 16<sup>th</sup> Street Mall (Mall) right-of-way
- Identify and address any real property impacts to businesses situated adjacent to the Project

### **8.2 RIGHT-OF-WAY REQUIREMENTS**

The City does not anticipate a need to acquire any additional real property interests for Project delivery. The Contractor shall perform all construction Work activities related to this Project within the limits of existing City owned right-of-way.

See Reference Documents RD-08-01 and RD-08-02 for the Project's Ownership Map & Right-of-Way plans and CAD files.

The Contractor is responsible for securing any temporary laydown, materials or equipment storage areas for the Project, as well as any temporary Contractor Project office facilities.

### **8.3 PERMISSION TO ENTER PROPERTY**

Upon receipt of written Approval from the City, the Contractor shall secure a signed Permission to Enter Property letter prior to entering any private property adjacent to the Project for any activities related to the Project. Such activities may include but are not limited to construction, surveying, environmental investigation, or appraisal inspection.

It shall be the Contractor's sole responsibility and cost to obtain the signed Permission to Enter Property letter and the Contractor shall be responsible for damages and claims that may arise from such entry onto the private property. The Contractor shall indemnify and hold the City safe and harmless from any claims or liability arising from the Contractor's procurement, or failure to procure, Permissions to Enter. The Contractor shall submit copies of all Permission to Enter Property letters to the City for Approval prior to entering the private property.

See Section 6 Third Party Agreements for requirements related to Work, near, or under Regional Transportation District (RTD) tracks.

### **8.4 ADDITIONAL LAND RIGHTS**

In the event the Contractor deems additional land rights are necessary for Project delivery, such land rights shall be delineated and immediately brought to the attention of the City for review. If the City confirms additional land rights are in fact required for the Project, the Contractor shall provide the necessary documentation for the City to acquire the property. Such documentation may include, but are not limited to; legal descriptions, ownership mapping, control drawings, control files, survey information, Project coordination notes, design drawings and/or design files.

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 8 Right-of-Way

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The following supplemental information shall be provided to the City prior to an Approval and subsequent pursuit of additional land rights for the Project:

- A sufficient level of design and construction Work means and methods that justifies the need for the acquisition
- Description of alternatives considered by the Contractor to avoid need for additional land rights for the Project
- Legal descriptions to describe the required right-of-way or easements
  - Revisions shall be based on the Project plans previously provided by the City
  - Updated legal descriptions shall be signed and sealed by a Colorado Professional Land Surveyor
- Contractor shall provide an ownership report for temporary construction easements
- Contractor shall provide sufficient evidence of an environmental investigation and the related clearance of the additional acquisition area
- Contractor shall provide sufficient NEPA clearance, as necessary

As part of the Final Design Submittal, the Contractor shall provide a letter certifying that the Contractor's design does not require any additional land rights – whether fee acquisition, permanent easement, or temporary construction easement.

## 8.5 PROPERTY MANAGEMENT

The Contractor shall comply with all Applicable Law and obtain all necessary permits or other approval documents required by State and Local governments for all environmental remediation related activities, if encountered as part of the Work. Refer to Section 5 Environmental Requirements for additional requirements.

If the Contractor's Work requires specific business property requirements, then those considerations shall be submitted to the City for Approval.

## 8.6 DELIVERABLES

At a minimum, the Contractor shall submit the following to the City:

Table 8-1 Deliverables		
Deliverable	Information or Approval	Schedule
Letter certifying no additional land rights required for Contractor design	Information	Concurrent with Final Design Submittal
Fully executed Permission to Enter Property letter	Approval	14 Calendar Days prior to entering private property for non-invasive activities
Supporting documentation for any additional land rights	Approval	As needed and as approved
Specific business property Work requirements	Approval	As identified during design

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 8 Right-of-Way

RFP March 31, 2020

<b>Table 8-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Stamped and sealed legal descriptions to reflect any/all right-of-way impacts related to the Project	Approval	Prior to Final Completion

## **9.0 SURVEY**

### **9.1 GOALS**

The goals of this Section 9 are to:

- Establish the Project horizontal and vertical control
- Locate additional topographic features as needed for design and construction

### **9.2 ADMINISTRATIVE REQUIREMENTS**

#### **9.2.1 STANDARDS**

The Contractor shall comply with the requirements of the Contract Documents and shall meet all applicable Federal, State, and City and County of Denver (City) requirements related to surveys, records, and monuments to complete the Work.

#### **9.2.2 PROJECT SURVEY COORDINATOR**

The Contractor shall designate a Professional Land Surveyor (PLS), licensed in the State of Colorado, as the Project survey coordinator. The Project survey coordinator shall be in responsible charge of all Contractor survey activities. The Project survey coordinator shall direct and review, and verify all City Supplied Survey Data and shall be the point of contact for all survey related activities. Contractor survey staff shall perform survey Work under the direct supervision of the Project survey coordinator.

All survey crew chiefs shall carry business cards that include their name, title, business address, and phone number while engaged in performing survey activities on the Project. These cards shall be offered to any public contacts made during the performance of survey activities as a means of introduction and point of contact.

#### **9.2.3 CITY SUPPLIED SURVEY DATA**

CAD files presenting the existing survey Basis of Design are provided in Reference Documents RD-09-01 and RD-09-02 which contain City Supplied Survey Data, including a PROJECT CONTROL DIAGRAM, topographic mapping, and a digital terrain model. The Contractor shall verify and confirm the accuracy of all survey and mapping information provided to the Contractor, regardless of the source of the information. The Contractor shall document all forms of data verification and submit a City Supplied Survey Data Verification Letter including records of relevant survey data verification, to the City, no later than 60 Calendar Days following issuance of Notice to Proceed (NTP). Any discrepancies in information provided shall be reported to the City. The City Surveyor's Office will assist with survey records research; however, it is the Contractor's responsibility to obtain all necessary survey records.

#### **9.2.4 CONTRACTOR SUPPLIED SURVEY DATA**

The Contractor shall provide all verification and supplemental surveys required for completion of the design and construction Work.

#### **9.2.5 DESIGN SURVEY MONUMENTATION**

The Contractor shall include the PROJECT CONTROL DIAGRAM in all design plan submittals.

#### **9.2.6 PRESERVATION OF SURVEY MONUMENTS**

The preservation of survey markers and monuments is mandatory. At all times during construction Work, the Contractor shall ensure that right-of-way survey control is, or can be made available, as required for use on adjacent projects in a timely manner. The marker position shall be accurately referenced prior to

disturbing any such marker. The Project Survey Coordinator shall be responsible to replace or reestablish all survey markers or monuments, including appropriate documentation.

The Contractor shall coordinate with the City Surveyor's Office to protect and restore monuments as required to complete the design and construction Work.

### **9.2.7 SURVEY RECORDS**

The Contractor shall prepare and maintain supporting documentation, including but not limited to field notes, drawings, and calculations for all Project survey Work. All survey records shall conform to the City Standards and Specifications. Such records shall be neat, legible, accurate, and maintained by the Contractor in a neat and orderly manner.

The Contractor's Project survey coordinator shall be required to sign and seal the survey documentation in accordance with State law. All such documentation shall be transmitted to the City at the completion of the survey Work.

## **9.3 SURVEY REQUIREMENTS**

Prior to construction Work activities, the Contractor shall perform a survey to verify all survey control points, City range points, section corners, and benchmarks as shown on the PROJECT CONTROL DIAGRAM. The Contractor shall be responsible for replacing all land survey monuments disrupted by construction Work activities or by negligence on the part of the Contractor. The Contractor is required to follow Colorado state law regarding survey monuments. Survey monumentation shall be included in design plan sheets. The Contractor shall retain a Colorado licensed Professional Land Surveyor to reset any affected survey monuments.

After completion of the construction Work, the Contractor shall upgrade temporary range points with permanent range point monuments at the locations as indicated on the PROJECT CONTROL DIAGRAM. Monuments shall conform to current City Standards and Specifications.

### **9.3.1 DESIGN CONTROL SURVEYS**

The Contractor shall plan, schedule, and perform all surveys and monumentation necessary to maintain and supplement the Project control network for the Project design. The Contractor shall submit to the City any revised PROJECT CONTROL DIAGRAM showing modifications to the Project control network.

### **9.3.2 DESIGN SURVEYS**

The Contractor shall arrange for all supplemental survey information and Utility locations necessary to complete the design. Design surveys shall provide sufficient detail to verify actual field locations of existing drainage improvements as well as for the final design of drainage and Utility improvements. Surveying shall be performed in accordance with the City Standards and Specifications. Traffic control and permits necessary to complete the survey shall be the responsibility of the Contractor. The Contractor shall deliver the data and field notes in a format mutually agreed to by the Contractor and the City upon completion of the survey. Errors and omissions found by the City shall be corrected by the Contractor and resubmitted. The Contractor shall not receive additional compensation for any corrective Work.

### **9.3.3 CONSTRUCTION CONTROL SURVEYS**

The Contractor shall plan, schedule, and perform all surveys and monumentation necessary to maintain and supplement the Project control network for the construction layout of the Work. The Contractor shall submit to the City any revised PROJECT CONTROL DIAGRAM showing modifications to the Project control network due to construction layout Work.

### **9.3.4 AS-BUILT PLANS**

The Contractor shall plan, schedule, and perform all surveys required to document the location of As-Built Project features. See Section 3 Quality Management and other Technical Requirements, as applicable, for additional As-Built Plan submittal requirements. The As-Built Plans shall comply with City Standards and Specifications, including all items on the As-Built Drawing Submittal checklist and, at a minimum, the following Project elements:

- Potholing to accurately locate Utilities
- Pipe sizes, inverts, and flow directions
- 16<sup>th</sup> Street Mall (Mall) horizontal and vertical profile grade lines, including the transit way centerline crown and flowlines, edge of granite pavers, and face of building
- Cross streets and alley ways centerline and profiles
- Edge of cross street and alley ways pavement
- Pedestrian sidewalks and ramps
- Permanent aesthetic features elements including Public Life and furniture, fixtures, and equipment (FFE) products; fountains; and benches
- All Utilities including items such as pull boxes, valves, and vaults (including accurate depth)
- Trees
- Irrigation systems
- Signs, traffic signals, and any smart poles
- Lighting
- Permanent Water Quality Best Management Practices (BMPs)

As-Built survey shall be completed by a PLS, licensed in the State of Colorado. All As-Built electronic data shall be submitted to the City, including CADD data, photos, and point data. The submitted electronic data shall be organized and include a detailed inventory of all materials.

### **9.3.5 MONUMENTATION**

The Contractor shall reset and replace with new monuments all monumentation, of any kind, damaged, lost or destroyed during the progression of work. The Contractor shall submit a final Survey Monumentation Diagram to the City to document the disposition of all monumentation existing, destroyed, moved, replaced, or newly created within the Project Limits. The final Survey Monumentation Diagram shall be in the form of a Land Survey Plat as defined by State Statute and after acceptance, shall be appropriately deposited.



**9.4 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 9-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
City Supplied Survey Verification Letter	Information	60 Calendar Days following issuance of NTP
Revised PROJECT CONTROL DIAGRAM	Approval	Prior to Final Completion
As-Built survey diagram, plans, and electronic data.	Approval	Prior to Final Completion
Final Survey Monumentation Diagram	Approval	Prior to Final Completion

## **10.0 GEOTECHNICAL AND PAVEMENTS**

### **10.1 GOAL**

The goals of this Section 10 are to:

- Build cross street and alley way pavement sections that will last for 30 years
- Build the 16<sup>th</sup> Street Mall (Mall) granite pavement system so that it will last for 40 years

### **10.2 GENERAL REQUIREMENTS**

The Contractor shall design and construct stable roadway subgrades and excavations; and a stable foundation for all roadway pavements. Stable is defined to mean that foundations shall be designed and constructed to ensure that foundation movement shall not result in exceedance of the performance criteria.

The Contractor is advised that this Section 10 addresses the geotechnical Work related to the cross street and alley way pavements and the Mall granite pavement system. Additional pavement design requirements for the granite pavement system are addressed in Section 11 Granite Pavement System. Additional design requirements for the cross street intersections are provided in Section 15 Cross Street and Intersection Layout.

The City and County of Denver (City) has prepared a study of potential alley way enhancements. See Reference Document RD-10-01 for additional information related to this enhancement program. The Contractor shall avoid any Work in the alley ways that may preclude implementation of this future alley way enhancement program.

### **10.3 GEOTECHNICAL INVESTIGATIONS**

#### **10.3.1 GENERAL**

A Project-specific geotechnical investigation including laboratory tests and engineering analyses has been conducted by the City to define preliminary subsurface conditions and soil characteristics for the Project. The results of this investigation are contained in the Geotechnical Investigation Report provided in Reference Document RD-10-02, which is provided for background and information only. Also, for reference is the 2016 Kleinfelder Geotech report (RTD) and the 1978 Seismic Risk report, RD-10-03 and RD-10-04 respectively. The Contractor shall conduct such additional subsurface investigations as it determines necessary to complete its design for all Project improvements. Subsurface investigations shall be completed in accordance with American Association for State Highway Transportation Officials (AASHTO), Colorado Department of Transportation (CDOT), and City Standards and Specifications requirements.

The Contractor shall consider and design for the impacts of ground water and the required mitigation in its design and construction. See additional information regarding ground water in Section 5 Environmental Requirements.

The Contractor shall be responsible for any supplemental subsurface investigations necessary to complete the Work. Supplemental subsurface investigations shall be incorporated into the Contractor's Geotechnical Investigation Report, which shall provide, at a minimum, a similar level of analysis as the City supplied Geotechnical Investigation Report.

The Contractor shall design and construct all required excavations, foundations, and trench backfill and shall perform all required subgrade stabilization or removals to complete the Work.

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 10 Geotechnical and Pavements

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The Contractor shall perform subsurface investigations and laboratory testing during design to define the subsurface conditions. The investigations shall be conducted in general accordance with AASHTO R13. All borings shall be logged in the field in general accordance with American Society for Testing & Materials (ASTM) D2488. Laboratory testing shall be conducted on representative samples to classify the materials and describe the subsurface conditions and to identify any potential problems which may exist. Classification of soil and rock samples tested in the laboratory shall be in general accordance with ASTM D2487 and AASHTO M145.

The maximum spacing of test borings shall be no greater than 175 feet. Areas of complex subsurface conditions shall require closer spacing of borings. The Contractor shall conduct subsurface investigations to describe subsurface conditions and to delineate major changes in subsurface conditions.

The Contractor shall prepare a Project Geotechnical Investigation Report summarizing subsurface investigations performed and submit to the City for Approval. The report shall provide a comprehensive written description of the subsurface investigations and laboratory testing completed, final typewritten boring logs, description of site conditions, engineering recommendations, and construction considerations. This report shall be sealed and signed by a licensed Professional Engineer in the State of Colorado.

### **10.3.2 GRANITE PAVEMENT SYSTEM GEOTECHNICAL INVESTIGATION**

The Contractor shall be responsible for any supplemental subsurface investigations necessary to complete the granite pavement system design in accordance with this Section 10. Supplemental subsurface investigation(s) shall be incorporated in the Contractor's Geotechnical Investigation Report, which shall provide, at a minimum, a similar level of analysis as required by City Standards and Specifications and as in the Geotechnical Investigation Report. Specifically, the Contractor shall:

- Provide sufficient geotechnical investigations to evaluate the subgrade strength and variability of the in-situ materials prior to backfilling any excavation areas
- Develop a process for providing uniform support to the granite pavement system and a program of verification testing to ensure the uniform support has been achieved under the transit way within each Mall block
  - This process and verification testing program may be deferred for inclusion in the Granite Pavement System Design Report and/or Pavement Design Report; all testing procedures shall be included in the CQMP
- Provide in-situ soil strength parameters to use for the granite pavement system design

## **10.4 PAVEMENTS**

### **10.4.1 DESIGN AND CONSTRUCTION REQUIREMENTS**

The Contractor shall review the available geotechnical information and obtain additional subsurface information required for pavement design and to complete the Work.

Pavement thickness designs shall comply with the requirements of the Metropolitan Government Pavement Engineers Council (MGPEC) *Pavement Design Standards*. Refer to the 2019 version of the Pavement Design Standards at [www.mgpec.org](http://www.mgpec.org).

The cross streets shall be constructed of Jointed Plain Portland Cement Concrete Pavement (PCCP) with a structural section matching the existing pavement section and in compliance with City Standards and Specifications, whichever requirement results in the stronger pavement section.

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 10 Geotechnical and Pavements

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RFP March 31, 2020

At both Stout Street and California Street the cross street pavement shall include doweled joints and loadings as required by RTD standards, specifications, and design criteria. Reference Document RD-11-09 provides a representative RTD detail showing doweled joint.

Alley ways shall be constructed of Jointed Plain PCCP in accordance with City Standards and Specifications (Transportation Standards and Details for the Engineering Section).

Cross street pavement full-depth reconstruction shall be required for the entire width of the roadway, extending to the furthest limits of curb and gutter and sidewalk reconstruction Work. Exemptions to these requirements are provided below:

- The proposed bus island, south of the Mall, along Tremont Place does not require associated full width roadway reconstruction
  - The full width roadway reconstruction limits may be determined by the southeast curb and gutter limits
- The proposed bus stop, north of the Mall, along California Street does not require associated full width roadway reconstruction
  - The full width roadway reconstruction limits may be determined by the northeast curb and gutter limits

The existing asphalt pavement segment (35 +/- feet), north of the Mall, along Cleveland Place shall be replaced with PCCP.

All Pavement Design Report for all pavements, including cross street, alley, and temporary pavements shall be submitted to the City for Approval. The Pavement Design Report shall include a design information, calculations, documentation and other information necessary for the pavement design. Pavement design information for the granite pavement system shall be included in the Granite Pavement System Design Report, as required in Section 11 Granite Pavement System.

#### **10.4.1.1 CROSS STREETS PAVEMENT ANALYSIS AND DESIGN**

Equivalent Single Axle Loads (ESALs) required for the design of the cross street pavements are provided in RD-10-05. For the cross street pavement design, the Contractor shall include the loading resulting from the high volume of Regional Transportation District (RTD) Free MallRide shuttles as the transit way traverses the cross streets and design the cross street pavement system at the transit way crossing for these loads. The Contractor shall use the City Standards and Specifications and MGPEC *Pavement Design Standards* for pavement design. The alley way pavement structural sections, within the Mall, shall be determined based on the Contractor's pavement design applying the ESALs as required by this Section 10, or by matching the existing pavement structural section, whichever provides the stronger pavement section and as Approved by the City. The pavement structural section at the transit way crossing shall be designed based on the loadings developed as required in Section 11 Granite Pavement System.

The Contractor shall be responsible for cross street PCCP joint design. Cross street PCCP joint design shall comply with the City *Engineering Division Transportation Standards and Details*. The PCCP longitudinal and transverse joint designs shall be compatible with lane configurations. Longitudinal joints shall be placed adjacent to and within six inches of lane markings, as applicable. Cross street PCCP pavement joint designs shall be submitted to the City for Approval.

See Section 11 Granite Pavement System for additional granite pavement system base slab jointing requirements.

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The Contractor shall be responsible for pavement designs for detour, temporary, and any other pavement identified during the Project. Any temporary pavement design by the Contractor shall provide smooth travel at the posted speed limit and shall be maintained for the duration needed.

The PCCP pavement design shall not include the structural component of the aggregate base course (ABC) in the pavement design, however a minimum of six inches of ABC is required. Composite hot mix asphalt (HMA) over ABC utilizing the structural component of the ABC will be considered, based on swell and other factors. Any pavement underlain by aggregate base course and subgrade soil which classifies as A-6 or A-7-6 shall have a layer of separation geotextile between the subgrade and the aggregate base course. ABC is defined in the CDOT *Standards for Road and Bridge Construction* and shall have a minimum R-Value of 78. The Contractor shall provide test data confirming the ABC meets all criteria for gradation, liquid and plastic limits, and R-Value.

Pavements shall be designed for an initial Serviceability Index of 4.5 and end of design period Serviceability Index of 2.5. Reliability of 95 percent is required and is already part of the required MGPEC pavement design method.

Pavement shall be designed to comply with the City *Engineering Division Transportation Standards and Details* and constructed with surface drainage to prevent pavement structure problems. Drainage slopes, both cross and longitudinal, shall meet the Americans with Disabilities Act (ADA) regulations and guidelines and City Standards and Specifications.

#### **10.4.1.2 ALLEY WAY PAVEMENTS**

All alley way patching or reconstruction to accommodate the Work shall be constructed using PCCP. All patching or reconstruction shall match the existing alley way pavement section and in conformance with City Standards and Specifications.

#### **10.4.1.3 PAVEMENT TYPES AND THICKNESS REQUIREMENTS**

Pavement type and thickness design shall be performed by the Contractor after completion of its geotechnical investigations for final pavement design that provides the actual design subgrade support criteria, subject to field placement verification.

Rigid PCCP pavement thicknesses shall include an additional ¼-inch, after rounding up to the closest ½-inch, to accommodate grinding at year 22. Example: A calculated design of 9.8 inches becomes 10.25 inches for plan thickness.

For flexible HMA pavement, to be used only for temporary detours, the Contractor shall use the grading and binder for HMA as determined using the City *Engineering Division Transportation Standards and Details*.

Pavement material design input shall comply with MGPEC *Pavement Design Standards* or City Standards and Specifications. All concrete mixtures potentially exposed to deicer chemicals shall comply with CDOT 601.04 for Severity of Sulfate Exposure Class 2.

PCCP and HMA mix designs shall be submitted to the City for Approval.

#### **10.4.2 CONSTRUCTION REQUIREMENTS**

The materials excavated from the existing Mall tree area containing any organic, hazardous, contaminated, or deleterious materials shall not be used for the cross street and alley way subgrade, embankment, or trench backfill. Any on-site materials used for subgrade embankments shall be free of all deleterious materials including tree roots, organic materials, trash, and contaminated or hazardous substances or materials. The

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Contractor may include and blend acceptable excavated site material into the trench backfill and embankments in compliance with City and CDOT Standards and Specifications.

The Contractor shall construct PCCP surface texture pursuant to City Standards and Specifications, the CDOT *Standard Specifications for Road and Bridge Construction*, this Section 10, Section 11 Granite Pavement System, and Section 14 Mall and Transit Way Layout.

Final thickness verification of roadway pavements, whether PCCP or HMA, shall be determined in accordance with CDOT Specification 412.21.

Where pavement thickness is less than planned thickness by 0.25 inches, or more, the deficient pavement area shall be remediated by the Contractor to the satisfaction of the City to meet the design thickness requirements. When replacement of deficient PCCP is required, full pavement panels shall be replaced.

### 10.4.3 PAVEMENT WARRANTY

The Project requires a Contractor Warranty for all constructed pavements. Warranty requirements are provided in the Special Contract Conditions. Performance criteria for the Warranty is provided in Table 10-1.

#### 10.4.3.1 CROSS STREET PAVEMENT PERFORMANCE CRITERIA

The performance criteria set forth herein are to be interpreted in accordance with the definitions for cracking, rutting, raveling, and potholes as found in the *Distress Identification Manual for the Long-Term Pavement Performance Project*, 2003, FHWA-RD-03-031.

Table 10-1 presents the minimum acceptable criteria for the Warrantied performance items. The PCCP pavement definitions for the Table 10-1 performance criteria items are included in Reference Document RD-ITP-01, Acronyms and Definitions.

<b>Table 10-1 Minimum Acceptable Cross Street PCCP Pavement Performance Criteria for the Warranty Period</b>	
<b>Performance Item</b>	
Rut depth, maximum	<0.4-inch
<b>Cracking</b>	
Transverse width at a control joint, maximum	<1/8-inch
Transverse spacing, minimum	>15 feet
Longitudinal width at a control joint, maximum	<1/8-inch
Longitudinal length, maximum	<50 feet per cross street intersection
<b>General</b>	
Scaling	<70 square feet per cross street or alley way intersection
Spalling	<2 square feet per cross street or alley way intersection
Broken or damaged slabs	None
Missing joint sealant	None
Vertical displacement within pedestrian walkway or sidewalk	< or = 1/4-inch

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<b>Table 10-1 Minimum Acceptable Cross Street PCCP Pavement Performance Criteria for the Warranty Period</b>	
<b>Performance Item</b>	
Local depressions or pop outs deeper than ½-inch	None

Notes:

1. Rutting shall be the average of both wheel paths per cross street or alley way intersection measured with a 10-foot straightedge.
2. Longitudinal cracking includes joint separations.

For smoothness quality testing, the finished pavement transverse and longitudinal surface elevation shall be measured using an Approved 10-foot straightedge. Areas to be measured shall be directed by the City. Areas showing high spots of more than 3/16-inch in 10 feet shall be marked and diamond ground until the high spot does not exceed 3/16-inch in 10 feet. Grinding shall not reduce the planned pavement thickness by more than 0.25 inches.

Cores shall be taken by the Contractor to verify minimum pavement thicknesses have been maintained. A minimum of one core shall be taken for every 100 cumulative lane-feet or fraction thereof per lane of diamond grinding, as directed by the City. Where pavement thickness is less than planned thickness by 0.25 inches, or more, the deficient pavement area shall be remediated by the Contractor to the satisfaction of the City to meet the design thickness requirements. The Contractor shall patch and consolidate core holes full depth with approved non-shrink grout.

#### **10.4.3.2 CORRECTION**

If at any time during the Warranty period, the minimum acceptable criteria for any performance item is exceeded, the Contractor's pavement management consultant shall evaluate and provide a written recommended Remediation Plan to the City for Approval.

After the Remediation Plan has been prepared, the Contractor shall prepare a Work Plan, which includes a Traffic Control Plan (TCP) or Method of Handling Traffic (MHT) Plan, depending on the extent of the required corrective Work. The TCP or MHT shall meet the requirements of Section 17 Construction Phasing and Maintenance of Traffic. The Work Plan shall be submitted to the City for Approval.

The Contractor shall be responsible and pay for all remedial Work, including traffic control, Quality Assurance (QA), Quality Control (QC) testing, and inspection.

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**10.5 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 10-2 Deliverables</b>		
<b>Deliverables</b>	<b>Information or Approval</b>	<b>Schedule</b>
Geotechnical Investigation Reports	Approval	Concurrent with the Preliminary Design Submittal
Pavement Design Reports	Approval	Concurrent with Final Design Submittal
PCCP Cross Street and Alley Way Jointing Plan	Approval	Concurrent with Final Design Submittal
PCCP mix designs	Approval	At the Pre-Paving Conference and at least 30 Calendar Days prior to the use of any PCCP on the Project
HMA mix designs	Approval	At the Pre-Paving Conference and at a minimum of 30 Calendar Days prior to the planned placement of any HMA on the Project



## **11.0 GRANITE PAVEMENT SYSTEM**

### **11.1 GOALS**

The goals of this Section 11 are to:

- Construct a high-quality granite pavement system to reduce long-term maintenance requirements that will last for 40 years
- Install the granite paver pattern to mimic the historic granite paver pattern
- Increase safety through improved granite paver surface friction and skid and slip resistance

### **11.2 GRANITE PAVEMENT SECTION DESIGN REQUIREMENTS**

The Contractor shall design and construct a stable granite pavement system for the entire 16<sup>th</sup> Street Mall (Mall) width and length, inclusive of bulbouts and other proposed Project features within the Mall and as required in the Contract Documents. Stable is defined to mean that the granite pavement system shall be designed and constructed to ensure that the granite pavement system is structurally adequate for the resistance of the design loads; the granite paver surface, setting bed, base slab, and subbase are designed to drain moisture away from the subgrade; and the foundation movement shall not result in exceedance of the performance criteria in this Section 11.

The intent of the design is to remove water using surface flow on the granite pavers to the extent possible. The granite pavement system pavement design shall comply with City and County of Denver (City), Metropolitan Government Pavement Engineers Council (MGPEC), and Colorado Department of Transportation (CDOT) standards and specifications. The granite pavement system, inclusive of the subbase, base slab, granite pavers, and other system components, shall have a design life of 40 years.

The Locally Preferred Alternative (LPA) as described in the Finding of No significant Impact (FONSI), Environmental Assessment (EA), and Programmatic Agreement (PA) maintains the progression of a beginning, middle, and end of the Mall through asymmetrical blocks at the beginning and end of the Mall and symmetrical blocks at the middle.

The Contractor shall implement the LPA, FONSI, and PA commitments with granite pavers arranged to mimic the Mall's existing color and pattern in the transit way, pedestrian walkways, and amenity zones; and provide edge delineation of the transit way. These requirements are presented in Section 14 Mall and Transit Way Layout.

A Basis of Design detailing the pavement pattern layout and its relationships to Mall elements including trees and Mall light locations is provided in Reference Document RD-11-05. This document is provided for the Contractor's reference. CAD files presenting the Basis of Design are provided in Reference Documents RD-11-11 and RD-11-12.

The Contractor shall determine the optimum granite paver size to minimize long term system maintenance and address Mall loading, while meeting the prescribed historic color, geometric shapes, and relationships to the Mall's vertical elements (including trees and Mall lights) and meet any other requirements of this Section 11.

See Reference Document RD-11-01 *A Failure Analysis of the Masonry Pavement of the Sixteenth Street Mall* for a forensic engineer's opinion related to the original Mall granite pavement system failure mechanism. This document is provided for the Contractor's reference.

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See Reference Document RD-11-02 *Final Report 16<sup>th</sup> Street Mall Pilot Repair Block 11 – December 18, 2013* presenting a pilot repair program for Mall Block 11 between Tremont Place and Court Place. This document is provided for the Contractor's reference.

See Reference Document RD-11-03 *Project Report 16<sup>th</sup> Street Mall Pedestrian Hardscape Inspection, Repair, and Maintenance Program – May 1, 2015* presenting results of an evaluation of the full length of the Mall granite paver surface providing documentation of the paver condition and presenting maintenance recommendations. This document is provided for the Contractor's reference.

The Contractor shall provide the granite pavement system subgrade, subbase, and base slab design in accordance with the requirements of this Section 11 and Section 10 Geotechnical and Pavements. The granite pavement system design and construction Work shall meet the following performance requirements:

- Provide durability to withstand the repeated loading of the Regional Transportation District (RTD) Free MallRide shuttle, emergency vehicles, delivery vehicles, garbage trucks, construction equipment, snow clearing equipment, and other commercial and private vehicles for the 40-year design life
- Provide a granite pavement system providing positive drainage off the granite paver surface to minimize moisture penetrating the granite paver surface, to meet the Section 13 Drainage and Water Quality and Section 14 Mall and Transit Way Layout requirements
- Provide positive subsurface drainage at all granite pavement system layers, including the subgrade
- Provide a granite pavement system base slab to include:
  - Details to prevent settlement or shifting in a way that produces non-compliant grades, violate Americans with Disability Act (ADA) compliance requirements, vertical surface paver joint discontinuities greater than ¼-inch or half the joint width, whichever is less
  - Granite paver joint width variance shall not exceed +/- 1/8-inch from the Contractor-designed joint width
  - Base slab joint layout to match the granite paver jointing and minimize joint reflection to the granite paver surface for a mortar-set system
  - Design to allow for horizontal and vertical thermal expansion
  - Design to account for or reduce clay volume expansion (heave)
  - Ability to withstand repeated cycles of seasonal and daily temperature changes and thermal shock
  - Mitigation of effects from freeze-thaw cycles
  - Design to not allow subgrade differential settlements greater than ¼-inch
  - Joint design and layout to fulfill the design requirements for the load transfer between the slab joints to minimize differential base slab settlement
  - Load transfer from the transit way granite paver base slab to the cross street and pedestrian walkway and amenity zones

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- Vertical and lateral loading resistance from vehicular traffic on both the transit way and the pedestrian walkways and amenity zones
- Accommodation for horizontal acceleration and braking forces to the pavers, paver setting bed and base slab due to the increased granite paver skid resistance of the new Mall granite pavers
- Include granite paver setting bed supporting the pavers and applied loadings to maintain paver integrity and bond
- Granite paver setting bed materials, including Portland Cement Mortar-based, bituminous, aggregate, and polymer-based materials, meeting the performance requirements of this Section 11
- Compliance with the supplier's technical specifications and requirements for granite paver setting bed products, including Portland Cement-based, bituminous, aggregate, or polymer-based setting bed products
- Meet or exceed the Static and Dynamic Coefficient of Friction provide by the Coldspring Diamond® 100 surface treatment
- Incorporate the selected granite paver setting bed product and its long-term durability and maintenance requirements
- Fulfill the design requirements for pervious granite paver setting bed materials, if used, to provide positive drainage from the granite paver surface to the granite pavement system positive drainage system
- Ensure granite paver setting bed bonding to the granite pavers and base slab to maintain granite paver stability over the design life of the granite pavement system
- Ability to withstand frequent applications of deicing and anti-icing products and withstand snow clearance practices adopted for the granite pavement system
- Ability to withstand cleaning practices described in the Contractor's Granite Pavement System Operations and Maintenance Manual

**11.2.1 TRAFFIC LOADING**

The Mall transit way is trafficked by RTD Free MallRide shuttles, emergency vehicles, delivery vehicles, garbage trucks, Project construction equipment and potential future Mall construction work, snow clearing equipment, and other commercial and private vehicles. The Mall pedestrian walkways and amenity zones are trafficked by maintenance equipment including pickup trucks, snow clearing equipment, scissor lift and boom lift access equipment, and event staging vehicles and platforms, which are within the H-10 design loading requirements. Maintenance equipment may be wheeled or tracked.

The Contractor shall apply the Free MallRide shuttle schedule details available on the RTD website to determine the current shuttle average daily traffic (ADT) value, include the daily traffic from the additional vehicles noted in this section, and include a shuttle ADT growth of 25 percent over the design period to determine the parameters for the pavement life cycle design.

The Contractor shall determine the types and frequency of different vehicles and items of equipment through discussions with City and Department of Transportation & Infrastructure (DOTI) staff, interviews

with relevant parties, traffic studies, or other appropriate means to validate vehicle loadings. Contact details for some of the relevant parties include:

- Free MallRide – RTD
- Fire Marshal – Denver Fire Department
- Maintenance Manager – Business Improvement District (BID)
- Event Manager – BID

During final design, the Contractor shall verify the traffic assumptions with the contacts noted in this section and adjust the design based on the final design parameters developed as part of these discussions. The final design parameters shall be Approved by the City.

Based upon the traffic and vehicle data, the Contractor shall determine the range of vertical and horizontal loads exerted on the individual granite pavers.

### **11.2.2 ENVIRONMENTAL FACTORS**

Colorado is known for its extreme air temperatures and its rapid climatic fluctuations creating damaging freeze-thaw cycles. These extreme temperatures and rapid fluctuations introduce severe stress and strain on granite pavement systems, as evidenced by the deterioration of the existing Mall granite pavement system. These thermal and climatic variation induced stresses and strains shall be accounted for in the Mall granite pavement system design. The Contractor shall determine the environmental factors that will affect the granite pavement system. These factors include, but not limited to, the daily and seasonal temperature changes, freeze/thaw cycles, rain and snowfall, as well as severe climatic exposure. The Contractor shall include consideration of movement from expansion, contraction, and warping of the granite pavement system. The Contractor shall incorporate moisture factors based on the Contractor's design and drainage of any water ingress. The Contractor shall submit the design criteria, supporting information, and technical research related to granite pavement system design requirements to resist severe climatic effects.

## **11.3 GRANITE PAVEMENT SYSTEM COMPONENT REQUIREMENTS**

### **11.3.1 SUBGRADE**

The granite pavement system subgrade shall be in compliance with City, Colorado Department of Transportation (CDOT), MGPEC, and American Association of State Highway and Transportation Officials (AASHTO) standards and specifications.

Any on-site materials used for subgrade embankments shall be free of all deleterious materials including tree roots, organic materials, trash, and Hazardous or Contaminated Materials or Substances.

### **11.3.2 SUBBASE**

A compacted granular subbase layer shall be included to ensure any water penetrating the base slab will be positively drained from the base slab subgrade. The subbase layer shall consist of compacted granular material complying with City and CDOT standards and specifications. The design shall address erosion potential and the creation of voids beneath the base slab.

The subbase shall be free-draining with a permeability of no less than  $10^{-4}$  cm/sec when properly compacted.

A separation geotextile shall be used where filtering criteria between subgrade and subbase materials is inadequate to prevent the downward loss of subbase material into the underlying subgrade and the upward intrusion of fine-grained subgrade material into the subbase.

### 11.3.3 BASE SLAB

#### 11.3.3.1 GENERAL REQUIREMENTS

The granite pavement system base slabs shall be designed in accordance with the geotechnical, pavement, and grading design requirements in Section 10 Geotechnical and Pavements, Section 14 Mall and Transit Way Layout, and as modified by this Section 11. Additional geotechnical investigations Work may be required to provide the materials properties required to design the granite pavement system.

The Contractor's granite pavement system design shall include a rigid base slab and shall account for the thermal expansion of the granite pavers, paver setting bed, and the base slab in its analysis and detailing.

Vehicle wheel loading in the transit way include the Free MallRide shuttles, AASHTO HS-20, emergency vehicles, and as required by RTD or City Standards and Specifications. The design vehicles shall be the same as required in Section 15 Cross Street and Intersection Layout. Vehicle wheel loading in the pedestrian walkway and amenity zones shall be AASHTO HS-10, or as required by City Standards and Specifications. The Contractor shall fulfill the design requirements for heavier wheel loading at the cross street intersections to account for bus and emergency vehicle off tracking wheel loading at the curb cuts, curb ramps, and sidewalk areas. See Section 10 Geotechnical and Pavements, Section 14 Mall and Transit Way Grading, and Section 15 Cross Street and Intersection Layout for additional information.

The base slab design at Stout Street and California Street shall include doweled joints and loadings as required by RTD standards, specifications, and design criteria. Reference Document RD-11-09 provides a representative RTD detail showing a doweled joint.

The design of the base slab shall be undertaken assuming that the granite pavers and setting bed provide no structural contribution to the granite pavement system strength.

The base slab surface elevations shall match the granite paver surface elevations less the granite paver and setting bed material thickness, with a tolerance of  $\pm 1/2$  - inch, except where intentional indentations in the slab surfaces are provided for drainage – as Approved by the City. Any elevation variation shall be corrected as required by the City.

The base slab surface shall be such that it provides lateral resistance to movement of the setting bed. The granite paver setting bed and base slab shall be detailed to provide a continuous drainage path to the base slab surface drainage system.

#### 11.3.3.2 ANALYSIS AND DESIGN

Pavements shall comply with the requirements of the MGPEC *Pavement Design Standards*.

Equivalent Single Axle Loads (ESALs) required for the pavement design is provided in RD-10-05. The Contractor shall use the City Standards and Specifications, RTD Standards and Specifications, CDOT Standards and Specifications, and MGPEC *Pavement Design Standards* for pavement design. See Reference Document RD-11-11 for RTD Free MallRide shuttle measurements and details.

The transit way base slab design criteria shall be based on Free MallRide shuttle, AASHTO HS-20, and emergency vehicle loading for wheel loads with a minimum of 20 percent of wheel load for horizontal loading or greater value as recommended by industry best practices based on the granite paver surface skid resistance. The Contractor shall describe how the bus braking and acceleration forces are transmitted through the granite pavers to the base slab and account for this loading in the base slab design.

The pedestrian walkway and amenity zone base slab design criteria shall be based on AASHTO HS-10 loading for wheel loads with a minimum of 20 percent of wheel load for horizontal loading.

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The Contractor shall make special consideration for and provide documentation that addresses the base slab design at the intersection corner areas to account for bus and emergency vehicle wheel loading from turning movements and over tracking. See Section 10 Geotechnical and Pavements and Section 15 Cross Street and Intersection Layout for additional requirements at these locations.

The Contractor's base slab analysis and design shall account for the additional longitudinal acceleration and braking forces transmitted through the granite pavers and setting bed material due to the increased skid resistance of the textured granite pavers.

The Contractor shall perform a finite element analysis or other similar analytical model to document stress and strain of the pavement layers, and other components of the granite pavement system, modeled over an expansive clay representing the conditions observed in the Geotechnical Investigation Report. The analysis shall be used to show the granite pavement system's adherence to a 40-year design life. Documentation of the analysis and a corresponding narrative shall be included in the Granite Pavement System Design Report.

To the extent possible, the Contractor shall provide proof of concept for the mortar-set application granite pavement system design to demonstrate its proven durability. Proof of concept shall include performance documentation for a similar granite pavement system from a similar project in a similar climate with freeze-thaw conditions in service for a minimum of five years or documentation from a laboratory accelerated durability testing program. Proof of concept for the sand-set application shall include performance documentation for a granite or similar material pavement system from a similar project in a similar climate with freeze-thaw conditions in service for a minimum of five years.

The Contractor shall be responsible for Portland Cement Concrete Pavement (PCCP) joint design. PCCP joint design shall comply with the City Engineering Division *Transportation Standards and Details*, as modified by Section 10 Geotechnical and Pavements and this Section 11 to fulfill the design requirements for the granite paver surface jointing. The PCCP longitudinal and transverse joint designs shall be compatible with the granite paver jointing to avoid reflection cracking and paver distress. PCCP pavement joint designs shall be submitted to the City for Approval.

The base slab pavement design shall be based on the subgrade strength and shall not include the aggregate base course (ABC) in the pavement strength design calculation. The ABC shall be included in the pavement system, in accordance with City Standards and Specifications. In a sand-set application, if flow fill is utilized, it shall not be included in the pavement strength design calculation. Any pavement underlain by aggregate base course and subgrade soil which classifies as A-6 or A-7-6 shall have a layer of separation geotextile between the subgrade and the aggregate base course. ABC is defined in the CDOT *Standards for Road and Bridge Construction* and shall have a minimum R-Value of 78. The Contractor shall provide test data confirming the ABC meets the above criteria for gradation, liquid and plastic limits, and R-Value.

Pavements shall be designed for an initial Serviceability Index of 4.5 and end of design period Serviceability Index of 2.5. Reliability of 95 percent is required and is already part of the required MGPEC pavement design method, unless modified by City Standards and Specifications.

Pavement shall be designed to comply with the City Engineering Division *Transportation Standards and Details* and constructed with surface and subgrade drainage to prevent pavement structure problems. Drainage slopes, both cross and longitudinal, shall meet the City and Urban Drainage & Flood Control District (UDFCD) Standards and Specifications unless modified by this Section 11.

As part of the Granite Pavement System Design Report, a Pavement Design Report shall be included. The report shall adhere to all Pavement Design Report requirements listed in Section 10 Geotechnical and Pavements and this Section 11. Granite pavement system geotechnical information and analysis shall be

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included in an Geotechnical Information Report, either separate for the granite pavement system or as part of a Project-wide report.

**11.3.3.3 PAVEMENT THICKNESS REQUIREMENTS**

Base slab pavement thickness design shall be performed by the Contractor after completion of its geotechnical investigations. The analysis shall include the final pavement design to incorporate the actual design subgrade support criteria, subject to field placement verification.

Construction of pavements shall follow CDOT *Standard Specifications for Road and Bridge Construction*. Rigid pavement thicknesses shall include an additional ¼-inch, after rounding up to the closest ½-inch, to accommodate grinding for surface profile refinement during construction Work. Example: A calculated design of 9.8 inches becomes 10.25 inches for plan thickness.

Pavement material shall comply with MGPEC, City, and CDOT Standards and Specifications, as applicable. All concrete mixtures potentially exposed to deicer chemicals shall comply with CDOT 601.04 for Severity of Sulfate Exposure Class 2.

PCCP mix designs shall be submitted to the City for Approval.

**11.3.3.4 TRANSIT WAY EDGE DETAILS**

The granite pavement system transit way base slab shall include perimeter or edge stiffening elements as required to stiffen the slab perimeter, transfer loads to the base slab subgrade, and provide frost penetration mitigation. The base slab edge stiffening element shall be of sufficient depth to not impose additional loads on the modular supported pavement system tree planting modules, shall prevent fine material migration between the transit way pavement section modular supported pavement system, the pedestrian walkways, and the amenity zones granite pavement systems. Schematic transit way base slab edge or perimeter stiffening elements and pedestrian walkway and amenity zone base slab stiffened edge details are included in Reference Documents RD-11-04 and RD-11-05. These documents are provided for the Contractor's reference.

The Denver area frost penetration is recorded as approximately 48 inches. The Contractor's granite pavement system design and detailing shall incorporate frost penetration and document the approach applied to mitigate pavement distress from frost penetration.

Approach slabs shall be included on all sides of the transit way granite pavement system base slab to transfer wheel loads and eliminate pavement distress at these transitions as the Mall now experiences. The base slab approach slabs shall properly transfer loads and bridge any settlement at the adjacent granite pavement sections.

**11.3.3.5 UNDERDRAIN REQUIREMENTS**

Unless otherwise shown by drainage analysis, the base slab subbase layer shall be positively drained to the Mall storm sewer system to ensure any water migrating through the granite paver surface, granite paver setting bed, and the granite pavement system base slab is positively removed from the granite pavement system. The minimum drainage system slopes shall comply with City and UDFCD Standards and Specifications. The primary documented failure mode of the existing Mall granite pavement system is due to insufficient drainage and shall be avoided with the new Mall granite pavement system design. Schematic base slab underdrain details are included in Reference Documents RD-11-04 and RD-11-05. These documents are provided for the Contractor's reference.

**11.3.3.6 BASE SLAB SURFACE DRAINAGE REQUIREMENTS**

The granite pavement system base slab surface shall be positively drained to the Mall storm sewer system to ensure any water migrating through the granite paver surface and granite paver setting bed collecting on the base slab surface is positively removed from the granite pavement system. The primary documented failure mode of the existing Mall granite pavement system is due to improper drainage and shall be avoided with the new Mall granite pavement system design. Schematic base slab surface drainage details are included in Reference Documents RD-11-04 and RD-11-05. These documents are provided for the Contractor's reference.

Weep openings shall be provided to ensure that water drains out of the setting bed layer to the surface water drainage system and/or to the subbase drainage layer. Weep openings shall be located outside of the Free MallRide shuttle wheel paths.

**11.3.3.7 JOINTING**

The Contractor shall be responsible for the granite pavement system base slab joint design. Base slab joint design shall comply with the City Engineering Division *Transportation Standards and Details*, as modified by this Section 11 to fulfill the design requirements for the granite paver surface jointing. The longitudinal and transverse joint designs shall be designed to avoid reflection cracking and paver distress. PCCP pavement joint designs shall be submitted to the City for Approval.

All construction, expansion, or movement joints shall be provided with load transfer devices to eliminate joint differential settlement. All load transfer devices shall be provided with corrosion protection in compliance with City Standards and Specifications. The joints shall be located so they correspond to the granite paver joints and shall be continued to the granite pavement surface during paver installation. As such, it is anticipated that most construction, expansion, and movement joints shall follow the granite paver pattern. Joint spacing shall be such that the width at the pavement surface is no more than one and a half times the paver joint width between pavers.

**11.3.3.8 PENETRATIONS****Base Slab**

Provisions for all base slab penetrations shall be made so they do not affect the performance of the granite pavement system. The base slab shall be detailed so that crack formation and propagation are prevented, and that differential movement does not exceed ¼-inch. All covers and frames shall be load rated to suit the loads set out in this Section 11. Covers and frames shall be attached to the base slab, unless Approved by the City, and shall have outer faces that do not compromise the integrity of the adjacent granite pavers. See Section 7 Utility Relocations for additional requirements.

**Custom Surface Castings**

The Project requires custom fabricated manhole cover, pull box covers, and valve cover castings at the granite paver surface. Materials for covers that are visible at the granite paver surface shall be limited to metals (natural steel, cast iron, or bronze). Plastic, cement, cement fiber, and any non-metallic materials are not permitted. See Reference Document RD-11-08 for additional information for these custom items. To the extent possible, a single cover material shall be used along the Mall.

Locations of covers that are visible within the granite paver surface shall be centered on joints or granite paver units and shall be located entirely outside or centered within individual large, medium, or small diamonds, unless Approved by the City.



### **11.3.4 GRANITE PAVER SETTING BED ANALYSIS AND DESIGN**

The granite paver setting bed material shall be a constant depth across the full typical section width of the Mall to ensure proper setting bed and bonding to the base slab. Manufacturer cut sheets shall be provided documenting granite paver setting bed material properties including bond strength, compressive strength, flexural strength, and any additives or admixtures required to mix on site with the paver setting bed material.

A drainable setting bed is required. The Contractor shall provide laboratory documentation of the setting bed material permeability to ensure proper drainage to the base slab surface drainage system. This documentation shall be submitted to the City for Approval. A polyethylene drainage material or non-woven drainage mat material of any sort shall not be used in the granite paver setting bed. The required minimal nominal thickness of the granite paver setting bed is 2 inches with a +/- 1/4- inch tolerance for a mortar set application and 1.5 inches with a +/- 1/4- inch tolerance for a sand-set application. This nominal thickness shall be verified by the Contractor's granite pavement setting bed material design and submitted to the City for Approval.

The granite paver setting bed and base slab shall be detailed to provide a clear drainage path to the base slab surface drainage system.

The granite pavers, paver setting bed joints, and setting bed shall be designed to resist the vertical and lateral loads imposed by Mall vehicle traffic and the RTD Free MallRide shuttles. The Contractor shall submit the design assumptions, calculations, analytical modeling, supporting information, and technical research related to load transfer through the granite paver and setting bed system to its base slab, for both horizontal and vertical loadings.

The granite paver setting bed material shall provide base slab and the granite paver bonding to ensure system integrity and eliminate paver loosening due to the Free MallRide wheel loads. The Contractor shall submit laboratory documentation of the paver setting bed material bond strength. The Contractor shall conduct pull up, extraction tests in a representative sample area to demonstrate and prove the setting bed material properly bonds the granite pavers to the base slab for a mortars-set application.

### **11.3.5 MODULAR SUSPENDED PAVEMENT SYSTEM**

The Contractor shall furnish and install a modular suspended pavement system for all Mall trees, including soil cell assemblies and related accessories as well as other materials including, but not limited to, geotextile, geogrid, aggregate, subbase material, backfill, drainage system, root barrier, compost, and the installation of planting soil.

The modular suspended pavement system shall utilize modular soil cell structural components consisting of a deck, base, and posts to allow for subsurface soil volumes that support large tree growth. The modular suspended pavement system shall be designed to support the Free MallRide shuttles, AASHTO H-20, and emergency vehicle loading while providing a minimum soil volume of 1,000 cubic feet per Mall tree.

The Basis of Design product is the Silva Cell 2 System manufactured by DeepRoot Green Infrastructure, LLC, as represented in Reference Document RD-11-06. The Contractor shall provide a product matching the performance of the Basis of Design or Approved equal.

#### **11.3.5.1 SOIL CELLS**

Soil cells shall be modular, structural systems designed for the purpose of growing large, healthy trees and providing stormwater management. Each soil cell module shall be composed of one base, six post assemblies, and one deck.

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Each soil cell shall be structurally independent from all adjacent soil cells for incorporating irrigation, Utilities, and other site features as well as for future repairs. Soil cells shall be capable of supporting loads up to and including Free MallRide shuttles, AASHTO H-20, and emergency vehicles.

Soil cells shall be open on all vertical faces and horizontal planes, shall have no interior walls or diaphragms, and shall be capable of providing a large, contiguous, continuous volume of planting soil that does not inhibit or prevent the following:

- Placement of planting soil
- Walk through compaction
- Compaction testing of planting soil once in place
- Movement and growth of tree roots
- Movement of water within the provided soil volume, including lateral capillary movement
- Installation and maintenance of irrigation lines and utilities placed within, adjacent to, or below the soil cell

**11.3.6 SUSPENDED PAVEMENT TREE GRATE SYSTEM**

The Contractor shall provide a suspended pavement tree grate system designed to support granite pavers above the tree well at each Mall tree. The suspended pavement tree grate system shall include a frame provided in two halves with an integrated center frame designed to be fully height adjustable to allow for variations in paver height so that a standard 24-inch round decorative cast tree grate can be incorporated flush with the granite paver finish grade.

The suspended pavement tree grate system shall be manufactured from ASTM A36 2-1/2-inch by 2-1/2-inch by 3/16-inch mild steel angles, ASTM A500 2-1/2-inch by 2-1/2-inch by 1/8-inch mild steel tube with ASTM A36 1/2-inch square bar perimeter trim, with a top panel made from ASTM A569/569M No. 3 structural steel catwalk grating. The suspended pavement tree grate system frame shall be supplied with hot spray or hot dip zinc galvanized finish.

The Contractor shall provide a cast aluminum 24-inch round decorative cast tree grate designed specifically for integration with the suspended pavement tree grate system. The decorative cast tree grate shall have a 12-inch diameter tree opening, expandable to 16 inches with 1/4-inch maximum slot openings for ADA compliance and pedestrian safety. The decorative cast tree grate shall be supplied with a powder coat finish.

The suspended pavement tree grate system shall be manufactured true to design and all components shall fit together in a satisfactory manner. Suspended pavement tree grates are to be of uniform quality, flat, and free from distortion. All manufacturing and materials shall comply with City Standards and Specifications.

The suspended pavement tree grate system manufacturer shall have a minimum of five years of experience in fabricating suspended pavement tree grate systems for use in tree planting areas in pedestrian spaces subject to heavy traffic loads. The suspended pavement tree grate system installer shall have a minimum of five years of experience installing paver grate pavement suspension systems and unit pavers in similar uses.

The Contractor shall submit detailed shop drawings for each type of suspended pavement tree grate in compliance with City Standards and Specifications.

**Suspended Pavement Tree Grate - Type 1**

- Size: 96 inches by 96 inches (standard assembly)
- Frame Tree Opening: 24 inches
- Frame Finish: Galvanized
- Tree Grate Style: METRO (24-inch round)

- Tree Grate Tree Opening: 12 inches
- Tree Grate Finish: powder coat to match replica historic pedestrian lights or Approved equal

#### **Suspended Pavement Tree Grate - Type 2**

- Size: 84 inches by 96 inches (custom assembly)
- Frame Tree Opening: 24 inches
- Frame Finish: Galvanized
- Tree Grate Style: METRO (24-inch round)
- Tree Grate Tree Opening: 12 inches
- Tree Grate Finish: powder coat to match replica historic pedestrian lights or Approved equal

The Basis of Design product is the Paver-Grate<sup>®</sup> Pavement Suspension System with 24-inch round METRO Decorative Cast Tree Grate by IRONSMITH, Inc., as represented in Reference Document RD-11-07. The Contractor shall provide a product matching the performance of the Basis of Design or Approved equal.

### **11.3.7 GRANITE PAVERS**

#### **11.3.7.1 GENERAL REQUIREMENTS**

This Section 11 applies to the Project granite paver materials, surface pattern, color, and texture; organization; and layout of the trees and replica historic decorative light fixtures.

The granite paver materials, colors, and surface textures shall comply with the following:

#### **Materials**

All granite paver materials shall be composed of natural granite stone sourced from quarries within North America and shall meet the requirements of National Stone Council/American National Standards Institute (NSC/ANSI) 373 Sustainable Production of Natural Dimension Stone.

The Basis of Design for the colors and textures described below is Coldspring products. The Contractor shall provide products matching the performance of the Basis of Design or Approved equal.

#### **Color**

Granite colors shall be consistent with the following Coldspring colors and shall mimic the historic granite paving patterns as defined in the EA, including Grey, Red, and White. The requirements are:

- Grey: Coldspring Charcoal Black<sup>®</sup>
- White: Coldspring Iridian<sup>®</sup>
- Red: Coldspring Radiant Red<sup>®</sup>

Alternates shall be visually similar in overall color, as well as natural grain and composition, to the colors identified above, as Approved by the City. To reduce color variance, all granite of the same color shall be sourced from a single quarry.

#### **Texture and Finish**

Finishes shall be consistent with these Section 11 requirements. Finish textures shall meet or exceed the Static and Dynamic Coefficient of Friction, for Coldspring Diamond<sup>®</sup> 100, as defined by American Society for Testing and Materials (ASTM) 1028c Static Coefficient of Friction and ANSI 137.1 Dynamic Coefficient of Friction Standard – Surface Testing.

#### **11.3.7.2 GRANITE MATERIALS**

All granite shall be fabricated with saw cut edges; broken edges are not allowed.

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If the Contractor proposes alternative granite types, the Contractor shall provide test data not older than one month to verify that the granite meets or exceeds the following requirements:

<b>Table 11-1 Granite Paver Technical Specifications</b>		
<b>Physical Property</b>	<b>Test Method</b>	<b>Test Requirement</b>
Compressive Strength	ASTM C 170	19,000 psi minimum
Flexural Strength	ASTM C 880	1,200 psi minimum
Modulus of Rupture	ASTM C 99	1,500 psi minimum
Density	ASTM C 97	160 lb/ft <sup>3</sup> minimum
Absorption	ASTM C 97	0.2% maximum by weight
Abrasion Resistance	ASTM C 1353	40 Ha minimum
Slip Resistance	ASTM E 303	45 minimum wet Pendulum Test Value (PTV)
Freeze/Thaw Resistance	ASTM C 1645 Mod (ASTM C936)	Refer to Item 5.5 of ASTM C936

No individual test result shall vary more adversely than 10 percent of the Table 11-2 mean specified value.

### 11.3.7.3 PAVER JOINT MATERIAL

Paver joint material shall have a compressive strength fulfilling the design requirements to transmit horizontal loading between adjacent pavers and shall be dimensionally stable to resist movement during temperature variations and traffic forces. It shall have permeability of no greater than 10<sup>-6</sup> cm/sec when properly compacted. Paver joint material shall be resistant to damage by freeze/thaw cycles or the anti-icing and deicing practices.

Joints, within a mortar-set application, between individual granite pavers shall be no greater than 3/8-inch width tolerance of +/- 1/8-inch and shall be dimensioned so that full depth penetration of the paver joint material is achieved. The paver joint material shall be worked into the joints and shall be free of any voids or gaps that will aid water penetration.

Joints, within a sand-set application, between individual granite pavers shall have a nominal width of 1/8-inch but shall be no greater than 1/4-inch and shall be stabilized to be resistant to erosion. Gaps exceeding 1/8-inch shall not exceed 5 percent of the total granite pavement system area.

### 11.3.7.4 EXPANSION AND MOVEMENT JOINTS

All expansion and movement joints shall be provided with a compressible filler material and elastomeric joint sealant. The filler board shall provide support to the adjacent granite pavers at both extremes of expansion and contraction. The sealant shall be capable of providing a serviceable life of at least 20 years.

## 11.4 GRANITE PAVER PATTERN

The granite pavers shall be arranged to mimic the Mall's existing color and pattern in the transit way, pedestrian walkways, and amenity zones, and provide edge delineation of the transit way. This Section 11 describes the requirements that shall be met in the granite paver pattern design and vertical elements including trees and replica historic decorative light fixtures; unless otherwise Approved by the City

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The granite paver pattern is composed of a field of grey pavers, accented with a pattern of white and red granite paver diamonds of various patterns and sizes. There are 17 types of diamonds within the granite paver pattern as shown on Reference Document RD-11-05.

- Standard granite paver size: The paver size shall be designed in such a way to match the existing granite paver pattern, in compliance with the EA, FONSI, and PA; the number of differing paver sizes shall be minimized
- All elements of the granite paver pattern shall be aligned at 45 degrees to the centerline of the transit way, except the linear textured edge at the edge of the transit way and the tactile warning pavers
- All granite paver joints shall be aligned, continuous, and of uniform width throughout the granite paver pattern and shall not end in T intersections, with a mortar-set application
- All granite paver joints shall be aligned, continuous, and of uniform width throughout the granite paver pattern, with a sand-set application
- The total width of the granite paver pattern on all blocks shall be approximately 76 feet
- The concrete transition strip at the edge of each block shall be approximately two feet wide
  - The width of the concrete transition strip may vary to accommodate variation in building facades
- Partial size granite pavers shall be minimized in all instances
  - At the edges of the granite paver pattern along the concrete transition strip and ends at the intersections, the granite paver pattern shall terminate on one whole, or one-half of a standard, 1-foot 5-inch square paver pattern
  - One-quarter size pavers are permitted at corners at the perimeter of the granite paver pattern
- At the ends of each block approaching the intersections, the large, medium, and small diamonds shall continue until a whole diamond cannot fit within the granite paving area
  - Where a whole diamond cannot fit, the granite paving pattern shall include a standard sized grey paver

#### 11.4.1 ORGANIZATION OF PATTERN AND VERTICAL ELEMENTS

Vertical elements include Mall trees and replica historic decorative light fixtures as required in Section 18 Landscape and Section 19 Mall Lighting and Electrical. These elements have specific spacing and organizational requirements that are strictly tied to specific diamond types in the granite paver pattern. For this reason, the organization of vertical elements and the granite paver pattern is described together below. The organization and layout for the granite paver pattern and vertical elements differs for the symmetrical and asymmetrical blocks, as follows:

##### 11.4.1.1 SYMMETRICAL BLOCKS

- Large diamonds Type 1 and 2 shall be aligned, and shall alternate, along the centerline of the transit lane
  - A continuous joint shall be included along the centerline of the transit lane, to assist with driver navigation
- Vertical elements shall be aligned along the street, with one row on each side of the transit way, equidistant from the center line and/or edge of transit way

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- Trees and replica historic decorative light fixtures shall alternate along the street at sixteen feet on center
- Vertical elements shall be aligned across the street, in an alternating pattern, with trees and replica historic decorative light fixtures located opposite each other
- Vertical elements shall be located in the center of medium diamonds type 2 and 3

**11.4.1.2 ASYMMETRICAL BLOCKS**

- Vertical elements shall be aligned along the street, with two rows of vertical elements on the wide, north side of the transit way, and a single row on the narrow, south side of the transit way
- Trees on the wide side of the transit way shall be organized in two alternating rows, 16 feet apart, opposite large diamond types 1 and 2
- Trees in each row shall be evenly spaced along the transit way at 32 feet on-center and located in pan edge diamond 3 or curb edge diamond 3
- Replica historic decorative light fixtures on the wide side of the transit way shall be aligned with the row of trees closest to the transit way
- Replica historic decorative light fixtures shall be evenly spaced between trees, at 32 feet between lights, and 16 feet between each light and tree, and shall be located in pan edge diamond 3 or curb edge diamond 3
- Replica historic decorative light fixtures shall be aligned perpendicular the transit way with the trees in the outside row
- Vertical elements on the narrow side of the transit way shall be aligned along the street, alternating along the street at 16 feet on center, and located in pan edge diamond 3 or curb edge diamond 3
  - These elements shall align with the row of vertical elements across the transit way closest to the transit way, in an alternating pattern, with trees and replica historic decorative light fixtures located opposite each other
- The pattern of vertical elements shall extend as close as possible to the limits of the pedestrian crossing area for cross streets, defined as the extension of the right-of-way line for the cross street.
- The vertical elements shall continue at the spacing described above through the length of the bus stop

**11.4.2 GRANITE PAVER PATTERN WITHIN THE TRANSIT WAY**

The Contractor may subdivide and reduce the size of granite pavers within the transit way only if it is demonstrated as an engineering requirement to improve the durability and resiliency of the transit way and reduce future maintenance requirements.

- The pattern shall be maintained, as defined by the granite paver colors, overall sizes of the diamonds, and the relationship between them
- The existing paver joint pattern shall be retained, however individual granite pavers may be subdivided and additional joints added to create smaller, more durable granite paver units

**11.4.3 VEHICULAR MOVEMENTS**

The granite paver pattern and vertical elements shall be adjusted on a block-by-block basis to minimize vehicular conflicts with trees and replica historic decorative light fixtures at alley ways. The adjusted

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location of vertical elements and the corresponding adjustments to the granite paving pattern shall accommodate turning movements for an SU-40 vehicle turning into and out of mid-block alley ways.

- This shall be accomplished by shifting the entire pattern longitudinally and aligning the midpoint of the granite paver pattern with the centerline of the alley way
- Adjustments are not required on asymmetrical blocks where alley ways do not exist

#### **11.4.4 TACTILE WARNING PAVERS**

As described in Section 14 Mall and Transit Way Layout, tactile warning pavers, consistent with ADA guidance and City Standards and Specifications, shall be provided at pedestrian street crossings.

- For pedestrian crossings along the Mall, tactile warning pavers shall extend across the entire width of the pedestrian area, on either side of the transit way
- For pedestrian crossings across the Mall, the pedestrian path and tactile warning pavers shall extend from the flowline to a transposed line extended from edge of the right-of-way of the cross-street
  - Where the cross street right-of-way on either side of the Mall do not match, the wider option shall be used
- Tactile warning pavers shall be located behind the linear textured edge at the edge of the transit way
- The joints between tactile warning pavers shall coordinate and connect to the 45-degree joints of the adjacent granite paver pattern

#### **11.4.5 CURB AND GUTTER DESIGN**

As required in Section 14 Mall and Transit Way Layout, a 4-inch raised curb and gutter section is required at all bus stop locations. Paver pattern curb and gutter requirements shall be as follows:

- Curb and gutter and associated transitions shall coordinate with the granite paver pattern
- The face and length of the vertical curb shall align with the gutter pan
- Curb and gutter transitions shall be as follows:
  - At the end of the curb closest to the intersection, the vertical transition described below shall begin immediately at the end of the tactile warning pavers for the perpendicular street crossing
  - At the end of the curb farthest from the intersection, to accommodate the Technical Requirements of the tree planting and pavement systems, the curb may extend so that the transition occurs after the tree planting elements detailed in Section 18 Landscape
  - Curb and gutter transitions shall not exceed eight feet, unless otherwise Approved by the City
  - Transitions shall be designed to minimize pedestrians trip hazards and to maintain the adjacent vertical element
  - Transitions shall be parallel to the transit way, unless the following condition exists
  - At the end of the curb closest to the intersection, when there is insufficient space between the first vertical element and the tactile warning pavers to accommodate a transition parallel to the transit way, the transition may be perpendicular to the transit lane

### **11.4.6 LINEAR TEXTURED EDGE**

The granite paver pattern shall include a 2-foot wide linear textured edge at pan edges along the length of each block on both sides of the transit way, not including pedestrian ramps. The purpose of the textured edge is to provide under-foot detection of the edge of the transit way, supplemental traction and/or warning for buses at the edge of the transit way, and to discourage pedestrian circulation along the edge of the transit way.

- The textured edge shall be located at the edge of the transit way, to the outside of the flowline
- The textured edge shall provide sufficient contrasting texture to be detectable under-foot to pedestrians and detectable for navigation with a white cane device used by many people who are visually impaired
- The color of the textured edge shall remain consistent with the historic granite paver pattern and alternate between 4-foot lengths of grey and white

### **11.5 GRANITE PAVEMENT SYSTEM SUBMITTAL REQUIREMENTS**

The granite paver submittals shall include all required manufacturer cut sheets detailing materials, fabrication, color, and quantity of aesthetics items to be procured and installed. The submittal shall certify the materials ordered are in strict compliance with the requirements of this Section 11.

As part of the Final Design Submittal, the Contractor shall prepare the Granite Pavement System Operations and Maintenance Manual for the granite pavement system.

#### **11.5.1 GRANITE PAVEMENT SYSTEM DESIGN REPORT**

The Contractor shall prepare and submit for Approval a detailed Granite Pavement System Design Report summarizing the assumptions, criteria, loading, material properties and strengths, supporting research materials, and all information necessary for the City to review the Contractor's granite pavement system design. The Granite Pavement System Design Report shall include, at a minimum, the following:

- Address the granite paver pattern layout methodology to comply with the requirements of this Section 11
- The design assumptions, calculations, analytical modeling input and results, supporting information, and technical research related to load transfer through the granite paver and setting bed system to its base slab, for both horizontal and vertical loading
- Pavement Design Report
- Include and describe applicable codes and specifications to be addressed in the design
- Project-specific criteria, paver and paver setting bed material properties, material sources, product literature, product warranty information, inspection, and maintenance requirements, and applicable ASTM, ANSI, or ISO standards and certifications
- Laboratory testing results and documentation for the Contractor's granite pavement system design
- Vehicle loading parameters based on the traffic and vehicle data
- All granite pavement system design parameters, including wheel contact pressures
- The vertical and horizontal loads exerted into the individual granite pavers and the granite pavement system
- Other local conditions that may affect the granite pavement system design



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- Analytical models applied to complete the design, including input assumptions, criteria, and associated narrative
- Granite pavement system fatigue criteria
- Factors of safety accounted for in the granite pavement system element design
- How climatic and temperature variation induced stresses and strains are accounted for in the design, including design parameters and factors of safety for each design criteria
- Granite paver setting bed manufacturer product cut sheets, material properties, bond strength, compressive strength, flexural strength, permeability, installation requirements and restrictions, additives and admixtures required during placement, maintenance requirements and restrictions, and long performance characteristics
- How the granite pavers, paver setting bed joints, and setting bed are designed to resist the vertical and lateral loads imposed by RTD Free MallRide shuttles and other Mall vehicle traffic
- The Contractor's proposed proof of concept approach to demonstrate the proposed granite pavement system durability
- Performance characteristics and durability of a similar granite pavement system in accordance with Section 11.3.3.2
- Industry anticipated, expected, or allowable performance against the Table 11-2 requirements
- Granite Pavement System Operations and Maintenance Manual annotated outline
- All other information necessary for the City to review the granite pavement system design

### 11.5.2 GRANITE PAVEMENT SYSTEM PLANS

The Contractor shall prepare Granite Pavement System Plans, at a minimum, plans shall include:

- Granite Paving Pattern Layout
- Grading Plans, including granite surface contours, slope indicators and spot elevations
- Typical sections
- Details
- Fabrication details and dimensions for each unique granite paver piece within the mortar-set application
- Fabrication details and dimensions for each standard granite paver piece within the sand-set application
- General notes
- Granite materials schedules and specifications
- Granite setting bed materials and specifications
- Installation requirements
- Granite paver textures and finishes
- Specifications

Plans shall be prepared under the supervision of a Professional Engineer and/or Landscape Architect, as appropriate, licensed in the State of Colorado.

For the Contractor's reference, the available original Mall construction plans are included as Section 14 Mall and Transit Way Layout Reference Documents.

Plan sheets shall include detailed plan sheets scaled at 1 inch = 10 feet. The pattern layout .DWG file shall be provided with all submittals.

### **11.5.3 INITIAL DESIGN SUBMITTAL**

The Contractor shall provide an initial granite paver pattern layout plan. This plan shall include a narrative discussing the granite paver pattern layout methodology to comply with the National Policy Act (NEPA) Document requirements, list and define applicable codes and specifications to be used, Project-specific criteria, paver and paver setting bed material properties, material sources, product literature, product warranty information, inspection, and maintenance requirements, and applicable ASTM and ANSI certifications. The Initial Design Submittal shall be the basis of the final granite paver layout, and thus it is the responsibility of the Contractor to provide sufficient information for the City to Approve the granite pattern proposed materials, colors, finishes, layout approach, and compliance with the FONSI, EA, and PA requirements.

### **11.5.4 PRELIMINARY DESIGN SUBMITTAL**

The Preliminary Design Submittal shall include all elements from the Initial Design Submittal, surface grading, surface drainage plans and details, enlarged plans at focused areas, granite paver product selection, granite paver details, granite paver colors, granite paver textures, granite paver setting bed material details and specifications, general notes, schedules, installation requirements, materials, and finishes.

Non-City standard specifications shall be packaged together and submitted.

### **11.5.5 FINAL DESIGN SUBMITTAL**

The Final Design Submittal shall include all elements from the Preliminary Design Submittal and all elements as required in Section 3 Quality Management, including Granite Paver surface elevations for the entire Mall granite paver surface. The Final Design Submittal shall include fabrication details for each individual unique granite paver piece to be installed in the Mall granite paver surface, in accordance with Section 11.5.2.

Include the Granite Pavement System Operations and Maintenance Manual with the Final Design Submittal.

### **11.5.6 RELEASE FOR CONSTRUCTION SUBMITTAL**

The Release for Construction (RFC) Submittal shall be as required in Section 3 Quality Management.

## **11.6 GRANITE PAVEMENT SYSTEM CONSTRUCTION REQUIREMENTS**

### **11.6.1 BASE SLAB**

The Contractor shall construct the base slab surface texture pursuant to City Standards and Specifications for PCCP and to meet requirements for the granite paver setting bed materials. The Contractor shall follow the granite paver setting bed material manufacturer requirements to ensure proper setting bed material bonding to the base slab and granite pavers.

Base slab final thickness verification shall be determined in accordance with CDOT Specification 412.21.

Where base slab thickness is less than planned thickness by 0.25 inches, or more, the deficient base slab area shall be remediated by the Contractor to the satisfaction of the City to meet the design thickness requirements. When replacement of deficient base slab is required, full base slab panels shall be replaced.

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In the event any surface grinding is required to correct slab surface elevation, the base slab cores shall be taken by the Contractor to verify minimum base slab thicknesses have been maintained. A minimum of one core shall be taken for every 100 cumulative feet or fraction thereof of the diamond grinding, as Approved by the City.

The base slab surface shall be roughened as required to enhance granite paver setting bed material bond. For surface elevation quality testing, the finished transverse and longitudinal surface elevation of the base slab shall be measured using an Approved 10-foot straightedge. Areas to be measured shall be directed by the City and in compliance with the CQMP. Areas showing high spots of more than 3/16-inch in 10 feet shall be marked and diamond ground until the high spot does not exceed 3/16-inch in 10 feet. Grinding shall not reduce the planned pavement thickness by more than 0.25 inches.

Upon completion of the granite pavement system base slab construction, the Contractor shall conduct a surface drainage test to ensure the base slab positively drains and does not have any standing water or ponding.

#### 11.6.1.1 BASE SLAB PAVEMENT PERFORMANCE CRITERIA

Any base slab pavement distress shall be corrected in accordance with CDOT Specification 412.

#### 11.6.2 GRANITE PAVER SETTING BED

The Contractor shall carry out all Work and protect all stored and in-place granite setting bed materials in accordance with the manufacturer's temperature, moisture, and sunlight restrictions. The Contractor shall strictly follow all pot life, open time, and workability requirements of all products and shall ensure that a qualified or certified representative from each manufacturer is onsite at the beginning of the use of their respective product to certify that the materials are being installed correctly.

#### 11.6.3 GRANITE PAVERS

Table 11-2 provides the criteria for the granite paver surface installation to achieve Block Substantial Completion.

Table 11-2 Minimum Granite Paver Surface Performance Criteria	
Performance Item	Criteria Measurement
Cracked or loose granite pavers	Not allowed at any time. Any cracked granite pavers shall be removed and replaced with new pavers to meet original installation requirements
Chipped granite pavers	No granite paver shall have chipped edges that extend more than ¼-inch into the paver or more than 1/8-inch below the surface. Chipping shall not exceed 10 percent of the paver's edge. No more than 5 percent of the pavers shall exhibit chipping and all pavers with chipping greater than any of these limits shall be removed and replaced with new pavers to meet original installation requirements
Loose or moving granite pavers	Not allowed. Any loose or moving granite pavers shall be removed and re-bedded to meet original installation requirements.

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<b>Table 11-2 Minimum Granite Paver Surface Performance Criteria</b>	
<b>Performance Item</b>	<b>Criteria Measurement</b>
Granite paver joint width	No greater than 3/8-inch width tolerance of +/- 1/8-inch for a mortar application; no greater than 1/8-inch width tolerance of +/- 1/8-inch for a sand-set application
Lipping or height variation across adjacent granite paver joints	No greater than 1/8-inch or half of the joint width, whichever is less, within a mortar-set application; No greater than 1/8-inch within a sand-set application
Joint fill	Joint filling material between granite pavers shall not be lower than 1/8-inch below the paver surface. All joints with cracked or incomplete joint filling shall be cleaned out and reinstated to meet original installation requirements. Joint fill shall be free of shrinkage cracks across the joint or along the edge of any granite paver.
Sealant joints	Movement joints sealed with an elastomeric material shall exhibit no evidence of adhesion or cohesion failure or evidence of extrusion above the paver surface. All joints shall exhibit no tearing or puncture damage. Elastomeric joint sealant shall be fully bonded to the sides of the joint and shall be free of all adhesion and cohesion failure. Joint sealant shall not extrude above the granite paver surface during maximum compression of movement joints.
Granite paver joint lines	Straight and true, meeting the requirements of this Section 11
Granite paver surface skid resistance or coefficient of friction	Maintain the originally specified granite paver surface skid resistance or coefficient of friction meeting the requirements of this Section 11

For smoothness quality testing, the finished transverse and longitudinal surface elevation of granite pavers shall be measured using an Approved 10-foot straightedge. Areas to be measured shall be directed by the City. Areas showing high spots of more than 3/16-inch in 10 feet or at paver joints shall be marked, removed, and re-bedded until the high spot does not exceed 3/16-inch in 10 feet. Grinding shall not be performed on granite pavers for any reason.

#### 11.6.4 QUALITY CONTROL HOLD POINTS

Section 3 Quality Management provides the requirements for quality control schedule hold points. To verify the subgrade, subbase, and base slab are graded to ensure proper drainage is provided, the Contractor shall schedule individual quality control hold points at the completion of these three pavement system components. The Contractor shall correct any subgrade, subbase, base slab grading creating drainage issues as required by the City.

To verify the proper granite paver jointing is provided, the Contractor shall schedule a quality control hold point to demonstrate the proper granite paver jointing is provided prior to proceeding with any further granite paver placement.

The schedule for the quality control hold points shall be included in the Contractor's Pavement Design Report and the Construction Quality Management Plan (CQMP). The Contractor shall correct any granite paver jointing issues as required by the City.

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### 11.6.5 EXTRA REMAINING GRANITE PAVERS

At the completion of the construction Work, the Contractor shall provide any extra remaining granite pavers to the City for future maintenance work. The City will provide the granite paver storage location for the Contractor to deliver the extra remaining granite pavers.

## 11.7 GRANITE PAVER MAINTENANCE REQUIREMENTS

### 11.7.1 GENERAL

The Contractor shall maintain the new granite pavers from installation through Block Substantial Completion. The Contractor shall, at a minimum, perform maintenance to the levels described in the BID maintenance tasks included in Reference Document RD-17-01 and as prescribed in the Approved Granite Pavement System Operations and Maintenance Manual.

Pedestrian walkway winter maintenance shall comply with City Public Works Rules and Regulations. No anti-icing or deicing chemicals of any sort shall be applied to the granite pavers.

Granite paver high pressure washing shall not be performed by the Contractor.

No sooner than 30 Calendar Days prior to Block Substantial Completion, the Contractor shall thoroughly low pressure wash the granite paver surface, within the anticipated Block Substantial Completion area and re-fill any paver joints to their original as installed condition.

## 11.8 GRANITE PAVEMENT SYSTEM WARRANTY

The Project requires a Contractor Warranty for the granite pavement system. Performance criteria for the Warranty is provided in Table 11-3.

<b>Table 11-3 Granite Paver System Warranty Performance Criteria</b>	
<b>Performance Item</b>	<b>Criteria Measurement</b>
<b>Granite Pavers</b>	
Cracked or Loose Pavers	No more than 0.1 percent of the granite pavers shall be cracked into two or more pieces, and/or shall have become partially or completely loose from the setting bed. Cracks are considered to cross between two sides of the paver and to exhibit spalling over some part of their length.  Loose pavers are considered to move under vehicle tires in the transit way or under foot pressure in pedestrian areas and shall be removed and re-bedded to meet original installation requirements.
Chipped Pavers	No more than 5 percent of the granite pavers shall exhibit chipping.  No more than 1 percent of the granite pavers shall exhibit chipping that extends more than 1/4-inch into the paver or more than 1/8-inch below the surface, and chipping shall not exceed 10 percent of the paver's perimeter.  Chipping extending greater than 1-inch from the edge of the paver or more than 3/8-inch deep is unacceptable.
Lipping or height variation	No greater than 1/4-inch or half of the joint width, whichever is less, with a mortar-set application; No greater than 1/4-inch, with a sand-set application

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<b>Table 11-3 Granite Paver System Warranty Performance Criteria</b>	
<b>Performance Item</b>	<b>Criteria Measurement</b>
across adjacent granite paver joints	
<b>Paver Joints</b>	
Cracked and/or Missing Paver Joint Material	<p>No more than 2-inches in length of the paver joint material around any paver shall exhibit cracking or be missing to a depth exceeding 1/4-inch below the paver surface.</p> <p>No more than 1 percent of the pavers shall be so affected.</p> <p>Cracked or missing paver joint material affecting more than 4-inches in length around any paver or greater than 1/2-inch in depth is unacceptable.</p> <p>Cracks are considered to be transverse across the joint at a spacing of 2-inches or less.</p> <p>Missing paver joint material includes soft joint material that can be removed with a coin.</p>
<b>Sealant Joints</b>	
Adhesive and/or Cohesive Failure	Movement joints sealed with an elastomeric material shall exhibit no evidence of adhesive or cohesive failure.
Extruded and/or Torn Sealant	Movement joints sealed with an elastomeric material shall exhibit no evidence of extrusion above the paver surface or having been torn or punctured by vehicular or pedestrian traffic.
<b>Concrete Pavement</b>	
Cracks	Concrete pavement shall be free from longitudinal, transverse, and diagonal cracks and from cracks propagating from Utility covers and other penetrations.
Settlement and/or Joint Faulting	Concrete pavement shall not exhibit evidence of settlement or joint faulting greater than 3/16-inch relative to adjacent panels, Utility covers, or granite pavers.

## 11.9 CORRECTION

If, during the Warranty period, it is determined that any of the granite pavement system components from subgrade to granite paver surface are the source of the granite pavement system exceeding Table 11-3, warranties from the granite pavement system product manufacturers, or recommendations from the Granite Pavement System Operations and Maintenance Manual, the Contractor shall evaluate the granite pavement system condition with the City to determine the source of the criteria exceedance and provide a written recommended Correction and Remediation Plan to the City for Approval.

After the Correction and Remediation Plan has been prepared, the Contractor shall prepare a Work Plan, which includes a Traffic Control Plan (TCP). The TCP shall meet the requirements of Section 17 Construction Phasing and Maintenance of Traffic. The Work Plan shall be submitted to the City for Approval.

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The Contractor shall be responsible and pay for all remedial Work, including site investigation, forensic analysis, traffic control, Quality Assurance (QA) and Quality Control (QC) testing, and inspection for the required corrective action.

**11.10 DELIVERABLES****11.10.1 GRANITE PAVEMENT SYSTEM OPERATIONS AND MAINTENANCE MANUAL**

Concurrent with the Final Design Submittal, the Contractor shall prepare a Draft Granite Pavement System Operations and Maintenance Manual. The Final Granite Pavement System Operations and Maintenance Manual shall be submitted prior to Block Substantial Completion. The manual shall comply with the City Standards and Specifications for Operations and Maintenance Manuals and shall include information required for the proper long term granite pavement system maintenance, including:

- The anticipated granite paver maintenance required to replace cracked or broken granite pavers, unbonded or loose granite pavers, or any other performance measure outside industry anticipated out of specification performance or issues requiring maintenance
- Based on the Contractor's design, indicate the compliance with the industry anticipated, expected, or allowable granite pavement system performance against the Table 11-3 requirements per year during the Warranty period
- The Contractor's response time to initiate granite pavement system repairs when notified of granite pavement issues by the City
- The proposed pavement inspection frequency to observe and provide pavement system reports to the City for Information including paver joint material durability, pavement differential elevation at joints, any cracked or loose pavers, and proposed required maintenance
- The frequency of regular inspections of the granite pavement system with the City to identify maintenance adjustments or address items requiring repair or maintenance
- The pavement system management approach to detect potential pavement system performance issues observed during regular pavement system inspections by an experienced granite pavement design and maintenance expert
- The Contractor's proposed plan to address repeat maintenance issues occurring at the same location along the Mall
- The Contractor's proposed plan to provide pavement performance inspection training to the City staff upon Project Substantial Completion and Warranty commencement
- The required cleaning and maintenance practices to minimize impact to the granite pavement system
- The recommended frequency and approach to regular low pressure washing
- The recommended frequency, general guidelines, and approach to high pressure washing and the follow up maintenance or restoration work required following any high pressure washing
- Required snow and ice prevention and clearing practices to minimize impact to the granite pavement system
- Restrictions related to application of anti-icing or deicing chemicals to the granite pavement system
- Warranty specifications for all applicable granite pavement system materials and products

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- The granite pavement system Geographic Information System (GIS) tool developed to track maintenance activities including individual granite paver tile replacement, re-filling, or re-bedding for a mortar-set application
- The granite pavement system Geographic Information System (GIS) tool developed to track maintenance activities including granite paver tile replacement, re-filling, or re-bedding in a 1 foot – 5 inch by 1 foot – 5 inch grid – consistent with the granite paver pattern – for a sand-set application
- Anticipated annual cost for operations and maintenance over the design life of the granite pavement system

**11.10.2 AS-BUILT PLANS**

The Contractor shall provide As-Built Plans of the Granite Pavement System and granite paver layout as required in Section 3 Quality Management.

**11.10.3 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 11-4 Deliverables</b>		
<b>Deliverables</b>	<b>Information or Approval</b>	<b>Schedule</b>
Geotechnical Investigation Report	Approval	Within 30 Calendar Days following completion of the fieldwork
Material test results for the granite types, the setting bed and the jointing material	Approval	Within 30 Calendar Days following completion of the laboratory testing
Granite Pavement System Design Report	Approval	Draft report concurrent with Final Design Submittal; Final report concurrent with Release for Construction Submittal
PCCP Mix Design	Approval	At the Pre-Paving Conference and at least 30 Calendar Days prior to the use of any PCCP on the Project
Base Slab Jointing Plan and Details	Approval	Concurrent with Final Design Submittal
Draft Granite Pavement System Operations and Maintenance Plan	Approval	Concurrent with Final Design Submittal
Final Granite Pavement System Operations and Maintenance Plan	Approval	Prior to Block Substantial Completion
GIS-based tool showing the granite pavers	Approval	As part of the Granite Pavement System Operations and Maintenance Manual



## **12.0 EARTHWORK AND REMOVALS**

### **12.1 GOALS**

The goal of this Section 12 is to minimize limits of earthwork, reducing temporary impacts to the 16<sup>th</sup> Street Mall (Mall).

### **12.2 EARTHWORK GENERAL REQUIREMENTS**

All Work required to be performed by the Contractor shall comply with the City and County of Denver (City) Standards and Specifications, the Technical Requirements, and Good Industry Practice.

### **12.3 CONSTRUCTION REQUIREMENTS**

#### **12.3.1 CLEARING AND REMOVALS**

The Contractor shall be responsible for all clearing, removal, disposal, recycling, and earthwork requirements for the Work.

The Contractor shall be responsible for clearing and removals including, the removal of existing Mall trees, tree root balls, landscape irrigation systems, furniture, fixtures, equipment (FFE) not removed by others, signs, granite pavers, planters, kiosks, other unsuitable materials, and other Mall surface items as directed by the City that are found to conflict with Project design elements. Materials to be cleared and removed from the Project Limits shall be removed and hauled away by the Contractor. Removal items shall become the property of the Contractor unless designated to be salvaged as required in this Section 12.

For any non-Hazardous Materials or Substances, or non-Contaminated Materials or Substances that necessitate removal from the Project Limits and disposition of these substances or materials to Denver Arapahoe Disposal Site (DADS), the Contractor shall be responsible for the hauling of these substances or materials to DADS. Tickets for DADS will be obtained and paid for by the City and provided to the Contractor. All removals shall be performed in accordance with City Standards and Specifications. The Contractor shall be responsible for the removal, hauling, and disposal of all material suitable for reuse, in accordance with the City's Guidance for Reuse of Soil on City Projects. Additionally, the Contractor shall be responsible for the removal of all debris not required to go to DADS, in accordance with City Standards and Specifications.

Any Hazardous Materials or Substances and Contaminated Materials or Substances identified as contaminated or hazardous shall be properly removed from the Project Limits and disposed by the Contractor in compliance with Colorado Revised Statutes and City Standards and Specifications, in accordance with Section 5 Environmental Requirements.

The Contractor shall comply with Executive Order 123 and incorporate sustainable principles and Best Management Practices (BMPs) in the Project design and construction Work. Additional sustainability requirements and expectations are included in Section 5 Environmental Requirements.

The Contractor shall conduct a pre-clear and removal meeting with the City prior to the start of any construction Work to agree to the limits and extent of clearing and removals; present the Contractor's plan for recycling, reusing, or re-purposing any removed materials; and coordinate those items to be removed and salvaged by others.

The Contractor shall include clearing and removal limits as part of each design submittal for all construction Work in that area.

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The materials excavated from the existing Mall tree area containing any organic materials shall not be used for the transit way, cross street, or alley way subgrade, trench backfill, and embankment.

The Contractor shall remove only those trees necessary to be removed to conduct Project Work in the Active Construction Zone (ACZ). All other Mall trees shall remain in place until construction Work progresses to the next ACZ. The Contractor shall comply with tree protection requirements as described in Section 18 Landscape.

The Contractor shall comply with City Standards and Specification if any unidentified underground obstructions are encountered.

All items to be removed by the Contractor shall be clearly identified in Removal Plans and submitted with all design submittals, as appropriate.

**12.3.2 REMOVAL OF EXISTING GRANITE PAVERS**

The existing granite pavers shall be recycled or repurposed in accordance with Section 5 Environmental Requirements. The Contractor assumes all liability and responsibility associated with recycling or repurposing the existing granite pavers.

Substructures of existing features within the Project Limits shall be removed to a minimum of three feet below the proposed subgrade surface, and to a minimum of five feet horizontally from proposed underground elements if a conflict exists.

Remove and recycle or dispose of all trash, debris, trees, tree root balls, concrete, reinforcing steel, and other miscellaneous materials from the Project Limits. Debris removed from the site shall not be stockpiled or stored within the Project Limits, in compliance with City Standards and Specifications.

**12.3.3 SALVAGE MALL FIXTURES AND FURNISHINGS**

FFE and other items to be salvaged by the City, Downtown Denver Partnership (DDP), or Regional Transportation District (RTD) will be removed by the City, DDP, or RTD prior to start of Work. The Contractor shall provide 60 Calendar Days' notice prior to commencing Work in an ACZ to allow the City, DDP, or RTD to remove items to be salvaged. The Contractor shall coordinate with the City to facilitate the City's removal and transportation to a City temporary storage location any salvageable fixtures, furnishings, material, and other items designated to remain the property of the City.

**12.3.4 EXCAVATIONS AND EMBANKMENTS**

The Contractor shall be responsible for the design and construction of all embankments and excavations.

To provide for adequate sulfate resistance in all concrete supplied, Severity of Sulfate Potential Exposure shall be Colorado Department of Transportation (CDOT) Class 2 per CDOT Specification 601.04. The Contractor may at its own expense have a certified laboratory test the subgrade as per the City *Minimum Frequency of Materials Sampling and Testing Standard*. Testing shall be at the same schedule and frequency as required for a preliminary soil survey. The Contractor may propose a different Class of Exposure for the Project based on those test results. The Class 2 level shall be used for concrete potentially exposed to deicer chemicals either directly or by penetration through pervious surfaces and materials.

**12.3.4.1 MATERIALS REQUIREMENTS**

Except as required below, soil embankment material used under all pavements shall have a minimum resistance value (R-value) or Resilient Modulus (M<sub>R</sub>) of that used in the pavement design as detailed in Section 10 Geotechnical and Pavements, or other methods as Approved by the City, when tested by the

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Hveem Stabilometer for sand and clay subgrades as detailed in Section 5.2.3 of the Metropolitan Government Pavement Engineers Council (MGPEC) *Pavement Design Standards*.

Soil embankment material shall have a maximum dry density (MDD) of not less than 90 pounds per cubic foot when tested by American Association of State Highway and Transportation Officials (AASHTO) T-99 or AASHTO T-180 and meet all CDOT or MGPEC stability requirements, when tested, per Colorado Procedure – Laboratory 3102. Import material shall comply with the requirements of CDOT Specification 203.03 (a).

All pavement, excavation, and embankment testing shall be per City *Minimum Frequency of Materials Sampling and Testing Standard*.

The Contractor shall conduct a supplemental soil survey confirming that the subgrade meets the R-value and correlated  $M_R$  requirements used in the pavement design and shall conduct additional investigations and determine final pavement design according to requirements set forth in the MGPEC *Pavement Design Standards*, and do not include any organic, contaminated, hazardous, or other deleterious materials or substances. Test holes are required at a minimum of 175 feet. The Contractor shall provide any additional mitigation required as a result of the supplemental soil survey. The results of any supplemental soil surveys conducted by the Contractor together with any proposed mitigation measures to address any issues identified in the surveys shall be submitted to the City before any pavement and pavement-related Work commences. See Section 10 Geotechnical and Pavements for additional geotechnical investigation and pavement design requirements.

The Contractor may use on-site materials for Project subgrade provided that it can be demonstrated by tests that they comply with the material property requirements included in the MGPEC *Pavement Design Standards*. Such test data shall be submitted to the City prior to use of the material on the Project. Fill shall meet the reuse guidelines of the City Standards and Specifications, unless otherwise required by this Section 12. Any on-site materials used for subgrade embankments shall be free of all deleterious materials including tree roots, organic materials, construction waste materials, and Hazardous or Contaminated Substances or Materials.

The Contractor shall be responsible for identifying sources of embankment material.

The Contractor shall be responsible for disposing all surplus material outside the Project Limits at the Contractor's expense.

#### **12.3.4.2 RE-USE OF MATERIALS**

The Contractor shall not be permitted to use reclaimed asphalt, concrete, brick materials, organic materials, or materials containing Hazardous or Contaminated Materials or Substances in embankments or fills.

With the City's Approval, the existing subgrade may remain in place if it meets all other requirements herein, before any embankment or fill area, aggregate base course, pavement, and pavement-related Work commences.

#### **12.3.4.3 COMPACTION REQUIREMENTS**

Unless otherwise specified, all pavement embankment compaction and all compaction for Project elements shall be per CDOT *Standard Specifications for Road and Bridge Construction*.

Compaction for drainage structures shall comply with City Standards and Specifications.

Unless otherwise specified, Utility trench backfill compaction shall comply with Denver Water *Engineering Standards* for waterlines; the City *Storm Drainage and Sanitary Sewer Construction Detail and Technical*

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*Specifications for storm and sanitary sewers; and the City Public Works Rules and Regulations Governing Street Cuts and Roadway Excavation Specifications for all other Utilities.*

In narrow trenches where soil backfill is not practicable or not allowed per the City Standards and Specifications, removable controlled low-strength material shall be used pursuant to the City Standards and Specifications.

### 12.3.5 VIBRATION ASSESSMENTS AND MONITORING

See the Section 5 Environmental Requirements and the Technical Specifications for vibration monitoring and mitigation requirements.

### 12.3.6 EXCAVATION AND WORK ADJACENT TO EXISTING MALL BUILDINGS

The Contractor is advised that many of the existing Mall buildings include vaults under the sidewalk area and overhead awnings, canopies, and marquees that may extend into the City right-of-way. The Contractor shall exercise care to identify the locations of all existing vaults, awnings, canopies, and marquees to ensure they are protected and not damaged as a result of the Project Work. Prior to any excavation, the Contractor shall accurately mark the location of all building vaults. Work adjacent to existing buildings shall be performed in compliance with City Standards and Specifications. See Section 8 Right-of-Way, and Section 9 Survey and its Reference Documents for additional information related to Mall building vaults.

See Section 17 Construction Phasing and Maintenance of Traffic for additional requirements regarding encroachments into the right-of-way.

## 12.4 DELIVERABLES

At a minimum, the Contractor shall submit the following to the City:

Table 12-1 Deliverables		
Deliverable	Information or Approval	Schedule
Results of supplemental soil survey along with any proposed mitigation measures	Approval	30 Calendar Days prior to commencement of any embankment, aggregate base course, pavement, or pavement-related Work
Test data indicating suitability of reuse of excavated materials for trench backfill and subgrade fill	Approval	30 Calendar Days prior to commencement of any embankment, aggregate base course, pavement, or pavement-related Work

## 13.0 DRAINAGE AND WATER QUALITY

### 13.1 GOALS

The drainage goals of this Section 13 are to:

- Provide a drainage system that addresses the City and County of Denver's (City's) standard level of service, maximizes operating efficiency and minimizes long-term maintenance needs
- Utilize cross streets to capture and convey stormwater to minimize drainage infrastructure in the transit way
- Prevent adverse impacts to adjacent or downstream properties

The water quality goals of this Section 13 are to:

- Maximize water quality and runoff reduction using above ground and vegetated practices
- Utilize Water quality and green infrastructure practices that are visible and integrated throughout the Project Limits and serve as environmental learning tools for 16<sup>th</sup> Street Mall (Mall) users

### 13.2 GENERAL REQUIREMENTS

The Project shall include all Work for the modification of existing drainage facilities, construction of new drainage facilities, and construction of Best Management Practices (BMPs) that will be required to accommodate design flows, meet Project design criteria and policies, and comply with the terms and conditions of the City's Municipal Separate Storm Sewer System (MS4) Permit.

The Contractor shall design and construct complete storm-drainage systems to intercept and remove surface runoff entering the Project while maintaining surface and conduit flow consistent with the requirements of this Section 13, ensuring compliance with the City *Storm Drainage Design and Technical Criteria Manual*, and Mile High Flood District's (MHFD's) *Urban Storm Drainage Criteria Manuals*. Any drainage system components not considered in the City Standards and Specifications are subject to Approval by the City.

The Mall drainage and stormwater design and construction Work shall consist of the following stormwater conveyance and water quality improvements:

- A storm drainage system and associated structures (pipes, manholes, and inlets) shall be designed and constructed in the City right-of-way to capture and convey the design and major event flows to connection points
- The on-site storm drainage system on the Mall shall be capable of providing the City's standard level of service with no curb overtopping during the minor event while accounting for a curb height of 1 inch
- An underdrain system(s) shall be designed and constructed capable of preventing freeze/thaw cycles from affecting the long-term performance of the granite pavement system
- A tree trench drainage system designed to prevent excessive wetting of the root zone of the Mall trees due to irrigation shall be constructed and connected to the overall storm drainage system
- Water quality features shall be based on the City's *Ultra-Urban Green Infrastructure Guidelines*.

All existing drainage facilities left in place for continued use shall be:

- Evaluated and verified to have adequate hydraulic capacity

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- Evaluated and documented to be in acceptable existing condition suitable for the intended use and anticipated Project service life
- Evaluated and verified to be structurally adequate if subjected to anticipated conditions, and/or typical construction loading

Where the hydraulic capacity or existing conditions of drainage facilities upstream or downstream of the Project may be inadequate, the drainage facilities of the Project shall still be constructed to meet Project design criteria. The Contractor shall submit all related tributary basin hydrologic and hydraulic analyses to show no adverse impact, for any proposed drainage improvements within the Project Limits and those that are connected to existing storm-drainage systems, upstream or downstream of the Project for Approval by the City.

The Contractor shall design drainage facilities compatible with existing or proposed drainage systems located on adjacent properties while maintaining existing drainage patterns. If existing drainage patterns must be changed due to Project design, the Contractor shall design a solution that does not create an adverse impact to property owners and submit the design to the City for Approval prior to construction Work. During construction Work, the Contractor shall be responsible for drainage-related hazards within and outside of the Project Limits, flood damages, and water quality impacts due to negligence by the Contractor or insufficient design. The Contractor shall be responsible for obtaining all necessary Approvals, permits, and easements in locations where drainage patterns are modified, affected within and immediately outside the Project Limits.

For reference only, the Drainage Basis of Design is provided; see Reference Document RD-13-01. CAD files presenting the Basis of Design are provided in Reference Documents RD-13-06 and RD-13-07.

### **13.3 CITY ADMINISTRATIVE REQUIREMENTS**

#### **13.3.1 PERMITS**

The Contractor shall be aware of and adhere to the requirements of the various permits that will be necessary for Project design and construction. The Contractor shall be required to obtain all permits. The listing in this Section 13 is not all-inclusive, and it shall be the responsibility of the Contractor to determine all permits required in order to perform and complete the Work. Fines may be incurred upon the Project for permit non-compliance by regulatory agencies at which point said fines will be passed onto and paid by the Contractor.

##### **13.3.1.1 CONSTRUCTION ACTIVITIES STORMWATER DISCHARGE PERMIT**

The Contractor shall be responsible for obtaining the Construction Activities Stormwater Discharge Permit (CASDP) and shall comply with all stormwater permit requirements until final stabilization has been achieved and the CASDP can be closed. This includes the maintenance of all BMPs, maintenance of all landscaped areas, and removal of all construction BMPs once sufficient erosion potential has been eliminated.

##### **13.3.1.2 STORM WATER MANAGEMENT PLAN**

The Contractor's Stormwater Management Plan (SWMP) is required to fulfill the requirements of the CASDP and shall follow the format of the City SWMP template in accordance to the City *Construction Activities Stormwater Manual*. All existing and proposed drainage facility locations shall be shown on the SWMP site map.

The SWMP shall include detailed designs of the Project BMPs and shall include a plan describing when and where each BMP shall be implemented during construction Work phases. Construction site stormwater runoff control shall meet the ordinance requirements of the City MS4 permit requirements.

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The Contractor shall update the SWMP to fulfill the requirements of the CASDP and BMP inventory maps.

**13.3.1.3 MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT**

The Contractor shall be responsible for adhering to the City MS4 permit COS-000001.

Offsite flows entering the Project are not subject to permanent water quality requirements but are still subject to erosion control requirements.

**13.3.1.4 CONSTRUCTION DEWATERING PERMIT**

The Contractor shall be responsible for permit requirements associated with dewatering during temporary construction and post construction activities. A Construction Dewatering Permit is required for temporary dewatering activities during the construction Work.

Refer to Section 5 Environmental Requirements for additional permit direction and requirements.

**13.3.1.5 U.S. ARMY CORP OF ENGINEERS SECTION 404 PERMIT**

No known jurisdictional waters of the U.S. are within the Project Limits.

**13.4 DESIGN REQUIREMENTS****13.4.1 DRAINAGE DESIGN SOFTWARE**

The most recent versions of the following software shall be used in performing drainage design calculations.

- MHFD Generated Software (formerly Urban Drainage Flood Control District)
- CUHP
- PCSWMM
- EPA-SWMM
- Bentley, Power InRoads or OpenRoads
- Bentley, Flow Master
- FLO-2D
- AutoCAD Civil 3D
- Arc-GIS

Other proprietary drainage design software and spreadsheets may be used if it is certified by the software developer that it meets the design requirements herein and has prior City Approval. No software or spreadsheets created by the Contractor shall be used without City Approval. Approval of alternative software or spreadsheets shall require that the Contractor demonstrate that the proposed alternative provides analyses and results not adequately provided by already Approved software or spreadsheets. The alternative proposed software or spreadsheets results must demonstrate comparable accuracy and reliability as the already Approved software or spreadsheets. The City is under no obligation to consider alternatives to Approved software and spreadsheets and may Approve or deny the use of proposed alternatives at its sole discretion.

**13.4.2 DATA COLLECTION**

The Contractor shall identify all drainage-related issues, utilizing available data, including requirements imposed by Local, State, and Federal government regulations, and official documents concerning the Project. Drainage-related issues include, but are not limited to, areas with historically inadequate drainage, environmentally sensitive areas, drainage maintenance problems, and areas known to contain Hazardous or Contaminated Substances or Materials in the Project as described in Section 5 Environmental Requirements.

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The Contractor shall obtain existing Project area storm-drainage improvement drawings, drainage planning studies, and drainage reports from the City.

The Contractor shall design facilities to be compatible with drainage systems, existing or proposed, on adjacent properties, with no additional adverse impacts.

The Contractor shall design and construct the Project to not preclude proposed drainage systems improvements identified in the City's Drainage Master Plan that fall within the Project Limits, specifically the Stout Street Conduit extension. Considerations for non-preclusion shall include:

- Extension of the existing Stout Street Conduit, as identified in Reference Document RD-13-05, to north of the Mall
- The Project's design and construction shall permit both tunneling with its associated launch pits and open-cut methods of construction for the proposed extension
- The conduit will permit the connection of existing and Project storm sewer infrastructure
- Horizontal and vertical alignment of the proposed conduit shall assume an extension of the existing alignment

The Contractor shall perform supplemental detailed mapping and surveys as required for the Contractor's design to verify locations of existing drainage features necessary for the proposed drainage design. The Contractor shall verify or identify boundaries, flow patterns, and land uses of drainage basins based on field observations.

The Contractor shall identify, record, and resolve all conflicts between Utilities and proposed drainage improvements in accordance with Section 7 Utility Relocations.

### **13.4.3 HYDROLOGY**

The Contractor shall develop proposed conditions, on-site and off-site hydrology to support the sizing of inlet and storm sewer infrastructure on and adjacent to the Mall. Direct flow to Mall inlets for on-site hydrology shall be calculated using the Rational Method as described in the *Storm Drainage Design and Technical Criteria Manual* and in accordance with City Standards and Specifications. Off-site peak flows to cross street inlets and any bypass or indirect flow to Mall inlets shall be calculated utilizing CUHP per MHFD criteria, available on [udfcd.org/software](http://udfcd.org/software). Master plan data for 2019 is included in Reference Documents RD-13-03 and RD-13-04 for information only.

#### **13.4.3.1 DESIGN FREQUENCIES**

Design frequencies shall be in accordance with the City *Storm Drainage Design and Technical Criteria Manual*. Specifically, the minor event (Design) storm shall be the 5-year event, and the major storm shall be the 100-year event.

#### **13.4.3.2 PRECIPITATION**

Design rainfall calculations shall be in accordance with the City *Storm Drainage Design and Technical Criteria Manual*, such that the One-Hour Point Rainfall values for the minor and major event storms shall be 1.09 and 2.31 inches (from NOAA Atlas 14), respectively.

#### **13.4.3.3 RUNOFF COEFFICIENT**

The runoff coefficient used shall be in accordance with the MHFD *Urban Storm Drainage Criteria Manuals*.



### 13.4.4 HYDRAULICS

Rational method peak flows shall be used for on-site Mall inlet design and storm sewer sizing, along with any CUHP bypass peak flows. CUHP hydrographs will be utilized for input into EPA SWMM to confirm adequate proposed storm sewer system capacity.

#### 13.4.4.1 STORM SEWERS

Storm sewers shall comply with the *City Storm Drainage Design and Technical Criteria Manual* and shall provide the City's standard level of service.

Hydraulic analyses and plans for proposed storm sewers that are connected to the existing storm sewer systems upstream or downstream of the Project shall be Approved by the City. Minor and major storm analyses shall be performed to assess impacts and show benefits of the proposed systems. The hydraulic analyses shall utilize a time-based EPA-SWMM or PCSWMM stormwater model using the output hydrographs from CUHP. The hydraulic analyses shall assume proper hydraulic grade lines at tie-in points using data from the 2019 Storm Drainage Master Plan and good engineering judgment.

#### Hydraulic Design of Storm Sewers

Storm sewers shall be designed with the hydraulic gradient in compliance with the City's *Storm Drainage Design and Technical Criteria Manual*. The Contractor shall provide the City's standard level of service, within cross streets, during minor storm events – which allows underground storm pipes to run full, with residual street depths no more than curb height along the gutter line. The Contractor shall provide the City's standard level of service, within cross streets, during major storm events – which allows for pipes to run full, with residual street depths no more than 12-inches along the gutter line. Within the Mall, the minor event street flows shall not exceed the top of curb (or 1 inch above the flowline of the transit pan) and major event flow spread shall be maintained within the amenity zone and not encroach into the pedestrian walkway (as defined by RD-14-03). These depth and spread requirements within the Mall shall be for on-site flows only.

#### HGL and Residual Street Depth Calculations

The hydraulic design of the storm system shall meet, at a minimum, the above street depth criteria. For on-site flows, structures or building entryways along the Mall shall not exhibit flooding in the minor or major events. Additional requirements for hydraulic modeling related to existing and proposed street depths are provided in this Section 13.

#### Storm Sewer Alignment, Profile, and Size

Proposed storm sewers shall be designed per the *City Storm Drainage Design and Technical Criteria Manual*, *City Wastewater Management Division (WMD) Standards Details* and the items below:

- Storm sewer alignments shall be straight between drainage structures (inlets or manholes)
- Profiles of all storm sewers shall be straight grades between structures
- Hydraulic losses must be calculated per HEC-22 standards for all bends and structures
- The use of sag storm drains or inverted siphons shall not be allowed to convey stormwater
- Any deviation from the design criteria shall require the Contractor to obtain design variances as required by Section 3 Quality Management
- The Contractor shall provide a continuity of service when addressing runoff from roofs

**Inlets**

Inlet design shall be in accordance with the *City Storm Drainage Design and Technical Criteria Manual*, *City Wastewater Management Division (WMD) Standards Details*, and with the following Project specific requirements and clarifications:

- Standard City inlets shall be used on all the cross streets unless otherwise Approved by the City
- Inlets shall be designed for RTD Free MallRide shuttle and HS-20 live loading
- Bicycle and pedestrian-safe grates are required for all inlets
- All inlet locations shall be shown on the SWMP site map
- Slotted drain inlets have been shown for the Mall in the Drainage Basis of Design, Reference Document RD-13-01, as a means of meeting the stringent gutter flow depth requirements of this Project and for their ability to be highly integrated with the granite paver pattern
  - The Basis of Design product is the 9000 Series Slot Drain<sup>®</sup> manufactured by Slot Drain<sup>®</sup> System LTD as represented in Reference Document RD-13-02
  - The Contractor shall provide a product matching the performance of the Basis of Design or Approved equal
  - The Contractor shall provide a product that meets American Society of Mechanical Engineers (ASME) A112.6.3-2016 Floor and Trench Drains
  - Surface expressions of inlet components shall be constructed of high quality materials (cast iron, galvanized, or stainless steel) and corrosive resistant consistent with the 40-year design life of the granite pavement system
    - Fiberglass and plastic products are not permitted
  - The Drainage Basis of Design provides a custom combination inlet at curbed sections in lieu of slotted drain
- Inlets on the Mall shall be spaced and designed to intercept sufficient minor event flows to meet City standard depth and spread criteria, generated from on-site areas, including consideration of the 1-inch curb
- Inlets on the Mall shall be designed with sufficient capacity as to prevent local, major event spread beyond the amenity zone into the pedestrian walkway, as identified in Reference Document RD-14-03
- For cross street inlets, minor event flows shall be captured with the inlet sized to meet City standard depth and spread criteria
  - Calculated major event depth shall be compared to existing conditions to ensure no adverse impact is created for adjacent properties
- Proposed cross street inlets and lateral stormwater pipes shall be upsized to prevent major event surface flows from entering the Mall from cross streets
  - Basins for these inlets shall only extend to the next upstream inlet, neglecting bypass flows and off-site flows from further upstream
- Cross street and alley way inlets shall be designed using the appropriate clogging factors per the *City Storm Drainage Design and Technical Criteria Manual*
- Inlet shall not be located within bus loading operations

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### Manholes and Junction Structures

Manhole and junction structure spacing, placement, and construction shall follow the requirements in the *City Storm Drainage Design & Technical Criteria* and *City Wastewater Management Division (WMD) Standards Details*. However, manhole placement shall be limited within the granite paver areas to prevent penetrations and cutting of the granite pavers and to prevent disruption of the paver pattern specified in Section 11 Granite Pavement System. To accommodate this limitation, inlets servicing the Mall and alley ways will utilize direct connections to the Mall trunk line pursuant to the conditions presented in Standard Detail S-450.

Where manhole access is required within the granite paver area, the Contractor shall submit plans for City Approval showing the anticipated cut paver dimensions adjacent to the proposed ring and cover locations and how those penetrations adhere to the granite paver requirements.

### Storm Sewer Outfalls

No new storm sewer outfall structures are anticipated for this Project.

#### 13.4.4.2 NO ADVERSE IMPACT ANALYSIS

To demonstrate no adverse impact of the proposed design due to off-site flow conditions contributing to the Mall, the Contractor shall develop existing and proposed conditions Flo-2D rain-on-grid models for the area outlined in Reference Document RD-13-01, for the major and minor rainfall events. These models shall compare existing conditions maximum depths to proposed conditions maximum depths adjacent to the project site and shall roughly account for the existing storm sewer capacity at the Glenarm, Stout, Larimer, and Lawrence intersections with the Mall. The model shall utilize the standards listed in the Table 13-1. Existing drainage models are included in Reference Document RD-13-08.

Table 13-1 - FLO-2D Guidelines	
<b>Elevation Data</b>	
Source	2014 USGS LiDAR (NAVD88, 1-meter resolution)
<b>Grid Size</b>	
Size	10 feet
<b>Roughness Parameters</b>	
Shallow Manning's n	0.2
Variable Depth Manning's n	N/A
Street	0.03
Business	0.15
Park/Open Space	0.1
<b>Model Methodology</b>	
Buildings	Area Reduction Factors (ARFs)
Infiltration	none
Hydrology	Rain-On-Grid

#### 13.4.4.3 PERMANENT WATER QUALITY FACILITIES

##### Required Treatment

The Project shall provide water quality treatment for a minimum of 20 percent of the overall disturbed area within the Project Limits. This treatment can be provided for onsite flows generated directly by the Project,

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or for a combination of onsite and offsite tributary areas summing to at least 20 percent of the disturbed area.

All water quality facilities shall be maintainable per Section 2.5 of the City's *Ultra Urban Green Infrastructure Guidelines*.

### Treatment Approaches

Treatment shall be provided utilizing features from the City's *Ultra Urban Green Infrastructure Guidelines*. Such water quality features shall capture an equivalent of at least 20 percent of the overall disturbed area, within the Project Limits, from onsite and/or offsite areas, as well as providing sufficient volume (above media and/or within media poor space) to store precipitation from the feature's tributary area. After determining the appropriate WQCV as described in Mile High Flood District's Urban Storm Drainage Criteria Manual Volume 3, Chapter 3, Section 3, the actual volume stored by the feature shall be used to determine the tributary area contributing to the 20 percent capture requirement. Depression storage and infiltration shall not be accounted for in this calculation.

To achieve additional treatment area, the Contractor may utilize other water quality treatment methods, as Approved by the City, including those which do not rely on volumetric storage. Mechanical systems shall not contribute to the 20 percent requirement and are not an approach desired by the City. To ensure long term Mall tree viability, water quality treatment is not allowed in Mall tree pits.

Due to high levels of pedestrian traffic on the Mall, the City desires the Contractor to propose an approach to water quality with an emphasis on visible, above grade expressions of water as a resource, and education of the public to increase support and awareness of the City's water quality and green infrastructure goals and objectives by placing water quality facilities and educational opportunities throughout the Project Limits. Such an approach could include:

- Visible elements that showcase how green infrastructure (including plants, trees, stormwater planters, and green roofs) provide a broad array of human and ecosystem services beyond just stormwater management (such as food security, community livability, climate resiliency, air quality, and energy savings)
- Visible elements that show how green infrastructure ranges from single, small practices such as trees or rain gardens to large scale applications like parks, greenways and floodplains and that everyone can take part in greening Denver
- Visible elements that highlight Denver's South Platte River watershed and built environment/land use impacts to urban waterways along with mitigation strategies or solutions
  - Water quality facilities, their visible elements, and other green infrastructure along the Mall shall be creatively integrated into the public realm's Project infrastructure, as an extension of the Mall's character, through engravings, markings or artistic expressions that engage and educate the public about the systems functions, goals, and environmental impact of green infrastructure, such as tree canopy rainfall interception or carbon sequestration
  - Post mounted signs or placards are discouraged

#### 13.4.4.4 STORMWATER PUMPING STATIONS

The use of permanent stormwater pumping stations shall not be permitted.

#### 13.4.4.5 TEMPORARY DRAINAGE DURING CONSTRUCTION

The Contractor shall be responsible for the design and construction of temporary drainage for the Project during construction Work. Temporary Drainage Plans shall be consistent with the phasing outlined in the

Traffic Control Plans (TCP) and shall be submitted to the City for Approval. Temporary drainage shall be designed to provide positive drainage for each phase or stage of construction activities. The Contractor shall be responsible for properly sizing all temporary drainage structures. Temporary drainage shall be of sufficient capacity to convey potential flows during construction Work and shall include erosion control amenities to prevent excessive erosion should a rain event occur during construction Work. Information in the plans shall be sufficient for the City to review that all City Standards and Specifications for the temporary drainage facilities have been met.

#### **13.4.4.6 GROUNDWATER**

The Contractor shall be responsible for the design and construction of a dewatering system and required permits to prevent groundwater infiltration during construction, as necessary. The need for permanent dewatering systems is not desired or anticipated.

No permanent groundwater pump facilities will be permitted.

See Section 5 Environmental Requirements for additional information and requirements.

#### **13.4.4.7 FLOODPLAINS**

No regulatory floodplain impacts are within the Project Limits.

### **13.5 CONSTRUCTION REQUIREMENTS**

Drainage facilities shall be constructed in accordance with the all City Standards and Specifications and the requirements of this Section 13. Drainage facilities shall be designed to accommodate the Project construction phasing.

### **13.6 DELIVERABLES**

#### **13.6.1 DRAINAGE REPORT**

Drainage Reports shall be prepared by the Contractor and submitted to the City for Approval, in conjunction with plan submittals. Drainage Reports shall follow the report outline and content identified in the City *Storm Drainage Design & Technical Criteria*, and shall include references to relevant design criteria, circumstances influencing design, discussion of all drainage issues and drainage and water quality facilities, detailed design calculations, maintenance considerations, model reports, appropriate maps, figures, drawings, and all modeling files. Drainage Reports shall include a detailed discussion on any design variances and/or variations. The Contractor shall also submit the FLO-2D, SWMM and other hydrology and hydraulics analyses of existing and proposed conditions. The FLO- 2D analysis shall be used to support the no adverse impact assessment. The Contractor shall submit the final, Approved FLO-2D output files, either .mxd or .shp file format concurrent with the Final Design Submittal.

The Final Drainage Report shall be sealed by a Professional Engineer, licensed in the State of Colorado.

#### **13.6.2 DESIGN PLAN SUBMITTALS**

The drainage and water quality design plans development and submittal shall comply with the requirements of Section 3 Quality Management.

#### **13.6.3 OPERATION AND MAINTENANCE MANUAL**

As part of the Final Design Submittal, the Contractor shall submit a Drainage and Water Quality Operations and Maintenance Manual discussing any non-City standard drainage elements and permanent water quality features used on the Project. The manual shall identify the location and maintenance needs of each feature

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and shall state the Project's means of meeting those needs during construction, and recommendations for post construction maintenance.

**13.6.4 AS-BUILTS**

All plan views, profiles, details, and other information required to be prepared in accordance with this Section 13 shall be updated based on surveys of what was built in the field. As-Builts shall be clearly labeled with station, offsets, coordinates, and elevation information based on surveys for all drainage related elements. Additional requirements for As-Builts are provided in Section 3 Quality Management.

**13.6.5 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 13-2 - Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Drainage Report	Approval	Concurrent with all design submittals
Drainage Design Plans	Approval	Concurrent with all design submittals
SWMP	Approval	Concurrent with the Final Design Submittal
SWMP Site Map Updates	Approval	As required
Temporary Drainage Plans	Approval	Prior to construction Work
Approved FLO-2D output files, either .mxd or .shp file format	Approval	Concurrent with the Final Design Submittal
Drainage and Water Quality Operations and Maintenance Manual	Approval	Concurrent with the Final Design Submittal

## 14.0 MALL AND TRANSIT WAY LAYOUT

### 14.1 GOALS

The goals of this Section 14 are to:

- Continue the 16<sup>th</sup> Street Mall's (Mall) transit way designation as a "fixed guideway", as defined by the Federal Transit Administration (FTA)
- Open the Mall via innovative, hybrid-curbless design to maximize programming opportunities and mobility for all users, including those with mobility disabilities

### 14.2 GENERAL REQUIREMENTS

The Contractor shall design and construct all elements of the transit way, including but not limited to the granite pavement system, cross slopes, curb, gutter and pan, drainage, and other activities related to the Mall transit way. Additional requirements for the granite pavement system are detailed in Section 11 Granite Pavement System.

The Mall granite pavers and granite pavement system provide the platform for a variety of activities related to transit, entertainment, dining, commercial kiosks, Public Life elements, and other public activities. The transit way portion of the Mall surface is in a 24-foot wide cross section at locations as defined in the Locally Preferred Alternative (LPA) and Finding of No Significant Impact (FONSI). The transit way alignment, layout, and operational functions within the Mall are established by the Regional Transportation District (RTD) by applying FTA guidelines.

Additional information on how the Mall transitions into the cross streets can be found in Section 15 Cross Street and Intersection Layout. Impacted alley ways shall be designed and constructed in accordance with City Standards and Specifications.

### 14.3 DESIGN REQUIREMENTS

Table 14-1 provides the required Mall cross section and layout design criteria. The Mall transit way shall comply with the American Association of State Highway Transportation Officials (AASHTO) standards and City and County of Denver (City) Standards and Specifications.

<b>Table 14-1 Mall Cross Section and Layout Design Criteria</b>		
<b>Design Element</b>	<b>Criteria</b>	<b>Remarks</b>
Transit way width	24 feet	This includes the pan and curb width
Minimum profile grade	0.7 %	–
Maximum profile grade	3.5 %	–
Design speed	10 mph	–
Rate of vertical curve (K) crest (minimum)	3	Per AASHTO
Rate of vertical curve (K) sag (minimum)	10	Per AASHTO
Clear zone to obstruction	18 inches	Beyond face of curb

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<b>Table 14-1 Mall Cross Section and Layout Design Criteria</b>		
<b>Design Element</b>	<b>Criteria</b>	<b>Remarks</b>
Transit way normal cross slope	2 %	See Section 14.4.1 for cross slope transition information
Transit way cross slope transition runoff length	Per AASHTO	
Transit Way Composite slope (maximum)	4.6%	This is a combination of a 3.5% longitudinal (edge of transit way) slope and a 3% transverse slope

The Contractor shall design and construct the transit way in accordance with City Standards and Specifications, unless otherwise required in this Section 14.

- Coordinate the grading design with the drainage design to eliminate ponding (paying special attention to the curb ramp locations) and ensure minimal spread width in the transit way is achieved
  - All surface flows shall drain away from building faces and be captured and drained in accordance with City Standards and Specifications
  - See Section 13 Drainage and Water Quality for more information and requirements specific to drainage and water quality
- The Contractor shall develop a grading design that minimizes Mall surface cross slope transitions and is compliant with Americans With Disabilities Act (ADA) requirements and guidelines
- Upgrades to the transit way traffic signals shall be required; see Section 16 Permanent Signing, Pavement Marking, Traffic Signals, and Lighting for additional information
- The Contractor shall construct foundations as needed for various vertical elements along the Mall corridor; see Section 11 Granite Pavement System, Section 19 Mall Lighting and Electrical, and Section 20 Public Life for additional information
- The Contractor shall design and build all proposed improvement recommendations within the existing City right-of-way, as required in Section 8 Right-of-Way

#### 14.4 ALIGNMENTS

The Contractor is advised that the Mall granite paver surface horizontal control is established by the granite paver pattern. Refer to Section 11 Granite Pavement System and Section 20 Public Life for additional granite paver pattern layout requirements.

The Mall asymmetrical sections extend from Market Street to Arapahoe Street and from Tremont Place to Cleveland Place. The Mall symmetrical section extends from Arapahoe Street to Tremont Place. Both the asymmetrical and symmetrical sections shall be maintained. Typical section widths for the pedestrian zone, amenity zone, pedestrian walkway, and transit way for both the asymmetrical and symmetrical typical sections are shown in Reference Document RD-14-03.

The triangle block from Cleveland Place to Broadway will maintain its current cross section, layout, and alignment.

Reference Document RD-14-01 provides the Basis of Design horizontal alignment, layout, transit way components, and dimensions.



**Exhibit A-2**

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Throughout the Mall, vertical alignment shall be designed considering granite paver size, such that no vertical surface joint discontinuities are greater than ¼-inch, consistent with the requirements of Section 11 Granite Pavement System. Between Market Street to Broadway, the vertical alignment shall mimic existing grades and drainage patterns to the extent possible. The vertical alignment shall match existing elevations at the RTD light rail track crossings at both California Street and Stout Street. Impacts or modifications to the RTD light rail tracks shall not be permitted.

**14.4.1 MALL TYPICAL SECTION CROSS SLOPE**

The Mall typical cross section shall minimize cross slope transitions in the transit way and pedestrian zone. Additional cross slope design criteria is as follows:

- The transit way shall maintain a normal crown cross slope of 2 percent, unless otherwise permitted by this Section 14
- If it is determined that the transit way cross slope must transition from the preferred 2 percent normal crown, the standard AASHTO cross slope transition runoff criteria shall be followed
- Transit way cross slopes may vary from minus 3 percent to plus 3 percent when pedestrian walkway and amenity zone cross slopes are unable to otherwise meet established cross slope criteria and when longitudinal grades cannot meet the Technical Requirements
- Pedestrian walkway and amenity zone cross slope may vary from 0.5 percent to 1.5 percent
- The concrete transition strip cross slopes may vary from 0.50 percent to 7.80 percent, however, any cross slope exceeding 5 percent shall be Approved by the City
- To provide a consistent cross slope within the transit way and pedestrian zone, it is desirable to have most of the cross slope transitions take place in this concrete transition strip
- Cross slopes at door entrances shall be minimized to the great extent practicable

**14.4.2 COORDINATION WITH ADJACENT PROJECTS AND PROPERTIES**

During design the Contractor shall identify planned improvements from adjacent projects, improvements within the right-of-way, and tenant improvements along the Mall and any other private development work. Planned improvements shall be considered and incorporated, as appropriate, into the grading and tie-ins for the Project.

**14.4.3 CURB AND GUTTER AND GUTTER PAN**

A vertical four-inch curb and gutter shall be incorporated for the full length of every Free MallRide shuttle bus stop. The length of the curb and gutter shall be sufficient for the operations of a single Free MallRide shuttle bus without conflicts with vertical elements. Curbs shall not be extended beyond this point or be implemented at any other location along the Mall unless required by the design and Approved by the City. The terminus of the curb and gutter section shall be coordinated with the granite pavement system pattern and joint lines. See Section 11 Granite Pavement System for further detail on the curb and gutter and gutter pan limits.

A continuous gutter pan shall be incorporated on both sides of the transit way in locations where the combined curb and gutter section is not provided. The Contractor shall provide a transition from the curb and gutter to the gutter pan. The curb and gutter for the transit way shall be a consistent 2 feet wide and have a dimension of no more than 4 inches from the flowline to the top of curb. The gutter pan shall be a consistent 2 feet wide and shall not have a vertical dimension of more than 1 inch from flowline to the edge of the gutter pan. The Basis of Design curb and gutter and gutter pan detail is provided in Reference Document RD-14-02.

Curb and gutter pan shall be designed in coordination with Section 13 Drainage and Water Quality.

#### **14.4.4 CURB RAMPS**

Curb ramps shall be designed in accordance with Section 15 Cross Street Intersection Layout.

#### **14.4.5 CURB CUTS AND DRIVEWAYS**

Existing curb cuts and driveways along the transit way shall be maintained and shall be in compliance with City Standards and Specifications.

#### **14.4.6 AMERICANS WITH DISABILITIES ACT**

The Contractor shall design and construct an ADA-compliant Project. The Contractor will be required to perform independent third party reviews and complete ADA compliance certification documentation as outlined in Section 3 Quality Management to ensure ADA guidelines and requirements are being met.

### **14.5 MALL AND TRANSIT WAY PLANS**

Mall and Transit Way Plans shall conform to all City Standards and Specifications, as outlined in Section 3 Quality Management and shall include the additional information:

- Horizontal control lines and vertical profiles for the following elements:
  - Crown line (transit way)
  - Flow line (both sides of the transit way)
  - Outside edge of the granite (both sides of the Mall)
  - Building faces and right-of-way lines (both sides of the Mall)
- Mall surface cross slope variation diagram for the transit way and the pedestrian walkway and amenity zone (both sides of the Mall)
- Grading plans displaying the following:
  - Spot elevations at all grade breaks, cross slope transitions, and key geometry and tie-in points such as building entry ways
  - Cross slopes shall be shown where transitions occur (in the pedestrian zone and transit way) and at all curb ramps (landings, wings, and in the gutter pan)
  - Contours
- Concurrent with all design submittals, the Contractor shall submit a Digital Terrain Model (DTM) of the finished grade surface and granite pavement system base slab finished grade surface
- Cross sections at 25-foot intervals, at the centerline of every door entryway and all other necessary locations required to fully review the Mall surface grading design. At a minimum, cross sections shall include the following information:
  - Existing Mall surface grading
  - Building locations and finish floor elevations
  - Granite pavement system base slab and associated details
  - Utilities – labeled for type and size, new locations, and any existing Utilities to be abandoned in place
  - Drainage and water quality infrastructure
  - Representative locations to illustrate the new Mall trees and modular supported pavement systems

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#### 14.6 FTA MALL SAFETY AND SECURITY CERTIFICATION

The Contractor shall prepare a Safety and Security Certification Plan (SSCP) in compliance with the *FTA Handbook for Transit Safety and Security Certification - 2002*. RTD will provide information that they would be reasonably responsible to provide.

#### 14.7 AS-BUILT PLANS

The Contractor shall prepare and deliver As-Built Plans as directed in Section 3 Quality Management.

#### 14.8 TRANSIT WAY DELIVERABLES

At a minimum, the Contractor shall submit the following to the City:

Table 14-2 Deliverables		
Deliverable	Information or Approval	Schedule
Proposed DTM of the finished grade surface and granite pavement system base slab finished grade surface	Approval	Concurrent with all design submittals
Safety and Security Certification Plan (SSCP)	Approval	Concurrent with the Final Design Submittal

## 15.0 CROSS STREET AND INTERSECTION LAYOUT

### 15.1 GOALS

The goals of this Section 15 are to:

- Enhance pedestrian safety through shortened pedestrian crossing widths at intersections
- Extend the feel of the 16<sup>th</sup> Street Mall (Mall) through the cross street intersections
- Maintain vehicular access through the Mall

### 15.2 GENERAL REQUIREMENTS

The Contractor shall design and construct all cross street intersections and associated roadway items, including earthwork, pavements, bulb-outs, curbs, bus islands, incidentals, and other cross street intersection improvements. See Reference Document RD-15-01 for the Basis of Design horizontal geometry layouts and other details. The cross street intersection design and construction Work shall generally consist of the following:

- Intersection pavement and jointing layout
- Curb and gutter
- Bike lanes
- Bus islands
- Bulb-outs
- Curb ramps within the granite paver pattern
- Sidewalks
- Drainage inlets and water quality features
- Traffic signals and associated equipment including but not limited to poles, cabinets, meters, and junction boxes

All design elements within the cross streets and intersections shall comply with Americans with Disabilities Act (ADA) requirements and guidance.

CAD files presenting the Basis of Design are provided in Reference Documents RD-15-06, RD-15-07, and RD-15-08.

### 15.3 DESIGN REQUIREMENTS

Table 15-1 provides the required cross street and intersection layout design criteria. The cross streets and intersection layouts shall comply with the American Association of State Highway Transportation Officials (AASHTO) standards and City and County of Denver (City) Standards and Specifications.

Table 15-1 Cross Street and Intersection Layout Design Criteria		
Design Element	Criteria	Remarks
Roadway Classification*	Arterial	
Design Speed (Posted Speed) (MPH)	25	
Minimum Radius (feet)	198	Use Low-Speed Urban criteria per AASHTO
$e_{max}$ (%)	NC	
Normal Cross Slope (%)	2 %	See below for allowable cross slope ranges
Stopping Sight Distance (feet)	155	At level grade; per AASHTO

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<b>Table 15-1 Cross Street and Intersection Layout Design Criteria</b>		
<b>Design Element</b>	<b>Criteria</b>	<b>Remarks</b>
Minimum Profile Grade (%)	0.7	
Maximum Profile Grade (%)	5.0	
Minimum Rate of Vertical (K) Crest	12	Per AASHTO
Minimum Rate of Vertical (K) Sag	26	Per AASHTO
Minimum Cross Street Inside Lane Width (feet)	11	
Minimum Cross Street Outside Lane Width (feet)	10	10 foot lane + 2 foot gutter
*Both Glenarm Place and Cleveland Place are classified as Collector streets. All other cross streets along the Mall corridor are classified as Arterial streets.		

The Contractor shall design and construct roadways and alley ways in accordance with the City Standards and Specifications, unless otherwise required in this Section 15.

- Cross street intersections shall be designed and built within City right-of-way and the Project Limits
- Cross streets and intersections shall be repaved using Portland Cement Concrete Pavement (PCCP) and shall meet the roadway pavement requirements in Section 10 Geotechnical and Pavements
- Upgrades to the cross street traffic signals shall be required; see Section 16, Permanent Signing, Pavement Marking, Traffic Signals, and Street Lighting for additional information

### 15.3.1 ALIGNMENTS

Horizontal and vertical geometry for cross street roadways shall meet all requirements of this Section 15 and City Standards and Specifications.

### 15.3.2 CROSS SLOPE

All improvements shall be graded to drain using the following cross slope ranges:

- Roadway – 0.5 % to 2.0 %
- Sidewalk – 0.5 % to 1.5 %

The City acknowledges that the existing cross street cross slopes vary and may not necessarily meet current City Standards and Specifications. As part of the design, the cross street profile and cross slope shall be adjusted to match the Mall profile through the cross street intersections. The Mall granite paver surface elevations shall be the controlling feature. Cross slope transition rates shall conform to AASHTO standards.

### 15.3.3 STOPPING SIGHT DISTANCE

Stopping sight distances and decision sight distances shall be determined in accordance with the AASHTO *A Policy on Geometric Design of Highways and Streets*. Application of roadway and pedestrian sight distance triangles required for the cross street intersection design shall be in accordance with City Standards and Specifications. Sight triangles shall be identified in the roadway plans.

### **15.3.4 CURB AND GUTTER**

All cross street roadways shall provide curb and gutter on all reconstructed cross streets. Curb and gutter shall be designed and constructed in compliance with City Standards and Specifications. Flowline profiles shall be shown on the plans and maintain a minimum 0.5% grade, unless Approved by the City.

### **15.3.5 CURB CUTS AND DRIVEWAYS**

Existing curb cuts and driveways within cross streets shall be maintained and shall be in compliance with City Standards and Specifications.

### **15.3.6 CURB RAMPS**

Curb ramp shall be selected from the following three details and designed based on the following requirements (in order):

- Ramp Detail A is applicable where the difference in elevation between the pedestrian walkway and the flowline in both the transit way and cross street is relatively minimal, and a fully depressed landing can be achieved
- If Ramp Detail A is not feasible, then Ramp Detail B is applicable where the difference in elevation between the pedestrian walkway and the flowline in both the transit way and cross street is slightly greater and will require an additional ramp grade portion below the landing area to match the street level elevations
- If Ramp Detail A and B are not feasible, then Ramp Detail C is applicable where the difference in elevation between the pedestrian walkway and the flowline in both the transit way and cross street is at its greatest and a longer ramp grade is required to get pedestrians from sidewalk elevations down to street elevations

All curb ramps shall be coordinated within the granite pavement pattern and shall be built using granite pavers. Curb ramps shall be designed to withstand heavy vehicle loading and shall not incur damage, as outlined in this Section 15 and shall be designed to eliminate ponding at the ramp. Curb ramp details are provided in Reference Document RD-15-02.

Non-ADA compliant curb ramps on the west side of the Market Street intersection shall be reconstructed as part of the Work.

### **15.3.7 DETECTABLE WARNING TILES**

The Contractor shall provide maintenance free, corrosion-resistant cast iron detectable warning tiles. Warning tiles shall be designed to fully comply with the American Disabilities Act Accessibility Guidelines (ADAAG), American Association of State Highway and Transportation Officials (AASHTO) M 333-16 and the City's Standards and Specifications.

The placement of vertical elements within the curb ramp area is not permitted.

### **15.3.8 ON-STREET PARKING**

The Project will affect some on-street parking on the cross streets. The Contractor shall coordinate with the Department of Transportation and Infrastructure (DOTI) Transportation Operations Curbside Management and Parking group to determine the City requirements related to the displaced loading zones and metered and accessible parking spots.

### 15.3.9 BULB-OUTS

Bulb-outs will be provided along the Mall at cross streets identified in Reference Document RD-15-01 Intersection Basis of Design Plans. The bulb-out designs shall be designed and built per City Standards and Specifications. The bulb-outs will provide the following benefits:

- Shorter pedestrian crossings
- Improved site lines for pedestrians
- Aligned intersections making pedestrian crossings (at cross streets and the transit way) more predictable and safer

Bulb-out designs shall not preclude future two-way conversion and comfort bike way projects. There are known future two-way conversion and or comfort bike way projects at the following cross streets:

- Lawrence Street
- Arapahoe Street
- Curtis Street
- Welton Street – See Reference Document RD-15-05 for the Welton Two Way Conversions Plans
- Tremont Place

Final bulb-out geometry designs at all cross streets shall be coordinated with, and Approved by the City.

### 15.3.10 PEDESTRIAN AND BICYCLE MOBILITY

Sidewalks shall be provided along reconstructed cross streets and shall match existing sidewalk widths, unless otherwise Approved by the City. All reconstructed sidewalks – matching the extent of the roadway and/or curb and gutter reconstruction limits – shall be ADA compliant and in accordance with City Standards and Specifications. Beyond these reconstruction limits the Contractor's sidewalk cross slope design may transition to tie in to existing sidewalk cross slopes over a maximum of 15 feet, beyond the Work necessary to complete the proposed improvements.

The Project shall apply context sensitive pedestrian design to optimize pedestrian crossing movements at intersections while not significantly degrading vehicular operations. Pedestrian movement design shall consider locations of curb ramps to provide optimal sight distance and shortest route as well as requirements for pedestrian crossings at all legs of signalized intersections. All cross street sidewalks shall match the existing material, surface finish, and color of the sidewalk being replaced.

All existing intersecting bike facilities shall be designed in accordance with the *DRAFT Denver Bike Guidelines*. Provide bike movements through the intersections using pavement markings and/or color conflict zone pavement markings in compliance with City Standards and Specifications.

### 15.3.11 TURNING MOVEMENTS

The Contractor shall complete turning movement analysis at all intersections and alleys for temporary and permanent configurations. During Free MallRide shuttle operations, and to accommodate emergency vehicle access, these heavy vehicles must move on to or off the Mall such that their tracking will cross over the new and existing curb ramps. Therefore, the concrete base slab underneath the new granite pavement system ramp shall be designed to accommodate the Free MallRide and AASHTO HS-20 heavier wheel loading due to these operations. See Section 11 Granite Pavement System for additional information regarding vehicle loading requirements.

Free MallRide shuttle off-tracking onto curb ramps or other pedestrian facilities shall not be permitted unless otherwise Approved by the City. For specific information on the Free MallRide Shuttle see Reference Document RD-11-10.

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**AASHTO Design Vehicles:**

- BUS - 45 = Free MallRide shuttle
- City - Emergency = Denver Fire Truck

Any existing curb ramps damaged by these loadings during construction and the Warranty period shall be repaired by the Contractor, as directed by the City and at no cost to the City.

**15.3.12 AMERICANS WITH DISABILITIES ACT**

The Contractor shall design and construct an ADA-compliant Project. The Contractor will be required to perform independent third party reviews as outlined in Section 3 Quality Management to ensure ADA guidelines and requirements are met.

**15.3.13 REGIONAL TRANSPORTATION DISTRICT BUS STOPS**

The Contractor shall reconstruct to Regional Transportation District (RTD) standards and specifications and ADA requirements the existing bus stops impacted by the Work. New bus stop facilities shall comply with RTD standards and specifications and ADA requirements.

The Contractor shall protect all other existing bus stops and bus stop amenities in place, unless relocation of an existing bus stop is required due to the final design and Approved by the City. The Contractor shall coordinate with RTD for all design and construction Work.

The Contractor shall deliver any existing RTD bus stop amenities including benches, shelters, and associated items removed during the course of the construction Work to RTD as directed by RTD. If agreed with RTD, the Contractor may reuse existing amenities at new locations in the Work or dispose of the existing bus stop amenities.

A bus island shall be provided at Tremont Place to mitigate cyclist and bus conflict points. Reference Document RD-15-03 provides the Basis of Design for the bus island. The Contractor shall coordinate with the City (Transportation Design) and RTD to determine final dimensions and location of the bus island.

**15.4 CROSS STREET AND INTERSECTION LAYOUT PLANS**

Cross Street and Intersection Layout Plans shall conform to all City Standards and Specifications, as outlined in Section 3 Quality Management and shall include the additional information:

- Cross street cross slope variation diagram
- Grading plans displaying the following:
  - Spot elevations at all grade breaks, cross slope transitions and key geometry and tie-in points such as building entry ways
  - Cross slopes shall be shown where transitions occur (in the sidewalk and street) and at all curb ramps (landings, wings, and in the gutter pan)
  - Contours
- Concurrent with all design submittals the Contractor shall submit a Digital Terrain Model (DTM) of the finished grade surface



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**15.5 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 15-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Turning movement analysis	Approval	Concurrent with all design submittals
Curb ramp loading analysis	Approval	Concurrent the Final Design Submittals
Proposed DTM of the finish grade surface	Approval	Concurrent with all design submittals

## **16.0 PERMANENT SIGNING, PAVEMENT MARKING, TRAFFIC SIGNALS, AND STREET LIGHTING**

### **16.1 GOALS**

The goals of this Section 16 are to:

- Increase passive-wayfinding and minimize signage along the 16<sup>th</sup> Street Mall (Mall)
- Replace traffic signals along the Mall
- Provide signage and pavement markings that meet current City Standards and Specifications

### **16.2 GENERAL REQUIREMENTS**

The Contractor shall be responsible for the new permanent signing, pavement marking, traffic signals, and street lighting elements for the Project and comply with all City and County of Denver (City) Standards and Specifications and the requirements of this Section 16.

All Work performed shall conform to the guidelines set forth in the *City Traffic Signal Standards and Sign & Marking Standards*, *Street Lighting Design Guidelines*, and the *Manual of Uniform Traffic Control Devices* (MUTCD), as modified by the Colorado Supplement, unless specifically stated otherwise. The requirements of the MUTCD shall include both the standard requirements and the guidance recommendations of the Manual. City Standards and Specifications shall govern in the event of conflict with the MUTCD.

### **16.3 SIGNING DESIGN**

The Contractor shall prepare cross street Signing Plans for the Project. These plans shall include all necessary guide, warning, supplemental, and regulatory signs, and additions, removals, or modifications to existing signs and appurtenances. Signing plans shall provide layouts showing the locations of all signs, special sign details, and structural and foundation requirements.

The City shall coordinate with the Regional Transportation District (RTD) to replace wayfinding signs for RTD stops and stations affected by the Project. If existing wayfinding signs require removal, alternative equivalent signs shall be replaced, as directed by RTD.

All cross streets signs shall be in accordance with MUTCD and City Standards and Specifications. Any non-MUTCD signs along the Mall or cross streets shall be submitted to the City for Approval.

#### **16.3.1 MALL SIGNAGE**

Signage and wayfinding shall be provided in accordance with *City Traffic Signal Standards and Sign & Marking Standards*, and the *Manual of Uniform Traffic Control Devices* (MUTCD) or as otherwise required in this Section 16. All new signs along the Mall or cross streets shall be submitted to the City for review and approval.

#### **Signing Materials**

The Contractor shall use ground sign materials in accordance with City Standards and Specifications.

For cross street ground signs, telespar posts for mounting ground signs shall be used. The use of breakaway poles and devices is not permitted per City Standards and Specifications.

All sheeting on cross street signs shall be in accordance with City Standards and Specifications.

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All sign posts, structures, panels, and components shall be new.

#### 16.4 PAVEMENT MARKING DESIGN

The Contractor shall prepare Pavement Marking Plans. Plans shall include all striping required as well as any modifications to permanent pavement markings required for transitions to existing pavement markings. Pavement markings shall include, but not be limited to the following: cross walk (18-inch continental bars), lane, stop bar, and bike lane striping. All pavement markings shall be in accordance with City Standards and Specifications and MUTCD.

#### 16.5 TRAFFIC SIGNAL DESIGN

Traffic and pedestrian signals are required. All existing traffic signals at each cross street intersection shall be removed and replaced within the Project Limits except for Welton Street and Broadway. Additional signal pole requirements shall be as follows:

- Four traffic signal poles shall be required at each intersection; see Reference Document RD-16-01 for general location and signal pole placement requirements within an intersection
  - Transit way – Mast arms not required
  - Cross streets – Mast arms required
- All intersections shall be designed to accommodate an additional future mast arm to allow for a cross street to not preclude conversion from one way to two way vehicular traffic, eliminating future throw away of installed materials
- Traffic signal cabinets and controllers at all locations except California Street and Stout Street may be reset, which shall be new
- All traffic signals shall have an electric meter and a PTZ camera
- All traffic signal poles shall be colored gray to match the existing and new signal poles both at Broadway and Welton Street
- No traffic signal foundations anchor bolts shall be below finished grade of granite pavers and no grates shall cover the anchor bolts
- All traffic signals shall be light emitting diode (LED) and metered, in accordance with City Standards and Specifications
- New traffic signals shall be interconnected to a new 12-strand single mode fiber optic cable within the Mall conduits specified in Technical Requirements Section 7.10.4
  - The new fiber optic cable and conduits shall extend the full Project length and shall connect to the existing City traffic and ITS network at locations Approved by the City
- Traffic signals at both California Street and Stout Street shall be interconnected signals with RTD light rail signals
  - Special considerations for these signal poles shall be required and need to be coordinated with the City and RTD for Approval
- Signal poles shall be located outside the granite pavement system
- Signal pole final locations shall be Approved by the City

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- See Reference Document RD-15-05 Welton Two Way Conversion Plan for additional information on the proposed signals at Welton Street
  - These signals will not be a part of the Project and shall be protected in place during construction Work
- The final design plans for the Central Business District traffic signal cabinet replacement project are included as Reference Document RD-16-02

The Contractor shall remove any existing traffic detection loops when re-constructing the intersections. All proposed traffic signals shall run on fixed time due to the light rail crossings at Stout Street and California Street.

The Contractor shall prepare Traffic Signal Plans for the Project, including proposed intersection plan details (such as traffic signal pole locations, mast arm and signal head locations, descriptions and directions, pedestrian countdown signal head, approach striping and marking locations and types, cabinet and power source locations, meter location, conduit and pull boxes, interconnect information, signal phasing, quantities), and all other plan and component details for complete traffic signal installation.

### **16.6 TRAFFIC SIGNAL MATERIALS**

Traffic signal components shall be new. Removal of existing components/materials shall follow City standards and specifications for the Removal of Traffic Signal Equipment.

### **16.7 MALL HALO SECURITY CAMERAS**

The Denver Police Department (DPD) owns a collection high activity location (HALO) security cameras located on traffic signal and cross street light poles along the Mall. The Contractor shall coordinate with DPD prior to the removal of any existing traffic signal and light poles. This coordination will allow for DPD to coordinate with their own commercial contractor who will be the one to remove the existing HALO cameras within an Active Construction Zone (ACZ). DPD's commercial contractor will relocate or store the cameras until Block Substantial Completion for the applicable location.

The Contractor shall provide connection infrastructure on each new traffic signal and light pole for future HALO camera installations.

### **16.8 PAVEMENT MARKING MATERIALS**

The Contractor shall utilize pavement marking materials that conform with Sections 713.08, 713.10 and 713.19 Methyl Methacrylate Pavement Marking Material of the 2019 Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction. Additional information on Methyl Methacrylate Pavement Markings can be found in Sections 627.07, 627.12, and 627.13.

Prior to Project Substantial Completion, the Contractor shall provide ten additional gallons of Methyl Methacrylate to the City for future use.

### **16.9 PERMANENT CROSS STREET AND INTERSECTION LIGHTING DESIGN**

All permanent lighting shall be designed and constructed in compliance with City Standards and Specifications and Xcel Energy (Xcel) standards and specifications.

The Contractor shall prepare lighting designs and plans for new street lighting and any impacted existing lighting. The Contractor shall include power design and plans for energizing all lighting, signal, powered

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signage, irrigation, and miscellaneous cross street support systems, where required. The Contractor shall coordinate with Xcel to determine Project electric power requirements and to develop the Project lighting design and construction requirements. Lighting designs and plans shall be subject to Approval by the City. High-mast lighting shall not be permitted.

All permanent lighting shall be LED luminaries and shall incorporate the most recent technology to ensure adequate lighting levels and lower maintenance needs.

The Contractor shall submit to the City for Approval the photometric lighting calculations showing the design meets the performance criteria for roadway design to include average, maximum, minimum foot-candles, and average to minimum, and maximum to minimum luminance on the horizontal roadway plane. Foot-candle illumination contour drawings with 2.0, 1.5, 1.0, and 0.5 iso-contours shall be submitted for cross street, cross street intersections, and Mall sections. Lighting solely for decorative purposes need not be documented with lighting calculations or contour submittals. The Contractor shall submit voltage drop calculations for each circuit.

The lighting plans shall address both temporary and permanent Work and shall include existing topography, right-of-way, Utilities and drainage facilities, and all other existing and proposed facilities. The drawings shall include location and orientation of standards and fixtures, wiring, conduits, pedestals, power sources, and all other lighting components required to construct the lighting.

The cross street, including cross street bulb-outs, bus islands, and sidewalks, shall provide levels of lighting that meet City Standards and Specifications to enhance safety and security, promote responsible use of Project areas, and serve aesthetic compatibility with the surrounding uses – factoring the use of vehicles, bicycles, and pedestrians into the lighting design.

Alley way lighting designs are not required.

## **16.10 CROSS STREET AND INTERSECTION PERMANENT LIGHTING MATERIALS**

Cross street lighting materials and components shall conform to the requirements specified in the City Standards and Specifications. Cross street lighting materials and components shall be approved by Xcel. Proposed cross street fixtures and poles shall be chosen from the standard Xcel list and submitted to the City for Approval.

All lighting materials and components shall be new, unless allowed by the Technical Requirements or Approved by the City.

### **16.10.1 CONSTRUCTION REQUIREMENTS**

#### **16.10.2 PERMANENT SIGNING**

The Contractor shall remove, reuse off the Project site, recycle, or dispose of all existing sign structures, ground-mounted signs, and delineators within the Project Limits and any signs that are in conflict with the Project, in all other locations. The Contractor shall be responsible for the proper disposal, repurposing, or recycling of all non-salvageable materials. Additional requirements are in Section 12 Earthwork and Removals.

#### **16.10.3 PERMANENT PAVEMENT MARKING**

All pavement markings shall be in accordance with City Standards and Specifications.

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New Portland Cement Concrete Pavement (PCCP) shall be sandblasted prior to placement of any primer or pavement-marking material.

#### 16.10.4 PERMANENT TRAFFIC SIGNALIZATION

The Contractor shall submit the proposed signal equipment list and shop drawings, for Approval.

Traffic signal pole locations shall be staked and Approved by the City 10 Working Days prior to commencement of the relevant construction Work.

The Contractor shall keep operable and maintain all traffic signals affected by the Project until Final Completion. The Contractor cannot change the signal timing without City Approval. The Contractor shall notify the City no later than 10 Working Days prior to the completion of the construction Work of the traffic signal. The City will provide the Contractor signal timings for the permanent traffic signals prior to the initial startup.

The Contractor shall be responsible for and pay for all power and metering required for new traffic signalization until Project Block Substantial Completion.

#### 16.10.5 PERMANENT LIGHTING

Existing cross street and intersection lighting that is removed shall become the property of Xcel or the City, as applicable. All lighting of a common style and wattage shall be consistent in appearance and electrical configuration for all instances, including any reused hardware.

All fixtures and lighting standards shall have equipment grounding conductors and bonding systems components which are distinct from neutral circuit wiring. Ground rods and bonding jumpers shall be installed at every light standard above six feet.

The Contractor shall be responsible for coordination of the removal, relocation, and/or construction of roadway lighting, in accordance with the City's Xcel Franchise Agreement.

The Contractor shall be responsible for and pay for metering, all lighting materials and components, construction, and all power required for Mall decorative lighting, and cross street lighting until Final Completion.

#### 16.11 DELIVERABLES

At a minimum, the Contractor shall submit the following to the City:

Table 16-1 Deliverables		
Deliverable	Information or Approval	Submittals
Lighting design and photometric calculations	Approval	Concurrent with Final Design Submittal
Cross street lighting materials	Approval	Concurrent with Final Design Submittal
Cross street signal fixtures and poles	Approval	Concurrent with Final Design Submittal
Historic Decorative Light Fixture Reuse Plan	Approval	Prior to removing any Historic Decorative Light Fixtures from the Mall

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<b>Table 16-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Submittals</b>
Traffic signal shop drawings	Approval	Prior to ordering traffic signal equipment
Staked location of traffic signalization	Approval	10 Working Days prior to traffic signal construction Work

## **17.0 CONSTRUCTION PHASING AND MAINTENANCE OF TRAFFIC**

### **17.1 GOALS**

The goals of this Section 17 are to:

- Maintain current downtown traffic operations and accommodate Free MallRide transit service from Union Station to Civic Center Station
- Minimize disruption to vehicular, bike, and pedestrian users in and through the 16<sup>th</sup> Street Mall (Mall)
- Maintain access for Mall users to businesses and residential units
- Maintain emergency service access to the Mall during construction
- Minimize overall Project cost and schedule duration with creative and coordinated construction phasing

### **17.2 GENERAL REQUIREMENTS**

The Contractor shall conduct all Work necessary to meet the requirements associated with the Mall construction phasing and cross street and alley way maintenance of traffic (MOT), including provisions for the safe and efficient continuation of the Mall business and Free MallRide operations between Denver Union Station and the Civic Center Station and movement of people, goods, and services through and around the Project, while minimizing impacts and travel delays to residents, businesses, commuters, and other Mall users.

The Contractor shall coordinate with the City and County of Denver (City) and Contractor's Public Information Officer (PIO) in accordance with Section 4 Public Information to provide information to support the Public Information Plan (PIP) requirements to implement and communicate the Traffic Management Plan (TMP) to Stakeholders and the public. The approach to communicate impacts to the Free MallRide, Regional Transportation District (RTD) light rail and bus activities, emergency services access, vehicular traffic, transit operations, pedestrian access and mobility, access for individuals with mobility disabilities or challenges, bicycle facilities, pedicab service, and access to businesses and residences during construction Work shall be coordinated with the City and communicated in a way accessible to all audiences. The Contractor shall continue coordination with the business owners, tenants, and Stakeholders, as outlined in Section 4 Public Information.

All MOT shall comply with City Standards and Specifications. However, the Project is not subject to the Holiday Moratorium nor the Coors Field Moratorium per Department of Transportation & Infrastructure (DOTI) Policy.

### **17.3 ACTIVE CONSTRUCTION ZONE REQUIREMENTS**

In order to best manage the sequencing of the Work and minimize impacts to residents, businesses, commuters, and other Mall users, the Contractor shall be responsible – as defined by this Section 17 – for the full Mall block once construction Work commences on that given Mall block. The Contractor shall be responsible for the Mall block for the duration of the construction Work, until Block Substantial Completion is achieved. Commencement of construction Work for a Mall block is determined through a request of an ACZ. An ACZ is the geographic area that consists of all active construction Work and shall be determined in Mall block increments, utilizing the full right-of-way of the given Mall block and shall include any cross streets, alley ways, and other early construction Work packages identified by the Contractor.



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The Contractor shall not mobilize or perform Work for any block, block segment, cross street, alley way, or other area of Work until a request for an ACZ is Approved by the City. The date that any ACZ request is Approved in writing by the City is referred to as the “Approved ACZ Date” for the Mall block(s) included in the corresponding ACZ request and shall trigger the Block Start Date (as defined in the Special Contract Conditions) for such block(s). Additional requirements for the Work and any ACZ include:

- An ACZ request, at a minimum, shall include a single Mall block, inclusive of all accesses and driveways
  - The Mall between Broadway and Court Place may be considered a single Mall block for the purposes of an ACZ request, if the Contractor is able to show an ability to meet the contiguous and continuous requirements of this Section 17.3
- The ACZ may be expanded if continuous and ongoing construction Work is maintained, as shown by the Project Schedule and construction Work
- For each Mall block and applicable adjacent cross street, the Block Substantial Completion date shall not exceed more than 18-months from the Block Start Date
  - The Contractor shall pay to the City liquidated damages for every day Block Substantial Completion is not achieved, in accordance with the Contract
  - Early construction Work packages, as defined by Section 3 Quality Management, in advance of mobilizing onto a Mall block shall not count toward the 18-month time restriction and shall not require the determination of a Block Substantial Completion date in advance of early construction Work package mobilization
- For purposes of ACZ definition, cross streets and alleys shall be included in an adjacent Mall block, as determined by the Contractor
- Continuous construction Work shall be maintained with any existing Mall block or contiguous Mall blocks prior to the inclusion of a subsequent Mall block, either to expand to the continuous Mall block ACZ, or to shift the ACZ along the Mall
- Prior to commencement of mobilization for an entire Mall block and the commencement of the 18-month duration for an ACZ per Mall block, early construction Work packages are permitted, as outlined in Section 3 Quality Management and Approved by the City
  - Early construction Work packages require an ACZ request
  - Early construction Work packages shall be the minimally necessary amount of Work to achieve the Project Schedule, while also minimizing impacts to adjacent businesses and Mall users
  - The schedule submittal for the early construction Work package ACZ request shall identify the need for completing the early construction Work prior to fully mobilizing on a Mall block, indicating the time between completing an early construction Work package and mobilizing for the full Mall block scope within those same impacted Mall blocks
  - Early construction Work shall be shown as necessary and that it cannot be reasonably performed while a Mall block is fully mobilized
  - Early construction Work packages shall be evaluated based off the mutual benefit to the Contractor and the City and are not intended to increase Project impacts and burden to the City, Mall businesses, and users
  - Use of temporary asphalt patching is permitted

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- The Contractor shall conduct a pre-construction meeting with the City and required Stakeholders – as determined by the City – prior to mobilizing onto or shifting an ACZ a minimum, of five Working Days prior to the scheduled Work

Requirements to request an ACZ include all elements of Table 17-1. To preserve the ACZ Approval, active, on-going, and productive Work shall occur. Productive Work is considered to be the on-going Work required to achieve the block schedule. Short time shut downs may be required to achieve scheduled Work; however, moving active Work off an ACZ for more than 72 hours shall be Approved by the City prior to shut down. Weekends and Holidays are not included in the shutdown restrictions. Material and equipment storage and general laydown and staging areas do not qualify as active Work for continued ACZ Approval. The City reserves the right to issue a Nonconformance Report should it be determined at any time that active and productive Work is not occurring within the ACZ.

<b>Table 17-1 Requirements for Active Construction Zone Approval</b>	
<b>Category</b>	<b>Deliverable</b>
Design	Initial ACZ Work package(s) shall have received a Statement of No Objection (SONO) on the applicable Release for Construction (RFC) drawings. Subsequent design packages, within the ACZ, shall be shown in the Project Schedule and shall show the ability to not cause delays to the scheduled construction Work.
Communications	All affected Stakeholders shall have had the necessary communications, as defined in Section 4 Public Information and the PIP shall be Approved.
Emergency Service	The Contractor shall schedule a meeting with emergency responders to discuss the construction Work, schedule, and requirements to maintain emergency service access at all times. Approval for the ACZ shall not be provided until notification from emergency responders including fire and police acknowledges their ability to maintain access in the ACZ.
Regulatory	All necessary permits shall be obtained by the Contractor.
Construction Work	All necessary Work plans shall be Approved, including Construction Quality Management Plan (CQMP), the Traffic Management Plan (TMP), Traffic Control Plan (TCP), Pedestrian and Bike Temporary Access Plan, and Incident Management Plan (IMP).
Transit Operations Coordination	Anticipated affected transit operations and coordination requirements shall be provided and reviewed by RTD, as outlined in this Section 17.
Schedule	Submittal of the block schedule and establishment of the Block Substantial Completion Date

#### 17.4 MALL GENERAL MAINTENANCE DURING CONSTRUCTION

Upon mobilization to an ACZ, the Contractor shall maintain the ACZ in a clean, safe, and orderly state. Maintenance of ACZ shall be at a similar level as that historically performed by the Business Improvement District (BID), as described in Reference Document RD-17-01. All maintenance shall be in compliance with City Standards and Specifications, good industry practice, and the requirements of this Section 17.

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This includes active measures to prevent construction debris and dust blowing from the ACZ, maintaining a clear entrance into business and residential access, snow removal, and the management of temporary drainage and other Best Management Practices (BMPs) within the ACZ. For each block, the Contractor's maintenance responsibilities shall terminate with the achievement of Block Substantial Completion. Warranty obligations shall be as required in the Special Contract Conditions.

The Contractor's maintenance operations shall not interfere with the Mall activities and businesses, shall coordinate with Special Events and Marquee Special Events, shall accommodate RTD's transit operations, and shall not cause damage to the existing granite paver surface outside the ACZ or following Block Substantial Completion. The Contractor shall not store or move any equipment or vehicles across the new or existing granite pavers or store any materials on the new or existing granite pavers outside the ACZ. Information and direction related to the existing granite paver maintenance during construction and for the new granite pavers is provided in Technical Requirements Section 11 Granite Pavement System and its Reference Documents. The Contractor shall not be responsible for the Mall general maintenance outside the ACZ.

The Contractor shall maintain the temporary pedestrian walkways within the ACZ free and clear of any obstructions, hazards, debris, litter, trash, dust, and stormwater runoff to ensure safe and Americans with Disabilities Act (ADA)-compliant access is maintained at all times. Pedestrian walkway winter maintenance shall comply with City Rules & Regulations on Snow and Ice Removal from Sidewalks. Trash receptacles shall be provided along the temporary pedestrian walkways similar to those on the existing Mall. The Contractor shall empty trash receptacles along the temporary pedestrian walkways and maintain the temporary walkways daily.

If, in the opinion of the City, the ACZ is not being maintained to an acceptable level, the Contractor shall perform Mall maintenance activities to the City's satisfaction and ensure these Section 17 maintenance requirements are met.

**17.5 CROSS STREET AND ALLEY WAY MAINTENANCE OF TRAFFIC  
GENERAL REQUIREMENTS**

The Contractor shall conduct all Work necessary to meet the requirements associated with the cross street and alley way MOT, including provisions for the safe and efficient movement of people, goods, and services through and around the Project, while minimizing impacts and travel delays to residents, businesses, and commuters. All existing operations, deliveries, and usage of the alley ways shall be maintained or provided through an Approved detour.

**17.6 TRANSIT OPERATIONS COORDINATION AND GENERAL  
REQUIREMENTS**

Free MallRide shuttle detours are permitted off the Mall onto the dedicated transit lanes on 15<sup>th</sup> Street and 17<sup>th</sup> Street. Detours shall be jointly determined by the Contractor, RTD, and the City. The Contractor shall provide all necessary construction Work information for RTD to implement and communicate to the public effective Free MallRide detours.

The Contractor shall coordinate with RTD to minimize any impacts to the RTD transit system as a result of the construction Work, including the Free MallRide, bus routes, light rail station access, bus stop locations, and other RTD services. During both design and construction Work, the Contractor shall coordinate with RTD 60 Calendar Days prior to disruptions or impacts to RTD service areas and schedules. Coordination with RTD shall be completed far enough in advance to allow a 30 Calendar Days notification to transit users of any closures, delays, or modifications in bus or light rail routes and of modifications or relocation of transit stops or signage along the affected routes. Communications strategies to communicate

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changes of RTD service to RTD patrons and the public shall be included in the ACZ request, as required in Section 4 Public Information.

The Contractor shall maintain access to all RTD light rail stations during construction Work. No surface Work shall be completed within the RTD track envelope without approval from RTD. RTD light rail operations shall not be affected unless Approved by the City and RTD.

The Contractor shall maintain access to all RTD bus stops within the Project Limits during construction Work. Any modifications to RTD bus stop locations and/or access shall be submitted to the RTD and the City for Approval.

As the Mall blocks are completed within the ACZ, the Contractor shall coordinate with RTD's Free MallRide operations staff to accommodate the Free MallRide shuttle service in the new Mall transit way.

The Contractor shall include the City in all coordination with RTD.

**17.7 TRAFFIC MANAGEMENT PLAN**

The Contractor shall prepare a TMP which defines the strategic construction phasing and traffic management plan for Project. The TMP shall address major aspects of the construction Work for individual ACZs, blocks, and stages. These aspects shall include, but are not limited to construction phasing and associated durations, detours, cross street and alley way closures, lane closures, staging, haul routes, construction site access, anticipated impacted business access, construction laydown and material storage areas, equipment staging areas, temporary pavement location and description, numbers and type of traffic shifts, traffic control personnel, transit operations, RTD requirements, device quality and maintenance requirements, contact lists, communication protocols, public information, pedestrian and bicycle cross street and alley way access, and emergency services access. The TMP shall address any associated impacts to surrounding properties and property owners, as well as the larger downtown area.

The TMP shall be submitted to the City for Approval at least 60 Calendar Days prior to commencement of any construction Work. The Contractor shall update the TMP as Work progresses along the Mall and experience is gained as Work phases are completed. The Contractor shall obtain all permits for closures through City right-of-way. The Contractor shall submit draft City street closure permit requests for Information 30 Calendar Days prior to the Street Occupancy Permit (SOP) request. The City response time for permit reviews will be no more than 21 Calendar Days following receipt of a complete permit request. At a minimum, the TMP shall include:

- An overview, description, and schedule of the Work, subdivided as applicable, into the following components
  - Active Construction Zone: A specific grouping of Work within the Project defined by the Contractor that creates Project segments for the purpose of planning and executing the Work, complying with all requirements of the Contract Documents, and this Section 17
  - Mall Block: A specific sequence of the Work in each and every block along the Mall
    - A separate TCP shall be required for each Mall block
    - Adjacent and relevant cross streets shall be identified and included in specific Mall block TCPs, as determined by the Contractor
  - Stage: A subdivision of Work within a block that combines similar components of Work to maintain efficiency

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- A list, description, and schedule of Work for early construction Work packages
  - A detailed approach to the development of TCPs and Method of Handling Traffic (MHT)
  - A list of known or potential detours and cross street lane, cross street closure, or alley way closures, including the following information:
    - Description of traffic shift
    - Description of detour
      - Identification of detour limits to be used
      - Typical cross street or detour roadway section requirements
      - Contractor's identification and coordination with other construction projects, within the vicinity of the proposed detour
      - The impact of these construction projects shall be incorporated into the detour route planning and scheduling
    - Number of shifts expected
    - Construction phase and duration of shifts and detours
  - Approach to providing public information, directional, and warning signage throughout the Project. The Contractor shall describe its approach to implementing Variable Message Signs (VMS) and static signage to notify Stakeholders of cross street and alley way closures, Mall transit way closures, and lane shifts, along with durations of these MOT and construction phasing measures
    - No less than six VMS boards shall be provided throughout the duration of the Project
    - At a minimum, VMS shall be provided for any full or partially closed cross street and for Special Events or Marquee Special Events, as appropriate
  - An approach to the use of temporary traffic signals
  - A checklist identifying specific items that shall be provided weekly to the Contractor's PIO and the City for public information data collection and management activities
    - The checklist shall provide the inclusion of supporting information relevant to coping messages and public awareness and shall be included in the Public Information Plan (PIP)
  - An approach to coordinating with the Downtown Denver Partnership (DDP) and BID
  - An approach to coordination, communication, and cooperation with construction Work being performed by adjacent projects
    - Specifically, the Contractor shall address work performed, haul routes, staging areas, material delivery, and other potential impacts from the Colorado Convention Center Expansion Project, Skyline Park Improvement Project, other improvements within the right-of-way, tenant improvements along the Mall, and any other private development work
    - To ensure coordination with adjacent projects, the Contractor shall attend the bi-weekly Downtown Construction Coordination Meeting
  - An approach to the Free MallRide shuttle operations to maintain service between Denver Union Station and the Civic Center Station, including a list of anticipated modifications to transit facilities and operations and Free MallRide shuttle routing during Construction
  - An approach to coordination with RTD and its flagging requirements

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- An approach to traffic access management, including restrictions for bicycles, pedestrians, pedicabs, and potential impacts to individuals with mobility disabilities or challenges
- Relevant portions of the Incident Management Plan (IMP), described in this Section 17
- An approach to Special Event and Marquee Special Event coordination
- Approach to emergency service coordination and accommodation
- Approach to public, business, and residential access, including a plan to work with residents, property and business owners, and tenants to determine acceptable closure locations and durations and retain business access and during Special Events and Marquee Special Events
- Approach to working with special interest Stakeholders, such as people with disabilities to ensure consistent access to properties and the Mall
- Approach to addressing bicycle facility closures and detours
- Approach to ensuring access is maintained for business deliveries (including accommodating large delivery items) and trash service
- Approach to maintaining Mall and cross street parking garage entrance and exit access
- Approach to keep the City informed of all public communications, as it relates to MOT, specifically any access discussions and decisions
- Approach to coordination and cooperation with construction being performed by Utility Owners or other Utility Relocations, as required in Section 7 Utility Relocations
- Approach to addressing drainage and preventing stormwater runoff impacts during traffic management
- Identification of haul routes, staging areas, and materials receiving and storage areas, with particular attention to staging areas for large delivery trucks including ready-mix concrete trucks
- Haul routes and deliveries shall not be permitted across RTD's light rail tracks
- Approach to construction lay down areas, material storage, and equipment staging area
- Approach to minimize material and equipment deliveries during peak period traffic times to reduce queuing in traffic lanes
- Approach for Contractor parking
- Approach to parking meter bagging to accommodate active construction Work activities for short periods of time
- Approach to notifying and engaging service providers to support people on the Mall experiencing unhoused situations in coordination with the City and DDP
- Approach to maintaining public access to the existing Mall restrooms and to the proposed Mall restroom project anticipated to be installed on Champa Street (between 15<sup>th</sup> Street and 16<sup>th</sup> Street) by the end of 2020, as shown in Reference Document RD-17-03
- Approach to inform the City of upcoming SOP permit applications

**17.8 MAINTENANCE OF TRAFFIC VARIANCE PROCESS**

The Contractor may request an MOT Variance for any closure or other restriction beyond the requirements defined within this Section 17. MOT Variance requests shall be submitted when safety is a concern or other

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Project goals, objectives, and criteria can be maximized. The Contractor shall be responsible for demonstrating the ability to effectively and continuously perform construction Work in order to minimize the overall impact of the Project to the adjacent businesses and residents, Mall users, emergency service access, vehicles, and pedestrians.

The following information shall be included in each MOT Variance request:

- Summary of the MOT Variance request
- Justification for the MOT Variance request including a list of the criteria which cannot be met and the reasons for not meeting those criteria
- Schedule of planned construction Work activities during the MOT Variance
- Public notification methods and schedule
- List of affected emergency services and the schedule for their notification
- List of affected agencies or private owners and the method and schedule for their notification
- Description of additional public information surveys to be performed, if required
- List of potential safety hazards to which motorists and citizens may be exposed, if any
- Proposed revisions to the Approved TCP or current MHT
- Description of how ACZ Approval requirements are impacted and how proposed MOT Variance request complies with all requirement intents for an ACZ request, as outlined in this Section 17

Prior to the proposed implementation of an MOT Variance request, the Contractor shall allow the City a minimum of 15 Working Days for review and Approval. Any required resubmittals are the responsibility of the Contractor. The City may extend the review time if additional adjacent property owner or tenant coordination is required or if revisions are requested. MOT Variance Approvals are at the sole discretion of the City.

**17.9 INCIDENT MANAGEMENT PLAN**

The Contractor shall develop an IMP to manage traffic and non-traffic incidents and emergency operations within the Project Limits. The IMP shall be submitted to the City for Approval at least 60 Calendar Days prior to commencement of construction Work. At a minimum, the IMP shall include the following:

- Coordination with the PIP and Crisis Communications Plan (CCP)
- Incident response methods and approach
- Approach to securing the incident site until first responders arrive for their investigation
- Incident clearance methods and approach in collaboration with first responders
- Geographic or other special constraints
- Contractor responsibilities
- Alternate routes
- Project phasing
- Available resources
- Coordination with the DDP security team
- Emergency services notification, including Denver Police Department (DPD), Denver Fire Department (DFD), ambulance services, and any other emergency response providers

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The Contractor shall inform the City of all recorded incidents located within the Project traffic control zones as they occur. The incidents shall be reviewed with the City and the Contractor to identify potential problem locations and make the necessary adjustments for the safety of the workers and public.

**17.10 CONTRACTOR INCIDENT RESPONSE**

For incidents that occur within the ACZ, the Contractor shall have at least one representative on call, via cellular phone, that can respond to all incidents within 30 minutes. Upon arrival at the incident, the Contractor representative shall assess the situation and immediately notify the appropriate personnel to implement the IMP. Upon notification of the incident, the Contractor shall cooperate with the emergency services and immediately undertake actions necessary to preserve the incident site for first responder's incident investigation and restore traffic operations, as described in the IMP, in a timely and expedient manner. The Contractor is not responsible to provide the services normally provided by emergency responders.

**17.11 SPECIAL EVENTS****17.11.1 GENERAL**

Downtown Denver, and the Mall in particular, attracts many people through Special Events throughout the year. The Contractor shall designate a single point of contact for Special Event coordination with the City and DDP. A list of potential annual Special Events is provided in Reference Document RD-04-01. The Contractor shall maintain the list of Special Events in coordination with the City. These Special Events shall be incorporated into the Project Schedules required in Section 2 Project Management. The list of Special Events shall be updated annually and shall be reflected in the Project Schedules. The Contractor shall identify and implement necessary changes in Work progress to accommodate traffic, transit operations, and pedestrian and bicycle access for the Special Events, as jointly determined by the City and the Contractor. The Contractor shall use reasonable efforts to mitigate the effects of ongoing lane closures, detours, revised transit operations, and pedestrian and bicycle access associated with Special Events.

**17.11.2 MARQUEE SPECIAL EVENTS**

Certain Marquee Special Events may require construction Work to be stopped during the Marquee Special Event. The Contractor shall assume 10 non-Work Days per year when construction Work may not be permitted due to a Marquee Special Event. This 10 non-Work Day shutdown per year is to accommodate anticipated high vehicular and pedestrian traffic, to accommodate increased Mall activity, and to maximize safety throughout the Mall. These 10 days per year shall be assumed to be during Marquee Special Events. Marquee Special Events are not identified at this time and may include some of the Special Events included in Reference Document RD-14-01. Determination of a Marquee Special Event is at the City's sole discretion. To the extent possible, the City will provide 45 Calendar Days notification of a designated Marquee Special Event.

Marquee Special Events shall include a Special Event Management Plan which outlines the Contractor's detailed approach to managing vehicular and pedestrian traffic, coordination of the Free MallRide shuttle, anticipated operational impacts, business and residential access, power supply, and any other considerations necessary for the safe and effective coordination of the Project and the Marquee Special Event. A separate Special Event Management Plan is required for each unique Marquee Special Event.

**17.12 PEDESTRIAN AND BIKE TEMPORARY ACCESS**

The Contractor shall keep the Mall open for business during construction, including business delivery and pedestrian access. Temporary pedestrian access shall be ADA compliant. The Contractor shall have an Approved Pedestrian and Bike Temporary Access Plan as a condition of a request for an ACZ. Temporary



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pedestrian access materials shall be asphalt, concrete, or as Approved by the City. Pedestrian detours shall be the shortest route feasible and maintain access to existing pedestrian facilities, businesses, and residential properties. The Contractor shall meet all ADA requirements, the Manual on Uniform Traffic Control Devices (MUTCD) requirements, and City Standards and Specifications for all Work that impacts existing pedestrian facilities or that will be used for temporary detour routes. Temporary construction signage to support the detour and temporary access shall be required. The temporary pedestrian access shall be maintained in a safe, clean, and debris-free condition at all times.

At a minimum, the Contractor shall always maintain 10 feet clear for continuous pedestrian access along either side of the Mall, unless otherwise Approved by the City.

Cross connectivity for pedestrians within the Mall is critical during construction Work. Therefore, the Contractor shall maintain all existing pedestrian access at cross street intersections for each block, unless otherwise Approved by the City.

Existing bike facilities shall be maintained throughout construction Work, unless otherwise Approved by the City. Minimum bike lane widths are five feet for a bike lane and two feet for a bike buffer, where applicable. Bike access will not be permitted through an ACZ within the Mall. Bike racks shall be maintained during construction Work and may be relocated based on ACZ phasing, as coordinated with the City.

### **17.13 COORDINATION WITH ADJACENT PROJECTS**

The Contractor shall coordinate with adjacent projects – both public and private. Coordination discussions and communication shall include the City and other contractors to harmonize construction traffic and detour impacts and minimize simultaneous closures or impacts to adjacent or alternate routes.

### **17.14 DESIGN REQUIREMENTS**

#### **17.14.1 TRAFFIC CONTROL PLAN**

Each TCP shall describe the locations available to the Contractor for construction; no-Work locations; environmental, security, and safety restricted sites (include references for information); the location of traffic; and the location of Contractor access, staging areas, laydown areas, and materials delivery locations. Each Mall block shall have a separate TCP and shall be consistent with the TMP. The TCPs shall conform to the requirements specified herein and shall generally describe all traffic-control signing, construction parking, pavement markings and traffic-control devices, and temporary signalization, lane and shoulder configurations (including widths), staging, Project deliveries, access impacts and mitigation strategies, reduction of construction traffic queuing onto traffic lanes, pedestrian requirements, and bicycle requirements. All TCPs shall be sealed by a Professional Engineer licensed in the State of Colorado. Each TCP shall be submitted prior to the ACZ request associated with the TCP for Approval by the City. Any major revision to the TCP, as determined by the City, shall require submission of a new TCP to the City for Approval.

#### **17.14.2 METHOD OF HANDLING TRAFFIC**

In conjunction with the required Street Occupancy Permit, the MHT Plans are the detailed plans for implementing TCPs and lane closures including anticipated lane closure durations. MHT Plans shall include, but are not limited to temporary or permanent striping, temporary signage, channelizing devices, appropriate barriers, temporary signals, locations of shifted signal heads at intersections, traffic flow arrows for each travel lane, Work zones, staging, Project deliveries, reduction of construction traffic queuing onto traffic lanes, and affected pedestrian, business, and residential accesses (showing compliance with the

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TCP). MHT Plans shall be as Approved as part of the SOP. Lane closures shall require signs on temporary portable mounts, cones or vertical panels, and do not require the adjustment of striping.

For short periods of time less than four hours duration between the hours of 8:30 AM and 4:30 PM, signals may be put in flash temporarily and uniformed (off-duty police) traffic control may direct traffic. Signals shall not be put in flash temporarily during Special Events and Marquee Special Events. Signals with RTD light rail phases shall not be put in flash temporarily at any time. The uniformed police agency officer shall have completed *The Safe and Effective Use of Law Enforcement Personnel in Work Zones* training course. The Contractor shall provide the City copies of documentation certifying the officer's successful completion of this course. MHT Plans shall be drawn to scale and appropriately sized to show the construction Work area in sufficient detail. MHT Plans shall include the dates and times they are planned to be in effect. Temporary traffic signals shall be installed in conformance with standards set forth in this Section 17.

The design speed for all lane shifts shall be defined and shown on the MHT Plans. Tapers, device spacing, and the size of signs and attenuators shall be shown per the MUTCD and design speed. The American Association of State Highway and Transportation Officials (AASHTO) *Roadside Design Guide* shall be used but not limited to the design of temporary clear zones and barrier end treatments. All permanent traffic control devices shall be shown on every MHT covering its particular portion of the construction Work area. These permanent traffic devices shall have a note describing its role in the MHT such as "cover sign," "permanent signal in operation," "signal not operating and bag heads," or similar informational designation. MHTs shall be prepared by an American Traffic Safety Services Association (ATSSA) or Colorado Contractors Association (CCA) certified Traffic Control Supervisor or Professional Engineer, licensed in the State of Colorado.

MHTs and construction permits shall be coordinated with adjacent projects to achieve the City's need for Project area traffic control.

MHTs shall include Free MallRide shuttle turning movements for all shuttle operations. Movements shall meet RTD requirements, not track onto oncoming traffic, and not damage existing, temporary, or permanent infrastructure. If shuttle movements are determined to be unacceptable during implementation of the MHT, the Contractor shall modify the MHT to correct any deficiencies.

No less than 15 Working Days prior to any lane closure or restriction implementation, an appropriate MHT Plan shall be submitted to the City for Approval. The City may Approve MHTs in less than 15 Working Days for construction emergencies or other reasonably unforeseen events, at the sole discretion of the City.

### **17.14.3 DESIGN SPEED AND POSTED SPEED**

The Contractor shall maintain the existing posted speed for all cross streets.

### **17.14.4 LANE RESTRICTIONS**

Minimum cross street lane widths shall be 10 feet. Parking spaces shall be maintained unless Approved by the City.

### **17.14.5 LANE CLOSURES**

No full closures are permitted.

All cross streets shall maintain two lanes of traffic, unless otherwise permitted in the Contract Documents or as Approved by the City. Stout Street and California Street shall maintain one lane of traffic, at all times.

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Concurrent lane closures for adjacent one-way couplets shall not be permitted (such as Market Street and Lawrence Street or Stout Street and Curtis Street).

Lane closure protection shall be provided in accordance with City Standards and Specifications for all lane closures.

Alley way closures are permitted following required coordination, notification, and mitigation as required in this Section 17.

The Contractor shall coordinate with the City and Mall business owners, and address in its TCP strategies, related to the following:

- Access during Special Events and Marquee Special Events as required in Section 2 Project Management, Section 4 Public Information, and this Section 17 to verify any closure restrictions
- Business delivery routes and access with special attention to business delivery access whether from the Mall, alley ways, or parking garages for larger delivery trucks
- Parking garage entrance and exit access for locations such as the Independence Plaza between Curtis Street and Arapaho Street and the Denver Energy Center at Tremont Place and Cleveland Place
- Access to special parking access locations such as the valet parking access station at the Sheraton Downtown Denver Hotel at Tremont Place
- Access to designated business loading zones
- Although the Holiday Moratorium and Coors Field Moratorium do not apply to the Project, the Contractor shall coordinate with business owners to minimize disruptions to retail customer access for major retail shopping areas such as the Pavilions during the time noted in the moratorium periods
- Traffic control performed by flaggers shall not have wait times that exceed two minutes
- All temporary signal operations shall be performed by a Uniformed Traffic Control (UTC) Officer

Construction Work shall not impact the RTD light rail crossings or cause Free MallRide shuttle queuing over the tracks. The Contractor shall provide necessary traffic control measures to ensure RTD tracks are not infringed in any way. If unsafe conditions occur at or near RTD tracks, the City or RTD may require additional flaggers or corrective measures at the Contractor's expense.

#### **17.14.6 BUSINESS AND PRIVATE ACCESS**

Accesses shall be maintained for properties adjacent to the Project throughout construction, unless otherwise agreed to by the property owner and documented in writing and Approved by the City. TCPs and MHTs shall incorporate stakeholder information from the PIP, available surveys, conversations with affected property owners, and other information relating to business and private access for the Project. At a minimum, the Contractor shall communicate (two-way conversation) and document the following information relevant to business, private, or public access:

- Access points impacted by construction Work at locations noted in this Section 17
- Access points impacted by a particular construction phase or stage, including consolidation or temporary removal of accesses
- All notifications and communications with affected business owners, tenants, and residents

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- Schedule of closures and estimated durations
- Site-specific access or delivery requirements for local businesses addressing deliveries, wide-load vehicles, and other related access considerations
- Proposed mitigation efforts for affected access
- Detours required to maintain access during construction

The City shall be included in communications regarding access and shall be informed in writing of all communications with business owners, tenants, and residents as required by Section 4 Public Information and this Section 17.

**17.14.7 DETOUR ROUTES**

If a cross street closure is permitted by this Section 17 or Approved by the City through an MOT Variance, detour routes shall be required. Detour routes shall be submitted for Approval a minimum 30 Calendar Days in advance of implementation. Detours shall be coordinated with public information requirements, including advanced notifications as required in this Section 17 and Section 4 Public Information.

**17.14.8 NOISE**

The Contractor shall comply with Section 5 Environmental Requirements.

**17.14.9 SPECIFIC PROPERTY REQUIREMENTS**

Detours for all business access shall be submitted to the business owner no later than 10 Working Days prior to implementation. Any business access detours shall be approved in writing by the business owner prior to submittal to the City for Approval and implementation. Approval by the business owner does not necessarily ensure City Approval.

Construction Work (including restrictions, closures, and detours) adjacent to all cross street businesses shall be coordinated with the business owner.

The Contractor shall document and maintain Safe Routes to School (pedestrian and bicycle) during construction Work.

**17.15 CONSTRUCTION REQUIREMENTS**

The Contractor shall provide installation, maintenance, and complete removal of all temporary traffic control devices.

**17.15.1 TEMPORARY TRAFFIC CONTROL DEVICES**

All permanent and temporary traffic control devices visible to traffic for the Project shall be shown on at least one Approved and active MHT.

**17.15.1.1 CONSTRUCTION SIGNING**

Project construction signing for detours shall comply with the respective City Standards and Specifications, the MUTCD, and all applicable standards. Construction signing and construction signing maintenance shall be the responsibility of the Contractor. Construction signing shall be kept clean, visible, well maintained, and in good repair at all times and updated as required by the City throughout the Project duration.

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**17.15.1.2 TEMPORARY FENCING**

The Contractor shall provide non-transparent temporary fencing to deter unauthorized access into and maintain control of the Project site, with the exclusion of locations where views of the construction Work can be safely visible to the public. Fence height shall be a minimum of 72 inches. Fencing shall accommodate Project branding and other marketing collateral in accordance with Section 4 Public Information.

**17.15.1.3 EXISTING SIGNALS DURING CONSTRUCTION**

The Contractor shall be responsible to maintain existing signals within City right-of-way as required through a Street Occupancy Permit, if the signal is within an ACZ. Additional requirements are provided in Section 16 Permanent Signing, Pavement Marking, Traffic Signals, and Street Lighting.

Existing signal timings may not be altered during construction.

**17.15.1.4 TEMPORARY TRAFFIC SIGNALS**

Temporary traffic signals shall comply with City Standards and Specifications for span wire signals. The Contractor shall submit a Temporary Traffic Signal Plan and design to the City for Approval prior to any signal Work. The Contractor shall operate the temporary signals and respond to malfunctions during the Project duration, in accordance with the Street Occupancy Permit. Temporary Traffic Signal Plans shall be designed and submitted to the City for Approval 15 Working Days prior to planned implementation. Changes to the traffic signal timing shall not be allowed. For temporary signals, the Contractor may have access to City traffic signal cabinets, as Approved by the City. Maintenance of temporary signals shall be the responsibility of the Contractor. The Contractor shall be responsible to respond to and correct signal malfunctions within one hour of notification or discovery of the signal malfunction. If the Contractor discovers or is notified of a temporary traffic signal malfunction, the Contractor shall notify the City immediately and proceed with the corrective actions.

The Contractor shall be responsible for and pay for all power and metering required for temporary traffic signalization.

**17.15.1.5 TEMPORARY PAVEMENT MARKINGS**

The Contractor shall furnish, apply, and remove temporary pavement marking paint in accordance with City Standards and Specifications. Temporary paint striping shall meet the conformity of lines (including no overspray), dimensions, patterns, locations, and details established in the Contractor's TMP and MHTs.

- Temporary pavement markings shall be re-striped once a month, or as required to maintain safe traffic operations
  - Stripes shall be sufficiently retroreflective to be visible at night during a rain storm
- No epoxy-based paint shall be permitted on concrete pavement surfaces for temporary striping
- No temporary pavement markings of any sort are allowed on the Mall granite pavers
- Hydroblasting, or other methods that do not result in scarring of permanent pavements shall be used for removal of temporary pavement markings

**17.15.2 MAINTENANCE OF TEMPORARY TRAFFIC CONTROL DEVICES**

The Contractor shall be responsible for the maintenance of all permanent and temporary traffic control devices within the Project. Temporary traffic control devices shall meet the acceptable standard as defined by the ATSSA *Quality Guidelines for Work Zone Traffic Control Devices* and the MUTCD.

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**17.15.3 TEMPORARY PAVEMENT**

Any temporary pavement locations shall be described in the TMP, designating the type and thickness of the pavement used to accommodate anticipated loadings. The Contractor shall be responsible for the complete removal, recycling, or disposal of all temporary pavement.

The Contractor shall maintain the detour pavement for the entire period during which it is open to the traveling public, including all temporary approaches, accesses, crossings, and intersections. Detour pavements shall be maintained in good operating condition devoid of potholes, uneven surfaces, edge drop offs, and rutting. The City may direct the Contractor to repair or replace detour pavements if, in the City's sole discretion, detour pavements are determined to be in poor condition. Detours that use existing pavements shall be subject to pavement repair or replacement when it is determined that the condition of the existing pavement has noticeably deteriorated over the duration of its use as a detour.

Refer to Section 10 Geotechnical and Pavements for additional information.

**17.15.4 TEMPORARY LIGHTING**

All construction lighting fixtures shall be oriented to avoid glare that may distract or interfere with the vision of drivers, bicyclists, or pedestrians, and shall be oriented to avoid glare onto adjacent residences and businesses. Full cut-off fixtures are required. Lighting shall be adjusted as requested by the City, if complaints from residences or businesses are received.

During the Work, maintain a temporary light level on the Mall of 100 percent of the City standard for permanent street lighting. On cross streets, maintain a temporary light level of 50 percent of the City standard for permanent street lighting.

Temporary wood light poles are permitted for installation of temporary lighting.

**17.15.5 CONSTRUCTION TRAFFIC AND PARKING**

The Contractor shall minimize construction traffic through the Project area and on the Mall. No construction parking shall be permitted adjacent to the Project Limits or on the Mall outside the ACZ – including personal vehicles. Haul routes and construction access maps shall be submitted as part of the TMP.

**17.15.6 STAGING AREAS**

The Contractor shall provide, and be responsible for, any staging areas including materials stockpiling; laydown yards; equipment storage and staging; materials removed to be salvaged, recycled, or disposed; or other temporary operations necessary for the Project Work. Staging areas shall comply with all City Standards and Specifications for erosion, debris, dust control, and stormwater runoff. Staging area information shall be submitted as part of the TMP.

The ACZ may be utilized for limited Contractor staging/laydown areas, as described in the TMP and as Approved by the City. The Contractor may not use the areas immediately adjacent the Federal Reserve Building for staging (i.e., Arapahoe Street, Curtis Street, or the Mall), unless Approved by the City.

**17.15.7 SIDEWALK MAINTENANCE DURING CONSTRUCTION**

The Contractor shall maintain the sidewalks located within the ACZ for the duration of the Work, as required in any active Street Occupancy Permits or other construction permits, and as required by this Section 17.

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**17.15.8 ENCROACHMENTS WITHIN THE RIGHT-OF-WAY**

Historic and long-established Mall structures, including overhead signs and canopies extend into the right-of-way. The Contractor shall not remove, damage, or disturb these structures. If due to necessary means and methods to complete the construction Work, the Contractor determines any of these structures require temporary removal or alteration – the Contractor shall submit a request to the City for their temporary removal or alteration. Requests will be Approved at the City’s sole discretion. Requests shall include the reasons necessitating removal of the encroachment, means and methods to complete the Work, options considered for completing Work with encroachment in-place, duration of requested encroachment removal, and proposed mitigation for business sign and canopy advertisement including the ability for business to be seen by Mall users due to removal of sign or canopy or other business interests.

**17.16 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 17-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Traffic Management Plan (TMP)	Approval	60 Calendar Days prior to commencement of construction Work
Maintenance of Traffic (MOT) Variance request	Approval	15 Working Days prior to the requested date for variance implementation
Active Construction Zone (ACZ) request	Approval	30 Calendar Days prior to commencement of construction Work
Incident Management Plan (IMP)	Approval	60 Calendar Days prior to commencement of construction Work
Traffic Control Plan (TCP)	Approval	Prior to request for an ACZ
Method of Handling Traffic (MHT)	Approval	15 Working Days prior to implementation of the MHT
Uniformed traffic control certifications	Information	15 Working Days prior to implementation of the MHT
Pedestrian and Bike Temporary Access Plan	Approval	Prior to request for an ACZ
Special Event Management Plan	Approval	30 Calendar Days prior to the scheduled Marquee Special Event
Notification of impacts to transit facilities	Approval	60 Calendar Days prior to proposed impacts
Temporary Traffic Signal Plan	Approval	15 Working Days prior to implementation
Detour Routes	Approval	30 Calendar Days prior to implementation

## **18.0 LANDSCAPE**

### **18.1 GOALS**

The goals of this Section 18 are to:

- Create a resilient tree canopy by diversifying the number of tree species planted on the 16<sup>th</sup> Street Mall (Mall), selecting tree species that are appropriate to the environment and growing conditions
- Install and commission an irrigation solution that supports the long-term health and viability of the Mall trees
- Install a planting and pavement system that facilitates reasonable maintenance access and accommodates long term growth of the trees

### **18.2 LANDSCAPE GENERAL REQUIREMENTS**

The Contractor shall be responsible for the design and construction of all Project landscape elements in accordance with the requirements of this Section 18 and City and County of Denver (City) Standards and Specifications. The Project's overall landscaping elements shall, at a minimum, meeting the following:

- Ensure long term Mall tree viability
  - Mall trees shall not be used for water quality treatment areas
  - The Contractor shall minimize stormwater runoff into the Mall tree planting pits
- All landscaping shall comply with City Standards and Good Industry Practice for horticulture, planting, cultivation, irrigation, water quality and conservation, life cycle cost, and maintenance
- All Work performed shall conform to the guidelines set forth in the current City Standards and Specifications, specifically the Denver Parks + Recreation *Planning, Design + Construction Standards*, unless otherwise required by this Section 18
- All landscaping residing related to water quality including but not limited to streetside stormwater planters or bumpout stormwater planters shall comply with the City's *Ultra-Urban Green Infrastructure Guidelines* and the requirements of Section 13 Drainage and Water Quality
- All tree plantings adjacent to the transit way shall be designed and maintained to avoid conflicts with the Free MallRide shuttle and emergency vehicles at the direction of the City

### **18.3 TREE REMOVAL PLAN**

The Contractor shall be responsible for permits, clearing, and removals including the removal of existing Mall trees. All non-Mall trees (trees located within cross streets) that may be impacted by construction Work shall be protected in place, unless otherwise Approved by the City.

### **18.4 LANDSCAPE DESIGN REQUIREMENTS**

#### **18.4.1 PLANT MATERIAL – GENERAL REQUIREMENTS**

All plant material specified for installation at the Project site shall conform to the current edition of *The American Standard for Nursery Stock (ANSI Z60.1)* as published by the American Horticulture Industry Association (AmericanHort), and the requirements presented in this Section 18.



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**18.4.2 MALL TREES**

Mall trees shall include all trees within the Mall that will be removed and replaced with trees supplied by the Tree Grower. The City has procured the required Mall trees, which are organized into groups as described in the Environmental Assessment (EA). A summary of the selected Mall trees are listed in Table 18-1. The caliper size, root ball size, and assumed planting pit type for each Mall tree are identified in Reference Document RD-18-02.

<b>Table 18-1 Mall Tree Species</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Quantity</b>	<b>Approximate Root ball (diameter)</b>
<b>Honeylocust Group</b>			
Honeylocust	<i>Gleditsia tricanthos-inermis</i>	56	72 to 85 inches
Kentucky Coffeetree	<i>Gymnocladus dioica</i>	28	72 inches
Japanese Pagoda	<i>Styphnolobium japonicum</i>	22	54 to 65 inches
<b>Promenade Group</b>			
Swamp White Oak	<i>Quercus bicolor</i>	20	80 inches
Shumard Oak	<i>Quercus shumardii</i>	7	72 inches
Heritage Oak	<i>Quercus x macdonaldii</i> 'Clemons'	12	72 to 85 inches
Overcup Oak	<i>Quercus lyrata</i>	14	72 inches
Accolade Elm	<i>Ulmus japonica x wilsoniana</i> 'Morton' TM	25	72 inches
Frontier Elm	<i>Ulmus x 'Frontier'</i>	29	65 inches
State Street Maple	<i>Acer miyabei 'State Street'</i>	18	72 inches

**18.4.2.1 MALL TREE PROCUREMENT AND CONTRACT GROWING**

The City has contracted with Environmental Design Inc., the Tree Procurement and Contract Growing Nursery (Tree Grower) to acquire and grow the required Mall trees to replace the Mall tree canopy. See Reference Document RD-18-03 for the City's Request for Proposal (RFP) issued to select the City's Tree Grower. No other Mall tree source is allowed. All Mall trees planted within the Mall shall be provided by the City's Tree Grower for the Contractor to prepare, load, and transport to the Project site.

The Contractor shall engage the Tree Grower semi-annually to observe growing operations and coordinate the upcoming transport schedule of Mall trees. The Contractor shall provide the Tree Grower a notification for Mall tree transport, 30 Calendar Days prior to initiating Mall tree delivery.

The Contractor shall provide to the City a Mall Tree Delivery and Installation Plan detailing the approach, procedure, and delivery route for preparing, loading, transporting, and installing the trees on the Mall for

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Approval, 60 Calendar Days prior to initiating Mall tree delivery. Preparation, loading, transport, and planting of all Mall trees shall be in accordance with the requirements of this Section 18.

The Contractor shall be responsible for coordination with the Tree Grower and shall include the City in all communications with the Tree Grower. Documentation of all meetings with the Tree Grower shall be as required in Section 3 Quality Management.

### **18.4.3 MALL TREE PLANTING PLAN**

The Basis of Design for Mall tree species and layout are indicated on Reference Document RD-18-01. Modifications to the Mall tree planting plan shall be consistent with these Section 18 requirements and shall be grouped based on overall form, leaf type, color to create a clear beginning, middle, and end, corresponding to the asymmetrical and symmetrical blocks on the Mall. Any modifications made to the tree species, layout, or location shall be Approved by the City.

#### **18.4.3.1 SYMMETRICAL BLOCKS**

The Honeylocust Group species (Honeylocust, Japanese Pagoda, and Kentucky Coffeetree) are selected to replicate the historic Honeylocust allée. Trees in this group shall be arranged together on the symmetrical blocks between Arapahoe Street and Tremont Place only.

- Trees shall be planted at 32 feet on-center in repeating patterns, with no more than two trees of the same species in a row, per block
- The ends of symmetrical blocks shall be planted with Honeylocust trees

#### **18.4.3.2 ASYMMETRICAL BLOCKS**

The Promenade Group species were selected to contrast with the Honeylocust Group in color and leaf texture and fall color. Trees in this group shall be arranged on the asymmetrical blocks at either end of the Mall. Trees shall be organized according to the following requirements:

- Tree species shall be divided into two groups; a north group (between Market Street and Arapahoe Street) and a south group (between Tremont Place and Broadway)
  - Each group shall contain no more than four tree species
  - Within each group, only two tree species are permitted on the wide side of the transit way
  - Within each group, only two tree species are permitted on the short side of the transit way
  - The same tree species shall not be located on both sides of the transit way
- Trees on the wide side of the transit way shall be planted in repeating triangular patterns, or longer triangulated arrangements
  - Trees on the wide side of the transit way shall not be organized in separate, parallel rows of species
- Trees on the narrow side of the transit way shall be planted at 32 feet on-center in repeating patterns with no more than two trees of the same species in a row
- At cross street intersections, the end of asymmetrical blocks shall be planted with the same tree species on either side of cross streets

**18.4.4 MALL TREE PLANTING REQUIREMENTS**

Mall trees shall be planted in a defined Mall tree planting pit, within prescribed voids in the modular supported pavement system and shall be covered by a removable suspended pavement tree grate system as described in Section 11 Granite Pavement System.

The complete tree planting volume, including the modular supported pavement system and Mall tree planting pit, shall provide no less than 1,000 cubic feet of uncompacted soil area for each tree, unless Approved by the City.

The depth of the modular supported pavement system shall be the maximum provided by the manufacturer specifications, except at conflicts with underground vaults or existing Utility mainlines that cannot be accommodated within or between soil cells according to manufacturer's specifications. The Contractor shall use reasonable efforts both during design and construction Work to anticipate and avoid displacement or interruption of a continuous tree canopy. New and protect in place Utility conflicts shall be identified and reasonable efforts made to otherwise minimize and/or mitigate the consequences of canopy disruptions or Utility Relocations including but not limited to adjacent Xcel steam main lines, service lines, or distribution lines and vaults. In no circumstances shall the modular supported pavement system be less than 16 inches, unless Approved by the City.

Immediately adjacent to the Mall tree planting pit, the modular supported pavement system shall be no less than 42 inches in height for the width of no less than one soil cell, or 24 inches.

The modular supported pavement system shall be provided on all four sides of each Mall tree planting pit, unless constrained by physical obstruction such as the edge of the transit way or a Utility mainline greater than 16 inches in diameter. Where there is a physical obstruction, the modular supported pavement system shall be provided on three sides of each tree planting pit to support root growth and tree stability.

Soil cells shall be continuous between adjacent trees, except at the ends of blocks and alley ways. Conflicts with Utilities shall be accommodated according to manufacturer specifications.

The Mall tree planting pit shall be prepared for installation of Mall trees with a gravel base of 6 inches provided at the bottom of the planting pit leading into a connected drain tile with other adjoining plantings to ensure positive drainage from the bottom of the root ball and to provide a benchmark for determining final elevation for the top of the root ball.

Mall trees shall be planted in the Mall tree planting pit as close as possible to the finish grade of the surrounding granite pavers, with the following conditions:

- Trees shall be planted such that the top of the root flare is 2 to 3 inches higher than finished grade of surrounding soil, or other Approved dimension to accommodate root flare growth, and eventual removal of removable suspended pavement system
- Trees shall be planted with sufficient space to accommodate growth of the root flare without conflicting with the removable suspended pavement system
- The Contractor shall identify and define the limits of the root flare prior to planting

Paver grates and tree ring shall be expandable or otherwise removeable to accommodate growth of the trunk taper over time by expanding the tree ring opening within the paver grate. Contractor shall provide details demonstrating how paver grates and tree ring can accommodate tree growth over time without causing trip hazards, including consideration for full tree maturity size.

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Mall tree planting pits shall include access and maintenance for Mall trees, which shall be identified in the plans. Removable suspended pavement system including granite pavers placed on them, shall not be mortared or permanently secured.

Each Mall tree planting pit shall provide sufficient space to accommodate the root ball, without shaving more than 10 percent of the root ball. Planter pit types are described in Reference Document RD-18-01.

### **18.4.5 TREE PLANTING SOIL**

The Contractor shall provide tree planting soil in compliance with the Technical Specifications for City Approval.

### **18.4.6 TREE ANCHORING DEVICES**

The Contractor shall provide one root ball anchoring system per Mall tree. The anchoring system shall stabilize the tree root ball in a manner that holds the Mall tree in place without any visible expression of the anchoring system at the granite paver surface.

The root ball anchor system shall include a minimum of three anchor points with an anchoring capacity of no less than 3,000 pounds per anchor. The Contractor shall confirm anchor holding capacity of existing site soils using a torque probe to obtain a quick classification in the field prior to installing anchors.

Root balls shall be anchored to the Mall tree anchoring system using industrial 2-inch webbing. A treated 1 by 4 wood timber shall be placed between the webbing and the root ball for the entire length of the root ball to act as a force spreading buffer.

Visible staking of Mall trees is not allowed.

## **18.5 IRRIGATION DESIGN REQUIREMENTS**

The Contractor shall design and install a fully automatic irrigation system meeting the requirements of the City of Denver Parks and Recreation *Planning, Design + Construction Standards* and Standards and best practices of the Irrigation Association. The Contractor shall provide necessary water, power, and other services required to provide irrigation of all plant and tree materials to achieve Mall tree health. Irrigation design shall permit the control (including maintenance and watering to be tailored to the individual planting or tree zones) through separate irrigation zones. Final irrigation system design shall be Approved by the City.

All landscape irrigation shall be connected to a potable source, and backflow prevention devices installed. All irrigation lines that shall be installed in high density polyethylene (HDPE) sleeves with access boxes.

### **18.5.1.1 IRRIGATION SYSTEM REQUIREMENTS**

The irrigation system for the Mall tree planting areas shall be designed and installed to meet the following performance requirements:

- The irrigation system shall be a low-flow, drip system for all Mall tree planting areas
- The irrigation system shall provide uniform irrigation for the entire extent of the soil area for the Mall trees
- The irrigation system shall provide four irrigation zones, including valves and flow sensors, per Mall block
  - Two zones shall be provided on either side of the transit way

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- On each side of the transit way, the irrigation zones shall be further subdivided at the intersection of perpendicular alley ways, or to have approximately equal numbers of Mall trees
- The irrigation system shall include a treatment system to ensure water is in an acceptable pH range (Denver Water's 2020 increase in pH and its potential affect on the new trees ability to uptake nutrients)
- The acceptable water pH range shall be Approved by the City
- The irrigation system shall be designed to be maintainable with minimal impact or disruption to the granite paver system, and in slotted sleeves
- All distribution lines in each irrigation zone shall be accessible from a single access box, and able to be removed and replaced from that point
- The Contractor shall provide soil moisture sensors throughout the entire Mall tree planting and soil cell area to detect soil moisture for tree health and provide warning and general location of leaks or clogs within the system
  - Soil moisture sensors shall measure Absolute Volumetric Water Volume (VCM)
  - Final spacing, quantity, and layout shall be determined during Contractor's design phase
- The irrigation system shall provide an Environmental Protection Agency (EPA) Certified Water Sense controller(s) capable of supporting:
  - Soil moisture sensor based watering
  - Two-wire and/or conventional wire connectivity
  - 200 irrigation zones, and concurrent zone operations for 99 concurrent zones
  - 99 independent programs
  - Advanced flow monitoring
  - Multiple available addresses for transmission control/Internet protocol (TCP/IP) based connections

**18.5.1.2 IRRIGATION PLANS**

Irrigation Plans shall be developed by a certified irrigation designer, certified by the Irrigation Association. Prepare detailed Irrigation Plans for City Approval that include water source, points of connection (POC), all required equipment, controls and installation, programming and maintenance requirements, and water budget, as required by Denver Water.

**18.6 CONSTRUCTION REQUIREMENTS**

The Contractor shall be responsible for any required tree clean up or corrective actions required to repair any tree damage resulting from the Contractor's preparation, loading, delivery, and installation.

The Contractor shall maintain, prune, irrigate, fertilize, and maintain Mall trees in good health until Block Substantial Completion. During this period, the Contractor shall replace any dead or stressed trees, including those that exhibit the following:

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- Sparse, undersized, or distorted, chlorotic, nutrient-deficient leaves; browning of leaf margins; premature autumn color; premature leaf drop; and pervasive dieback throughout the crown of the tree and adventitious sprouts
- Frost cracks, hail damage, sunscald, insect infestation or disease, fungus growth, rot, or decay
- Topping or poor pruning, including tipping, bark cutting, flush cutting, bark ripping, and leaving stubs; wounding of the woody tissue by mechanical damage, human activity, vehicle damage, or vandalism

The Contractor shall provide maintenance for all Project landscaped areas until Block Substantial Completion. Maintenance activities shall include regular watering, pruning, fertilization, pest control, plant replacement, and coordination with the City, in accordance with City Standards and Specifications and the Contractor's Approved Landscape Operations and Maintenance Manual.

### **18.6.1 PREPARATION, LOADING, AND TRANSPORT**

The Contractor shall coordinate with the Tree Grower to prepare, load, transport, unload, and install the Mall trees, which shall be confirmed in the Mall Tree Delivery and Installation Plan. The Contractor shall coordinate with the Tree Grower and identify the trees needed for preparation, transport, and installation, in accordance with the Landscape Plans and Contractor's construction schedule.

### **18.6.2 LOADING TREES FOR TRANSPORT**

Preparing, loading, and transport shall meet the following requirements:

- The Contractor shall coordinate with the City to Approve trees provided by the Tree Grower prior to preparing and loading trees for transport to the Mall
- A durable, expandable polyethylene tree protector shall be installed to the base of the trunk of each tree prior to any preparation for loading
- Trees shall be tied up with the combination of gentle hand-tying and a properly adjusted size ring to bring the tree crown into a cocoon and a proper shipping package
- A 60 to 72-inch tree tyer ring shall be used to pull in the branches while simultaneously being tied in using polypropylene rope to gently bring in branching
- The top of the root ball box shall be covered to ensure so no soil is lost during transport and the integrity of the root ball is not compromised
  - Trees shall be lifted only with steel lifting brackets (not from the box) that have been inserted into the top of the box and bound by 3,000 pound strength webbing
  - The inserts shall cover the entire surface area of the top of the root ball with the webbing wrapping around the box bottom and attached to the shoulders of the inserts
  - The inserts shall be a single steel fabrication
- All handling and lifting of the trees shall ensure safety and horticultural integrity and shall only be from attachment points to the shoulders of the steel inserts
- Trees shall be loaded and stacked with no direct contact of any kind to the trunk of the trees

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- All boxes shall rest on the deck of the truck and secured with minimum 3,000 pound strength webbing to the truck deck
- All loads shall be double tarped using only tree shade tarps that cover the entire length and width of the load
  - Tarps shall be secured in a manner that allows for no movement during transport

**18.6.3 UNLOADING TREES ON-SITE**

Unloading of trees at the Project site shall meet the following requirements:

- The City Forester shall be on-site during the unloading of trees
- Boxes shall only be lifted from steel lifting brackets to avoid damage to boxes and root balls, to prevent injury to trees and roots, and to prevent displacement of soil from the boxes
- The Contractor shall not lift trees by trunks or bind or handle trees with wire or wire rope
- The Contractor shall pad trunks and branches wherever hoisting cables or straps make contact
- Using the bottom two steel lifting brackets, the tree will be lifted until the box is upright on the truck
  - Once upright, minimum 20,000-pound capacity rigging shall be used to attached and lift from all four steel lifting brackets
- Trees shall be unloaded directly into planting location or staging area
  - Trees shall be installed no less than 24 hours of arrival on site
  - If trees are not planted directly into the final location, trees shall be watered again prior to being installed
- Trees shall be unloaded within two hours of arrival at the Project site

**18.6.4 MALL TREE PLANTING**

Mall trees shall be planted according to the following requirements:

- The City Forester shall be on site for all Mall tree planting
- The box shall be removed and properly disposed
- Metal lifting insert shall be installed and minimum 3,000-pound strength webbing used to secure the insert to the root ball
- Trees shall be immediately backfilled with the specified soil mix
  - As the soil mix is added, water shall be applied to displace air pockets and eliminate settling

**18.6.5 MALL TREE REPLACEMENT REQUIREMENTS**

The Extra Reserve Trees are available for the Contractor to replace Mall trees that are lost, damaged, or otherwise require replacement. In all situations, the Contractor shall coordinate with the Tree Grower to prepare the replacement trees for the Contractor to prepare, load, deliver, and install the replacement trees on the Mall.

Where Extra Reserve Trees are required resulting from normal mortality rates resulting from transplant stress as based on industry standards, the City will provide – at no additional charge to the Contractor – the Extra Reserve Tree. However, any tree lost or damaged, resulting from improper preparation, delivery, installation, or maintenance prior to Block Substantial Completion, the Extra Reserve Tree shall be purchased from the City by the Contractor. The cost for the Contractor to acquire the Extra Reserve Trees for installation on the Mall shall be determined based on a fair market value cost evaluation determined based on similar size and quality trees available from commercial nurseries.

In all situations the cost for preparation, delivery, installation, equipment, labor, materials, coordination, and maintenance of replacement Mall trees shall be borne by the Contractor, at no cost to the City.

Unless otherwise Approved by the City, the Extra Reserve Trees shall be the only source of Mall tree replacement.

**18.7 LANDSCAPE PLANS**

The Contractor shall prepare consolidated Landscape Plans for the Project. Plans shall include plans, elevations, typical sections, details, general notes, schedules, installation requirements, and landscaping. Plans shall be prepared and stamped by a Landscape Architect, licensed in the State of Colorado. Design submittals shall be prepared and submitted in compliance with Section 3 Quality Management and the requirements of this Section 18.

**18.7.1 INITIAL DESIGN SUBMITTAL**

At the Initial Design Submittal, the Contractor shall provide a landscape concept plan. This plan shall include a layout, details, and list design codes and specifications to be used.

The Initial Design Submittal shall be the basis of preliminary design, and thus it is the responsibility of the Contractor to provide sufficient information for the City to Approve the proposed materials and design approach.

**18.7.2 PRELIMINARY DESIGN SUBMITTAL**

The Preliminary Design Submittal shall include all elements from the Initial Design Submittal, removal plans, irrigation, enlargement plans, product selection, product literature, product warranty information, typical sections, details, general notes, schedules, installation requirements, materials, forms, textures, finishes, and a maintenance plan, including inspection and maintenance requirements

The Preliminary Design Submittal shall be the basis of final design, and thus it is the responsibility of the Contractor to provide sufficient information for the City to Approve the proposed materials and design approach

**18.7.3 FINAL DESIGN SUBMITTAL**

The Final Design Submittal shall include all elements from the Preliminary Design Submittal and all elements as required in Section 3 Quality Management. The Landscape Operations and Maintenance Manual shall be submitted as part of the Final Design Submittal.



**18.7.4 RELEASE FOR CONSTRUCTION SUBMITTAL**

The Release for Construction (RFC) Submittal shall be as required in Section 3 Quality Management.

**18.8 DELIVERABLES****18.8.1.1 MANUALS AND DOCUMENTATION**

The Contractor shall prepare a Draft Landscape Operations and Maintenance Manual and submit to the City for Approval as part of the Final Design Submittal. The Final Landscape Operations and Maintenance Manual shall be submitted prior to Block Substantial Completion. The manual shall comply with the City Standards and Specifications for operations and maintenance manuals and shall include information required for the proper landscape and irrigation system maintenance, including:

- Annual and daily irrigation schedules
- Commissioning irrigation systems and Business Improvement District (BID) and City staff training
  - Commissioning and training shall be completed prior to Block Substantial Completion
- Fertilizer requirements and schedules
- Pruning requirements
- Pest and disease control
- Inspection of inlet/outlet structured and underdrain pipes
- Soil testing for salt contamination, and remediation process requirements
- Tree health and safety plan
- Tree root flare and potential girdling at suspended pavement tree grate system and/or tree ring, including schedule for expanding opening
- Additional maintenance activities required during tree establishment period

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**18.8.1.2 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 18-2 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Notification to Tree Grower of Mall trees transport	Information	30 Calendar Days prior to initiating Mall tree delivery
Mall Tree Delivery and Installation Plan	Approval	60 Calendar Days prior to initiating Mall tree delivery
Draft Landscape Operations and Maintenance Manual	Approval	Concurrent with Final Design Submittal
Final Landscape Operations and Maintenance Manual	Approval	Prior to Block Substantial Completion
Irrigation system commissioning and BID and City training	Approval	Prior to Block Substantial Completion

## **19.0 MALL LIGHTING AND ELECTRICAL**

### **19.1 GOALS**

The goals of this Section 19 are to:

- Provide a safe and well-lit 16<sup>th</sup> Street Mall (Mall) that engages users through multi-colored and controllable lighting
- Reuse of the replica historic decorative light fixtures within the Mall

### **19.2 GENERAL REQUIREMENTS**

This Section 19 includes Mall lighting requirements and additional electrical requirements for Public Life amenities, such as fountains, permanent shade structures, and Mall information signs (IKE).

All Work performed shall conform to the fabrication, installation, and maintenance guidelines set forth in the current National Electrical Code (NEC), City and County of Denver (City) Standards and Specifications, and this Section 19.

The Contractor shall be responsible for and shall pay for permanent metering, all lighting materials and components, construction, maintenance, and all power required for the lighting until Block Substantial Completion.

### **19.3 MALL LIGHTING DESIGN**

The existing Mall replica historic decorative light fixtures are recent replacements from the original Mall light fixtures. To protect the recent lighting investment, the Contractor shall salvage, store, and reuse the existing replica historic decorative light fixtures. In addition, as additional replica historic decorative light features be required, the Contractor shall procure new replica historic decorative light fixtures as required by this Section 19.

The Contractor shall provide a photometric analysis illustrating the light levels for all blocks of the Mall, meeting the same plan requirements stipulated for permanent cross street and intersection lighting design, in Section 16 Permanent Signing, Pavement Marking, Traffic Signals, and Street Lighting. The analysis shall evaluate the light level to confirm the lighting design meets Illumination Engineering Society of North America (IESNA) recommendations:

- Achieve an average of 1.6 footcandles for pedestrian zones and 1.0 for the transit way
- All areas of the Mall shall be within the International Electrotechnical Commission (IEC) recommended range of 0.6 to 3.0 footcandles, with a uniformity of 4.0M

If lighting levels are not achieved, the Contractor shall propose additional lighting elements to meet the Project lighting requirements for City Approval. Additional lighting shall be achieved using accent lighting within other Public Life elements.

Replica historic decorative light fixtures shall only be utilized in accordance with Section 11 Granite Pavement System, as the layout of such lighting is bounded through the Environmental Assessment (EA), Finding of No Significant Impact (FONSI), and Programmatic Agreement (PA).

Within the Mall, pole-mounted pedestrian light fixtures other than the replica historic decorative light fixture are not permitted.

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**19.3.1 REPLICA HISTORIC (EXISTING) DECORATIVE LIGHT FIXTURES**

The Contractor shall salvage, upgrade and reuse the existing replica historic decorative light fixtures on the Mall, unless otherwise Approved by the City. The Contractor shall remove, store, and re-install existing replica decorative light fixtures to be installed on the Mall. The number of available fixtures for reuse is insufficient for the Project requirements and compliance with the EA, FONSI, and PA. Additional replica decorative light fixtures are required and shall be designed and constructed as described in this Section 19. See Reference Document RD-19-01 for details.

**19.3.1.1 UPGRADES TO EXISTING REPLICA HISTORIC DECORATIVE LIGHTS**

Though the existing replica historic decorative light fixtures shall be reused, the equipment (including the bulb, control system, and other hardware as stipulated) shall be removed and replaced with all light fixture requirements, provided in Section 19.3.3. Each light fixture shall include an upgraded decorative (not downlight) color-changing red, green, blue, white (RGBW) LED light twinkle ring compatible with the specified control system and a secure, waterproof GFCI 220-volt duplex power outlet integrated into the base plate.

**19.3.1.2 EXISTING REPLICA HISTORIC DECORATIVE LIGHT FIXTURE REUSE PLAN**

The Contractor shall submit an Existing Replica Historic Decorative Light Fixture Reuse Plan detailing the approach related to the assessment, cataloguing, removal, storage, refurbishment, and re-installation of the existing fixtures to the City for Approval. At a minimum, the plan shall include two assessment types of the Mall lighting fixtures.

The first assessment shall be performed prior to the Final Design Submittal for any given Mall block. At this assessment, the Contractor shall coordinate with the City to catalogue and perform a condition assessment of each individual existing replica historic decorative light fixture on the Mall. The purpose of this assessment is to identify which fixtures will be reused and where new fixtures are required. Identification of reuse versus new fixtures shall be clearly labeled in the Final Design Submittal plans. This assessment shall be the baseline for future assessments. The inventory of the fixtures shall document the condition of each fixture, including high-resolution color photos, and a detailed written description of each fixture and any existing damage. Each fixture shall be provided a unique inventory number to track it through the process from removal to re-installation or disposal.

A second assessment shall be performed within 30 Calendar Days prior to mobilization of an Active Construction Zone (ACZ). The Contractor shall reassess the existing replica historic light fixtures to update the baseline assessment. Any changes to the baseline assessment shall be submitted to the City for Approval prior to mobilizing to the ACZ. Upon Approval of the Existing Replica Historic Decorative Light Fixture Reuse Plan, as modified for the second assessment, the Contractor assumes full responsibility in event of loss or damage to the fixtures to be refurbished and reinstalled on the Mall. Any existing fixtures scheduled to be refurbished and reinstalled on the Mall that are damaged by the Contractor during the construction Work shall be replaced at the Contractor's cost.

Existing fixtures shall be removed and transported to a secure off-site facility by the Contractor in a manner that minimizes the potential for loss or damage to the fixtures, including the glass globes, the internal components and the powder-coated fixture finish. The fixtures to be reused shall be carefully removed, stored in a secure, protected off-site location, and re-installed on the Mall by the Contractor.

The existing Mall includes approximately 178 replica historic decorative light fixtures. The Basis of Design in RD-11-05 includes 208 fixtures. Based on the City's assessment, the Contractor shall assume in its baseline assessment, that 160 of the existing replica historic decorative light fixtures shall be refurbished and reused, and forty eight new fixtures shall be procured by the Contractor.

### 19.3.2 REPLICA (NEW) DECORATIVE LIGHT FIXTURES

For additional or replacement replica decorative light fixtures, the Contractor shall procure and install new replica decorative light fixtures that have been fabricated to match the existing replica historic decorative light fixtures. The Contractor shall provide a product matching the performance, style, look, and quality of the Basis of Design or Approved equal.

### 19.3.3 LIGHT FIXTURE REQUIREMENTS

Both upgrades to the existing replica historic decorative light fixtures and all new installed replica decorative light fixtures shall include the internal equipment required in this Section 19.3.3, including light source, LED drivers, and GFCI power outlets.

All installed replica decorative light fixtures shall be a complete, finished, and operational assembly that matches in every respect the prototype replica historic light fixture that is currently installed on the Mall. The new LED replica decorative light fixtures shall be installed at the locations consistent with the Basis of Design plans and connected to power and control systems in accordance with manufacturer specifications.

The replica decorative light fixtures, including the clear globe, shall be fabricated and furnished by a manufacturer currently holding a UL1598 file of outdoor luminaire products. Electrical components used in the lighting assembly shall be listed by the Underwriters Laboratories Inc. (UL) and shall conform to the National Electrical Code.

#### 19.3.3.1 MATERIALS

The complete, new replica decorative light fixture shall consist of an aluminum frame, clear globe, integrated control gear box, an integral LED cartridge for uplight, two integrated LED cartridges for downlight, an upper LED light ring (twinkle ring), and an aluminum base plate assembly with wireless control system and a secure, waterproof GFCI 220-volt duplex power outlet integrated into the base plate. The appearance of the new assembly shall preserve the appearance of the existing replica historic decorative light fixtures while improving the light distribution, color rendering, and energy performance.

All materials, except the new twinkle ring and GFCI duplex power outlets, shall be the same as the existing replica historic decorative light fixture, or as Approved by the City.

#### Aluminum Frame Assembly

- *Base Plate:* Base plate shall be fabricated from Aluminum 6061 or equal
- *Main Support Extrusion(s):* Main vertical supports and cross-members shall be fabricated from custom-shaped Aluminum 6063-T5 and have a minimum 1/8-inch wall thickness
- *Support rings:* Support rings shall be fabricated from 319, 356, or 413 cast aluminum alloy
- *Control Gear Box:* Control box will be fabricated from steel sheet and include and a 356 cast aluminum alloy access door capable of passing the UL 1598 rain test 16.5.2
- *Hardware:* Hardware threading into aluminum must attach with galvanic neutral Magni-Coat hardware

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**Light Sources**

- LED cartridges, modules, or arrays must be new and designed for the intended use and shall not be retrofit into the luminaire housing
- The Contractor shall replace/provide the entire replica historic light fixture as a single unit
- Light sources shall be compatible with dimmable drivers supplied with the luminaires in which they are to be installed
- *Housing:* The housing of the LED cartridge shall be fabricated from 319, 356, or 413 cast aluminum alloy with a clear anodized finish
  - The housing shall be rated IP66
- *LED Diodes:* Each LED shall have an efficacy of no less than 100 lumens per watt
- *LED Cartridges:* The LED cartridges shall utilize individual RoHS compliant FR4 or Metal core printed circuit boards with three high power LEDs on each (Tri-board)
  - Each circuit board shall have integrated over-voltage protection
  - Each board shall have an affixed optic or lens
  - Each printed circuit board (PCB) shall be bonded to the cartridge housing with 3M thermal interface material
  - *Primary Downlight:* The Primary Downlight cartridge shall contain fifteen triangular PCBs containing 3 LEDs each (total of 45 LED emitters)
    - Each PCB will be uniquely aimed at a discrete position within the photometric distribution
    - Each LED shall be directed through a secondary total internal reflection (TIR) optic to alter the center beam axis by 5.5 degrees
    - The downlight construction will pass IPx6 criteria and have a total initial light output of 3,000lm using 50W max and achieve a B1-U1-G1 rating
  - *Secondary Downlight:* The Secondary Downlight cartridge shall contain three triangular PCBs containing 3 LEDs each (total of 9 LED emitters)
    - Each PCB will be uniquely aimed at a discrete position within the photometric distribution
    - Each LED shall be directed through a secondary TIR optic to alter the center beam axis by 5.5 degrees
    - The downlight construction will pass IPx6 criteria and have a total initial light output of 200lm using 12W max and achieve a B1-U1-G1 rating
  - *Uplight:* The Uplight cartridge shall contain three metal core circuit boards with a single multi die emitter
    - The downlight construction will pass IPx6 criteria and have a total initial light output of 1000lm using 25W max

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- Twinkle Ring: The twinkle ring assembly shall contain sixty LED emitters using a custom, ganged light pipe optic with two luminous apertures each (total of 60 LED luminous apertures)
    - The maximum input watts shall be 40W
  - The multi-color twinkle ring retrofit shall include the components listed below
  - All twinkle ring components shall be drop-in replacements that require no modification to the structure of the light and shall be suitable for use in damp locations:
    - New LED modules with red, green, blue, and warm white LED colors
    - Proprietary color-mixing optics
    - Factory assembled wire harnesses
    - The above components to be drop-in replacements that require no modification to the structure of the light
  - Driver plate retrofit components shall be mounted to a drop-in replacement mounting plate that requires no modification to the structure of the light, are suitable for use in dry locations, and shall include:
    - Digital Multiplex (DMX)-controlled LED drivers for the individual white light elements, as described below
    - DMX-controlled driver for the RGBW twinkle ring element, as described below
    - Factory assembled wire harnesses
  - DMX, or equivalent control system, as specified in this Section 19 and provided by others
    - DMX control system components, such as wires and/or antennas shall not require structural changes to the existing fixtures or structure of the light
  - *Light Distribution:* The light distribution for the LED downlight cartridges shall be symmetrical, round, Illuminating Engineering Society (IES) Type 5 distribution
    - The angle of maximum candela from the cartridge shall not exceed 80 degrees from nadir
  - *Lenses:* The LED cartridges shall utilize an impact-resistant modified acrylic diffusing lens
    - The visible light transmittance of the acrylic lens shall not be less than 85 percent
  - *Correlated Color Temperature (CCT):* All LED light sources shall emit white light and have a CCT of no greater than 3000K nominal in accordance with ANSI C78.277
  - *Color Rendering Index (CRI):* All LED light sources shall have a minimum CRI 80 per the LM79 results
  - *Luminous Flux:* Luminous flux differences between LEDs shall not exceed 10 percent
  - *Rated Life:* LED light sources shall have a minimum rated life of 90,000 hours per IES TM21 at 45° C at the normal operating drive current for the specific luminaire

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- The lumen output shall be maintained at 70 percent of initial rated lumens (L70) or greater at the rated life of the luminaire
- *Operating Temperature:* LED light sources shall be temperature rated for operation and storage within the range of -30° C to +50° C
  - LED light sources shall not exceed the junction temperature recommended by the LED manufacturer during operation
- *Cooling System:* LED light sources shall utilize passive heat sinks, convection or conduction to maintain operational temperatures
  - Fans, diaphragms, pumps, or liquid cooling systems shall not be acceptable
- *Wiring:* The assembly shall be provided with all necessary wiring and be ready for connection to the electrical distribution system
  - Connection to the electrical system shall be made by means of a water-tight quick connect suitable for outdoor use below grade

**LED Drivers**

LED drivers shall be Restriction of Hazardous Substances (RoHS) compliant and shall be capable of continuous dimming down to 10 percent. Acceptable dimming signal protocols for LED drivers are 0 to 10VDC and/or DMX.

- *Operating voltage:* 120/277-volt at 50/60 Hz
  - Drivers shall operate normally with input voltage fluctuations of  $\pm 10$  percent, consistent with National Electrical Manufacturers Association (NEMA) SSL-1-2010, Electronic Drivers for LED Devices, Arrays, or Systems
- *Minimum Power Factor (PF):* 0.90 at full input power and across specified voltage range
- *Maximum Total Harmonic Distortion (THD):* 20 percent or less at full input power and across specified voltage range

Factory-set drive current shall be 2100mA or less unless Approved by the City. If higher drive currents are proposed, the submittal shall be accompanied with IES LM79 and TM21 test results for higher operating drive current.

All electronics of the power supply and the LEDs shall be protected from all electrical surges with an elevated electrical immunity rating, including but not limited to lightning strikes and stray current in reinforcing bars and concrete. Surge protection shall be integral to the LED power supply. An additional standalone surge protector device shall be included. The surge protector shall comply with IEC 61643-11; 8.3.4.3 and be UL 1449 recognized.

Luminaire shall meet the Elevated requirements per Institute of Electrical and Electronics Engineers (IEEE) C62.41.2 -2002. The Contractor shall indicate whether failure of the electrical immunity system can possibly result in disconnect of power to luminaire. Luminaire and driver shall consume no more than eight watts in the off state.



**GFCI Power Outlet**

Each replica historic decorative light fixture shall include:

- GFCI power outlet: One secure, waterproof GFCI 220v duplex power outlet shall be integrated into the base plate of each replica historic decorative light
- The duplex power outlet shall be concealed in a cylindrical, lockable case, fabricated from Aluminum 6061 or equal, and shall be powder-coated to match the replica historic decorative light
- Hardware threading into aluminum must attach with galvanic neutral Magni-Coat hardware

**Finishes**

Each replica decorative light fixture shall be finished by a process that inhibits rust, resists ultraviolet (UV), and minimizes chalking, flaking, chipping, and other defects.

- *Color:* The color of the new lighting assembly shall be TITANIUM
- *Finish on Metal:* The exterior finish coating of the assembly shall consist of:
  - Primer: Rust inhibitor
  - Topcoat: Thermosetting TGIC polyester powder coat with a minimum 3mil thickness
- *Coating:* The exterior finish coating used for the replica decorative light fixture shall meet or exceed the following:
  - Gloss Consistency, Gardner 60 Degrees, ASTM D 523:  $\pm 5$  percent from standard
  - UV Resistance, Color and Gloss, ASTM G 155, Cycle 7: Delta E less than 2 at 2.0 mils and less than 20 percent loss
  - Cross-Hatch Adhesion, ASTM D 3359, Method B: 100 percent pass
  - Flexibility Test, Mandrel, ASTM D 522: 3 mm at 2 mils
  - Erichsen Cupping, ISO 1520: 8 mm
  - Impression Hardness, Buchholz, ISO 2815: 95
  - Impact Test, ASTM D 2794: 60 inch-pounds at 2.5 mils
  - Pencil Hardness, ASTM D 3363: 2H minimum
  - Corrosion Resistance, 1,500-Hour Test, ASTM B 117: Max undercutting 1 mm
  - Humidity Resistance, 1,500-Hour Test, ASTM D 2247: Max blisters 1 mm

**19.3.3.2 LIGHTING CONTROL SYSTEMS**

The Contractor shall install a DMX mesh network control system with secure cloud-based network infrastructure to control both the decorative color-changing LED rings as well as the downlights. Color-changing LED rings shall be able to remotely control and configure color changing, scene selection, dimming, and time/ day scheduling via a digital control system. Additionally, the system shall be capable of providing 24 pre-programmed scenes with color changing and the ability to do custom shows. Mall lighting controls shall be integrated with fountain lighting, but shall maintain the ability to be operated

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separately. Photocell and astronomical timeclock functionality shall be included with the control system. The system shall be accessible remotely via secure internet access.

Control cabinets and additional accessory components shall be coordinated and provided as required to implement the network control system. The control system layout shall be Approved by the City.

The Basis of Design product is the Limelight by Lutron Outdoor Lighting Control Solutions with Quantum Enterprise Vue manufactured by Lutron®. The Contractor shall provide a product matching the performance of the Basis of Design or Approved equal.

**19.4 PUBLIC LIFE ELEMENTS**

The Contractor shall design, coordinate, and install power, data, and electrical components to the Public Life elements listed below. All power, data, and electrical components shall meet City Standards and Specifications and applicable industry standards. See Section 20 Public Life for additional requirements.

**19.4.1 INTERACTIVE MALL INFORMATION SIGNS**

The Contractor shall provide conduit, power, and data supply to accommodate new IKE signs as needed, according to manufacturer's specifications.

**19.4.2 BANNER POLES**

To provide power for holiday lighting displays, each banner pole shall include one secure, waterproof GFCI 110-volt duplex power outlet integrated into the top of banner pole.

**19.4.3 SHADE STRUCTURES**

The Contractor shall provide electric outlets and data connections according to manufacturer's requirements for each shade structure location and type identified.

**19.4.4 WATER FEATURES**

The Contractor shall provide power and data as required for fountain operations, including mechanical and control systems.

**19.4.5 ADDITIONAL POWER SOURCES**

If required by the final design, additional power sources shall be coordinated with the City.

Any additional GFCI duplex power outlets, or other additional power sources shall be integrated into the granite paver pattern, and located at the center of a granite paver, or centered on the intersection of multiple joints between granite pavers. The outlet enclosure shall be locking and waterproof and shall be flush-mounted into the granite pavers.

The outlet cover shall be fabricated of bronze or cast aluminum with powdercoat finish, as described in Section 11 Granite Pavement System. Plastic or coverings shall not be permitted.

**19.5 MALL LIGHTING AND ELECTRICAL OPERATIONS MANUAL**

Concurrent with the Final Design Submittal, the Contractor shall prepare the draft Mall Lighting and Electrical Operations and Maintenance Manual. The Final Mall Lighting and Electrical Operations and Maintenance Manual shall be submitted prior to Block Substantial Completion. The manual shall include all items required for the City to assume ownership of the lighting and electrical products. The manual shall include operational and maintenance frequencies, instructions, and all required manufacturer cut sheets detailing materials, fabrication, color, and quantity of lighting and electrical products.

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**19.6 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 19-1 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Replica Historic Decorative Light Fixture Reuse Plan	Approval	Concurrent with Final Design Submittal and within 30 Calendar Days prior to mobilization of an ACZ
Draft Mall Lighting and Electrical Operations and Maintenance Manual	Approval	Concurrent with Final Design submittal
Final Mall Lighting and Electrical Operations and Maintenance Manual	Approval	Prior to Block Substantial Completion

## **20.0 PUBLIC LIFE**

### **20.1 GOALS**

The goals of this Section 20 are to:

- Design and construct Project elements that increase activation and Public Life on the 16<sup>th</sup> Street Mall (Mall)
- Ensure furnishing and amenities installed on the Mall align with character areas, described the design concepts, furnishing layouts, and selections vetted throughout the Stakeholder outreach process

### **20.2 GENERAL REQUIREMENTS**

This Section 20 provides requirements and responsibilities for Public Life elements for the Project. A summary of Public Life elements for the Project are listed in Table 20-1. All Public Life elements shall be provided for as required in this Section 20 or Approved equal.

The Public Life elements described in this Section 20 are a result of multiple years of stakeholder outreach study and analysis of the Public Life of the Mall, beginning with the “Meet in the Streets” and Downtown Denver Partnership (DDP) Prototyping Festival in 2016 and 2017. The conclusions of this research is documented in Reference Document RD-20-01, and as documented in the Environmental Assessment (EA).

The Denver 16<sup>th</sup> Street Character Areas document, Reference Document RD-20-02, describes four character areas, each defined by a node:

- Local Link: Market Street to Curtis Street; (node: Arapahoe Street to Curtis Street)
- Press Play: Curtis Street to Stout Street (node: Champa Street to Stout Street)
- Experience16: Stout Street to Tremont Place (node: Welton Street to Tremont Place)
- Jump Start: Tremont Place to Broadway (node: Court Place to Broadway)

The character areas and nodes define the experience of each area of the Mall, including key elements and programming.

Reference Document RD-20-04 builds on the character areas and nodes and describes the organization of all Public Life elements included in this Section 20, including all constructed elements and furniture, fixtures, and equipment (FFE) products, their location, organization, amenity groupings, color and design character, and informs the requirements in this Section 20.

Public Life elements are broken out into three categories:

- Those items that are the responsibility of the Contractor to design, procure, coordinate, construct, and install – consistent with the requirements and specifications of the Contract Documents (Public Life Designed and Constructed Elements)
- Those items that will be procured and installed by the City and County of Denver (City) or Business Improvement District (BID) but require coordination and support infrastructure by the Contractor (Public Life Coordination Elements)
- Those elements which shall be procured and installed by the City (Public Life FFE Products)

These Project elements shall comply with this Section 20 and applicable City Standards and Specifications.

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<b>Table 20-1 Summary of Public Life Elements</b>	
<b>Item</b>	<b>Reference Document</b>
<b>Public Life Designed and Constructed Elements</b>	
Fountains	N/A
Banner Poles	RD-20-06
Areas of Shade	RD-20-07
Areas of Play	RD-20-09
<b>Public Life Coordination Elements</b>	
Interactive Mall Informational Signs	RD-20-11
<b>Public Life FFE Products</b>	
Iconic Seating Element	RD-20-03
Bike Racks	RD-20-03
Trash and Recycling Receptacles	RD-20-03
Furnishing Families	RD-20-03

### **20.3 PUBLIC LIFE DESIGNED AND CONSTRUCTED ELEMENTS**

The Contractor shall be responsible for the final design, procurement, coordination, and installation of all the Public Life Designed and Constructed Elements, including their coordination with all other Project elements. Design of all the Public Life Designed and Constructed Elements shall be based on the requirements of this Section 20. The Reference Documents listed above provide additional descriptions that further establish key design characteristics, materials and minimum quality levels. The Reference Documents will be a reference for City review of proposed design and a minimum quality level.

#### **20.3.1 STAKEHOLDER OUTREACH PROCESS**

Design of the Public Life elements is important to the community and obtaining public design support is critical to the Project success. For many Public Life elements, including the Public Life FFE Products, the City has spent considerable time and resources on Stakeholder outreach, including design input from focus groups and the public to assist with the overall design of the Public Life FFE Products and the design criteria in these Contract Documents. As part of the continued public information and outreach process required in Section 4 Public Information, the Contractor shall hold Stakeholder outreach meetings for specific Public Life Design and Constructed Elements, such as, areas of shade, areas of play, and banner poles. This outreach process shall utilize tools, techniques, and forums specified in Section 4 Public Information, as well as any other focus group meetings necessary to complete the design. The outreach process shall be integrated throughout the design of the specified Public Life Design and Constructed Elements to ensure feedback is incorporated into the final design of the elements. Specifically, the Contractor shall engage with the appropriate Stakeholders, in no less than two design charrettes for each of the specified elements. As part of the Initial Design Submittal and included in the initial series of outreach meetings, the Contractor shall provide two or three options or variations for input by the Stakeholder groups. Subsequent meetings shall be used to make selections, refine, and finalize the design of these elements.

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### 20.3.2 BANNER POLES

The Contractor shall provide four banner poles per Mall block according to the requirements listed below:

- Two banner poles shall be located on either side of the transit way, on each block
  - On either side of the transit way, banner poles shall be located on either side at the intersection of perpendicular alleys, equidistant from the alley way
- Two banner poles are required on the triangle Mall block between Cleveland Place and Broadway
- Banner poles shall not be located at the ends of Mall blocks; there shall be at least one tree between the banner pole and intersection or transit stop area
- The banner poles location shall be coordinated with the granite paver pattern and shall be centered within a paving diamond or centered at the joint intersection between pavers

The banner armature shall accommodate two options:

- Configuration 1 shall be an equilateral triangular accommodating a removable banner on each side
  - One side shall be parallel to the transit way
- Configuration 2 shall include a single removable banner and a smaller Mall identity element on opposite sides of a central post
  - The removable banner and identity element shall be perpendicular to the Mall, with the identity element on the transit way side

The minimum height to the bottom of the banner mounting armature shall be no less than eight feet clear. The banner armature shall attach to a central steel or aluminum post or Approved equal. All components shall be powdercoated dark grey or shall match the color of the replica historic decorative light fixtures.

Materials, finishes, and connections shall be designed to convey permanence and craftsmanship and durability consistent with the character of the Mall and be resistant to vandalism or provide treatments or coatings to reduce maintenance.

The Contractor shall coordinate required banner sizes with the City and BID.

Banner poles shall include break away arms.

Banner poles shall be sleeved and embedded in the granite pavement system to create a permanent fixture.

Banner poles shall include armature and attachments for Mall identification element. The branding and signage strategy will be provided by others.

Banner poles shall provide power for seasonal lighting. Each pole shall include one 110V waterproof, lockable GFCI outlet at or near the top of the center pole as required in Section 19 Mall Lighting and Electrical.

### 20.3.3 FOUNTAINS

The City has identified one location for a fountain at the Cleveland to Broadway block, identified in this Section 20.

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### 20.3.3.1 GENERAL REQUIREMENTS

The following general requirements apply to the fountain designed and installed on the Mall.

- Fountain shall be designed by a qualified fountain design specialist and mechanical engineer
- Materials, finishes, and connections shall be designed to convey permanence and craftsmanship and durability consistent with the character of the Mall and be resistant to vandalism or provide treatments or coatings to reduce maintenance.
- Fountain shall not impede the pedestrian routes required by the Americans with Disabilities Act (ADA), the ten-foot wide continuous pedestrian sidewalk as defined in the EA, transit way lanes, and adjacent transit stops
- Fountain shall be designed to maintain water quality in accordance with the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division's 5 CCR 1003-5; Swimming Pools and Mineral Baths (April 1998)
  - Fountain shall meet all ADA guidance and relevant City Standards and Specifications, and Regulations including but not limited to, *Denver Parks + Recreation Planning, Design + Construction Standards* and *Denver Department of Parks and Recreation Guidelines for Fountain Vault Facilities and Equipment*
- All fountain mechanical systems, filtration systems, tanks, and controls shall be located below grade or disguised within an element above grade that does not interfere with normal block circulation patterns, allows routine access for maintenance and compliments the character of the street
  - Locations and expression of manholes and/or vault covers in the granite paver pattern shall follow the requirements provided in Section 11 Granite Pavement System
- Fountain shall be designed to be shut off for winter months without adverse impact to the public realm
  - When the feature is not in use, it shall not create a safety hazard, or have appearance of an empty or unused feature
  - Fountain shall not be designed to pond or store water at the surface
- Fountain control systems shall be provided to operate, control, and monitor each fountain system
  - The control system shall provide process and instrumentation integration, programmable logic control (PLC) and system control integration, supervisory control and data acquisition (SCADA) system integration, treatment and water quality monitoring systems control and operation, automatic, programmed, timed, and manual start-up and shutdown control, emergency shutdown control and safeguards, and fountain programming
- Fountain component parts shall be commonly available and have a good track record of reliability
  - The system design shall provide for efficient winterization of the system to protect it from freezing
  - Fountain shall have a dedicated water tap and shall be connected to the sanitary sewer for drainage

### 20.3.3.2 GATEWAY SIGNATURE FOUNTAIN

The Contractor shall provide one fountain at the east end of the Mall, between Broadway and Cleveland Place. The existing fountain shall be removed and replaced, maintaining the original fountain's design intent, interactive experience, and relationship to the Mall – while being brought up to the latest standards

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and requirements, as specified in this Section 20. The design of the fountain shall meet the following requirements:

- Location: The fountain shall be located between Broadway and Cleveland Place, in approximately the same location as the existing fountain
- Area and paver pattern: The granite paver pattern and size of the defined fountain space shall match the existing fountain design
- Fountain character: The fountain shall maintain the original fountain character
- The fountains shall be located and/or designed to prevent users from unintentionally entering active traffic lanes
- The existing stone seating blocks surrounding the fountain shall not be included

### 20.3.4 SHADE STRUCTURES

The Contractor shall design, procure, and install fixed shade structures at locations throughout the Mall. Areas of shade are identified by location in Reference Document RD-20-04 and consistent with Reference Documents RD-20-07.

- Shade Structure canopy: The Contractor shall provide the following minimum square footage of canopy per character area:
  - Local Link: 450 sf
  - Press Play: 1,550 sf
  - Experience 16: 250 sf
  - Jump Start: 500 sf
- Shade Structure character: The Contractor shall demonstrate how the design will be a recognizable symbol of the Mall's character and both provide a moment of rest and accommodate programmed events on the Mall including patio seating, market stalls, or pop-up events
  - Shade structures shall include design features such as canopies, openings, or louvres that articulate the structure and provide visual interest
  - The areas of shade shall be visually permeable to maintains sight lines to and from the transit way and pedestrian walkway
  - Shade structure posts, canopies, or armatures shall not impede or impact routine operations and maintenance activities on the Mall including shuttle circulation, pedestrian circulation, and trash or service deliveries
  - Lighting shall be integrated into the structure to provide improved nighttime atmosphere and increase safety
    - ✓ Exterior mounted fixtures or hanging pendants shall not be permitted
    - ✓ Lighting control systems shall be combined with Replica Historic Decorative Light Fixture control system
- Shade Structure construction: The Contractor shall demonstrate how the design incorporates durable materials that are proven to withstand the Colorado climate and downtown urban environment



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- Materials, finishes, and connections shall be designed to convey permanence and craftsmanship and durability consistent with the character of the Mall and be resistant to vandalism or provide treatments or coatings to reduce maintenance.
- Connections, footings, fittings, or mechanized systems shall be designed by a licensed structural or mechanical engineer

### 20.3.5 AREAS OF PLAY

The Contractor shall design, procure, and install two structured areas of play along the Mall. The play areas are located in the Larimer to Lawrence block and the Welton to Glenarm block. See Reference Document RD-20-09 for reference design locations within those blocks.

- Areas of play character: The areas of play shall be a recognizable symbol of the Mall's character and both provide an invitation to stay and/or a moment of play for children
  - See Reference Document RD-20-09 for additional design intent and guidance
  - The Contractor shall meet during the design process as required by Section 20.3.1 and demonstrate how the design meets the following characteristics:
    - ✓ The Larimer to Lawrence block area of play shall provide for simultaneous play for 12 or more children and establish at least 3 different zones or play experiences for the larger play structure
    - ✓ The Welton to Glenarm block area of play shall be a vertical expression of play and provide for simultaneous play for 6 or more children and establish 2 different zones or play experiences
    - ✓ Areas of play shall include forms and interpretive expressions of Colorado's natural, agricultural, cultural, or built environments consistent the character areas described in RD-20-09
    - ✓ Areas of play shall integrate a perimeter barrier, include clear ingress and egress points or be sited to prevent unintentional circulation into the transit way
    - ✓ Areas of play shall be laid out to allow parents or caregivers to keep track of children as they move throughout the play environment
    - ✓ The Contractor shall develop diagrammatic sight line exhibits during design development demonstrating circulation, entrances and exits, and sight lines from building edges, pedestrian walkways, amenity zone elements, and the transit way
    - ✓ The Contractor shall develop diagrammatic exhibits during design development that indicates what age of play is envisioned for each area
    - ✓ Areas of play shall be designed to stimulate children and encourage them to develop new skills and are in scale with their sizes, abilities, and developmental levels
    - ✓ Areas of play shall be designed to prevent conflicts with Mall tree canopies and reduce injury rates play structures
    - ✓ Play elements shall be limited in height so that no fall height exceeds 6 feet unless Approved by the City

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- Areas of play construction: The Contractor shall demonstrate how the design incorporates durable materials that are proven to withstand the Colorado climate and Downtown urban environment
  - Play elements shall be placed on the granite surface
    - ✓ Connections, attachments, and penetrations of the granite surface shall not limit the City's ability to remove or relocate play elements as urban conditions change or Special Events dictate modifications
    - ✓ Materials, finishes, and connections shall be designed to convey permanence and craftsmanship and durability consistent with the character of the Mall and be resistant to vandalism or provide treatments or coatings to reduce maintenance.
  - Connections, footings, fittings, or mechanized systems shall be designed by a licensed structural or mechanical engineer
  - Play elements that require fall surfaces shall utilize unitary fall surface materials to reduce displacement and maintenance

The Contractor shall design, procure, and install three custom play-as-you-go areas along the Mall. See Reference Document RD-20-09 for additional design intent and guidance.

- The play-as-you-go areas shall be playful expressions of lounging, sitting, swinging or climbing that serve a functional purpose for all ages
- Each experience shall be no less than 250 sf and no larger than 450 sf in total area and fit within or around the rhythm of trees and lights within the amenity zone
- Elements shall be placed on the granite surface and shall not limit the City's ability to remove or relocate elements as urban conditions change or Special Events dictate modifications
- Elements shall be designed to encourage child exploration and limited in height and or experience to preclude the requirement of fall zones and surfaces
- The Contractor shall work with the City to determine the location and orientation of the experience based on the design themes established in the Contractor's design
- The elements shall include natural and fabricated material (steel, wood, or stone) that are proven to withstand the Colorado climate and downtown urban environment

## 20.4 PUBLIC LIFE COORDINATION ITEMS

### 20.4.1 INTERACTIVE MALL INFORMATIONAL SIGNS (IKES)

The BID will provide and install new IKEs to be located adjacent to Free MallRide shuttle stops throughout the Mall. The Contractor shall design and construct anchorages, footings, power, data, and other necessary infrastructure for the IKEs. All coordination of the IKEs shall be provided by the Contractor. IKE manufacturer product sheets are provided in Reference Document RD-20-11.

The Contractor shall provide locations for two IKE signs on each Mall block. They shall be located adjacent to the transit stop, according to the following:

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- IKE signs shall not impede pedestrian routes required by ADA, the ten-foot wide continuous pedestrian sidewalk as defined in the Environmental Assessment (EA), transit way lanes, and adjacent transit stops
- IKE signs shall be located adjacent to the end of the transit stop furthest from the adjacent intersection
  - Signs shall not interfere with shuttle access and egress, at all doors
- The IKE sign location shall be aligned with adjacent trees and replica historic decorative light fixtures and coordinated with the granite paver pattern and shall be centered within a paving diamond or centered at the joint intersection between pavers

Final IKE locations shall be Approved by the City.

The Contractor shall verify requirements and install all items required in accordance with the manufacturer's specifications.

## 20.5 PUBLIC LIFE FFE PRODUCTS

The Public Life FFE Products include an iconic seating element, bike racks, trash and recycling receptacles, and four families of moveable furnishings, to be procured and installed by the City including:

- Benches
- Café chairs
- Café tables
- Tables
- Lounge chairs
- Social decks
- Planters

These elements create a variety of new seating and gathering options to increase public use and activation of the Mall and are intended to be moveable by the public for daily use and responsive to future needs on the Mall. The Public Life FFE Products correspond to the concepts for each of the Character Areas and Nodes.

The City will procure and install all Public Life FFE Products identified in Reference Document RD-20-03. The Contractor shall not preclude the installation of the Public Life FFE elements through the design and location of Public Life Designed and Constructed Elements and Public Life Coordination Elements. If required, the Contractor shall supply anchoring for bike racks located in cross-street bulb-outs.

Public Life FFE Products are subject to ongoing public and Stakeholder outreach. The specific items and quantities identified in the Reference Document are a draft, intended to provide preliminary reference information for the Contractor.

## 20.6 LONG TERM MALL SAFETY AND SECURITY

Increasing the Mall's existing safety and security is critical for Project success. Safety is defined as mitigation of unintentional harm. Safety components of the Project are fulfilled through the Project Technical Requirements, such as consolidation of the transit way lanes, edge delineation between the transit way lanes and pedestrian area, ADA compliance, increased programming with Public Life elements, surface friction for the new granite pavement system, and improved lighting.

Security is defined as mitigation of intentional harm. In addition to the security related technology infrastructure items noted in Section 7 Utility Relocations and Section 11 Granite Pavement System, the

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Contractor shall lead a Mall vehicular attack threat assessment. The Contractor shall provide analysis of the vulnerabilities of the Mall, including potential mitigation strategies for the City's review. The Contractor shall incorporate the mitigation strategies utilizing the Public Life elements identified in this Section 20 to enhance security, in coordination with the City.

**20.7 PUBLIC ART**

Public Art shall be provided in accordance with City policy through the Denver Arts and Venues procurement process. The Contractor may be asked to provide coordination between the public art process and the Project. The Project design shall not preclude opportunities for public art such as wall murals, gateway features, or integration with Mall activation elements.

**20.8 SUBMITTAL REQUIREMENTS**

The Contractor shall prepare design submittals for all of the Public Life Designed and Constructed Elements. The submittals shall include all required manufacturer cut sheets detailing materials, fabrication, color, and quantity of items to be fabricated, procured, and installed.

**20.8.1 INITIAL DESIGN SUBMITTAL**

At the Initial Design Submittal, the Contractor shall provide concept plans, sketches and imagery for all Public Life Designed and Constructed Elements. All concept drawings shall include relevant surrounding elements, including the granite paver pattern, trees, replica historic lighting fixtures, and other Public Life elements. This submittal shall include a narrative discussing the design methodology, list and define design codes and specifications to be used, Project-specific criteria, and potential third-party fabricators.

The Contractor shall provide options or variations for input by the Stakeholder groups for those Public Life Design and Constructed Elements as required by this Section 20.

The Initial Design Submittal shall be the basis of the preliminary design, and thus it is the responsibility of the Contractor to provide sufficient information for the City for Approval of the proposed materials, colors, finishes, and layout.

**20.8.2 PRELIMINARY DESIGN SUBMITTAL**

The Preliminary Design Submittal shall include all elements from the Initial Design Submittal, product selection, details and specifications, layout, general notes, installation requirements, materials, colors and finishes for the Public Life Designed and Constructed Elements. Details and specifications for Public Life Coordinated Elements shall be included. The submittal shall include rendered plans, elevations and 3D views. All drawings shall include relevant surrounding elements, including the granite paver pattern, trees, replica historic lighting fixtures, and other Public Life elements.

Non-City standard specifications shall be packaged together and submitted for Approval.

The Preliminary Design Submittal shall be the basis of the final design, and thus it is the responsibility of the Contractor to provide sufficient information for the City for Approval of the proposed materials, colors, finishes, and layout.

**20.8.3 FINAL DESIGN SUBMITTAL**

The Final Design Submittal shall include all elements from the Preliminary Design Submittal and all other information as required in Section 3 Quality Management. The Final Design Submittal shall include construction documents, shop drawings, calculations, and specifications, product warranty information, maintenance requirements, and applicable ASTM and ANSI certifications for all Public Life Designed and

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Constructed Elements for all Public Life Designed and Constructed Elements and Public Life Coordination Elements.

As part of the Final Design Submittal, the Contractor shall prepare a Draft Public Life Operations and Maintenance Manual. The Final Public Life Operations and Maintenance Manual shall be submitted prior to Block Substantial Completion. The comprehensive manual shall include all elements required for the City to assume ownership of the Public Life elements, including those designed and constructed by the Contractor and those elements procured and installed by the City or BID. The Public Life Operations and Maintenance Manual shall coordinate with the Irrigation System Operation and Maintenance Manual and the Mall Lighting and Electrical Operations and Maintenance Manual.

#### **20.8.4 RELEASE FOR CONSTRUCTION SUBMITTAL**

The Release for Construction (RFC) Submittal shall be as required in Section 3 Quality Management.

#### **20.9 AS-BUILT PLANS**

The Contractor shall provide As-Built Plans of the Public Life elements as required in Section 3 Quality Management.

#### **20.10 DELIVERABLES**

At a minimum, the Contractor shall submit the following to the City:

<b>Table 20-3 Deliverables</b>		
<b>Deliverable</b>	<b>Information or Approval</b>	<b>Schedule</b>
Minimum three conceptual design options for all Public Life Constructed Elements	Approval	Initial Design Submittal
Draft Public Life Operations and Maintenance Manual	Approval	Concurrent with Final Design Submittal
Final Public Life Operations and Maintenance Manual	Approval	Prior to Block Substantial Completion
Mall vehicular attack threat assessment	Approval	Concurrent with Preliminary Design Submittal

## **21.0 TECHNICAL STANDARDS, DATA, AND REPORTS**

### **21.1 GOAL**

The goal of this Section 21 is to provide a summary listing of the City and County of Denver (City) and other agencies and regulatory authorities' technical standards, data, and reports applicable to the successful Project delivery

### **21.2 GENERAL**

The Contractor's performance under this Contract shall comply with the following standards, data, and reports.

The Contractor and each of its subcontractors and each of their respective subcontractors shall monitor and familiarize themselves with changes or additions to, or replacements of, the Project standards shown in Table 21-1 List of Applicable Standards, Data, and Reports. Table 21-1 is a list of known standards and specifications anticipated for the Project design and construction. The Contractor shall confirm the applicability and necessity of additional standards and specifications required for the completion of the Work.

The Contractor shall notify the City of any changes or additions to, or replacement of, any Project standard promptly after it becomes aware of such change, addition, or replacement.

If there is any conflict, ambiguity, or inconsistency between or among any provisions of the Project standards or specifications as shown in Table 21-1, then the City Standards or Specification shall prevail, and if no City Standard or Specification exists, the most stringent standard or specification shall prevail.

Reference to City and County of Denver Department of Parks and Recreation Standards and Specifications shall be in accordance with the Technical Requirements or Technical Specifications, as appropriate.

References to Colorado Department of Transportation (CDOT) Standards and Specifications shall be in accordance with the Technical Requirements. Reference to any specifications included in the CDOT *Standard Specifications for Road and Bridge Construction* shall include all current Standard Special Provisions.

If the Contractor's Proposal standards exceed the standards of either those shown in Table 21-1 or any of the provisions of the Technical Requirements, then the Proposal standards shall prevail.

If there is any unresolved ambiguity in standards, it is the Contractor's responsibility to obtain clarification from the City before proceeding with the design and/or construction.

The Contractor shall use the most current version of each listed standard as of the final publication date of this Request for Proposals (RFP).

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 21 Technical Standards, Data, and Reports

RFP March 31, 2020

<b>Table 21-1 List of Applicable Standards, Data, and Reports</b>	
<b>Originator</b>	<b>Title</b>
American Association of State Highway Transportation Officials (AASHTO)	All Standards and Manuals
Americans With Disabilities Act (ADA)	ADA Accessibility Guidelines
ADA	Draft Final Accessibility Guidelines for Outdoor Developed Areas
American National Standards Institute (ANSI)	ANSI Z60.1 American National Standard for Nursery Stock
American Society for Testing and Materials (ASTM)	All Standards and Manuals
American Society of Mechanical Engineers	All Standards and Manuals
City	Code of Ordinances, Chapter 36 Noise Control
City	Public Works Standards, Details, Manuals, Plans, and Studies (April 2017)
City	Standard Specifications for Construction/General Contract Conditions (the "Yellow Book")
City	Rules & Regulations Governing Sewerage Charges and Fees and Management of Wastewater
City	Rules & Regulations Criteria for Hazardous or Defective Sidewalks
City	Rules & Regulations Governing Street Cuts and Roadway Excavation Specifications
City	Rules & Regulations Encroachments in the Public Right of Way
City	Rules & Regulations for Sidewalk and Curb Ramp Construction
City	Rules & Regulations for Standard Right-of-Way Cross Sections and Utility Locations
City	Rules & Regulations for the Construction of Curbs, Gutters, Sidewalks, Driveways, Street Paving, and other Public Right-of-Way Improvements
City	Rules & Regulations Pertaining to the Issuance of Permits by the City Traffic Engineer
City	Rules and Regulations Pertaining to Aspects of the Enforcement and Interpretation of Article VII, Chapter 20, of the Denver Revised Municipal Code: Prompt Payment
City	Rules for Prequalification of Construction Contractors

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 21 Technical Standards, Data, and Reports

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<b>Table 21-1 List of Applicable Standards, Data, and Reports</b>	
<b>Originator</b>	<b>Title</b>
City	Rules and Regulations Part III – Subdivision Regulations of the Department of Public Works, City and County of Denver
City	Rules and Regulations Governing the Private Designing, Planning, Construction, Reconstruction, and Remodeling of General Public Improvements
City	Rules and Regulations Snow and Ice Removal from Sidewalks
City	Rules and Regulations for the Maintenance of Improvements in the Public Right-of-Way
City	Rules and Regulations Governing Item Placement Specifications
City	Rules and Regulations Housing Code
City	Rules and Regulations Pertaining to the Administration of a Bicycle Parking Program by the City Traffic Engineer
City	Denver Parks & Recreation Planning, Design + Construction Standards
City	Denver Parks & Recreation Nature Play Design Guidelines
City	Denver Parks & Recreation Parks Maintenance Standards
City	Bikeway Design Guidelines
City	Construction Activities Stormwater Discharge Permit
City	Storm and Sanitary Construction Plans / Studies General Requirements
City	Aesthetically Enhanced Detention and Water Quality Ponds
City	Small Cell Infrastructure Design Guidelines
City	Storm Drainage Design and Technical Criteria Manual
City	Storm Drainage Master Plan
City	Sanitary Sewer Master Plan
City	Transportation Standards and Details for the Engineering Division
City	Transportation Design Signal, Sign, & Marking Standards
City	Wastewater Management Standard Detail Drawings
City	Wastewater Capital Projects Management Standard Construction Specifications Including Measurement and Payment
City	Construction Activities Stormwater Manual (CASM)
City	Standard Provisions, Standard Concrete Construction Details and Technical Specifications
City	Streetscape Design Manual
City	Storm Drainage Design & Technical Criteria
City	Wastewater Capital Projects Management General Notes



## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 21 Technical Standards, Data, and Reports

RFP March 31, 2020

<b>Table 21-1 List of Applicable Standards, Data, and Reports</b>	
<b>Originator</b>	<b>Title</b>
City	Water Quality Management Plan
City	Ultra-Urban Green Infrastructure Guidelines
City	As-Built Drawing Submittal Checklist
City	DES Storm and Sanitary Sewer General Project Close-out Requirements
City	Sanitary Sewer Design Technical Criteria Manual
City	Minimum Frequency of Materials Sampling and Testing Standard
City	Underground Water Quality Devices
City	Approved Concrete Mix Designs
City	Water Quality Management Plan
City	Operating Rules of the Board of Water Commissioners
City	Utility Plan Review
City	Easement Relinquishment Entrance Requirements
City	Guidelines and Requirements for Range Points
City	Guidelines for Survey Control for Design of City Project
City	Approved List of HMAP Asphalt Mix Designs
City	Transportation Engineering Plan Review Submittal Requirements
City	Capital Project Engineering Plans (CPEP) Review Submittal Checklist
City	Construction Detour Standards for Bikeways and Multi-Use Trails
City	Street Lighting/Pedestrian Lighting, Design and Review Guidelines
City	Approved Street Tree List for Denver's Public Rights-of-way
City	City Forester - Street Tree Plan Review Checklist
City	City Forester – Tree Resources
City	Uncontrolled Pedestrian Crossing Guidelines
City	Street Lighting Design Guidelines
CDOT	Standard Specifications for Road and Bridge Construction
CDOT	M and S Standard Plans
Colorado Department of Health and Environment (CDPHE)	Regulation 5.5: Asbestos Contaminated Soil
Colorado Department of Health and Environment (CDPHE)	Regulation 84: Reclaimed Water Control Regulation

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 21 Technical Standards, Data, and Reports

RFP March 31, 2020

<b>Table 21-1 List of Applicable Standards, Data, and Reports</b>	
<b>Originator</b>	<b>Title</b>
Crime Prevention Through Environmental Design (CPTED)	Crime Prevention Through Environmental Design Guidebook
Denver Water	Engineering Standards including Materials Specifications and Standard Drawings
Denver Water	Plan Acceptance Checklist
Denver Water	Capital Projects Construction Standards, Vol's. I, II, and III
Denver Water	Capital Projects CAD Standard Manuals
Denver Water	General Construction and Water Notes
Federal Highway Administration (FHWA)	All Standards and Manuals
FHWA	Manual on Uniform Traffic Control Devices (MUTCD)
FHWA	Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide
FHWA	University Course on Bicycle and Pedestrian Transportation, Publication No. FHWA-HRT-05-133
Federal Transit Administration (FTA)	Handbook for Transit Safety and Security Certification
FTA	Quality Management System Guidelines
Illuminating Engineering Society of North America	Roadway Lighting, ANSI Approved RP-8-00
International Electrotechnical Commission	Standards and Specifications
International Organization for Standardization (ISO)	ISO 9001
Metropolitan Government Pavement Engineering Council (MGPEC)	Pavement Design Standards and Construction Specifications
Metro Wastewater Reclamation District	Rules and Regulations
Mile High Flood Control District (MHFCD)	Urban Storm Drainage Criteria Manuals, Vols. I, II, III

## Exhibit A-2

16<sup>th</sup> Street Mall Design-Build Project  
Section 21 Technical Standards, Data, and Reports

RFP March 31, 2020

<b>Table 21-1 List of Applicable Standards, Data, and Reports</b>	
<b>Originator</b>	<b>Title</b>
National Association of City Transportation Officials (NACTO)	Urban Street Design Guide
National Electrical Code	Standards and Specifications
National Electrical Manufacturers Association	Standards and Specifications
National Transportation Communications for ITS Protocol Standards (NTCIP)	Standards
Occupational Safety and Health Administration (OSHA)	Standard Specifications
RTD	ADA compliance certification form
RTD	All standards and specifications
RTD	RTD Bus Infrastructure Design Guidelines and Criteria – 2016
Telecommunications Industries Association (TIA)	All standards and publications
Transportation Research Board	Highway Capacity Manual
Underwriter's Laboratories	Standards and Specifications
UDFCD	Maintenance Eligibility Program Guidelines
UDFCD	UDFCD Specifications
United States Access Board	ADA Accessibility Guidelines (ADAAG)
United States Access Board	Public Right-of-Way Accessibility Guidelines (PROWAG)
US Army Corp of Engineers	Publications
Xcel Energy	Outdoor Lighting Manual

Exhibit B – Fixed Contract Price

## Exhibit B

### **Fixed Contract Price/Maximum Contract Amount:**

- Proposal dated September 9, 2020:

Proposed Fixed Contract Price: \$163,794,591.00 - REVISED

- Revised Price Proposal dated December 17, 2020:

Proposed Fixed Contract Price: \$154,065,673.00 - REVISED

- Revised Price Proposal Based Upon Final Contract Clarifications Set Forth in Exhibit A-1 and Final Technical Requirements set forth in Exhibit A-2:

**FINAL FIXED CONTRACT PRICE: \$148,992,354.00 - FINAL**

## Exhibit C – Schedule of Values

SCHEDULE OF VALUES (16<sup>TH</sup> STREET MALL DESIGN-BUILD PROJECT)

Bid item	Work Breakdown Structure Description	Unit	Quantity	Unit Price	16 <sup>th</sup> Street Mall Project Dollar Value	DBE Apply to Design or Construction
<b>Section 1 - General Conditions</b>						
	Mobilization	LS	1	\$ 9,283,981.09	\$ 9,283,981.09	Construction
	Construction Maintenance	LS	1	\$ 175,000.00	\$ 175,000.00	Construction
	Textura <sup>®</sup> Construction Payment Management System Fee	LS	1	\$ 44,605.00	\$ 44,605.00	Construction
	Bonds and Insurance	LS	1	\$ 5,481,869.00	\$ 5,481,869.00	Construction
	<b>Section 1 - Subtotal</b>				\$ 14,985,455.09	
<b>Section 2 - Project Management</b>						
	Project Management Plan	LS	1	\$ 50,000.00	\$ 50,000.00	Design
	Cost Management, Schedule Management, Project Controls, and Document Management	LS	1	\$ 5,386,049.00	\$ 5,386,049.00	Construction
	Progress Status Meetings and Reporting	LS	1	\$ 175,000.00	\$ 175,000.00	Construction
	Design - Base Scope	LS	1	\$ 11,344,000.00	\$ 11,344,000.00	Design
	Safety Management	LS	1	\$ 1,250,000.00	\$ 1,250,000.00	Construction
	Workforce Development Plan Implementation	LS	1	\$ 522,792.00	\$ 522,792.00	Construction
	Progress Documentation - Photos, Drone, and Webcam	LS	1	\$ 196,468.00	\$ 196,468.00	Construction
	Collocated Contractor and City Office Space	LS	1	\$ 2,272,688.00	\$ 2,272,688.00	Construction
	Owner's Contingency - City controlled Force Account	FA	1	\$ 3,000,000.00	\$ 3,000,000.00	Construction
	<b>Section 2 - Subtotal</b>				\$ 24,196,997.00	
<b>Section 3 - Quality Management</b>						
	Design QA/QC	LS	1	\$ 2,210,993.00	\$ 2,210,993.00	Design
	Construction QA/QC	LS	1	\$ 2,687,387.00	\$ 2,687,387.00	Construction
	Warranty	LS	1	\$ 500,000.00	\$ 500,000.00	Construction
	<b>Section 3 - Subtotal</b>				\$ 5,398,380.00	
<b>Section 4 - Public Information</b>						
	Public Information Program Implementation	LS	1	\$ 1,593,890.00	\$ 1,593,890.00	Construction
	<b>Section 4 - Subtotal</b>				\$ 1,593,890.00	
<b>Section 5 - Environmental Requirements</b>						
	Environmental Compliance	LS	1	\$ 599,755.00	\$ 599,755.00	Construction
	Vibration Monitoring	LS	1	\$ 1,525,027.00	\$ 1,525,027.00	Construction
	Permits	LS	1	\$ 25,000.00	\$ 25,000.00	Construction
	<b>Section 5 - Subtotal</b>				\$ 2,149,782.00	
<b>Section 6 - Third Party Agreements</b>						
	Third Party Coordination	LS	1	\$ 167,684.00	\$ 167,684.00	Construction
	<b>Section 6 - Subtotal</b>				\$ 167,684.00	
<b>Section 7 - Utility Relocations</b>						
	Utility Due Diligence	LS	1	\$ 692,984.00	\$ 692,984.00	Design
	Utility Coordination	LS	1	\$ 693,222.00	\$ 693,222.00	Construction
	Sanitary Sewer Lining - See Reference Document RD-07-08	LS	1	\$ 1,197,448.00	\$ 1,197,448.00	Construction
	Electrical/Communication Duct Bank Removals	LS	1	\$ 21,750.00	\$ 21,750.00	Construction
	Electrical/Communication Duct Bank	LF	52350	\$ 56.98	\$ 2,982,987.02	Construction
	Electrical/Communication Vaults	EA	120	\$ 11,151.02	\$ 1,338,122.00	Construction
	Testing, Startup, and Commissioning	LS	1	\$ 25,000.00	\$ 25,000.00	Construction
	Miscellaneous Utility Relocations	LS	1	\$ 55,000.00	\$ 55,000.00	Construction
	Denver Water Work - Design and Construction - City controlled Force Account	FA	1	\$ 5,454,776.00	\$ 5,454,776.00	Design/Construction
	<b>Section 7 - Subtotal</b>				\$ 12,461,289.02	
<b>Section 8 - Right-of-Way</b>						
	Right-of-Way Support Services	LS	1	\$ 100,000.00	\$ 100,000.00	Design
	<b>Section 8 - Subtotal</b>				\$ 100,000.00	
<b>Section 9 - Survey</b>						
	Design Surveying	LS	1	\$ 310,000.00	\$ 310,000.00	Design
	Construction Surveying	LS	1	\$ 1,984,617.00	\$ 1,984,617.00	Construction
	<b>Section 9 - Subtotal</b>				\$ 2,294,617.00	
<b>Section 10 - Geotechnical and Pavements</b>						
	Geotechnical Investigation	LS	1	\$ 250,000.00	\$ 250,000.00	Design
	Pavement Design Report	LS	1	\$ 100,000.00	\$ 100,000.00	Design
	<b>Section 10 - Subtotal</b>				\$ 350,000.00	

## Exhibit C

SCHEDULE OF VALUES (16<sup>TH</sup> STREET MALL DESIGN-BUILD PROJECT)

Bid Item	Work Breakdown Structure Description	Unit	Quantity	Unit Price	16 <sup>th</sup> Street Mall Project Dollar Value	DBE Apply to Design or Construction
<b>Section 11 – Granite Pavement System</b>						
	Subgrade Preparation	LS	1	\$ 1,034,124.00	\$ 1,034,124.00	Construction
	Aggregate Base Course	CY	9484	\$ 252.89	\$ 2,398,433.00	Construction
	Base Slab	SY	32710	\$ 295.67	\$ 9,671,498.20	Construction
	Granite Paver Setting Bed	SY	32710	\$ 61.61	\$ 2,015,167.50	Construction
	Granite Pavers	SY	32710	\$ 774.46	\$ 25,332,450.00	Construction
	Granite Curb and Gutter	LF	1797	\$ 343.35	\$ 616,999.95	Construction
	Granite Gutter Pan	LF	5645	\$ 175.20	\$ 989,004.00	Construction
	Modular Supported Pavement System	EA	8611	\$ 420.25	\$ 3,618,772.75	Construction
	Suspended Pavement Tree Grate System	EA	232	\$ 7,565.97	\$ 1,755,306.00	Construction
	Miscellaneous Materials	LS	1	\$ 783,387.00	\$ 783,387.00	Construction
	Operations and Maintenance During Construction	LS	1	\$ 34,901.00	\$ 34,901.00	Construction
	<b>Section 11 - Subtotal</b>				\$ 48,250,043.40	
<b>Section 12 - Earthwork and Removals</b>						
	Removal of Existing Utilities	LS	1	\$ 145,000.00	\$ 145,000.00	Construction
	Removal of Existing Storm Structures	LS	1	\$ 578,900.00	\$ 578,900.00	Construction
	Removal of Miscellaneous Structures	LS	1	\$ 137,000.00	\$ 137,000.00	Construction
	Removal of Existing Trees, Landscaping, and Appurtenances	EA	211	\$ 133.58	\$ 28,186.00	Construction
	Removal of Existing Granite Pavement System	SY	32745	\$ 55.51	\$ 1,817,786.00	Construction
	Removal of Existing Intersections/Cross Streets	SY	67623	\$ 9.64	\$ 651,987.90	Construction
	Embankment	CY	0	\$ -	\$ -	Construction
	Unclassified Excavation	CY	39181	\$ 21.09	\$ 826,333.00	Construction
	Structure Backfill	CY	13888	\$ 124.05	\$ 1,722,853.00	Construction
	<b>Section 12 - Subtotal</b>				\$ 5,908,045.90	
<b>Section 13 – Drainage and Water Quality</b>						
	Erosion Control	LS	1	\$ 454,161.00	\$ 454,161.00	Construction
	Abandon In Place - 30" Pipe	LF	362	\$ 94.18	\$ 34,094.00	Construction
	Abandon In Place - 24" Pipe	LF	1567	\$ 93.97	\$ 147,246.00	Construction
	Abandon In Place - 16" Pipe	LF	4706	\$ 26.74	\$ 125,834.00	Construction
	Abandon In Place - XX" Pipe	LF	0	\$ -	\$ -	Construction
	Tree Underdrain System	LF	8062	\$ 5.11	\$ 41,215.00	Construction
	XX" PVC Pipe	LF	0	\$ -	\$ -	Construction
	XX" PVC Pipe	LF	0	\$ -	\$ -	Construction
	36" RCP Pipe	LF	1450	\$ 687.51	\$ 996,884.00	Construction
	30" RCP Pipe	LF	30	\$ 648.37	\$ 19,451.00	Construction
	24" RCP Pipe	LF	2543	\$ 558.95	\$ 1,421,405.00	Construction
	18" RCP Pipe	LF	32	\$ 503.06	\$ 16,098.00	Construction
	15" RCP Pipe	LF	53	\$ 402.43	\$ 21,329.00	Construction
	12" RCP Pipe	LF	1086	\$ 566.45	\$ 615,167.00	Construction
	Granite Pavement System Sub-Drainage System	LF	1128	\$ 279.47	\$ 315,247.00	Construction
	3' Diameter Precast Manhole	EA	0	\$ -	\$ -	Construction
	4' Diameter Precast Manhole	EA	7	\$ 15,874.14	\$ 111,119.00	Construction
	5' Diameter Precast Manhole	EA	24	\$ 16,880.25	\$ 405,126.00	Construction
	Inlets	EA	32	\$ 19,472.66	\$ 623,125.00	Construction
	Miscellaneous Drainage Features	LS	1	\$ 242,807.00	\$ 242,807.00	Construction
	Water Quality Features	EA	6	\$ 56,289.50	\$ 337,737.00	Construction
	<b>Section 13 - Subtotal</b>				\$ 5,928,045.00	
<b>Section 14 - Mall and Transit Way Layout</b>						
	<b>Section 14 – Subtotal</b>					
<b>Section 15 – Cross Street and Intersection Layout</b>						
	Concrete Street Paving	SY	4050	\$ 210.00	\$ 850,500.00	Construction
	6" Concrete Curb and Gutter	LF	1325	\$ 36.77	\$ 48,717.00	Construction
	Concrete Sidewalk and Ramps with ADA Truncated Domes	SY	186	\$ 301.24	\$ 56,030.41	Construction
	Driveway Apron	SY	2813	\$ 30.53	\$ 85,870.00	Construction
	Bus Island	SY	158	\$ 126.57	\$ 19,998.00	Construction
	Sidewalk	SY	2813	\$ 89.52	\$ 251,816.00	Construction
	<b>Section 15 - Subtotal</b>				\$ 1,312,931.41	
<b>Section 16 - Permanent Signing, Pavement Marking, Traffic Signals, and Street Lighting</b>						
	Roadway Signs	EA	78	\$ 469.51	\$ 36,622.00	Construction
	Pavement Markings	GAL	213	\$ 1,174.17	\$ 250,099.00	Construction
	Traffic Signal Removals	EA	26	\$ 8,384.23	\$ 217,990.00	Construction
	Traffic Signal Installation	EA	26	\$ 109,641.00	\$ 2,850,666.00	Construction
	Lighting	EA	10	\$ 51,004.50	\$ 510,045.00	Construction
	<b>Section 16 - Subtotal</b>				\$ 3,865,422.00	



SCHEDULE OF VALUES (16<sup>TH</sup> STREET MALL DESIGN-BUILD PROJECT)

Bid item	Work Breakdown Structure Description	Unit	Quantity	Unit Price	16 <sup>th</sup> Street Mall Project Dollar Value	DBE Apply to Design or Construction
<b>Section 17 – Construction Phasing and Maintenance of Traffic</b>						
	Traffic Management Plan	LS	1	\$ 19,675.00	\$ 19,675.00	Construction
	Construction Traffic Control	LS	1	\$ 2,180,020.00	\$ 2,180,020.00	Construction
	Staging / Laydown Area	LS	1	\$ 1,409,530.00	\$ 1,409,530.00	Construction
	ADA Access Ramps and Aluminum Walkways	LS	1	\$ 541,076.00	\$ 541,076.00	Construction
	Individual Business Signage for Addendum 8 Phasing Approach	LS	1	\$ 297,648.00	\$ 297,648.00	Construction
	Winter Heating and Tenting	LS	1	\$ 1,033,422.00	\$ 1,033,422.00	Construction
	<b>Section 17 - Subtotal</b>				\$ 5,481,371.00	
<b>Section 18 - Landscape</b>						
	Tree Planting Pit Preparation	EA	232	\$ 1,490.47	\$ 345,790.00	Construction
	Mall Tree Soil Preparation	CY	4237	\$ 30.61	\$ 129,704.00	Construction
	Mall Tree Preparation, Loading, Transport, and Unloading	EA	232	\$ 3,287.10	\$ 762,607.00	Construction
	Mall Tree Planting	EA	232	\$ 2,715.67	\$ 630,035.00	Construction
	Mall Tree Irrigation System	LS	1	\$ 913,904.00	\$ 913,904.00	Construction
	<b>Section 18 - Subtotal</b>				\$ 2,782,040.00	
<b>Section 19 – Mall Lighting and Electrical</b>						
	Replica Historic Decorative Light Fixture (Reuse and Modification)	EA	160	\$ 23,411.00	\$ 3,745,760.00	Construction
	Replica Historic Decorative Light Fixtures (new)	EA	48	\$ 28,607.67	\$ 1,373,168.00	Construction
	Electric and Data Conduit and Wiring for Public Life Elements	LS	1	\$ 2,567,798.15	\$ 2,567,798.15	Construction
	<b>Section 19 - Subtotal</b>				\$ 7,686,726.15	
<b>Section 20 – Public Life</b>						
	Gateway Signature Fountain	EA	1	\$ 801,737.58	\$ 801,737.58	Construction
	Banner Poles	EA	50	\$ 19,984.86	\$ 999,243.00	Construction
	Areas of Shade	EA	26	\$ 43,969.75	\$ 1,143,213.40	Construction
	Areas of Play	EA	14	\$ 80,426.33	\$ 1,125,968.65	Construction
	IKE Foundations and Infrastructure	EA	26	\$ 364.32	\$ 9,472.40	Construction
	<b>Section 20 - Subtotal</b>				\$ 4,079,635.03	
	<b>Bid Total</b>				\$ 148,992,354.00	

## Exhibit D – Payment and Performance Bond

## Performance Bond and Payment Bond Date Authorization

Assistant City Attorney  
City and County of Denver  
201 W. Colfax Ave. Dept 1207  
Denver, Colorado 80202  
(as Obligee)

RE: Contractor (as Principal): **PCL Construction Services, Inc.**  
Project Name: **Contract Control Number: 202157899 –16<sup>th</sup> Street Mall Design-Build  
Project**  
Contract Amount: **\$148,992,354.00**  
Performance and Payment Bond(s) No.: **6357705, 107272929, K40195683**

The Performance and Payment Bond(s) covering the above captioned project were executed by this agency, through **Fidelity and Deposit Company of Maryland, Zurich American Insurance Company, Travelers Casualty and Surety Company of America, Federal Insurance Company**, as Surety(ies), on February 24, 2021.

We hereby authorize the City and County of Denver to date all bonds and powers of attorney to coincide with the date of the contract

If you should have any additional questions or concerns, please do not hesitate to call the undersigned at 312-381-4589.

Thank you.

Sincerely,  
Aon



\_\_\_\_\_  
Signature

Sandra M. Winsted  
\_\_\_\_\_  
Print Name

Attorney-in-Fact  
\_\_\_\_\_  
Print Title

Exhibit D

**Bond No. 6357705, 107272929, K40195683**

**CITY AND COUNTY OF DENVER  
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

**PERFORMANCE AND PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned PCL Construction Services, Inc.

\_\_\_\_\_,  
a corporation organized and existing under and by virtue of the laws of the State of CO,  
hereafter referred to as the "Contractor", and Fidelity and Deposit Company of Maryland/Zurich American  
Insurance Company, Travelers Casualty and Surety Company of America, Federal Insurance Company, a  
corporation organized and existing under and by virtue of the laws of the State of IL, CT, IN,  
and authorized to transact business in the State of Colorado, as Surety, are held and firmly bound unto the  
CITY AND COUNTY OF DENVER, a municipal corporation of the State of Colorado, hereinafter referred  
to as the "City", in the penal sum of One Hundred Forty Eight Million Nine Hundred Ninety Two Thousand  
Three Hundred Fifty Four and 00/100 Dollars (\$148,992,354.00), lawful money of the United States of  
America, for the payment of which sum, well and truly to be made, we bind ourselves and our heirs,  
executors, administrators, successors and assigns, jointly and severally, firmly by these presents;

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT:

WHEREAS, the above bounden Contractor has entered into a written contract with the aforesaid City for  
furnishing all labor and tools, supplies, equipment, superintendence, materials and everything necessary for  
and required to do, perform and complete the construction of **Contract No. 202157899 16<sup>th</sup> Street Mall  
Design-Build Project**, Denver, Colorado, and has bound itself to complete the project within the time or  
times specified or pay liquidated damages, all as designated, defined and described in the said Contract and  
Conditions thereof, and in accordance with the Plans and Technical Specifications therefore, a copy of said  
Contract being made a part hereof;

NOW, THEREFORE, if the said Contractor shall and will, in all particulars well and truly and faithfully  
observe, perform and abide by each and every Covenant, Condition and part of said Contract, and the  
Conditions, Technical Specifications, Plans, and other Contract Documents thereto attached, or by  
reference made a part thereof and any alterations in and additions thereto, according to the true intent and  
meaning in such case, then this obligation shall be and become null and void; otherwise, it shall remain in  
full force and effect;

PROVIDED FURTHER, that if the said Contractor shall satisfy all claims and demands incurred by the  
Contractor in the performance of said Contract, and shall fully indemnify and save harmless the City from  
all damages, claims, demands, expense and charge of every kind (including claims of patent infringement)  
arising from any act, omission, or neglect of said Contractor, its agents, or employees with relation to said  
work; and shall fully reimburse and repay to the City all costs, damages, and expenses which it may incur  
in making good any default based upon the failure of the Contractor to fulfill its obligation to furnish  
maintenance, repairs or replacements for the full guarantee period provided in the Contract Documents,  
then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if said Contractor shall at all times promptly make payments of all amounts  
lawfully due to all persons supplying or furnishing it or its subcontractors with labor and materials, rental  
machinery, tools or equipment used or performed in the prosecution of work provided for in the above  
Contract and that if the Contractor will indemnify and save harmless the City for the extent of any and all  
payments in connection with the carrying out of such Contract, then this obligation shall be null and void;  
otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor fails to duly pay for any labor, materials, team hire,  
sustenance, provisions, provender, gasoline, lubricating oils, fuel oils, grease, coal, or any other supplies or


Exhibit D

materials used or consumed by said Contractor or its subcontractors in performance of the work contracted to be done, or fails to pay any person who supplies rental machinery, tools or equipment, all amounts due as the result of the use of such machinery, tools or equipment in the prosecution of the work, the Surety will pay the same in any amount not exceeding the amount of this obligation, together with interest as provided by law;

PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to contracts with others in connection with this project, or the work to be performed thereunder, or the Technical Specifications and Plans accompanying the same, shall in any way affect its obligation on this bond and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or contracts, or to the work, or to the Technical Specifications and Plans.

IN WITNESS WHEREOF, said Contractor and said Surety have executed these presents as of this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_.

Attest:

  
Secretary  
Assistant Secretary


PCL Construction Services, Inc.

Contractor

By:   
President District Manager

Fidelity and Deposit Company of Maryland/  
Zurich American Insurance Company  
Travelers Casualty and Surety Company of America  
Federal Insurance Company

Surety

By:   
Attorney-In-Fact, Sandra M. Winsted

(Accompany this bond with Attorney-in-Fact's authority from the Surety to execute bond, certified to include the date of the bond).

APPROVED AS TO FORM:  
Attorney for the City and County of Denver

Approved for the City and County  
of Denver:

By: \_\_\_\_\_  
Assistant City Attorney

By: \_\_\_\_\_  
Mayor

By: \_\_\_\_\_  
Executive Director for the Department of  
Transportation and Infrastructure

[www.denvergov.org/doti](http://www.denvergov.org/doti)

\*\* Original bond will be signed by the City and hereby incorporated

Exhibit D

ZURICH AMERICAN INSURANCE COMPANY  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND  
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), by **Robert D. Murray, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Sandra M. WINSTED, Diane M. O'LEARY, Susan A. WELSH, Judith A. LUCKY-EFTIMOV, James B. MCTAGGART, Debra J. DOYLE, Sandra M. NOWAK, Jessica B. DEMPSEY, Christina L. SANDOVAL, Kristin L HANNIGAN and Samantha CHIERICI, all of Chicago, Illinois**, EACH, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: any and all bonds and undertakings, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland, and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland, in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 8<sup>th</sup> day of April, A.D. 2020.



ATTEST:  
ZURICH AMERICAN INSURANCE COMPANY  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: *Robert D. Murray*  
Vice President

By: *Dawn E. Brown*  
Secretary

State of Maryland  
County of Baltimore

On this 8th day of April, A.D. 2020, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Robert D. Murray, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



Constance A. Dunn, Notary Public  
My Commission Expires: July 9, 2023

Exhibit D

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Secretary of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this \_\_\_\_\_ day of \_\_\_\_\_.



*Brian M. Hodges*

By: Brian M. Hodges  
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims  
1299 Zurich Way  
Schaumburg, IL 60196-1056  
[www.reportsfelaims@zurichna.com](mailto:www.reportsfelaims@zurichna.com)  
800-626-4577

Exhibit D

	<b>Travelers Casualty and Surety Company of America</b> <b>Travelers Casualty and Surety Company</b> <b>St. Paul Fire and Marine Insurance Company</b>
--	--

POWER OF ATTORNEY

**KNOW ALL MEN BY THESE PRESENTS:** That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Sandra M. Winsted** of **Chicago Illinois**, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**IN WITNESS WHEREOF**, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February**, **2017**.



State of Connecticut

City of Hartford ss.

By:   
 Robert L. Raney, Senior Vice President

On this the **3rd** day of **February**, **2017**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

**In Witness Whereof**, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2021**



  
 Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this \_\_\_\_\_ day of \_\_\_\_\_,



  
 Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.**  
**Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**





Exhibit D

Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company  
Westchester Fire Insurance Company | ACE American Insurance Company

Know All by These Presents, that FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY corporations of the Commonwealth of Pennsylvania, do each hereby constitute and appoint Samantha Chierici, Jessica B. Dempsey, Debra J. Doyle, Derek J. Elston, Kristin L. Hannigan, Jennifer L. Jakaitis, Andrew Marks, James B. McTaggart, Judith A. Lucky-Eftimov, Sandra M. Nowak, Diane M. O'Leary, Nicholas Pantazis, Christina L. Sandoval, Bartlomiej Siepierski, Christopher P. Troha, Aerie Walton, Susan A. Welsh and Sandra M. Winsted of Chicago, Illinois

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY have each executed and attested these presents and affixed their corporate seals on this 16<sup>th</sup> day of January, 2020.

*Dawn M. Chloros*

Dawn M. Chloros, Assistant Secretary

*Stephen M. Haney*

Stephen M. Haney, Vice President



STATE OF NEW JERSEY  
County of Hunterdon

ss.

On this 16<sup>th</sup> day of January, 2020 before me, a Notary Public of New Jersey, personally came Dawn M. Chloros and Stephen M. Haney, to me known to be Assistant Secretary and Vice President, respectively, of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros and Stephen M. Haney, being by me duly sworn, severally and each for herself and himself did depose and say that they are Assistant Secretary and Vice President, respectively, of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY and know the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that their signatures as such officers were duly affixed and subscribed by like authority.

Notarial Seal



KATHERINE J. ADELAAR  
NOTARY PUBLIC OF NEW JERSEY  
No. 2316685  
Commission Expires July 16, 2024

*Katherine J. Adelaar*  
Notary Public

CERTIFICATION

Resolutions adopted by the Boards of Directors of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY on August 30, 2016; WESTCHESTER FIRE INSURANCE COMPANY on December 11, 2006; and ACE AMERICAN INSURANCE COMPANY on March 20, 2009:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested."

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY (the "Companies") do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
- (ii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Whitehouse Station, NJ, this



*Dawn M. Chloros*

Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:  
Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com

## Exhibit E – Federal Requirements

## Exhibit E

### FEDERAL REQUIREMENTS

The City shall comply with and perform its obligations under the IGA, and when applicable, shall require each of its consultants, contractors and their respective subcontractors to perform Project work under this IGA in accordance with the following requirements set forth in this Exhibit E. For the purposes of this **Exhibit E**, "Contractor" shall refer to the City and any Third Party Participant.

#### **FTA 1 NO FEDERAL GOVERNMENT OBLIGATIONS TO THIRD PARTIES**

- A. The Parties acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the IGA or the solicitation or award of underlying contracts or subcontracts, absent the express written consent by the Federal Government, the Federal Government is not a party to this IGA or such contracts and subcontracts and shall not be subject to any obligations or liabilities to RTD, the City, or any other party (whether or not a party to the IGA) pertaining to any matter resulting from the underlying IGA.

The City agrees to include the Required Clauses in Third Party Contracts set forth in the FTA Master Agreement Section 16(e) in each Third Party Contract financed in whole or in part with Federal assistance provided by FTA and to ensure the inclusion of such clauses in all Third Party Contracts at any tier. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

#### **FTA 2 FALSE OR FRAUDULENT STATEMENTS OR CLAIMS - CIVIL AND CRIMINAL FRAUD**

- A. The provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 *et seq.* and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution or performance of the underlying work, Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Contract work or the FTA assisted project for which this work is being performed. In addition to other penalties that may be applicable, Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on Contractor to the extent the Federal Government deems appropriate.
- B. Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 on Contractor, to the extent the Federal Government deems appropriate.

## Exhibit E

- C. Contractor agrees to include the above two clauses in each Third Party Contract financed in whole or in part with Federal assistance provided by FTA and to require its D/BC to include the same in any Third Party Contracts. It is further agreed that the clauses shall not be modified, except to identify the subcontractor(s) who will be subject to the provisions.

### **FTA 3 ACCESS TO THIRD PARTY CONTRACT RECORDS**

Contractor agrees to require, and assures that each of its Third Party Participants will require, its Third Party Participants at each tier provide:

- A. For a period of three years following contract closing, the Contractor shall maintain, preserve and make available to RTD, the FTA Administrator, the Comptroller General of the United States, and any of their authorized representatives, access at all reasonable times to any books, documents, papers and records of Contractor which are directly pertinent to the work for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. § 633.17, to provide the FTA Administrator or his or her authorized representatives, including any project management oversight contractor, access to Contractor's records and sites pertaining to a major capital project, defined at 49 U.S.C. § 5302(3)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. §§ 5307, 5309 or 5311.
- B. The Contractor shall maintain and RTD shall have the right to examine and audit all records and other evidence sufficient to reflect properly all prices, costs or rates negotiated and invoiced in performance of the Project work. This right of examination shall include inspection at all reasonable times of the Contractor's offices engaged in performing the Project work.
- C. If a contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement. The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.
- D. "Access to Records and Reports" applies with equal force and effect to any subcontractors hired by the Contractor to perform Work under this contract. The Contractor shall insert this provision in all subcontracts under this Contract and require subcontractor compliance therewith.

### **FTA 4 CHANGES TO FEDERAL REQUIREMENTS**

All applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the current Master Agreement between RTD and FTA, shall be in effect as they may be amended or promulgated from time to time during the term of this contract.

### **FTA 5 CIVIL RIGHTS (TITLE VI, ADA, EEO)**

The requirements for this section are set forth in Exhibit H to the IGA.

## Exhibit E

### **FTA 6    DISADVANTAGED BUSINESS ENTERPRISES (DBE)s**

A. The requirements for this section are set forth in Exhibit H to the IGA.

### **FTA 7    INCORPORATION OF FTA TERMS**

The provisions of this Contract include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the Contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F, dated November 1, 2008, as may be amended, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. Contractor shall not perform any act, fail to perform any act, or refuse to comply with any RTD requests which would cause RTD to be in violation of the FTA terms and conditions. The incorporation of FTA terms has unlimited flow down.

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## Exhibit E

### **Provision 8 applies to AWARDS EXCEEDING \$10,000**

#### **FTA 8 TERMINATION**

- A. Per Section 11. A. of the IGA.
  
- B. Suspension of Work. RTD may suspend the performance of the Contractor by giving the Contractor seven days' written notice. Upon Contractor's receipt of notice of suspension of Work, the Contractor shall perform no further Work and RTD will not be required to reimburse the Contractor for any costs incurred subsequent to Contractor's receipt of notice of suspension and prior to notice to resume Work, if any. Suspension of Work may be in whole or in part, as specified by RTD. The Contractor shall continue to submit invoices for Work performed. If after six months of suspension, RTD has not given the Contractor notice to resume Work, the Contractor is entitled to request in writing that RTD either (1) amend the Statement of Contract Cost or (2) terminate the Contract pursuant to "Termination for Convenience." If suspension for more than six months is not due in any part to the fault of the Contractor, RTD shall be required to amend or terminate the Contract. No amendment to the Statement of Contract Cost shall be made under this Article if suspension, delay, or interruption is due to the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this Contract.

## Exhibit E

### Provision 9 applies to AWARDS EXCEEDING \$25,000

#### FTA 9 DEBARMENT AND SUSPENSION

- A. If this Contract is valued at \$25,000 or greater, it is a covered transaction for purposes of 2 C.F.R. Part 180. As such, Contractor is required to verify that none of Contractor, its principals, as defined at 2 C.F.R. Part 180.995, or affiliates, as defined at 2 C.F.R. Part 180.905, are entered into or listed on the governmentwide exclusions in the System for Award Management (SAM) in accordance with the OMB guidelines at 2 C.F.R. Part 180 that implement Executive orders 12549 (31 U.S.C. Section 6101) and 12689 (31 U.S.C. Section 6101).
- B. Contractor is required to comply with 2 C.F.R. Part 180, Subpart C and must include the requirement to comply with 2 C.F.R. Part 180, Subpart C in any lower tier covered transaction it enters into.
- C. By accepting this Contract, Contractor is certifying as follows:
  1. The certification in this clause is a material representation of fact relied upon by RTD. If it is later determined that Contractor knowingly rendered an erroneous certification, in addition to remedies available to RTD, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. Contractor agrees to comply with the requirements of 2 C.F.R. Part 180, Subpart C throughout the period of this Contract.
  2. Contractor further agrees to include, and require each Third Party Participant to include, a similar provision in each lower tier covered transaction, ensuring that each lower tier Third Party Participant:
    - a) Complies with federal debarment and suspension requirements; and
    - b) Reviews the SAM at <https://www.sam.gov>, if necessary to comply with USDOT regulations, 2 C.F.R. part 1200.

## Exhibit E

### **Provisions 10 through 11 apply to AWARDS EXCEEDING THE SIMPLIFIED ACQUISITION THRESHOLD (\$150,000)**

#### **FTA 10 BUY AMERICA**

##### **(for Rolling Stock, Construction and Materials/Supplies)**

The Buy America requirements apply to all contracts for construction, the acquisition of goods, or the acquisition of rolling stock that are valued at more than \$150,000.

The Contractor agrees to comply with 49 U.S.C. § 5323(j), as amended by MAP-21, and 49 C.F.R. Part 661, to the extent consistent with MAP-21, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. § 5323(j)(2)(C) and 49 C.F.R. § 661.11. Rolling stock must be assembled in the United States and have a 65 percent domestic content. The Contractor shall be responsible for ensuring that lower tier contractors and subcontractors are in compliance with these requirements.

#### **FTA 11 RESOLUTION OF DISPUTES, BREACHES, OR OTHER LITIGATION**

A. Except as otherwise provided in this Contract, any dispute arising hereunder concerning a question of fact that is not disposed of by agreement shall be decided by RTD's General Manager, or his or her delegate. Contractor will be notified of the decision in writing. To the extent allowable by law, any such decision shall be final, conclusive, and not subject to judicial review unless shown to be fraudulent, capricious, arbitrary, or so grossly erroneous as to imply bad faith.

B. This Article does not preclude judicial consideration of questions of law. Nothing in this Contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

C. All costs, expenses and attorney fees incurred by the Contractor in connection with any appeal, suit or claim regarding a dispute that is brought by the Contractor shall be paid by the Contractor.

D. The duties, obligations, rights, and remedies provided by the Contract shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

E. Unless otherwise directed by RTD, the Contractor shall continue performance under this Contract while matters in dispute are being resolved.

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## Exhibit E

### **Provision 12 applies to AWARDS EXCEEDING \$100,000 BY STATUTE**

#### **FTA 12 LOBBYING**

Contractors and all subcontractors who apply or bid for an award of \$ 100,000 or more shall file the certification required by 49 C.F.R. Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not use and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. § 1352. Such disclosures are forwarded from tier to tier up to RTD. Contractor should contact RTD for the appropriate certification or retrieve a copy from the FTA Best Practices Manual at [http://www.fta.dot.gov/documents/BPPM\\_fulltext.pdf](http://www.fta.dot.gov/documents/BPPM_fulltext.pdf).

### **Provisions 13 through 14 apply to AWARDS EXCEEDING \$150,000 BY STATUTE**

#### **FTA 13 CLEAN AIR**

- A. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. Contractor agrees to report each violation to RTD and understands and agrees that RTD will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.
- B. Contractor also agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FTA.

#### **FTA 14 CLEAN WATER**

- A. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 *et seq.* Contractor agrees to report each violation to RTD and understands and agrees that RTD will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.
  - B. Contractor also agrees to include these requirements in each subcontract exceeding \$ 150,000 financed in whole or in part with Federal assistance provided by FTA.
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## Exhibit E

### **Provisions 15 and 16 apply for the TRANSPORT OF PROPERTY OR PERSONS**

#### **FTA 15 CARGO PREFERENCE**

##### **(Rolling Stock, Construction and Materials/Supplies)**

**The Cargo Preference requirements apply to all contracts involving equipment, materials, or commodities which may be transported by ocean vessels.**

The Contractor agrees:

1. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;
2. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to RTD (through the Contractor in the case of a subcontractor's bill-of-lading);
3. to include these requirements in all subcontracts issued pursuant to this Contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

#### **FTA 16 FLY AMERICA**

In the performance of Contracts that utilize FTA participation in the cost of international air transportation, Contractor agrees to comply with 49 U.S.C. § 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 C.F.R. Part 301-10, subpart B, which provide that recipients and subrecipients of Federal funds and their contractors are required to use U.S.-Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S.-Flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

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## Exhibit E

### Provisions 17 through 21 apply to CONSTRUCTION ACTIVITIES

#### **FTA 17 CONSTRUCTION EMPLOYEE PROTECTIONS – DAVIS–BACON ACT**

##### **(Awards that exceed \$2,000)**

Compliance with the Davis -Bacon Act, as amended (40 U.S.C. §§ 3141 – 3148), as supplemented by Department of Labor regulations (29 C.F.R. Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction").

Contractor is required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, Contractor is required to pay wages not less than once a week. Contractor must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation for Project work. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-federal entity must report all suspected or reported violations to the federal awarding agency.

#### **FTA 18 CONSTRUCTION EMPLOYEE PROTECTIONS – CONTRACT WORK HOURS & SAFETY STANDARDS ACT**

##### **(for construction contracts that exceed \$150,000)**

Compliance with 40 U.S. C. Section 3701-3708, as supplemented by Department of Labor regulations, 29 C.F.R., part 5.

(1) Overtime requirements - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages - The RTD shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the

## Exhibit E

Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

### **FTA 19 CONSTRUCTION EMPLOYEE PROTECTIONS – COPELAND ANTI-KICKBACK ACT**

Compliance with Copeland “Anti-Kickback” Act (“Act”) requirements - Contractor shall comply with the following requirements:

(a) Section 1 of the Act, as amended, 18 U.S.C. § 874, applies to all Contracts:

(i) Whoever, by force, intimidation, or threat of procuring dismissal from employment, or by any other manner whatsoever induces any person employed in the construction, prosecution, completion or repair of any public building, public work, or building or work financed in whole or in part by loans or grants from the United States, to give up any part of the compensation to which he is entitled under his contract of employment, shall be fined under this title or imprisoned not more than five years, or both;

(b) Section 2 of the Act, as amended, 40 U.S.C. § 3145, applies to construction and repair Contracts exceeding \$2,000:

(i) In General.—The Secretary of Labor shall prescribe reasonable regulations for contractors and subcontractors engaged in constructing, carrying out, completing, or repairing public buildings, public works, or buildings or works that at least partly are financed by a loan or grant from the Federal Government. The regulations shall include a provision that each contractor and subcontractor each week must furnish a statement on the wages paid each employee during the prior week.

(ii) Application.— The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001; and

(c) U.S. DOL regulations “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States,” 29 C.F.R. Part 3, which are incorporated by reference in this contract.

(d) For additional requirements of the Act not specified in this Article, see preceding Article FTA 17 – Construction Employee Protections – Davis Bacon Act.

## Exhibit E

### **FTA 20 BONDING FOR CONSTRUCTION ACTIVITIES EXCEEDING \$150,000**

Contractor agrees to comply with the following bonding requirements and restrictions as provided in federal regulations and guidance:

(1) Construction. As provided in federal regulations and modified by FTA guidance, for activities implementing Project work that involve construction, it will provide bid guarantee bonds, contract performance bonds, and payment bonds.

(2) Activities Not Involving Construction. For activities Project work not involving construction, the Contractor will not impose excessive bonding and will follow FTA guidance.

### **FTA 21 SEISMIC SAFETY**

If this Contract for professional services involves the design of a new building or addition to an existing building, the Contractor agrees that any such new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 C.F.R. Part 41 and will certify to compliance to the extent required by the regulation. The Contractor also agrees to ensure that all work performed under this Contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

### **FTA 22 VETERANS EMPLOYMENT**

As provided in 49 U.S.C. § 5325(k), to the extent practicable, Contractor agrees and assures that each of its Third Party Participants:

(1) Will give a hiring preference to veterans, as defined in 5 U.S.C. § 2108, who have the skills and abilities required to perform construction work required under a Third Party Contract in connection with a Project work supported with federal assistance appropriated or made available for 49 U.S.C. chapter 53; and

(2) Will not require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee.

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## Exhibit E

### Provision 23 applies to NONCONSTRUCTION ACTIVITIES

#### **FTA 23 NONCONSTRUCTION EMPLOYEE PROTECTION – CONTRACT WORK HOURS & SAFETY STANDARDS ACT**

**(for all turnkey, rolling stock and operational contracts {except transportation services contracts and open market contracts} exceeding \$150,000.)**

The Contractor agrees to comply, and assures the compliance of each subcontractor, lessee, third party contractor, and other participant at any tier of the Project, with the employee protection requirements for nonconstruction employees of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 3701 *et seq.*, in particular with the wage and hour requirements of section 102 of that Act at 40 U.S.C. § 3702, and with implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provision Applicable to Nonconstruction Contracts Subject to the Contract Work hours and Safety Standards Act)," 29 C.F.R. Part 5.

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## Exhibit E

### Provisions 24 through 28 apply to TRANSIT OPERATIONS

#### **FTA 24 TRANSIT EMPLOYEE PROTECTIVE ARRANGEMENTS**

Public Transportation Employee Protective Arrangements. If the Grant Agreement or Cooperative Agreement for the Project indicates that public transportation employee protective arrangements required by U.S. DOL apply to public transportation operations performed in connection with the Project, the Recipient agrees to comply with the applicable requirements for its Project as follows:

- (1) Standard Public Transportation Employee Protective Arrangements. To the extent that the Project involves public transportation operations and as required by Federal law, the Recipient agrees to implement the Project in accordance with the terms and conditions that the U.S. Secretary of Labor has determined to be fair and equitable to protect the interests of any employees affected by the Project and that comply with the requirements of 49 U.S.C. § 5333(b), and with the U.S. DOL guidelines, "Section 5333(b), Federal Transit Law," 29 C.F.R. Part 215 and any amendments thereto. These terms and conditions are identified in U.S. DOL's certification of public transportation employee protective arrangements to FTA, the date of which appears in the Grant Agreement or Cooperative Agreement for the Project. The Recipient agrees to implement the Project in accordance with the conditions stated in that U.S. DOL certification. That certification and any documents cited therein are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement for the Project. The requirements of this Subsection 24.d(1) of this Master Agreement do not apply to Projects for elderly individuals or individuals with disabilities that are authorized by 49 U.S.C. § 5310(a)(2) or subsection 3012(b) of SAFETEA-LU, or to Projects for nonurbanized areas authorized by 49 U.S.C. § 5311; separate requirements for those Projects are contained in Subsections 24.d(2) and (3), respectively, of this Master Agreement.
- (2) Public Transportation Employee Protective Arrangements for Elderly Individuals and Individuals with Disabilities for the Elderly Individuals and Individuals with Disabilities Formula Program and Pilot Program. To the extent that the U.S. Secretary of Transportation has determined or determines in the future that employee protective arrangements required by 49 U.S.C. § 5333(b) are necessary or appropriate for a governmental authority sub recipient participating a Project authorized by 49 U.S.C. § 5310(b)(2) or subsection 3012(b) of SAFETEA-LU, 49 U.S.C. § 5310 note, the Recipient agrees to carry out the Project in compliance with the terms and conditions determined by the U.S. Secretary of Labor necessary to comply with the requirements of 49 U.S.C. § 5333(b), and the U.S. DOL guidelines, "Section 5333(b), Federal Transit Law," at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the U.S. DOL's certification of public transportation employee protective arrangements to FTA, the date of which appears in the Grant Agreement. The Recipient agrees to implement the Project in compliance with the conditions stated in that U.S. DOL certification. That U.S. DOL certification and any documents cited therein are incorporated by reference and made part of the Grant Agreement.
- (3) Public Transportation Employee Protective Arrangements for Projects in Nonurbanized Areas Authorized by 49 U.S.C. § 5311. The Recipient agrees to comply with the terms

## Exhibit E

and conditions of the Special Warranty for the Nonurbanized Area Program agreed to by the U.S. Secretaries of Transportation and Labor, dated May 31, 1979, U.S. DOL implementing procedures, and any revisions thereto.

### **FTA 25 CHARTER BUS OPERATIONS**

The Recipient agrees that neither it nor any public transportation operator performing work in connection with a Project financed under 49 U.S.C. Chapter 53 or under 23 U.S.C. §§ 133 or 142 will engage in charter service operations, except as authorized by 49 U.S.C. § 5323(d) and FTA regulations, "Charter Service," 49 C.F.R. Part 604, and any subsequent Charter Service regulations or FTA directives that may be issued, except to the extent that FTA determines otherwise in writing. Any charter service agreement required by FTA regulations is incorporated by reference and made part of the Grant Agreement or Cooperative Agreement for the Project. The Recipient understands and agrees that in addition to any remedy specified in the charter service agreement, if a pattern of violations of that agreement is found, the violator will be barred from receiving Federal transit assistance in an amount to be determined by FTA or U.S. DOT.

### **FTA 26 SCHOOL BUS OPERATIONS**

The Recipient agrees that neither it nor any public transportation operator performing work in connection with a Project financed under 49 U.S.C. Chapter 53, or under 23 U.S.C. §§ 133 or 142 will engage in school transportation operations for the transportation of students or school personnel exclusively in competition with private school transportation operators, except as authorized by 49 U.S.C. §§ 5323(f) or (g), as applicable, and FTA regulations, "School Bus Operations," 49 C.F.R. Part 605, and any subsequent School Transportation Operations regulations or FTA directives that may be issued, except to the extent that FTA determines otherwise in writing. Any school transportation operations agreement required by FTA regulations is incorporated by reference and made part of the Grant Agreement or Cooperative Agreement for the Project. The Recipient understands and agrees that if it or an operator violates that school transportation operations agreement, the violator will be barred from receiving Federal transit assistance in an amount to be determined by FTA or U.S. DOT.

### **FTA 27 DRUG USE AND TESTING**

The Contractor agrees to establish and implement a drug testing program that complies with 49 C.F.R. Part 40 and Part 655, and permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency of Colorado, or the Regional Transportation District, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 C.F.R. Part 40 and 655 and review the testing process. The Contractor agrees further to certify annually its compliance with Part 40 and 655 before December 31<sup>st</sup> of every year and to submit the Management Information System (MIS) reports no later than February 15<sup>th</sup> of every year to the Substance Abuse Testing Department, Regional Transportation District, 1660 Blake Street, Denver, CO 80202-1399. To certify compliance, the Contractor shall use the "Substance Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register.



## Exhibit E

### **FTA 28 ALCOHOL MISUSE AND TESTING**

The Contractor agrees to establish and implement an alcohol testing program that complies with 49 C.F.R. Part 40 and Part 655, and permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency of Colorado, or the Regional Transportation District, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 C.F.R. Part 40 and 655 and review the testing process. The Contractor agrees further to certify annually its compliance with Part 40 and 655 before December 31<sup>st</sup> of every year and to submit the Management Information System (MIS) reports no later than February 15<sup>th</sup> of every year to the Substance Abuse Testing Department, Regional Transportation District, 1660 Blake Street, Denver, CO 80202-1399. To certify compliance, the Contractor shall use the "Substance Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register.

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## Exhibit E

### **Provisions 29 through 30 apply to PLANNING, RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROJECTS**

#### **FTA 29 PATENT RIGHTS**

A. General. The Recipient agrees that:

- (1) Depending on the nature of the Project, the Federal Government may acquire rights when the Recipient (RTD) or third party participant produces a patented or patentable invention, improvement, or discovery.
- (2) The Federal Government's rights arise when the patent or patentable information is conceived under the Project, or reduced to practice under the Project.
- (3) When a patent is issued or patented information becomes available as described in the preceding paragraph A(1) of this Article, the Recipient agrees to notify FTA immediately, and provide a detailed report satisfactory to FTA.

B. Federal Rights. The Recipient agrees that:

- (1) Its rights and responsibilities, and those of each third party participant, in that invention, improvement, or discovery will be determined as provided by Federal laws, regulations, and directives, including any waiver thereof.
- (2) Unless the Federal Government determines otherwise in writing, irrespective of its status or that of any third party participant as a large business, small business, State government, State instrumentality, local government, Indian tribe, nonprofit organization, institution of higher education, or individual, the Recipient agrees to transmit the Federal Government's patent rights to FTA as specified in 35 U.S.C. 200 *et seq.*, and U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401).

C. License Fees and Royalties. As permitted by 49 C.F.R. Parts 18 and 19:

- (1) License fees and royalties for patents, patent applications, and inventions derived from Project are program income.
- (2) The Recipient has no obligation to the Federal Government with respect to those license fees or royalties, except for compliance with 35 U.S.C. 200 *et seq.*, which applies to patent rights developed under a federally funded research-type project, and as FTA determines otherwise in writing.

#### **FTA 30 RIGHTS IN DATA AND COPYRIGHTS**

A. Definition of Subject Data. As used in this Article, "Subject Data" means recorded information that:

- (1) Copyright. Are copyrighted or not copyrighted,
- (2) Delivery. Are delivered or specified to be delivered by the underlying Agreement, and

## Exhibit E

(3) Examples include, but are not limited to: computer software, standards, specifications, engineering drawings and associated lists, process sheets, manuals, technical reports, catalog item identifications, and related information.

(4) Exceptions. "Subject data" do not include financial reports, cost analyses, or other similar information used for Project administration.

B. General. The following restrictions apply to all Subject Data first produced in the performance of the underlying Agreement:

(1) Prohibitions. The Recipient (RTD) may not publish or reproduce Subject Data in whole or in part, or in any manner or form, or permit others to do so.

(2) Exceptions. The restrictions on publication of Subsection B(1) of this Article do not apply to publications or reproductions for the Recipient's own internal use, to an institution of higher learning, to the portion of the data that the Federal Government has previously released or approved for release to the public, or to the portion of the data that has the Federal Government's prior written consent for release.

C. Federal Rights in Data and Copyrights. The Recipient agrees as follows:

(1) License Rights. The Recipient must provide the Federal Government a license to "Subject Data" that is royalty-free, non-exclusive, and irrevocable.

(2) Uses. The Federal Government's license must permit it to reproduce the Subject Data, publish the Subject Data, otherwise use the Subject Data, and permit others to use the Subject Data for Federal Government purposes.

(3) Federal Government Purposes. As used in this Article, "for Federal Government purposes" means that the Federal Government may use its license only for its own direct purposes, and the Federal Government may not provide or otherwise extend to other parties, without the copyright owner's consent, its license to any Subject Data developed and funded at any tier through the underlying Agreement, and any rights of copyright to which the Recipient or third party participant purchases ownership using Federal funds.

D. Special Federal Rights in Data for Research, Development, Demonstration, and Special Studies Projects. In general, FTA's purpose in providing Federal funds for a research, development, demonstration, or special studies Project is to increase transportation knowledge, rather than limit the benefits of the Project to the Recipient and its third party participants. Therefore, the Recipient agrees that:

(1) Publicly Available Report. When the Project is completed, it must provide a Project report that FTA may publish or make available for publication on the Internet.

## Exhibit E

- (2) Other Reports. It must provide other reports pertaining to the Project that FTA may request.
  - (3) Availability of Subject Data. FTA may make available to any FTA Recipient or any of its third party participants at any tier of the Project, either FTA's copyright to the Subject Data or a copy of the Subject Data, except as FTA determines otherwise in writing.
  - (4) Identification of Information. It must identify clearly any specific confidential, privileged, or proprietary information submitted to FTA.
  - (5) Incomplete Project. If the project is not completed for any reason whatsoever, all data developed under the Project becomes "subject Data" and must be delivered as the Federal Government may direct.
  - (6) Exception. This Subsection D does not apply to an adaptation of automatic data processing equipment or program that is both for the Recipient's use, and acquired with FTA capital program funding.
- E. License Fees and Royalties. As permitted by 49 C.F.R. Parts 18 and 19:
- (1) License fees and royalties for copyrighted material or trademarks derived from the Project are program income.
  - (2) The Recipient has no obligation to the Federal Government with respect to those license fees and royalties, except for compliance with 35 U.S.C. 200 *et seq.*, which applies to patent rights developed under a federally funded research-type project, and as FTA determines otherwise in writing.
- F. Hold Harmless. Upon request by the Federal Government, the Recipient agrees that:
- (1) Violation by Recipient. Except as prohibited or otherwise limited by State law, it will indemnify, save, and hold harmless the Federal Government's officers, employees, and agents acting within the scope of their official duties, against any liability, including costs and expenses,
    - (a) If it willfully or intentionally violates any Proprietary rights, Copyrights, or Right of privacy,
    - (b) Occurring from any of the following uses of Project data: Publication, Translation, Reproduction, Delivery, Use, or Disposition.
  - (2) Violation by Federal Officers, Employees or Agents. The Recipient will not be required to indemnify the Federal Government for any liability described in the preceding paragraph F(1) caused by the wrongful acts of Federal employees or agents.
- G. Restrictions on Access to Patent Rights. Nothing in this Article pertaining to rights in data either:

## Exhibit E

- (1) Implies a license to the Federal Government under any patent, or
  - (2) May be construed to affect the scope of any license or other right otherwise granted to the Federal Government under any patent.
- H. Data Developed Without Federal Funding or Support. The Recipient understands and agrees that it may need to provide data developed without any Federal funding or support to FTA.
- (1) Protections. paragraphs A, B, C, and D of this Article do not apply to data developed without Federal funding, even though that data may have been used in connection with the Project.
  - (2) Identification of Information. The Recipient understands and agrees that the Federal Government will not be able to protect data developed without Federal funding or support from unauthorized disclosure unless that data is clearly marked "Proprietary" or "Confidential."
- I. Requirements to Release Data. The Recipient understands and agrees that the Federal Government may be required to release Project data and information the Recipient submits to the Federal Government as required by:
- (1) The Freedom of Information Act, 5 U.S.C. § 552,
  - (2) Another Federal law requiring access to Project records,
  - (3) U.S. DOT regulations, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations," specifically 49 C.F.R. § 19.36(d), or
  - (4) Other Federal regulations requiring access to Project records.
-

## Exhibit E

**Provision 31 applies ONLY to States and Organizations that are being funded directly by the State with FTA grant funds.**

**FTA 31 SPECIAL NOTIFICATION REQUIREMENT FOR STATES**

N/A

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## Exhibit E

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**MISCELLANEOUS SPECIAL REQUIREMENTS****FTA 32 ENERGY CONSERVATION****(applies to all contracts)**

Contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan, if any, issued in compliance with the Energy Policy and Conservation Act.

**FTA 33 SOLID WASTES/PROCUREMENT OF RECOVERED MATERIALS****(Contracts when procuring \$10,000 or more per year of items designated by EPA)**

The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. § 6962), including but not limited to the regulatory provisions of 40 C.F.R. Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 C.F.R. Part 247, procuring solid waste management services in a manner that maximizes energy and resource recovery and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

**FTA 34 CONFORMANCE WITH NATIONAL ITS ARCHITECTURE****(Contracts and solicitations for ITS projects)**

National Intelligent Transportation Systems Architecture and Standards. To the extent applicable, the Contractor agrees to conform to the National Intelligent Transportation Systems (ITS) Architecture and Standards as required by SAFETEA-LU § 5307(c), 23 U.S.C. § 512 note, and comply with FTA Notice, "FTA National ITS Architecture Policy on Transit Projects" 66 *Fed. Reg.* 1455 *et seq.*, January 8, 2001, and any subsequent further implementing directives, except to the extent FTA determines otherwise in writing.

**FTA 35 ADA ACCESS****(Contracts for rolling stock or facilities construction/renovation)**

- A. RTD must comply with: 49 U.S.C. § 5332, which states the Federal policy that elderly individuals and individuals with disabilities have the same right as other individuals to use public transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly individuals and individuals with disabilities; all applicable provisions of section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of disability; the Americans with Disabilities Act of 1990 (ADA), as amended; 42 U.S.C. § 12101 *et seq.*, which requires that accessible facilities and services be made available to individuals with disabilities; and the Architectural Barriers Act of 1968, as amended, 42 U.S.C. § 4151 *et seq.*, which requires that buildings and public accommodations be accessible to individuals with disabilities.

## Exhibit E

- B. All deliverable items provided by the Contractor for RTD under this Contract shall comply with the above-referenced laws as well as all other applicable federal, state and local regulations and directives and any subsequent amendments thereto.

### **FTA 36 ASSIGNABILITY CLAUSE**

#### **(Procurements through assignments)**

Neither RTD nor Contractor shall assign or transfer any of its rights or obligations hereunder without the prior written consent of the other.

### **FTA 37 ARCHITECTURAL ENGINEERING AND RELATED SERVICES**

When procuring architectural engineering or related services supported with federal assistance appropriated or made available for 49 U.S.C. chapter 53 or provided in any other law requiring the RTD Awards to be administered under 49 U.S.C. chapter 53, Contractor agrees to comply and assures that each of its Third Party Participants will comply with 49 U.S.C. § 5325(b).

### **FTA 38 DESIGN BUILD PROJECTS**

As provided in 49 U.S.C. § 5325(d), Contractor may use a design - build procurement to carry out its Project, provided that it complies with applicable federal laws, regulations, and requirements, and follows federal guidance.

### **FTA 39 AWARD TO OTHER THAN THE LOWEST BIDDER**

As permitted under 49 U.S.C. § 5325(c), Contractor may award a third party contract to other than the lowest bidder, if that award furthers an objective (for example, improved long-term operating efficiency and lower long-term costs) consistent with the purposes of 49 U.S.C. chapter 53 and any implementing federal regulations, requirements, or guidance that FTA may issue.

### **FTA 40 AWARD TO RESPONSIBLE THIRD PARTY CONTRACTORS**

Contractor agrees to award Third Party Contracts only to contractors able to carry out the procurement successfully, as provided in 49 U.S.C. § 5325(j), and before awarding a Third Party Contract, it will consider the proposed contractor's integrity, compliance with public policy, past performance, and financial and technical resources.

### **FTA 41 ELECTRONIC AND INFORMATION TECHNOLOGY**



## Exhibit E

Contractor agrees that reports or information it provides to or on behalf of the Federal Government will use electronic or information technology that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794d, and U.S. ATBCB regulations, "Electronic and Information Technology Accessibility Standards," 36 C.F.R. part 1194.

### **FTA 42      ACQUISITION BY LEASE**

Contractor agrees that if it intends to acquire Project property through a lease it will comply, as applicable, with 49 U.S.C. chapter 53 and section 3019 of the FAST Act

### **FTA 43      BID PROTESTS**

City agrees to provide to RTD, as part of RTD's annual or quarterly Milestone Progress Report to the FTA, with a list of all bid protests and appeals for solicitations or contracts in excess of \$500,000. Contractor also should be mindful of the requirement in Section 39, Disputes, that the RTD must promptly notify the FTA Chief Counsel, or FTA Regional Counsel 8, of significant current or prospective legal matters that may affect the Federal Government.

Exhibit F – CCD ROCIP Safety and Insurance Manuals



**DENVER**  
THE MILE HIGH CITY

Rolling Owner  
Controlled Insurance  
Program (ROCIP)

# Safety Manual

# Exhibit F

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## 1. INTRODUCTION & GENERAL INFORMATION

The City and County of Denver (CCD) has arranged for certain activities under this construction project to be insured under a Rolling Owner Controlled Insurance Program (ROCIP). The ROCIP Safety Manual was developed to ensure proactive safety processes are established and implemented on ROCIP projects to prevent incidents and injuries to all employees and the public while working on City and County of Denver projects. Contractors and subcontractors of any tier are responsible for full compliance with all applicable laws, statutes, ordinances, rules, regulations and/or orders of any public authority (federal, state, local) as they relate to safety of persons, environment, public, or property.

This ROCIP Safety Manual is not an attempt to reiterate applicable health and safety standards, instead is prepared to provide a uniform framework for safety and health management at City and County of Denver projects. Changes to these standards may be made during the duration of the construction contract and will become immediately binding and enforced, provided they are more stringent than existing requirements. All applicable OSHA, ANSI, NEC, and NFPA standards are incorporated into this program by reference.

Throughout the duration of this project, the Contractor and their subcontractors, of any tier, shall be responsible for administering their own safety program. Neither this document, nor the safety services provided by individuals associated with this project, is intended to serve as a substitute for the control and responsibility of the Contractor and Subcontractor to provide a safe work environment for their employees, staff and the public.

The Contractor is responsible for overseeing the safety of all employees, including their subcontractors, on the project. This is required regardless of a subcontractors' eligibility for coverage under the ROCIP program; however, this does not relieve the subcontractor of its safety responsibilities.

The Contractor and subcontractors must thoroughly review this document and the appropriate portions of the Contract Documents to understand the risks inherent in the project and the safety measures needed to adequately protect employees and the public from harm. The ROCIP has specific safety requirements that, in many instances, exceed current federal, state, or local safety and environmental standards. No accommodations will be made to Contractors and subcontractors, due to ignorance, regarding safety program requirements. The cost of compliance shall be borne solely by the Contractor and subcontractors. This document shall become part of the Contract Documents. The requirements contained herein are binding. Failure to comply with these requirements will be deemed as non-compliance or default of the contract. Payments of monthly pay applications may be withheld until compliance is deemed satisfactory. Failure to comply may result in removal from the project.

**The City and County of Denver reserves the right to make any changes and modifications to this document via bulletin, memo, or any other written communication.**

**ALL CONTRACTORS PERFORMING WORK ON A ROCIP PROJECT, REGARDLESS OF ELIGIBILITY FOR INSURANCE ENROLLMENT, MUST FOLLOW THE SAFETY REQUIREMENTS OF THE CONTRACT AND THIS MANUAL.**

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## 2. DEFINITIONS

The following acronyms and titles may not reflect the actual titles and acronyms in use by all entities on this project and do not have any force or effect beyond their use in the Safety Manual. Due to such differences in nomenclature among Owners and Contractors, the following are used throughout the ROCIP Safety Manual to establish the functional framework for the ROCIP Safety Program. Terms of the ROCIP govern where there is conflict with other referenced definitions.

- a. **Accident.** An undesired event or sequence of events causing injury, illness, property damage or loss of life.
- b. **Contractor.** The entity with which the City and County of Denver enters into this contract; or, any entity having overall responsibility for the performance of work on the construction site, who determines construction means and methods, and who supervises Subcontractors.
- c. **Contractor Safety Representative.** Safety professional, meeting minimum requirements and approved by CCD, assigned fulltime to the project to monitor the safety of Contractor employees and subcontractors under the scope of work of the contract.
- d. **CCD ROCIP Safety Team.** This is the management team that represents the safety and health interests of the ROCIP in the prevention of insurable loss on the City and County of Denver ROCIP projects. The team members are declared in Section 3.
- e. **Drug.** For the purpose of this policy, the term "drug" is assumed to include illicit drugs, misused or abused prescribed or over-the-counter medications, controlled substances, marijuana, and alcohol. The terms drug abuse and substance abuse may be used interchangeably.
- f. **Employee.** Person employed by an Employer as defined by this section.
- g. **Employer.** Firm or entity that has Employees working on the ROCIP site. The term Employer includes the Contractor and Subcontractors of all tiers.
- h. **Job Hazard Analysis (JHA).** A technique to identify the dangers of specific job steps in order to reduce the risk of injury to workers.
- i. **Near Miss Incident.** Incident that had the potential to cause harm or injury but because of circumstances resulted in no harm or damage.
- j. **ROCIP Broker/Administrator.** Arthur J. Gallagher Risk Management Services, Inc. herein referred to as the "ROCIP Administrator" or "Gallagher" providing risk management consulting and being a consultant for safety to the project.
- k. **ROCIP Insurer.** The insurance companies providing CCD ROCIP coverages.
- l. **Rolling Owner Controlled Insurance Program (ROCIP).** Owner's wrap-up insurance program which provides insurance coverage for eligible and enrolled owner's representatives, Contractors, and Subcontractors of any tier, working on City and County of Denver ROCIP project sites. The Owner and ROCIP Administrator identifies program participants.
- m. **Site-Specific Safety Program (SSSP).** The Employer's Site-Specific Safety Program prepared in accordance with the requirements of this document and the Contract.
- n. **Subcontractor.** Firm or other entity awarded work by a Contractor on the ROCIP project. Subcontractor as used herein shall apply to all tiers of Subcontractors, as well as vendors and service providers performing work for the benefit of the Contractor. For the purposes of the Safety Standards, vendors, suppliers, and service providers on the project for the furtherance of the project are covered by this definition and are subject to the provisions of the Safety Standards even though they may not be enrolled in the ROCIP.

**NOTE:** OSHA definitions apply for: authorized person; competent person; hole; qualified person, attendant, or operator; and walking and working surface.

## Exhibit F

### 3. CITY AND COUNTY OF DENVER ROCIP SAFETY TEAM DIRECTORY

Following is a list of key safety and loss control contacts for the CCD ROCIP.

#### City and County of Denver Key Contacts

##### CCD ROCIP Safety Team

Director, Risk Management	Devron McMillin	720.913.3345	<a href="mailto:Devron.McMillin@Denvergov.org">Devron.McMillin@Denvergov.org</a>
Risk Manager	Devron McMillin	720.913.3345	<a href="mailto:Devron.McMillin@Denvergov.org">Devron.McMillin@Denvergov.org</a>
ROCIP Safety Administrator	Kris Wilson		<a href="mailto:Kris.Wilson@Denvergov.org">Kris.Wilson@Denvergov.org</a>
ROCIP Safety Coordinator	Theresa Goodwin	303.907.4488	<a href="mailto:Theresa.Goodwin@Denvergov.org">Theresa.Goodwin@Denvergov.org</a>
	Group Email		<a href="mailto:CCDROCIPSafety@Denvergov.org">CCDROCIPSafety@Denvergov.org</a>

#### Gallagher Key Contacts – ROCIP Administrator/Insurance Broker

##### Safety & Loss Control

Ed Davis	303.601.1165	<a href="mailto:Ed_Davis@ajg.com">Ed_Davis@ajg.com</a>
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#### Zurich Key Contacts – ROCIP Insurer

##### Safety/Risk Engineering

Rick Zellen	720.737.8434	<a href="mailto:Rick.Zellen@zurichna.com">Rick.Zellen@zurichna.com</a>
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For enrollment, workers compensation/medical treatment authorization, or other claims questions, please refer to the ROCIP Insurance Manual and ROCIP Claims Guide.

**FOR ALL EMERGENCIES: CALL 911**

# Exhibit F

## 4. SAFETY RESPONSIBILITIES & SAFETY REPRESENTATIVE QUALIFICATIONS

### 4.1 Statement of Authority

All persons who come into the work area for any reason during construction will be required to comply with the established safety regulations that govern the ROCIP Project. The CCD ROCIP Safety Team, ROCIP Administrator, and ROCIP Insurer and shall directly review and manage the requirements of the ROCIP Safety Plan.

If the CCD ROCIP Safety Team finds the Contractor controlled areas of work or individuals in noncompliance with OSHA, the Site-Specific Safety Plan, ROCIP Safety Manual requirements, or any other applicable regulations, **CCD in its sole discretion shall have the authority to order immediate correction and to stop work.**

**Noncompliance with Contractor Site-Specific Safety Plan or this manual may be grounds for Contractor dismissal and/or employee(s) being forbidden entry onto any CCD project. All costs of correction shall be borne by the Contractor.** Nothing contained herein shall serve to relieve the Contractor of their liabilities and/or obligations to the requirements set forth by OSHA, or other applicable Federal, State and Local requirements. The most stringent regulation shall apply if a conflict arises in the interpretation of the safety requirements of the ROCIP Safety Manual, Federal, State, or Local Government regulations.

#### 4.1.1 CCD ROCIP Safety Team Responsibilities

The CCD ROCIP Safety Team is responsible for generating and maintaining a high level of commitment for safe operations among all personnel assigned to the project site. Responsibilities and duties of The CCD ROCIP Safety Team may include, but are not limited to, the following:

- a. Review and accept Site Specific Safety Plans and Task Specific Safety Plans, review and approve Contractor Safety Representative qualifications, and evaluate variance requests.
- b. Compile, follow-up, and maintain safety performance statistics for the project. Communicate information to the project's management to ensure they are informed of the safety program.
- c. Keep apprised of new regulations and developments to keep the safety policies and procedures current and effective. Update and disseminate ROCIP Safety Manual.
- d. Observe Contractors' and Subcontractors' activities to evaluate safety performance and make appropriate recommendations and ensure compliance with approved plans.
- e. Review and communicate methods and procedures to foster the highest level of accident prevention performance possible.
- f. Participate in Contractor Safety Representatives incident investigations as deemed necessary. Review all accident investigation and near miss reports to ensure thorough investigations were conducted to control future accidents and communicate lessons learned.
- g. Periodically attend Contractor safety toolbox meetings, orientations, and review JHA's to ensure content and quality are being achieved.
- h. Review and evaluate Contractors' safety program to ensure it meets the standards of this Manual and all approved pre-planning safety documents.

# Exhibit F

- i. Conduct periodic Contractor Safety Meetings to discuss current work activities, review ROCIP Safety Manual revisions or share lessons learned.

## 4.2 Contractor Safety Requirements

Contractors and Subcontractors, of any tier, have the explicit responsibility to perform work in accordance with the Contract Documents, federal law (including but not limited to both 29CFR1910 and 29CFR1926 statutes) and the City and County of Denver's ROCIP Safety Manual requirements. Before work can begin, the Contractor must have the following in place:

- a. Site Specific Safety Plan reviewed and accepted by the CCD ROCIP Safety Team;
- b. Contractor Safety representative accepted by the CCD ROCIP Safety Team;
- c. Enrollment in ROCIP Insurance Plan (see ROCIP Insurance Manual);
- d. Negative drug test results for all workers on file with Contractor;
- e. Completed Site Safety Orientation training for all workers and acknowledgement on file. Contractor will issue project sticker to be displayed on hard hat at all times.

## 4.3 Contractor Safety Representative

The Contractor shall assign a safety professional to the project fulltime, meeting the qualifications in Section 4.3.2, to monitor the safety of their employees and subcontractors under the scope of work of the contract. A contractor safety representative must be present for entire duration of work activities with the expectation that they spend most of the shift in the field to ensure adherence to safe work practices. More oversight may be requested by the City and County of Denver depending on contractor performance and adherence to safe work practices as observed by the City and County of Denver or their representatives during safety inspections.

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*NOTE: Variance to the requirements in Section 4.3 or 4.4 may be granted at the sole discretion of the CCD ROCIP Safety Team. Any variance must be negotiated prior to contract signing.*

### 4.3.1 Contractor Safety Representative Ratios and Shift Representation

If the manpower loading exceeds 150 employees on the project, a second fulltime safety professional shall be retained. If the project exceeds 450 employees, the Contractor will discuss with CCD the need for adding additional safety personnel to ensure the safety requirements of the ROCIP are fully met.

**A FULL-TIME SAFETY PROFESSIONAL ACCEPTED BY THE CCD ROCIP SAFETY TEAM MEETING THE MINIMUM QUALIFICATION OUTLINED BELOW SHALL BE ASSIGNED TO EACH SHIFT WHEN CONTRACTOR IS ENGAGED IN MULTIPLE SHIFTS.**

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## 4.3.2 Safety Representative Qualifications

The qualifications and resume of the Contractor's Safety Representative candidate(s) must be submitted to the CCD ROCIP Safety Team for review and acceptance 30 days prior to desired assignment date to the site.

**THE CCD ROCIP SAFETY TEAM WILL REQUIRE AN INTERVIEW WITH THE SAFETY REPRESENTATIVE CANDIDATE.**

**The Contractor Safety Representative must at a minimum:**

- a. Hold a Board of Certified Safety Professionals (BCSP) designation (CHST, ASP, CSP, OHST, GSP) with at least 4 years of full-time relevant construction safety and health experience; **or**
- b. Have a bachelor's degree in Safety Management or an equivalent engineering degree with at least 6 years of full-time relevant construction safety and health experience; **or**
- c. Have at least 12 years of relevant construction safety and health experience.

**AND have all the following training/knowledge:**

- a. Completed the OSHA 500 course for construction within the last 60 months, remaining current for the duration of the project.
- b. Provide proof of completion of a Red Cross or approved equal for Cardio-Pulmonary Resuscitation (CPR), First Aid, Automated External Defibrillation (AED), and blood-borne pathogens training.
- c. Completion of drug and alcohol reasonable suspicion training.
- d. Knowledge of and ability to fulfill safety representative's responsibilities set forth in this manual.

**IN ORDER TO DETERMINE 'RELEVANT' CONSTRUCTION SAFETY EXPERIENCE, A LIST OF PROJECTS, THEIR APPROXIMATE VALUATION AND SCOPE, AND THE SAFETY REPRESENTATIVE'S DURATION ON THE PROJECTS NEEDS TO BE SUBMITTED ALONG WITH THEIR RESUME AND COPIES OF ALL THEIR REQUIRED CERTIFICATIONS TO THE CCD ROCIP SAFETY TEAM.**

**THE CCD ROCIP SAFETY TEAM HAS SOLE DISCRETION REGARDING DISQUALIFICATION OF THE CANDIDATE BASED ON CREDENTIALS, EXPERIENCE, THE INTERVIEW, AND/OR PAST CCD PROJECT PERFORMANCE. QUALIFICATION OF THE CONTRACTOR SAFETY REPRESENTATIVE MAY BE REVOKED BY CCD AT ANY TIME FOR FAILURE TO FULFILL THE RESPONSIBILITIES OR PERFORM TO THE STANDARDS SET FORTH IN THIS MANUAL.**

## 4.3.3 Safety Representative Responsibilities

Specific responsibilities of the Contractor's Safety Representative include, but are not limited to the following:

### 4.3.3.1 Employee Safety Orientation, Training, and Instruction

- a. Conduct safety orientation sessions for all Contractor, Subcontractor, and CCD employees or representatives prior to them starting work on site.
- b. Participate in weekly toolbox safety meetings; assist field supervisors with meetings as requested.

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- c. Conduct monthly supervisor safety meetings, including safety rules and regulations.
- d. Participate in Job Hazard Analysis development and Pre-Task Planning activities.
- e. Instruct employees concerning special procedures (e.g. lock-out, excavation, confined space entry, etc.) as required by OSHA or this manual.
- f. Conduct regulatory training as required.
- g. Conduct emergency evacuation training.

## 4.3.3.2 Record Keeping

- a. Complete and maintain OSHA, state, federal, company, and project specific reports and retain for the duration of the project or as required by law.
- b. Complete incident investigations, including near misses, to include root cause analysis and lessons learned reports for distribution to Contractors, Subcontractors, CCD ROCIP Safety Team within 72 hours.
- c. Complete inspection reports.
- d. Maintain training documentation.
- e. Maintain drug test results for all employees on the project.
- f. Complete and process the CCD ROCIP safety and health reporting requirements. This includes but is not limited to inspections, incident/accident reports and training logs.

## 4.3.3.3 Safety Standards, Rules and Regulations Enforcement

- a. Authority to take immediate corrective action, including authority to stop work.
- b. Organizational freedom necessary to implement and enforce Subcontractor safety and health programs.
- c. Implement, maintain, and update, as required, conditions and project site specific safety policies and procedures.
- d. Interpret and implement site specific safety policies and procedures.
- e. Demonstrate, by example, proper safety behavior.
- f. Ensure that appropriate company disciplinary action is taken in response to unsafe behavior.

## 4.3.3.4 First Aid/Medical Treatment

- a. Ensure first aid supplies are adequate.
- b. Investigate accidents and complete incident analysis reports.
- c. Coordinate transportation of employees with minor injuries to Contractor's first aid station or designated medical facility.
- d. After ensuring treatment of the injured worker and securing the work site, inform the CCD ROCIP Safety Team immediately.
- e. Prior to medical treatment, provide the injured employee with the designated provider list found in the ROCIP Claims Guide. Ensure that the injured employee selects an authorized treatment facility. Employee must circle their choice on the document, sign/date, and return to the Contractor. See ROCIP Insurance Manual and Claims Guide.

## 4.3.3.5 General Responsibilities

- a. Keep the CCD ROCIP Safety Team apprised of any safety related issues that have or may develop.

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- b. Contractor Safety Representative shall review all safety submittals to ensure they meet contract requirements before they are submitted to CCD. All submittals are to come directly from the General Contractor. Submissions coming directly from subcontractors will not be accepted.
- c. Conduct daily work area safety inspections and provide results to the CCD ROCIP Safety Team upon request.
- d. Compile safety statistical information and send to the CCD ROCIP Safety Team.
- e. Attend all safety meetings as scheduled by CCD ROCIP Safety Team.

## 4.4 Subcontractor Safety Representative

Subcontractors of any tier are responsible for complying with all safety requirements addressed in the ROCIP Safety Manual, the Contractor's SSSP, along with applicable Federal, State and Environmental, Safety and Health rules and regulations. In the case of conflict, the most stringent applies.

### 4.4.1 Subcontractor Safety Representative Qualifications- Less than 50 employees

Each Subcontractor on site with a manpower loading less than 50 employees shall have an employee assigned as a safety representative meeting the following minimum requirements:

- a. Completed at least an OSHA 10 Construction Outreach Training Course within the last twenty-four (24) months before being assigned to this project,
- b. Provide proof of non-expired completion of a Red Cross or approved equal for Cardio–Pulmonary Resuscitation (CPR), First Aid, Automated External Defibrillation (AED), and blood-borne pathogens training course, and
- c. Received training on Weather-Related Illness and is required by qualification to train their employees on the subject.
- d. Completion of drug and alcohol reasonable suspicion training.

**NOTE:** This employee may be a working foreman or superintendent.

### 4.4.2 Subcontractor Safety Representative Qualifications- More than 49 Employees

When a Subcontractor's manpower loading is equal to or exceeds 50 employees, the Subcontractor is required to have a full time Subcontractor safety representative onsite. The qualifications for the full-time safety representative shall meet the following minimum requirements:

- a. Completed at least an OSHA 30 Construction Outreach Training Course within the last twenty-four (24) months before being assigned to this project.
- b. Provide proof of completion of a Red Cross or approved equal for Cardio–Pulmonary Resuscitation (CPR), First Aid, Automated External Defibrillation (AED), and blood- borne pathogens training course.
- c. Received training on Heat Illness and is required by qualification to train their employees on the subject.
- d. Completion of drug and alcohol reasonable suspicion training.

### 4.4.3 Subcontractor Safety Representative Responsibilities

Duties of the Subcontractor Safety Representative include the following regardless of manpower loading:



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- a. Participation in accident and incident investigation involving their work and employees.
- b. Have the right and authority to stop any and all hazardous work being performed by their employer whenever imminent danger to life and health exists.
- c. Organizational freedom necessary to implement and enforce Subcontractor's safety and health program and report to their own direct supervisor all cases of employees who, in their opinion, are not qualified for the work to which they have been assigned or who engage in unsafe practices.
- d. Attend safety meetings scheduled by Contractor or CCD ROCIP Safety Team.
- e. Counsel and train the employees when the Daily Pre-Task Planning does not adequately identify the key hazards and controls of the risk.

## 4.5 Field Supervisor Requirements

Field supervisors, typically referred to as foreman or superintendents, have the responsibility for overall training, control, and conduct of employees on site. As first line supervisors, their role in the safety and health program is crucial as they set the example by which their employees work.

### 4.5.1 Field Supervisor Qualifications

Field supervisors that are not acting as the Subcontractor Safety Representative must have completed the following training:

- a. An OSHA 10 Construction Outreach Program within the last 24 months or OSHA 30 Construction Outreach Program within the last 60 months
- b. Red Cross or approved equal for Cardio –Pulmonary Resuscitation (CPR), First Aid, Automated External Defibrillation (AED), and blood-borne pathogens training course
- c. Drug and alcohol reasonable suspicion training

### 4.5.2 Field Supervisor Responsibilities

The field supervisors' safety responsibilities include, but are not limited to:

- a. Authority to stop work when employees or are exposed to hazardous conditions or potentially hazardous conditions
- b. Capable of developing and leading JHA's, Daily Pre-Task Planning activities, and toolbox talks
- c. Conduct task specific safety training
- d. Capable of performing safety inspections and aiding incident investigations
- e. Capable of implementing the crisis management plan

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## 5. DRUG AND ALCOHOL TESTING AND EDUCATION REQUIREMENTS

The City and County of Denver (CCD) operates all projects as a drug-free work environment. Contractors and subcontractors of any tier will maintain a drug-free environment. All contractors and subcontractors are responsible for testing all employees who work on CCD projects for the presence of drugs or alcohol as well as providing a drug-free awareness program that educates them on the requirements of this manual and any applicable contractor policies.

CCD will pay the cost of pre-project drug testing. Contractors and subcontractors are responsible for payment for post-incident drug testing, reasonable suspicion drug testing, return to duty, or other testing mandated by contractor policy or applicable laws.

Contractors and subcontractors shall test their employees, as appropriate, throughout the construction process including pre-project testing (referred to as pre-employment testing), testing following an injury or accident in accordance with OSHA's guidance, reasonable suspicion, and to the extent necessary to implement drug-free work standards in accordance with DOT requirements or this manual. Contractors are responsible for ensuring that all their subcontractors drug test their employees prior to reporting to work on a project.

The CCD ROCIP Safety Team and Risk Management Department or their representatives have the right to audit the test records at any time to confirm that each employee who works on a project has been drug tested. It is at the Contractors discretion on how to track and maintain records, but they must be able to produce them within 24 hours from time of request.

**CONTRACTOR SHALL SUBMIT A  
SUBSTANCE ABUSE POLICY.  
SEE SECTION 5.1.1 FOR REQUIREMENTS**

**CONTRACTOR AND SUBCONTRACTOR EMPLOYEES ON ROCIP  
PROJECTS ARE HEREBY ADVISED THAT FULL COMPLIANCE WITH  
THESE POLICIES SHALL BE A CONDITION OF EMPLOYMENT AND  
CONTINUED EMPLOYMENT ON THIS OR ANY CCD  
CONSTRUCTION PROJECT.**

All records regarding employee drug testing will be maintained by the contractors and subcontractors in a manner consistent with Federal, State, and Local law.

### 5.1 Drug-Free Workplace Policy

Implementation and enforcement of this policy is subject to interpretations appropriate to Federal and State laws and requirements.

- a. Prohibition Against Unlawful Presence of Controlled Substances in the Workplace
- b. The unlawful possession, manufacture, distribution, dispensation, possession of controlled substances and/or drug paraphernalia or the illegal use of a controlled substance on the project premises including defined rest areas, contractor parking areas, in company vehicles or while engaged in company activities on the project is strictly prohibited. The use of controlled substances includes being "under the influence".
- c. Sanctions for Violation of the Drug-Free Workplace Policy
- d. Employees who violate the foregoing drug-free workplace policy and engage in the use, sale, possession or purchase of illicit drugs on the worksite shall be subject to disciplinary action up to and including termination of employment on the project; and, where necessary, restraining orders may prevail.

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## 5.1.1 Contractor Substance Abuse Policy

Contractor shall submit a substance abuse policy that outlines how they will meet the criteria of Section 5. Contractors may choose to allow subcontractors to participate in or duplicate their Substance Abuse Policy. The policy must contain the following:

- a. Statement of Purpose
- b. Statement of Policy
- c. Policy Administration including responsible parties
- d. Types of Drug & Alcohol Tests (Pre-employment, post incident, and reasonable suspicion)
- e. Types of Drugs included in testing (must meet minimum of pre-employment ROCIP standards)
- f. Transportation of employees to and from testing facility or in the event of a positive drug test
- g. Use of prescription drugs and over-the-counter drugs and self-disclosure requirements where use could impact safety of the project and controls contractor will use to ensure safety
- h. Recordkeeping of positive and negative results, understanding that they may be audited
- i. Training for employees on policy, drug and alcohol abuse, and resources available for employees
- j. Training for supervisors including recognizing signs and symptoms of drug abuse (reasonable suspicion) for a minimum of 120 minutes per annum.
- k. Right to Search
- l. Discipline, including dismissal from CCD projects for refusals, non-negative and positive tests
- m. Definitions
- n. Confidentiality and notification requirements, i.e. entities results will be shared with such as General Contractor, Project Owner, and Insurance Carriers.

## 5.2 Notification Requirements

Contractors will provide written notice when anyone on site has undergone testing for drugs or alcohol, excepting pre-employment, unless the result is non-negative. Notices must be sent to your assigned CCD Safety Team member and [CCDROCIPSafety@denvergov.org](mailto:CCDROCIPSafety@denvergov.org).

**If the result is negative, the contractor must submit the results prior to employee returning to the project.**

**CCD Safety must be notified of all positive, non-negative, or refusal results (including pre-employment) within 24 hours and include a copy of the results from the MRO.**

## 5.3 Required Drug Testing

Contractors and Subcontractors of any tier regardless of enrollment in the ROCIP Insurance program are responsible for testing all employees who work on the project for the presence of drugs or alcohol. ROCIP requires pre-employment, post-incident, reasonable suspicion, and return to duty drug testing as outlined in this section.

### 5.3.1 Pre-employment Drug Testing

All employees must receive negative results for a pre-employment drug screen before beginning work on the project. CCD will pay for the cost of pre-employment drug and alcohol testing. Any

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employee who fails the test or refuses to test will be disqualified from working on any current or future CCD construction project. Retesting of an employee who previously failed or refused a drug test will not be authorized. It is the Contractor's responsibility to confirm all project personnel, including subcontractor's employees, meet the qualifications of this part.

It is up to the Contractor to determine how pre-employment drug testing records will be maintained so that they may be audited by authorized parties while maintaining individual privacy and confidentiality. If audited, the Contractor will be required to demonstrate proof of a negative drug test result within 24 hours. Employees that do not have negative pre-employment drug tests on file (or if the Contractor cannot produce the records) shall be disqualified from working on CCD construction projects.

**NOTE:** Pre-employment drug tests must be on file and auditable for each project. Employees must go through the Contractor orientation and begin work within 30 days of the pre-employment drug test. The contractor must reimburse CCD for any drug test performed where the employee does not start within 30 days. Employees must be tested for each project and test results may not be transferred.

**NOTE:** They employee being tested will receive their results in a sealed envelope. They must bring this sealed envelope to the Contractors orientation and present to the safety representative.

## 5.3.1.1 Drug Screening Authorization Form

The Authorization form found in Appendix Q must be emailed to the clinic and CCD ROCIP Safety Team in advance of the employee visit.

**THE FORM MUST BE COMPLETED ELECTRONICALLY (NOT HANDWRITTEN) AND THE SUBJECT OF THE EMAIL LINE MUST INCLUDE EMPLOYEE NAME, CONTRACTOR NAME, AND PROJECT NUMBER.**

## 5.3.1.2 Pre-employment Drug Screening Locations

CCD has a specific list of approved medical providers for you to select from to accomplish pre-employment drug screening. Please see the full listing on the Drug Screen Requisition and Authorization Form (See Appendix Q) with addresses for each location.

**ONLY APPROVED LOCATIONS MAY BE USED FOR PRE-EMPLOYMENT DRUG SCREENING.**

**PRE-EMPLOYMENT DRUG SCREENING LOCATIONS VARY FROM APPROVED MEDICAL PROVIDERS FOR TREATING INJURED WORKERS.**

**REFER TO THE ROCIP CLAIMS GUIDE FOR DETAILS ON LOCATIONS FOR TREATING WORKERS COMPENSATION RELATED INJURIES**

## 5.3.2 Post-Incident and Reasonable Suspicion Testing

The cost of post-incident and reasonable suspicion testing shall be borne by the contractor. The contractor is also responsible for determining logistics of testing during hours which the designated clinics for ROCIP drug testing are closed. Testing must be a screen performed to the identified testing standards established for ROCIP pre-employment drug and alcohol test as carried out by the designated ROCIP drug testing provider (11 panel- Point of Care drug screen

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including THC, COC, AMP, METH, OPI, PCP, BZO, BAR, MDMA, OXY, MTD and BAT breath alcohol test).

Utilizing a third party not listed in this manual must be approved by CCD and outlined in the Contractor's Drug and Alcohol Policy. Contractors may not self-perform drug and alcohol tests. Contractor is solely responsible for ensuring compliance with any regulatory authority that may ensure validity of test or rights of the employee.

Employees reasonably suspected of being under the influence of drug(s), or otherwise in violation of this policy, will submit to a drug test as determined by the Contractor or CCD ROCIP Safety Team. The reasonable suspicion test should be performed as soon as possible, but no later than 12 hours after the determination to test has been made, or in accordance with federal regulations.

As soon as possible, but no later than 12 hours after an incident, a post-incident drug and alcohol test will be required of any employee whose performance did or may have contributed to the incident. The employer may also deem that a reasonable suspicion drug test needs to be performed based on their training. For the purposes of post-incident drug testing, "incident" is defined as follows:

- a. An event resulting in one or any combination of the following:
  - Death
  - Loss of consciousness
  - Injury requiring professional medical treatment
  - Disability which prevents the discharge of normal activities beyond the day of the accident
- b. Property damage, resulting in cost of recovery value, for loss of product and/or damage to the property of the ROCIP project or others, without regard to monetary value.

### 5.3.3 Return to Duty Testing

Employees will be subject to immediate dismissal for refusal to submit to testing upon return to duty, or if the employee tests positive upon return to duty. Return to duty is defined as an employee previously tested and accepting employment for the CCD ROCIP Project and who has left the project for a period of greater than 14 (fourteen) consecutive calendar days due to a work-related injury or illness.

## 5.4 Confidentiality

The ROCIP will carefully consider the expectations of individual privacy and confidentiality in retaining records under this policy. Except for the testing laboratory, employer, the ROCIP Safety Team, and the ROCIP Administrator, drug test results may not be divulged to anyone without the expressed written authorization of the tested individual, unless requested by state or Federal agencies as part of an accident investigation.

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## 6. SAFETY PRE-PLANNING REQUIREMENTS

This section of the Safety Manual draws attention to pre-planning requirements unique to this ROCIP program, that may or may not be included in standards of regulatory authorities. The Contractor must ensure they are familiar with this manual in its entirety when considering the safety scope of this project.

### 6.1 Pre-Planning Requirements



30  
DAYS

The SSSP is essential to the successful and consistent implementation of the ROCIP Safety Program. The Contractor and each Subcontractor will be responsible for costs to establish and maintain a safety program that meets or exceeds the requirements contained in this manual.

**A WRITTEN SITE-SPECIFIC SAFETY PLAN MUST BE SUBMITTED FOR REVIEW BY THE CCD ROCIP SAFETY TEAM AT LEAST 30 DAYS BEFORE MOBILIZATION.**

Each SSSP must be tailored to the risks of the project. Some projects involve a variety of complex hazards and require substantial SSSP development with comprehensive guidance.

- See model Site-Specific Safety Plan in Appendix A.

The Contractor must be prepared to discuss, in detail, the procedures to control the hazards likely to occur during major phases of the work, and the organizational assignments involved in administering the program. The list of required elements below is not exhaustive, and CCD may require the Contractor provide additional safety planning documents or provide more detailed information before acceptance of the SSSP.

**NOTE:** Subcontractors are required to develop their own SSSP and submit it to the Contractor. The Contractor is responsible for reviewing their Subcontractor's SSSP and maintaining the document for CCD ROCIP Safety Team review.



**AFTER THE CONTRACTOR SUBMITS THE WRITTEN SSSP, A MEETING MAY BE HELD TO REVIEW THE PROGRAM WITH THE CCD ROCIP SAFETY TEAM.**

**REVIEW AND ACCEPTANCE OF THE CONTRACTOR'S SSSP SHALL NOT IMPOSE ANY LIABILITY ON THE OWNER, BROKER, OR INSURANCE CARRIER.**

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The SSSP must address the following elements at a minimum (note additional task planning in Section 6.3 that may be required):

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Accountability/Responsibility of Key Line Personnel to include Safety Representative</li> <li>2. Statement of Contractor's Safety and Health Policy</li> <li>3. Identification of Competent/Qualified Persons</li> <li>4. Scope of Work Evaluation</li> <li>5. Hazard/Risk/Exposure Assessment</li> <li>6. Control Measures/Job Hazard Analysis/Pre-Task Planning Activities</li> <li>7. Subcontractor Daily Safety Audits/Inspections</li> <li>8. Subcontractor's Weekly Safety Planning – Weekly Look Ahead Plan</li> <li>9. Compliance Requirements and Policy</li> <li>10. Written Disciplinary Program</li> <li>11. Hazard Identification and Correction Process</li> <li>12. Training and Instruction</li> <li>13. New Employee Orientation</li> <li>14. Communication System</li> <li>15. Recordkeeping</li> </ol> | <ol style="list-style-type: none"> <li>16. Accident Investigation</li> <li>17. Crisis Management/Emergency Action Plan</li> <li>18. Site-Specific Medical Emergency Plan with Evacuation Map</li> <li>19. Hazard Communication Program</li> <li>20. Hazardous Material Use and Storage plan including Spill Prevention Plan (if applicable)</li> <li>21. Trenching and Shoring Plan (if applicable)</li> <li>22. Written 100% Fall Protection Plan (if applicable)</li> <li>23. Substance Abuse Program</li> <li>24. Respiratory Protection Program (if applicable)</li> <li>25. Weather-Related Illness Prevention Plan (if applicable)</li> <li>26. Hot Work Permit Procedure (if applicable)</li> <li>27. Silica Exposure Control Program (if applicable)</li> <li>28. Confined Space Entry Procedure (if applicable)</li> <li>29. Lockout/Tagout Procedure (if applicable)</li> </ol> |
|---|---|

## 6.1.1.1 Severe Weather Plan

Severe weather encompasses any weather-related event—tornado, severe thunderstorm, hurricane, flood, winter storm, temperature extremes—that poses a risk to life and property or impacts operations. The Contractor shall develop a plan that focus on ensuring employee safety and minimizing equipment/property damage. The plan may be included as part of the SSSP and shall include:

- responsibilities
- communications procedures
- mitigation measures
- preparedness activities
- response actions
- warning resources
- safety and logistical considerations

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The Contractor will establish procedures in the event of snow, sleet, freezing rain, and/or ice accumulation to provide safe access to the site, parking areas, walking surfaces and haul roads. The plan will include priorities for snow and ice removal of all sidewalks, parking lots, roadways, and designated parking areas on the project and identify responsible parties.

## 6.1.1.2 Weather-Related Illness Prevention Plan

Contractors/Subcontractors are required to establish a Weather-Related Prevention Plan to educate and monitor employees for heat/cold-related illness. Please refer to NIOSH and OSHA heat illness prevention websites.

At a minimum, this plan is to contain the elements listed below and submitted as part of the SSSP for review by the CCD ROCIP Safety Team:

- Training
- Water
- Shade
- Cooling/Warming Stations if necessary
- Monitoring the Weather
- Heat/Cold Procedures & Acclimatization (may include break frequency or job rotation)
- Clothing
- Worker monitoring
- Emergency Response

## 6.1.1.3 Hazard Communication Plan

Contractors are responsible for developing and implementing their own written Hazard Communication Program as part of the SSSP. They must also ensure the proper handling, labeling, use, and storage of these chemicals and provide access to Safety Data Sheets (SDS) for all employees.

An EPA ID number will need to be obtained for the hazardous wastes produced by the Contractors and/or Subcontractors.

As part of the written HAZCOM program, a site specific hazardous chemical list must be maintained. The CCD ROCIP Safety Team or another Contractor may request copies of the most current SDS on a chemical being used by other Contractors/Subcontractors.

## 6.1.1.4 Crisis Communication Plan

Contingency planning for crisis and emergency situations is accepted as good management practice and by accepting this fact, anticipating certain crisis scenarios management will minimize the potential damage from critical situations. Proposed workflow process that details the general crisis communications on the program. All steps in the crisis communication process will be done in consultation with CCD. CCD, unless otherwise identified, will be responsible for crisis communications. Each Contractor on the program is expected to have a component in the crisis communication plan that addresses the following:



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- Ensuring accurate and timely information is disseminated both internally and externally. (The Crisis Communication Plan shall be updated at least quarterly or when there are changes to responsible personnel, etc.).
- Preparing CCD, Program and Contractor staff to respond in a crisis by identifying roles and responsibilities
- Coordinating effectively with existing CCD protocol and other agencies.

The plan shall also include information on:

- a. Crisis Communications Operations
- b. Crisis Communications Center
- c. Crisis Communications Team
- d. Roles and Responsibilities
- e. Emergency Contact Phone Tree
- f. Crisis Tasks
- g. Media Briefing
- h. On Site Crew Response
- i. Crisis Communications Tools
- j. Crisis Communication Workflow

The Program Management Team Strategic Communications Lead, in coordination with Contractors (if necessary), under the direction of CCD Director of Communications will administer the crisis communication plan.

The project shall hold at least two mock emergency drills per year. Tabletop exercises where possible crisis situations that may arise shall be discussed at least once monthly during progress meetings. Minutes of the meetings shall be retained.

## 6.2 Pre-Work Hazard Mitigation Planning Requirements

### 6.2.1 Daily Pre-Task Planning and Job Hazard Analysis

Daily pre-task planning enables Contractor field supervisors and employees to participate in a discussion regarding the day's activities, associated risks, and the relevant control measures. Contractor and Subcontractor's foremen or assigned competent persons shall complete a daily pre-task plan and review it with all workers.

The daily pre-task plan may include JHA(s) and shall be kept with the foreman during the shift and then retained on file for a minimum of 90 days.

It is the responsibility of the Contractor's project superintendent and safety representative to ensure a job hazard analysis is completed for all work tasks before work commences. The JHA must be used by the field supervisor/foreman to participate in discussions with employees during daily pre-task planning. If new or previously unidentified hazards are identified during the operation, the Contractor must stop the task, modify the plan, and review the new plan with all impacted personnel.

The daily pre-task plan and JHAs shall be made available on-site to employees and produced upon request by the CCD ROCIP Safety Team, Administrators, or Insurers.

- See Appendix B for sample JHA form and example.

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- See Appendix C for Daily Pre-Task Plan sample form.

## 6.2.2 Two-Week Look Ahead High-Risk Activity and Mobilization Report

Contractors are required to submit Appendix D every Thursday by close of business to the CCD ROCIP Safety Team to report on upcoming high-risk activities for the entire project. The report must be submitted in Excel and cannot be altered.

## 6.2.3 Subcontractor Pre-Mobilization Meeting

The Contractor will conduct a Subcontractor pre-mobilization safety meeting at the worksite on or before mobilization to review the Subcontractor's job hazard analysis, discuss site safety issues and requirements, and address any special concerns. The Contractor shall present their approach to managing safety on high-risk tasks. The sample Subcontractor Premobilization Safety Meeting checklist in Appendix E can be used to discuss and document this meeting. All attendees shall acknowledge understanding by their signature, and the Contractor shall retain the meeting minutes for the duration of the project. The following are the minimum required attendees:

- Contractor's project manager, safety representative, and supervisors
- Subcontractor's safety representative and competent persons



**CONTRACTORS ARE REQUIRED TO INVITE THEIR CCD ROCIP SAFETY TEAM REPRESENTATIVE TO ALL MEETINGS, HOWEVER, ACTUAL ATTENDANCE WILL BE BASED ON SCHEDULING AVAILABILITY.**

## 6.3 Task Specific Pre-Planning Requirements

The below list of required task specific pre-planning requirements is not exhaustive. CCD may, in its sole discretion, require additional pre-planning or pre-work meeting requirements based on Contractor safety performance, prior adherence to safety plans, safety audit results, previously unidentified risks, work sequencing that may introduce new risks, or any other condition that results in unique safety hazards or increased risk. All Task Specific Pre-Plans must be submitted and accepted by CCD ROCIP Safety Team before work commences.

### 6.3.1 Crane Operations

#### 6.3.1.1 Critical Lift Plans

The Critical Lift Plan in Appendix F is required to be completed, approved in writing by the Contractor and submitted for review by the CCD ROCIP Safety Team seven working days prior to critical lifts taking place if:

- The gross load exceeds 75% of the crane's total lifting capacity
- The gross load at any point during the lift exceeds 75% of the crane's lifting capacity.
- The lift requires multiple cranes.
- The load will be swung over occupied areas, unprotected plant, equipment, or utility service.
- The lift is performed in proximity of live electrical lines.
- Hoisting of personnel.



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DAYS**

# Exhibit F

**NOTE:** The Critical Lift Plan must be specific for the crane brought on site by the Contractor. If a different model/type of crane is brought on site, then the lift plan will be voided. In this case, another lift plan must be submitted for the specific crane to be used on site.

## 6.3.1.2 Crane Operators

Crane operators must be certified by an accredited third-party testing entity prior to operating the type of crane assigned. Crane operator certification must be submitted to the CCD ROCIP Safety Team prior to crane assembly/operation. There are two ways that an equipment operator can be qualified or certified and meet ROCIP Safety requirements:

- a. A certificate from the National Commission of Certification of Crane Operators (NCCCO), or
- b. Qualification from the employer through an accredited third-party testing organization.

The crane operator shall not be responsible for hazards or conditions that are not under their direct control and that adversely affect the lift operations. Whenever the operator has doubt as to the safety of crane operations, the operator shall stop the crane's functions in a controlled manner. Lift operations shall resume only after safety concerns have been addressed or the continuation of crane operations is directed by the lift supervisor.

**NOTE:** Crane operator credentials must be provided to the CCD ROCIP Safety Team seven working days prior to any lift for review and acceptance.

## 6.3.1.3 Third-Party Inspection

A third-party inspector must oversee the erection of any crane being assembled on site. All cranes requiring assembly onsite must be inspected and certified by a third-party inspector prior to use. Any deficiencies noted must be corrected prior to any lift activities.

Where cranes do not require assembly before inspection, third-party inspections must be conducted off-site within the last 90 days prior to mobilization to the worksite. Any identified deficiencies must be corrected before the crane is brought onsite. Inspection documentation must be provided to the CCD ROCIP Safety Team after crane assembly or pre-mobilization to site and prior to operation.

## 6.3.1.4 Shared Space Agreement

When two Contractors/Subcontractors have common or shared airspace with the potential for two crane booms and/or associated rigging to collide, a Shared Space Agreement must be developed by the two affected Contractors and made available to the CCD ROCIP Safety Team.

- See Appendix G for sample Shared Space Agreement.



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# Exhibit F

## 6.3.2 Elevated Work

### 6.3.2.1 Written Elevated Work Plan

Preparing and following a written, site specific elevated work plan is required for employees working at heights of six feet or more, including during steel erection. The plan must be submitted to the CCD ROCIP Safety Team seven working days in advance of upcoming work for review and approval. Changes to the plan must be discussed with the CCD ROCIP Safety Team. At a minimum, the plan will include:

- a. Names of competent and qualified persons for fall protection systems and scaffolding.
- b. Identification of the specific call hazards in the work area (including location of fall hazards).
- c. Methods to be used for fall arrest or fall restraint. See 10.2 for engineering requirements.
- d. Equipment to be used and design of fall protection systems, scaffolding, or guardrails.
- e. Phasing plans that identify which call prevention/protection methods will be used for specific tasks.
- f. Overhead hazard protection measures; including tool tethers or canopy protection for employees and/or public.
- g. Description of rescue methods and equipment.
- h. Enforcement and the disciplinary actions for non-conformance.



**A MEETING WILL BE HELD BETWEEN THE CCD ROCIP SAFETY TEAM AND THE CONTRACTOR TO DISCUSS THE DETAILS OF SITE-SPECIFIC ELEVATED WORK PROTECTION PLAN PRIOR TO COMMENCEMENT OF WORK ACTIVITY.**

## 6.3.3 Lock-Out Tag-Out

### 6.3.3.1 Lock-Out Tag-Out Written Procedure

A written lock-out tag-out procedure is required at all times.

### 6.3.3.2 Lock-Out Tag-Out Coordination Meetings

When one or more employees of another Contractor or Subcontractor may be exposed to danger in the event power is either interrupted or restored unexpectedly contractor must hold a coordination meeting with all affected Contractors and Subcontractors, of any tier, at least 24 hours in advance of the lock-out.



**YOU MUST INFORM YOUR ASSIGNED MEMBER OF THE CCD ROCIP SAFETY TEAM 24 HOURS IN ADVANCE OF THE MEETING. THEY MAY ATTEND THE MEETING OR MONITOR THE ACTUAL LOCK-OUT OPERATIONS**



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DAYS**

# Exhibit F

## 6.3.4 Confined Space



### 6.3.4.1 Confined Space Identification and Entry Plan

The Contractor or Subcontractor performing confined space entry shall submit an exposure-specific Confined Space Entry Procedure to the CCD ROCIP Safety team seven calendar days prior to entry for review. It must include at a minimum, the following elements:

- a. Contractor shall identify all confined spaces.
  - All confined spaces on CCD property are considered “permit-required confined spaces”
  - Permit-required confined space must be posted with signs stating Danger: Permit Confined Space. Do Not Enter.
- b. How the employer will implement the measures necessary to prevent unauthorized entry;
- c. Identification and evaluation of the hazards of permit spaces before employees enter them;
- d. Equipment needed to perform a safe entry operation;
- e. Procedures for atmospheric testing of the space;
- f. Provision of at least one attendant outside the space;
- g. Provision for responding to emergencies;
- h. Description of rescue method and equipment to be used;
- i. Designation of all persons with active roles (e.g. entrants, attendants, persons who test and monitor) and provision of required training;
- j. Procedures for summoning rescue and emergency services;
- k. System for the preparation, issuance, use and cancellation of entry permits;
- l. The system developed and implemented for the closing off the permit space and cancellation of entry permits;
- m. Procedures to coordinate operation where more than one Contractor (such as a Subcontractor) is involved;
- n. Procedure for evaluation and correction of entry operations when the Contractor has reason to believe that the program is not sufficiently protective; and
- o. The mechanism by which the confined space permit entry program is reviewed.

### 6.3.4.2 Entry Notification Requirements

The CCD ROCIP Safety Team member assigned to the project must be notified of all confined space entries prior to the beginning of work. The following information must be provided:

- a. Name of contractor or subcontractor performing the entry;
- b. Number of entrants;
- c. Name and mobile phone number of the attendant or entry supervisor;
- d. Start time of the entry operation;
- e. Duration of confined space operation;
- f. Work to be performed in the confined space.

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## 6.3.4.3 Denver Fire Department Confined Space Permit

Contractors must also obtain a confined space entry permit from the Denver Fire Department prior to entering a confined space. This permit will be valid for the duration of the project and must be posted at or near the space. Contractors are responsible for meeting the requirements needed to obtain the fire department permit.

## 6.3.4.4 Designation of Rescue Method

Where entry must be made for rescue, OSHA allows rescue to be performed either with the facility's trained in-house rescuers or by contracting to an outside rescue service. The Contractor must identify on the permit the type of rescue to be performed for each confined space.

- a. In-house Rescue: The Contractor's rescuers must have extensive training. No employee is authorized to enter a space to rescue an entrant unless they have had extensive training in personal protective and rescue equipment. This includes actual practice in making simulated rescues and CPR.

NOTE: A trained attendant may not enter a space to make a rescue until another attendant has arrived.

- b. Outside Rescue: If the Contractor is relying on an outside agency to perform a rescue, the rescue service must be informed of the hazards they may confront, and the rescue service must have access to all permit spaces so that the rescue service can develop appropriate rescue plans and practice rescues before a rescue must be made.

**IF THE CONTRACTOR IS EXPECTING TO USE AN OUTSIDE AGENCY TO PERFORM RESCUE, THEY MUST HAVE AVAILABLE A WRITTEN AGREEMENT BETWEEN THE AGENCY AND THE CONTRACTOR. THE CONTRACTOR WILL OBTAIN WRITTEN VERIFICATION FROM THE RESCUE SERVICE, PRIOR TO EACH ENTRY THAT THEY WOULD BE READILY AVAILABLE TO RESPOND IN A TIMELY MANNER**

## 6.3.5 Hot Work

### 6.3.5.1 Hot Work Permits

Contractors shall obtain a hot work permit from the Denver Fire Department, to be renewed annually.

### 6.3.5.2 Hot Work Permit Procedure

The Contractor will develop and submit a hot work permit procedure as part of the SSSP and include provisions at least as stringent in Section 10.18 of this manual.

## 6.3.6 Traffic Control

### 6.3.6.1 Traffic Management Plan

A Traffic plan shall be developed in accordance with the Colorado Department of Transportation and the Manual of Uniform Traffic Control Devices (MUTCD) and submitted for review and comment 14 calendar days prior to work commencing to the CCD Safety Team. The plan shall include:

- a. Traffic conditions;

# Exhibit F

- b. Existing traffic controls;
- c. Physical features;
- d. Visibility restrictions;
- e. Access to private property, businesses, and activities;
- f. Pedestrian traffic control where applicable;
- g. Means of mitigating any adverse effect upon the blind or other physical handicapped;
- h. The type, number, and location of traffic control devices required for the work;
- i. Typical MHTs to be utilized for phasing/short duration closures; and
- j. Safety measures to be used during traffic control set-up and traffic switches.

## 6.3.7 Silica

### 6.3.7.1 Silica Exposure Control Program

Contractors and/or Subcontractors shall submit a written silica exposure control program for review by the CCD ROCIP Safety Team seven calendar days prior to performing work that may expose employees. The requirements for managing silica dust shall be followed and included in the written plan. In addition to their own employees and subcontractors, Contractors are expected to protect nearby workers and the public from silica exposure. The written plan must include:

- a. Statement of the Contractor's commitment to prevent silicosis and to comply with OSHA's standards.
- b. Describe portion of OSHA 1926.1153(c)(1) to be utilized OR provide a description of air monitoring to determine silica levels generated to provide a basis for:
  - Selecting engineering controls,
  - Selecting respirator protection,
  - Selecting work practices to reduce dust, and
  - Determining if a medical surveillance program is necessary.
- c. Description of engineering controls which are proposed for the project to eliminate or reduce the amount of silica in the air and the build-up of dust on equipment and surfaces.
- d. Description of less hazardous materials than crystalline silica which are proposed for abrasive blasting and automatic blast cleaning machines or tools to be utilized.
- e. Description of high-efficiency particulate air filter vacuums to be used by employees and work practices to vacuum, hose down, or wet clean work areas and equipment.
- f. Description of warning signs and other barriers proposed to identify work areas where respirable silica may be present and to limit access to only authorized employees.
- g. Description of personal protective equipment and clothing to be provided to employees and changing facilities if necessitated by the level of silica dust exposure.
- h. Certification of training provided to employees about health effects of silica exposure, engineering controls and work practices that reduce dust, the importance of maintenance and good housekeeping, as well as the proper type and fitting of respirators; and include a statement that the employee is or is not enrolled in a medical surveillance program.



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## 6.3.8 Respiratory Program

Contractor and Subcontractors who require or permits employees to wear a respirator must have a written respiratory protection program as part of the SSSP. The written respiratory protection program shall establish standard operating procedures concerning the use and maintenance of respiratory equipment. In addition to having such a written program, the Contractor must also be able to demonstrate that the program is enforced and updated as necessary. The written respiratory protection program shall be available to employees on site and include:

- a. A written statement of company policy, including assignment of individual responsibility, accountability, and authority for required activities of the respiratory protection program.
- b. Written standard operating procedures governing the selection and use of respirators.
- c. Respirator selection (from NIOSH/MSHA approved and certified models) based on hazards to which the worker is exposed.
- d. Medical examinations of workers to determine whether they may be assigned an activity where negative pressure respiratory protection is required.
- e. Employee training in the proper use and limitations of respirators (as well to evaluate the skill and knowledge obtained by the worker through training).
- f. Respirator fit testing.
- g. Regular cleaning and disinfecting of respirators.
- h. Routine inspection of respirators during cleaning, and at least once a month and after each use for those respirators designated for emergency use.
- i. Storage of respirators in convenient, clean, and sanitary locations.
- j. Surveillance of work area conditions and degree of employee exposure (e.g., through air monitoring.).
- k. Regular inspection and evaluation of the continued effectiveness of the program.



## 7. SAFETY TRAINING AND MEETING REQUIREMENTS

### 7.1 Employee Orientation Training

One of the requirements of the Contractor and their safety representatives or designees is to conduct a complete safety orientation for anyone who will be working/entering the construction site including but not limited to employees, subcontractors, inspectors, and CCD representatives and employees. The orientation is required before an employee can enter the construction area. The purpose of the orientation is to provide employees an awareness of what they can expect and what is expected of them on site. At a minimum, the orientation will include:

- a. Employee jobsite safety and health requirements and policies
- b. Review of site-specific safety plan to include emergency procedures/phone numbers, Crisis Management Plan, and Severe Weather Plan
- c. Employer and employee rights and responsibilities
- d. Hazard communication
- e. Fall Protection (if applicable)
- f. PPE and work attire
- g. Personal conduct and disciplinary actions
- h. Authorized access and parking
- i. Good housekeeping practices
- j. Daily Pre-Task Planning and Job Hazard Analysis (JHA)
- k. Return to work programs, incident (to include near misses) reporting procedures, workers compensation requirements, and designated provider information.
- l. Drug free workplace and substance abuse testing.
- m. Injury and illness reporting

All employees will complete the Project Safety Orientation Training Acknowledgement Form in Appendix J at the end of the orientation training session. A copy of the completed form must be maintained and provided to CCD ROCIP Safety upon request.

### 7.2 Tour & Visitor Guidelines

Non-construction personnel, visitors, or groups shall always be accompanied by an authorized representative of CCD, the Contractor, or other designee that is familiar with the site hazards of the project. All visitors must wear the required PPE.

Before entering the project, all visitors shall receive a brief safety orientation from the Contractor Safety Representative on site-specific hazards expected to be encountered during the tour or visit. The number of escorted persons on tours should be proportionate to the degree of the hazards and operating space involved but may not exceed ten (10) visitors per authorized group representative.

**THE "WAIVER AND RELEASE"  
PROVIDED IN APPENDIX I SHALL BE  
SIGNED BY ALL VISITORS PRIOR TO  
ACCESSING THE PROJECT. THIS APPLIES  
TO CONTRACTOR EMPLOYEES  
TOURING THE SITE NOT ASSIGNED TO  
THE PROJECT.**

# Exhibit F

## 7.3 Regulatory Training

The Contractor is responsible for providing or ensuring effective training has been provided for any and all employees working on the project as required by any regulatory authority having oversight of the work or employer and as outlined in this Manual.

## 7.4 Weekly Safety Toolbox Meeting

Each employee shall attend a contractor's weekly safety toolbox meeting. Contractors must document the toolbox meeting on the Weekly Toolbox Safety Attendance Roster at the end of each week's meeting and maintain a copy onsite for review by the CCD ROCIP Safety Team.

- See Sample Weekly Toolbox Safety Meeting Report in Appendix L.

## 7.5 Weekly Joint Safety Meeting

The Contractor Safety Representative and designated members of the respective staff must participate in scheduled weekly safety meetings. The meetings must review the effectiveness of the Contractor's safety effort, resolve health and safety issues relating to current or future operations, and provide a forum for developing the two-week look ahead schedule. CCD may include this in other weekly meetings, such as weekly construction progress meetings.

## 7.6 Supervisory Safety Meetings

The Contractor must conduct regularly scheduled (at least monthly) supervisory safety meetings for all levels of job supervision. The Contractor will maintain a summary report containing subject matter and signatures of all attendees and make it available for review by the CCD ROCIP Safety Team.

## 7.7 Incident Review with CCD ROCIP Safety Team

When notified by the CCD ROCIP Safety Team, near miss incidents, recordable injuries/illnesses, builders' risk, and general liability incidents will require Contractor/Subcontractor management personnel to meet and review the findings of incident investigation and resolutions. The Contractors and Subcontractors Project Manager (if applicable), Safety Representative(s), involved supervisor/foremen and employee(s), and witnesses may be required to attend and present investigative findings, causes, underlying factors, and corrective actions.

## 7.8 ROCIP Safety Meetings

A meeting may be held to review project safety performance with the CCD ROCIP Safety Team and Contractor's Project Manager and Safety Representative on a periodic basis, as determined necessary by the CCD ROCIP Safety Team.

# Exhibit F

## 8. SAFETY REPORTING AND INSPECTION REQUIREMENTS

### 8.1 Post-Incident Reports

#### 8.1.1 Incident Notification

The Contractor shall report all incidents by phone immediately to the CCD Project Manager or designee and the assigned CCD ROCIP Safety Team member.

#### 8.1.2 Incident and Near Miss Investigations

All incidents, whether they involve injury or not (“near-miss”) must be reported to the CCD ROCIP Safety Team immediately. The Contractor and Subcontractor Safety Representative shall immediately investigate and document the incident appropriately. The preliminary report must be completed and submitted to the CCD ROCIP Safety Team within twenty-four hours of the incident. The final investigative report and supporting documentation is due five calendar days after the date of the incident or near- miss incident.



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**THE FINAL INVESTIGATION MUST BE SENT TO YOUR ASSIGNED CCD ROCIP SAFETY TEAM MEMBER AND [CCDROCIPSAFETY@DENVERGOV.ORG](mailto:CCDROCIPSAFETY@DENVERGOV.ORG) WITHIN 5 DAYS OF THE INCIDENT.**

The Contractor Safety Representative is expected to provide a professionally written narrative with the following elements:

- a. Facts of the incident including but not limited to: date, time, names of employees involved, witnesses, company, job title, injury or damage specifics;
- b. Sequence of events before, during, and after the event;
- c. Analysis of event and list of causative factors; and
- d. Corrective actions implemented or to be implemented.

Most incidents and near-miss incidents relate to system failure rather than individual. The Contractor must have an open and fair reporting system so that employees can report problems without fear of reprisal. Lessons learned from accidents, incidents and near-miss incidents will be shared with employees.

- See sample accident investigation forms in Appendix M.
- See Section 9.2 for Lesson Learned Program Requirements
- See Section 9.4 for Employee Near Miss Reporting Program Requirements

### 8.2 Jobsite Safety Inspections

The Contractor’s safety representative will conduct and document daily jobsite inspections of work site to evaluate compliance with SSSP, ROCIP Safety Manual, and regulations and identify and correct jobsite hazards. Inspection reports must be documented daily and be made available to the CCD ROCIP Safety Team for review.

# Exhibit F

A member of the Contractor's management group (Project Manager, Field Supervisor, Foreperson, etc.) must attend and participate in at least one jobsite inspection per week. Attendance must be documented.

CONTRACTOR MAY BE DIRECTED TO USE A SOFTWARE PROGRAM OR SOFTWARE-AS-A-SERVICE (SAAS) SOLUTION THAT WILL ENABLE THE CONTRACTOR TO PERFORM JOBSITE SAFETY AUDITS AND MEASURE THE EFFECTIVENESS OF THEIR SAFETY PROGRAMS. ALL SOFTWARE COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

## 8.3 Contractor's Monthly Safety Report

The Contractor is responsible for providing leading and lagging indicators for their project to the CCD ROCIP Safety Team. Contractors are required to submit Appendix P the first Tuesday of the following month to the CCD ROCIP Safety Team. The report must be submitted in Excel and cannot be altered.

## 8.4 Safety Observations

The CCD ROCIP Safety Team will provide written notice of work activities that are not in compliance with the established safety policies and procedures. If a Contractor or Subcontractor receives a notice, they must immediately correct the hazard, document the corrective action, or reason for delayed abatement, and return the report to the CCD ROCIP Safety Team within 24 hours.

The ROCIP Broker and Insurer are also committed to the success of ROCIP projects. They may at their discretion and chosen timeframe perform safety assessments of the project. It is a best practice during these observations to have the Contractor Safety Representative and/or Superintendent in attendance. These assessments will result in a written record of their findings. If deficiencies are found, the Contractor is to immediately correct the hazard, document the corrective action, or reason for delayed abatement, and return the report to the CCD ROCIP Safety Team within 24 hours from time of delivery.

## 8.5 OSHA Inspections

Inspections by OSHA compliance officers may be initiated for many reasons, including employee complaints, serious or fatal accidents, special emphasis programs or planned audits. When a Contractor or Subcontractor receives notification of an inspection, contact the CCD ROCIP Safety Team so a representative of the CCD ROCIP Safety Team can be present during the opening conference, inspection and closing conference. It is the policy of the City and County of Denver to fully cooperate with OSHA compliance officers.

## 8.6 Miscellaneous Inspections

Inspections may also be conducted by other interested CCD parties such as but not limited to Environmental, Denver Fire Department or other Federal, State or Local agencies. Deficiencies found regarding life safety or that will negatively impact CCD operations must be corrected immediately.

# Exhibit F

## 9. MISCELLANEOUS SAFETY PROGRAM REQUIREMENTS

### 9.1 Safety Awareness

Communication and awareness are essential to developing a proactive project safety culture. The goal of the safety awareness program is to raise awareness of day-to-day risks, hazards, and exposures in the field and drive employee engagement. The Contractor is responsible for developing and submitting innovative ideas for improving safety awareness. Safety awareness program initiatives have included:

- a. Project specific safety stickers
- b. Volunteer safety stewards
- c. Safety posters
- d. Days at Zero signs at entrances, lunchrooms, etc.
- e. Guest speakers for employee meetings
- f. Banners addressing specific hazards on the project
- g. Whiteboards for employees to identify Today's Biggest Risk in This Area
- h. Employee-led safety committees
- i. Foremen and Superintendents completing "Foundations for Safety Leadership" training
- j. Methods for employees to report safety hazards on the job site

### 9.2 Lessons Learned

The goal of this program is to share and use experience-based information to promote the recurrence of desirable activities and prevent the recurrence of undesirable activities. All Contractors and Subcontractors are expected to plan and execute their work based on best available practices. Through their work experiences, all personnel are expected to identify opportunities for improvement and best practices and share these with their colleagues using the form in Appendix O. Actions taken as a result of a Lesson Learned may include:

- a. Corrective actions taken as a result of the analysis of an actual experience
- b. Preventive actions taken to prevent a negative situation from occurring
- c. Improvement actions taken to improve the efficiency and safety of operations

Lessons Learned Programs include two basic processes:

- a. A development process that includes identification, documentation, validation, and dissemination of a Lesson Learned.
- b. A utilization and incorporation process that includes identification of applicable Lessons Learned, distribution to the CCD ROCIP Safety Team, identification of actions as a result of the Lesson Learned, and follow-up to ensure that appropriate actions were taken.

### 9.3 Stretch and Flex Program

The Contractor will implement a stretch and flex program that is conducted prior to the start of each shift and after the lunch break where all employees will participate, to include Subcontractors.

### 9.4 Employee Near Miss Reporting Program

A "near miss" is an unplanned event that did not result in injury, illness, or damage, —but had the potential to do so. Only a fortunate break in the chain of events prevented an injury, fatality or damage.

# Exhibit F

Although human error is commonly an initiating event, a faulty process or system invariably permits or compounds the harm and should be the focus of improvement.

Blank Near Miss Report forms are to be made readily available onsite to employees to report near misses. It is the responsibility of the Contractor to encourage near miss reporting, investigate and report findings to CCD ROCIP Safety Team.

- See sample Near Miss Report Form in Appendix K.
- See Section 8.1. for Contractor investigation and reporting requirements

## 9.5 Employee Discipline & Enforcement

The ROCIP has established various rules and regulations, which serve as guidelines to acceptable employee behavior. In addition, specific job site rules may be established to meet the needs of the project. In either case, the rules and regulations of the ROCIP, and jobsite rules, are subject to change, without prior notice, at the sole discretion of the CCD ROCIP Safety Team.

All employees need to be aware of and abide by the ROCIP and Contractor's work rules and regulations. Rules have been developed to assist the efficient operation of the Project and for the benefit and safety of all employees and the general public. In general, any employee found to be in violation of ROCIP Project rules will be subject to disciplinary action, including immediate suspension or permanent discharge.

The following is a description of the ROCIP Project policy for dealing with discipline and termination:

- a. Corrective discipline is normally the responsibility of the job foreman or superintendent. One purpose of discipline is to motivate an employee to change their behavior. Discipline can be effective in helping an employee develop a more acceptable level of job performance.
- b. In the event discipline is considered, the foreman or superintendent will identify the severity of the problem and determine the appropriate level of discipline, recognizing that the seriousness of offenses may vary. When violations of a less serious nature occur, a discussion between the employee and the supervisor will often be sufficient.
- c. In the case of more serious violation, a written warning will be issued. On some occasions, because of the seriousness of the offense, a written warning may be given even though a verbal warning has not been issued. Certain other offenses will be of such a serious nature that they will be grounds for immediate suspension and /or discharge.
- d. Verbal or written warnings are often appropriate for minor infractions and first-time offenses. A warning should include an explanation of the problem, which has been identified, with an opportunity for the employee to respond.
- e. Discharge of an employee will be considered if the desired change in an employee's conduct is not accomplished through prior actions.
- f. Employee misconduct may be of such a high level of seriousness that immediate termination will result. Examples of more serious misconduct include, but are not limited to, violation of the Substance Abuse Policy, blatant disregard for personal and public safety, disregard of the ROCIP Safety Plan, fighting, theft and falsification of records.
- g. In any given case, the CCD ROCIP Safety Team or the Contractor may find it appropriate to impose greater or lesser disciplinary action, based on individual circumstances.

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Nothing in this policy should be construed as limiting the discretion to impose any level of discipline at any time, up to and including discharge, as circumstances warrant.

Nothing in this policy alters an employee's status as an "at will" employee or creates any contractual rights, either expressed or implied. This Policy will be applied in a matter that is consistent with the requirements appropriate to local, state and federal laws.

# Exhibit F

## 10. SAFETY PROVISIONS

The safety provisions in this section may meet or exceed OSHA or other regulatory requirements. Recognizing that local, state, and federal regulations may change, in the event of a conflict between the ROCIP Safety Manual and any regulatory authority, the more stringent standard prevails. See applicable pre-planning requirements in Section 6.

### 10.1 Cranes

Crane operators and riggers must be given the opportunity to pre-inspect crane lift and load placement areas. If loads are transferred onto or within a building structure, the Contractor must identify safe, structurally suitable lift and drop zone locations, including assessment of potentially occupied areas and subterranean utility systems. Notification, and evacuation if warranted, of occupied areas under lift and drop zones must occur prior to lift.

#### 10.1.1 Crane Assembly/Disassembly

Work is to be directed by an A/D (Assembly/Disassembly) director. The A/D director must meet the criteria for both a “competent person” and a “qualified person,” which are defined terms in this rule, or must be a “competent person” assisted by a “qualified person.”

- a. The A/D director must understand the applicable procedures.
- b. The A/D director must review the procedures immediately prior to beginning work unless they understand the procedures and have used them before for that equipment type and configuration.
- c. The A/D director must ensure that each member of the crew understands their tasks, the hazards of the tasks, and any hazardous positions or locations to avoid and be documented on the Pre-Task Planning sheet.
- d. Address hazards associated with the operation, including 12 specified areas of concern: site and ground conditions, blocking material, proper location of blocking, verifying assist crane loads, boom & jib pick points, center of gravity, stability upon pin removal, snagging, struck by counterweights, boom hoist brake failure, loss of backward stability, and wind speed and weather.
- e. The A/D director must verify all capacities of any equipment used, including rigging, lifting lugs, etc.
- f. Any lifting accessory must be designed by a professional engineer, with design criteria available on site, and capacities legibly marked on the device.

#### 10.1.2 Qualified Riggers

Employers must use qualified riggers during hoisting activities for assembly and disassembly work. Additionally, qualified riggers are required whenever workers are within the fall zone and hooking, unhooking, or guiding a load, or doing the initial connection of a load to a component or structure.

Contractors using riggers shall make available upon request, proof of documentation supporting the expertise of their qualified rigger.

#### 10.1.3 Qualified Signal Person Requirements A signal person is required when:

- a. The point of operation is not in full view of the operator.



# Exhibit F

- b. The operator's view is obstructed in the direction the equipment is traveling.
- c. Either the operator or the person handling the load determines that a signal person is needed because of site-specific safety concerns.

Contractor must use one of the following options to ensure that a signal person is qualified:

- a. Third party qualified evaluator. The signal person has documentation from a third- party qualified evaluator showing that they meet the qualification requirements.
- b. The employer's qualified evaluator (not a third-party) assesses the individual, determines the individual meets the qualification requirements, and provides documentation of that determination. This assessment may not be relied on by other employers.

Employers must make the documentation of the signal person's qualifications available at the worksite in paper form for review by the CCD ROCIP Safety Team. The documentation must specify each type of signaling (e.g., hand signals, radio signals, etc.) for which the signal person is qualified under the requirement of ASME B30.5-2007 and ASME B30.3- 2009.

## 10.1.4 Outriggers and stabilizers

When outriggers or stabilizers are used or are necessary:

- a. The Contractor must evaluate the soil bearing capacity at the lift site to ensure that the crane, including the maximum intended loads is compatible with the location and placement of the crane. Review of any underground installations shall be part of the evaluation.
- b. Outriggers and stabilizers must be fully extended or, if permitted by manufacturer procedures, deployed as specified in the load chart.
- c. Outriggers must be set to remove equipment weight from the wheels.
- d. Outrigger floats, if used, must be attached to the outriggers; stabilizer floats, if used, must be attached to the stabilizers.
- e. Each outrigger or stabilizer must be visible to the operator or to a signal person during extension and setting.
- f. Outrigger and stabilizer blocking must be placed under the float/pad of the jack or, if there is no jack, under the outer bearing surface of the outrigger or stabilizer beam. Blocking must also be sufficient to sustain the loads and maintain stability and must be properly placed, per manufacturer's specifications.
- g. Horizontal distance for crane setup from an excavation must be greater than the depth of the hole.

## 10.1.5 Work Platforms Suspended from Cranes

The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous or is not possible because of structural design or worksite conditions.

**NOTE:** Contractor shall submit a written variance request to use a suspended personnel work platform to the CCD ROCIP Safety Team identifying the rationale for selecting a suspended personnel work platform and explanation why conventional methods would be more hazardous or infeasible.



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Prior to the use of a work platform suspended from a crane, the Contractor and/or Subcontractor will complete the Suspended Personnel Platform Checklist in Appendix H for each such operation and will maintain a file documenting its operation. Each record is good only for lifts made from a single crane set-up location. Traveling, repairs or modifications of the crane will require a new record. Each record is to:

- a. Be initiated by the supervisor of the employee who will be working from the platform
- b. Describe the work to be performed and its exact location
- c. List all required inspections, certifications, tests, and pre-lift meetings
- d. Be signed by the crane operator, rigger, and initiating supervisor
- e. Note the name of the person who will flag or signal the crane operator
- f. Remain with the crane while the personnel hoist is in progress
- g. Section 4 (Weight Calculation Sheet) of the Suspended Personnel Work Platform Checklist must be submitted to the CCD ROCIP Safety Team for review 7 days in advance of scheduled work.

## 10.2 Elevated Work - Fall Protection

Contractors and Subcontractors of any tier shall provide an appropriate fall prevention or fall protection system whenever employees are exposed to falls in excess of six feet or higher. Examples of exposures include, drilled shafts, steel erection, walking/working surfaces, etc. Controlled access zones are not permitted as appropriate means of fall prevention or protection on this project. All fall protection equipment must be inspected by employees before each use. This equipment shall also be inspected by a competent person at least monthly and documented. Damaged and worn equipment must be removed from service and the project site immediately.

### 10.2.1 Types of Fall Protection Systems

- a. Personal fall arrest system is a means used to arrest an employee in a fall from a work level. It consists of an anchorage, full body harness, and connectors.
- b. Positioning device system allows an employee to be safely supported on an elevated vertical surface (such as a wall) and work with both hands free. The positioning device is not to be used as a primary anchor point.
- c. Warning line system is a barrier erected to warn employees that they are approaching an unprotected edge. It also designates an area in which work may not take place without the use of a guardrail, personal fall arrest system or a safety net to protect employees. The warning line must be a minimum of 15 feet from the unprotected edge.
- d. The use of safety monitors is prohibited.
- e. Guardrail system is a barrier erected to prevent employees from falling to lower levels. All guardrails must meet the requirements of 29CFR1926.502.
- f. Safety net system can be used when workplaces are more than 25 feet above the ground, water surface or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or a safety harness is impractical.

### 10.2.2 Safety Harness

The only permissible fall arrest system on this project is a full body harness, subsystem and components meeting ANSI requirements. In order to maintain 100 percent fall protection, two lanyards may be required. The use of body belts is prohibited.

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Safety harnesses must be secured to an anchor point, preferably overhead, of substantial capacity capable of supporting at least five thousand pounds per worker attached (e.g. pipe, structure, cable, or rope lifeline). Anchorage not secured overhead may require additional sharp or leading-edge protection. Anchorages must be engineered and drawings available at the work location.

## 10.2.3 Lanyards and Lifelines

Lanyard and lifeline selection will be determined by the type of work as well as the environmental conditions. If lanyards, connectors or lifelines may be damaged by welding, chemical cleaning, sandblasting, or sharp edges, either protect the components or use a more appropriate type of securing system.

Lanyards and lifelines must incorporate or be used with an appropriate deceleration device. Deceleration devices include rope grabs, rip-stitch lanyards, specially woven lanyards, tearing or deforming lanyards, automatic self-retracting lifelines and lanyard, etc., which dissipate or otherwise limit the energy imposed on an employee during fall arrest. Lanyards and lifelines must only use locking snap hooks. Under no circumstances may two lanyard snap hooks be connected to each other.

Once in use, the system's effectiveness is to be monitored by a qualified person. In some cases, a program for cleaning and maintaining the system may be necessary. Anchor points, other than those installed by equipment manufacturers, must be inspected and approved by a qualified person.

Horizontal lifelines (HLL) and catenary lines shall be designed by a registered professional engineer. A copy of the design shall be maintained at the work location where the HLL is in place. HLLs shall be installed and maintained, per the design, by a competent person.

- **Horizontal Lifeline and Catenary Line Fall Distance.** The primary factor that is critical to the design of HLL or catenary line system is calculating the dynamic point loading and deflection of the line and end connection points. Other factors that must be accounted for include freefall of the worker, the deceleration distance of the worker's shock-absorbing lanyard or retractable lifeline and any other considerations that increase the worker's total fall distance. The sum of these factors shall not be so great that the worker can contact an obstruction or lower level. The registered professional engineer or manufacturer of an HLL or catenary line system shall provide a method of calculating minimum clearances for temporary systems that can be installed in multiple configurations.
- **Horizontal Lifeline and Catenary Line Designed Load Factor.** When HLL's or catenary lines are used, the Contractor shall include in their fall protection plan the appropriate and specific engineered calculations for the system based on the number of workers attached. The load requirement is often confused with the 5,000-pound OSHA requirement for personal fall arrest systems (PFAS). The Contractor shall take into consideration in the design of the HLL and catenary line, the maximum arresting force on a worker's lanyard may be greater than 1,800 pounds depending on the line's geometry, angle of sag, the lines elasticity and the dynamic deflection to the end loads at the anchorage points or stanchions.

**NOTE:** Catenary lines shall be elevated, not at or below walking level, unless a variance is granted and approved in writing before the execution of the contract. This includes steel work.

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## 10.2.4 Training

Contractor must provide a fall prevention training program for each employee who might be exposed to fall hazards. The training program must include recognition of the hazards of falling and procedures to follow to minimize these hazards. Training materials must be reviewed to verify that each employee has been trained, as necessary, by a competent person knowledgeable in the following areas:

- a. The nature of fall hazards in the work area;
- b. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
- c. The use and operation of guardrail systems, restraint systems, personal fall arrest systems, safety net systems, warning line systems, CAZS, and other protection to be used;
- d. The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs;
- e. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection;
- f. The role of employees in fall protection plans;
- g. The requirements contained in 29 CFR 1926 Subpart M.

Contractor must maintain a written certification record of employee training on site at all times for review. The record must contain the following information:

- The name or other identity of the employee trained
- The date(s) of the training;
- Topics reviewed; and
- Trainer and trainee signatures

## 10.3 Scaffolding

All scaffolds and platforms must meet the following requirements:

### 10.3.1 General Requirements

- a. Scaffolds shall be erected, moved, dismantled or altered only under the supervision and direction under a competent person qualified in scaffold moving, erecting, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.
- b. The competent person will determine the feasibility and safety of providing fall protection for employees erecting or dismantling support scaffolds. The Contractor is required to provide fall protection for employees erecting or dismantling support scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.
- c. Scaffolds six (6) feet or more above the ground or floor are to be completely decked and have handrails, mid-rails and toe-boards installed. If for some reason, a platform or scaffold cannot be equipped with standard handrails or completely decked, safety harnesses must be worn and properly tied off.
- d. Chain guardrails on scaffolding are not permitted.
- e. Overhead protection for employees on a scaffold is required if they are exposed to overhead hazards.

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- f. Barricade the area beneath the scaffold and post “working overhead” signs in all approach directions.
- g. Materials will not be stored on scaffolding, excepting supplies needed for immediate use. All debris and tripping hazards will be removed immediately.
- h. Contact the CCD ROCIP Safety Team if any special scaffolding issues arise.

## 10.3.2 Rolling Scaffolds

- a. No one is to ride on a rolling scaffold while it is being moved.
- b. All materials and tools must be secured prior to moving a rolling scaffold.
- c. No rolling scaffolds will be utilized to support other scaffolds.

## 10.3.3 Scaffold Planking

- a. Paint or stamp scaffold planks within 12” on each end or edge to denote use for scaffold decking only.
- b. Use only 2” X 10” or 2” X 12” scaffold grade material for scaffold planking.

## 10.3.4 Scaffold Tagging

The most effective means of communication between the scaffold builder and the scaffold user is a scaffold tag. The tagging procedures are as follows:

- a. The crew that erects the scaffold must complete and attach the appropriate scaffold tag.
- b. The scaffold tag must be placed at eye level on or near the access ladder, so it is easy to locate and plainly visible.
- c. If the scaffold needs to be altered in any way, the person who signed the tag must be contacted to authorize the change and re-tag if necessary.
- d. An untagged scaffold must not be used.
- e. Scaffolds shall be inspected and documented by a competent person before each shift. Scaffolds passing inspection shall have a green tag applied with the date of inspection and the inspector’s signature.
  - A green "Scaffold Use" tag shall be used for pre-shift inspections. Note: This tag shall be attached by the qualified person upon completion of the scaffold erection.
  - A yellow tag is completed and attached to scaffolds that cannot be erected with all the components complete. The yellow tag allows the erecting crew to note what portion of the scaffold is incomplete and cautions the user. A yellow tag also informs the user fall protection may be required.
  - A red tag means the scaffold is being dismantled not yet completely erected or for some reason not safe and shall not be used.

## 10.4 Scissor Lifts

Fall protection inside scissor lifts may be required by the manufacturer or the Contractor. “Required” is when the word “shall” or “must” is incorporated in the manufacturer’s operator’s manual and/or instructions. The scissor lift should not be used as a means of transfer material from the lift to another location. Employees shall always stand firmly on the floor of the scissor lift work platform and shall not sit or climb on the edge of the rails or use planks, ladders, or other devices to elevate themselves within the basket. The area below shall be demarcated in the case of overhead hazards.

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Scissor lifts must be inspected prior to each shift by the operator using the lift. This will be documented on a standard inspection form supplied by contractor who is responsible for having the lift on the project. Daily inspection records shall be available for review with the lift for the duration of the work shift and maintained for duration of project.

**NOTE:** Scissor lifts cannot be moved or driven to another location without lowering the work platform first. Short movements for positioning the lift are exempted.

## 10.5 Mobile Elevating Work Platforms (MEWP- formerly Aerial Lifts)

A full body harness and lanyard shall be worn by persons working in MEWP and the fall protection system shall be attached to the manufacturer's approved anchorage point on the boom or basket of an aerial lift. It is the responsibility of the user to review the manufacture's operator's manual for approved tie-off locations.

- a. Fall protection shall not be secured to an adjacent pole, equipment or structure when work is being performed from the basket of the aerial lift.
- b. Employees shall always stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices.
- c. The area below shall be demarcated in the case of overhead hazards.
- d. MEWPs must be inspected prior to each shift by each operator using the lift. This will be documented on a standard inspection form supplied by the contractor who is responsible for the Boom Lift. Daily inspection records shall be available for review with the lift for the duration of the work shift and maintained for the duration of the project.

**NOTE:** Boom lifts/aerial lifts cannot be moved or driven to another location without lowering the basket first.

## 10.6 Floor and Roof Openings

Floor and roof hole covers shall be installed and maintained by the Contractor creating the hole. In the event a Contractor alters or removes a hole cover to complete work, they shall replace it, or make it safe, prior to leaving the work area. The covers must be capable of supporting twice the maximum intended load, secured against displacement or lifting, and labeled as a "hole" or "cover".

## 10.7 Ladders

The purpose of this policy is to establish minimum expectations for personnel working with portable ladders. This policy applies to all work performed by Contractor's and their Subcontractors including, but not limited to the following activities: construction, installation, demolition, remodeling, relocation, refurbishing, testing, servicing or maintenance of equipment or machines, and any time ladders are required.

### 10.7.1 Fall protection

All personnel using fall protection must be properly trained. If a job being performed on a ladder is rendered more hazardous using personal fall protection, then the employee must:

- a. Ascend/descend the ladder, maintaining at least three points of contact with the ladder at all times
- b. Maintain their center of gravity between the rails while performing work on the ladder
- c. Always face the ladder while working or ascending and descending

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## 10.7.2 General Requirements

- a. **Only Class 1A or 1AA fiberglass and wood ladders are allowed on site.** Metal ladders (other than fixed building ladders) are prohibited on the CCD Project.
- b. Use a ladder for its intended purpose ONLY.
- c. Inspect ladder prior to use according to manufacturer's recommendations.
- d. Tag and dispose of defective ladders immediately.
- e. Identify every ladder with company name.

## 10.7.3 Usage

- a. Ladders shall be used only on stable and level surfaces. All ladders must have slip resistant feet.
- b. Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement.
- c. The area around the top and bottom of a ladder shall be kept clear and shall not be used for storage of unattended materials.
- d. The top of a straight ladder shall be placed with the two rails supported equally, unless it is equipped with a single support attachment.
- e. Straight/extension ladders shall extend a minimum of 3 rungs or 36" above the surface to be accessed and shall be secured. Where supplying long-term access, walk through extensions with self-closing gates must be used.
- f. Folding step ladders shall ONLY be used in the fully open position, with spreaders locked.

## 10.7.4 Storage

- a. Ladders are to be stored in a secure manner that will not allow them to fall.
- b. Storage methods:
  - Chained together upright
  - Laid down flat stacked in a manner so they cannot tip/fall. Maximum of 4 stacked on top. (Head to toe)
  - On supported wall racks designated for ladder storage
- c. When shift work is complete, the ladders will be returned to a designated storage area.

## 10.7.5 Job Built Ladders.

Job built ladders shall comply with ANSI A14.4 – Safety Requirements for Job Made Ladders

## 10.8 Excavations and Trenching

Excavation and trenching are among the most hazardous construction operations. Excavations are defined as any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. A trench is defined as a narrow underground excavation that is deeper than it is wide and is no wider than 15 feet.

Contractors shall never enter an unprotected trench. **Trenches 4 feet deep or greater require a protective system.** Refer to OSHA 29 CFR 1926 Subpart P for soil type definitions and protective system requirements.

- a. **All soils will be classified as Type C soil** when designing protective systems, unless a geotechnical survey is conducted determining that the soil is more stable than Type C.

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- A copy of the geotechnical report and letter must be present at the location of the excavation activity
- b. Regardless of soil type, the Contractor must provide a competent person with demonstrated soil classification experience to be on site during any excavation and trenching activity. The competent person shall be responsible for observing soil conditions during all phases of excavation. If the competent person determines that the soil has become less stable than the original classification determined by the geotechnical survey, they shall have the duty and authority to stop work and require that additional protective measures be implemented.

Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/ or approved by a registered professional engineer.

There are different types of protective systems. Sloping involves cutting back the trench wall at an angle inclined away from the excavation. Shoring requires installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins. Shielding protects workers by using trench boxes or other types of supports to prevent soil cave-ins. When design/selecting a protective system, the Contractor must consider many factors: soil classification, depth of cut, water content of soil, changes due to weather or climate, surcharge loads (e.g. spoil, other materials to be used in the trench) and other operations in the vicinity.

Trenches must be inspected daily and as conditions change by a competent person prior to worker entry to ensure elimination of excavation hazards. Safe access and egress must be provided by the Contractor to all excavations including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations 4 feet or deeper. These devices must be located within 25 feet of all workers.

Heavy equipment shall be kept a safe distance away from trench edges. Surcharge loads must be kept at least 2 feet from trench edges. **Contractors are not permitted to work under raised loads.**

Prior to beginning any excavation, digging, trenching or drilling operation, Contractors or Subcontractors, of any tier, must ensure that all underground utilities have been located and verified by the responsible parties. Testing shall be performed for low oxygen, hazardous fumes and toxic gases.

## 10.8.1 Underground Utility Damage Prevention Work Plan

Underground Utility Damage Prevention. The Contractor is responsible for complying with all OSHA regulations related to underground utility damage prevention. The Contractor shall take all reasonable steps necessary to make certain that all active, abandoned, or unknown utilities are identified. Such steps are to include the utilization of an individual or firm acceptable to the Contractor and knowledgeable in Subsurface Utility Engineering (SUE) techniques, and competent to perform utility designation in conformance with the National Utility Locating Contractors Association (NULCA) Standard 101 for Professions Competence Standards for Locating Technicians or other written standard acceptable to the CCD ROCIP Safety Team.

### 10.8.1.1 Preparation

- a. All existing underground utilities depicted on the drawings, (which include but are not limited to: power, control, and communications cables; telephone, water and sewer lines; and other utilities) are shown in their approximate locations only. Other utility lines may exist but not be depicted. It is the Contractor's responsibility



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to ensure that locations of all underground public and/or private utilities are established prior to work in the area.

- b. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- c. Protect subgrade and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary. Protect subgrade and foundation soils from softening and damage by rain or water accumulation.
- d. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 10.8.1.2 Pre-excavation Requirements for Underground Utility Installations

- a. Prior to any excavation, the Contractor shall layout in the field the centerline of all proposed utilities. The Contractor shall white line (by white spray paint, barricade or other means acceptable to the CCD ROCIP Safety Team) the limits of construction including the area(s) to be excavated. The Contractor shall also identify the proposed placement of grounding rods and cathodic protection.
- b. The Contractor shall identify the location of existing underground utilities on as-built drawings, including any unknown or abandoned utility found during construction. The Contractor shall ensure that all utility owners/operators, and Colorado 811/Utility Notification Center of Colorado performing utility designation/location services designate/mark existing utilities within the construction limits as well as the entire path of excavation, including five (5) feet to either side of proposed utilities. The Contractor shall be solely responsible for notifying relevant utility owners/operators and Colorado 811 sufficiently in advance to ensure that delays to construction does not occur.
- c. After completion of the utility designation described above, the Contractor shall hire a professional Subsurface Utility Engineering (SUE) or utility designation/locating company, acceptable to the CCD ROCIP Safety Team, to designate and sweep the entire excavation area, including five (5) feet to either side of proposed utilities, to confirm the locations of the marked utilities and identify and mark any additional unidentified utilities that may be within the limits of excavation.
- d. Contractor shall expose all utilities that it will be crossing through non-destructive mechanical excavation methods such as vacuum excavation or similar mechanical method(s) approved by the CCD ROCIP Safety Team (“potholing”) or by hand digging. When a cable is located, the Contractor shall hand-excavate a trench (5) feet each side of the exposed utility to verify that another cable is not adjacent to the exposed utility.
- e. Life threatening utilities such as gas and electrical services will be exposed through the entire length of the excavation by non-destructive methods.
  - Gas and electric lines within 25 feet of the work area shall be potholed and marked every 25 feet to verify that the line has not changed directions.
  - Gas and electric lines outside the 25 feet of the work zone will be potholed at least once on each end of the limits of the excavation to verify Underground Service Alert and the utility plans.

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- Fiber-optic lines will be potholed every 25 feet within the work area.
  - Telephone/Cable lines will be potholed every 50 feet within the work area.
- f. Contractor shall continuously maintain utilities, facilities and/or systems that are or may be affected by work associated with the project. The Contractor shall provide the CCD ROCIP Safety Team with written reports on any utility damage.
  - g. If the Contractor does not find an underground utility that was previously marked, the excavation shall be stopped, the Contractor's safety representative shall be contacted, and the Contractor shall contact the appropriate owner/operator of the utility, using the Colorado 811/Utility Notification Center of Colorado when warranted.
  - h. Every attempt shall be made to preserve the locate markings during excavation. Locate markings that are no longer visible shall be refreshed by calling the one-call system and/or the utility owners/operators for remarking.
  - i. All existing utilities that have been exposed during exploratory potholing or excavation must be supported to prevent stretching, kinking, or damage to the existing utility.

### 10.8.1.3 Excavation

- a. Preserve, protect and maintain existing operable drains, sewers, and electrical ducts during grading, excavating and backfilling operations.
- b. Excavation made with power driven equipment is not permitted within five feet of any known existing utility. Start hand excavation on each side of the indicated obstruction and continue until the obstruction is uncovered.
- c. An observer shall be present to assist the equipment operator when operating equipment around known underground facilities and utilities. Adhere to the following during excavation:
  - All mechanized excavation shall start with 6 to 10-inch depth excavation on the surface. The equipment operator shall immediately cease operation and notify the CCD ROCIP Safety Team if utility warning tapes, sand, or bedding material is uncovered at any time during excavation.
  - All excavations within 5 feet of any pedestal, closure, riser guard, pole (with riser), meter, or other structure shall be performed by hand digging or other means such as vacuum excavating.
  - If the Contractor discovers damage, causes damage, or contacts an existing underground utility, the owner/operator of that utility, and CCD ROCIP Safety Team shall be notified immediately.
  - If there is a critical or high priority utility line in the dig area, make arrangements for the utility owner/operator to be on the job site during the excavation. If the utility owner/operator refuses to be present, document this response.
- d. The Contractor shall coordinate daily with the excavator and the excavating work crew regarding the work to be performed that day with an emphasis on the underground utility damage prevention work plan and anticipated utility crossings.

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## 10.9 Hazardous Materials and Hazardous Waste

Hazardous materials or hazardous wastes are to be placed on spill containment pads or other secondary containment. All hazardous wastes produced by the Contractors and/or Subcontractors must be removed from the project site by a licensed hazardous waste hauler. Such loads will need to be manifested and a copy of the manifest and the return manifest must be submitted to the Project Team.

Report any release of hazardous materials or hazardous wastes promptly to 720-460-1706. If the release is of a reportable quantity, the responsible Contractor or Subcontractor, of any tier, will notify the appropriate regulatory agency. See the EPA List of Lists for chemical reportable quantities. Proper clean-up of hazardous materials waste will be done by the responsible Contractor or Subcontractor. Clean-up is to be done by properly trained personnel. Hazardous waste from the clean-up must be hauled away by a licensed hauler and disposed of at a properly permitted facility. Provide a copy of the company spill notification procedure to the CCD ROCIP Safety Team.

Depending on the hazardous materials spilled, CCD may require the responsible Contractor or Subcontractor to sample the affected site and hire a certified laboratory to analyze an appropriate number of samples to test at their laboratory. A copy of the results is to be provided to CCD. Contractors or Subcontractors, of any tier, must inspect and document their hazardous material and waste storage areas at least weekly to ensure they are properly maintained.

CCD may randomly audit the labeling and storage of hazardous material and waste and the disposal of hazardous waste to verify that all Contractors and Subcontractors, of any tier, are fulfilling their roles as responsible parties.

All hazardous materials and hazardous wastes must be properly labeled and stored until removed from the project. Consideration shall be given to chemical compatibility prior to storage of chemicals. CCD may determine after SDS review, specific chemicals may be unsuitable for use due to physical properties that may endanger the environment, CCD property, and/or create potential exposures to adjacent workers or the general public. The Contractor will be required to work with CCD to locate an acceptable replacement chemical and or process.

## 10.10 Spill Prevention

Contractors will store petroleum products and hazardous materials at the construction yards in safe locations employing appropriate secondary containment and control measures. Secondary containment systems can include: a bermed area lined with an impervious material to provide a minimum containment volume equal to 110 percent of the volume of the largest storage vessel contained within the berm area; double walled tanks; secondary containment pallets, etc.

The Contractor will construct these containment structures to contain spilled or leaked liquids within the structures. The volume of the secondary containment will be 110 percent of the largest storage vessel or container volume. If earthen containment dikes are used, they will be constructed with slopes no steeper than 3:1 (horizontal to vertical) to limit erosion and provide structural stability. Containment areas will not have drains. Control measures can include: updated stormwater management plans and site maps, properly stocked spill kits, and documented inspections.

The Contractor will visually inspect aboveground bulk tanks frequently and whenever the tank is refilled. Drain valves on temporary storage tanks will be locked to prevent accidental or unauthorized discharges from the tank. The Contractor will correct visible leaks in tanks as soon as possible. All fuel nozzles will be equipped with functional automatic shut-off valves. Prior to departure of any fuel tank truck, all

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outlets on the vehicle will be examined by the driver for leakage and tightened, adjusted, or replaced to prevent leaking while in transit.

Routine equipment maintenance of wheel-mounted vehicles such as oil changes will be accomplished at the Contractor yards or staging areas to the greatest extent practical. Routine maintenance of track-mounted equipment will be conducted in a manner to gather all oil and other discharges and removed from the project site to a suitable recycling or disposal site.

Where required, Contractors shall provide equipment diapers and/or drip pans to protect from environmental spills. The Contractor will maintain a minimum of 20 pounds of suitable commercial absorbent and barrier materials at each Contractor yard and on fuel and service trucks to allow rapid containment and recovery of a spill. In addition, fuel trucks will be equipped with shovels and an assortment of hand tools to aid in the containment of a spill.

Equipment will not be washed on the project sites. Equipment operators will be held responsible for prompt reporting and mitigation of any fuel or lubricant spills from their equipment. Two trained personnel will be present during refueling to reduce the potential for spills or accidents. If the equipment operator is used as one of the two trained persons on the site, that person should be directly involved with the refueling process (i.e., not just sitting in the equipment) so that they can respond immediately to any overfilling.

Equipment such as large stationary pumps may be fitted with auxiliary tanks as appropriate. Such auxiliary tanks will be placed within a secondary containment structure. Refueling of dewatering pumps, generators, and other small portable equipment will be performed using approved containers with a maximum volume of 10 gallons. Alternately, a pickup truck-mounted tank (up to 300 gallons) may be used to fill the secondary fuel tanks provided the pump hose has an automatic cut-off sensor and provided the person conducting the refueling does not leave the filling location.

Before lubricants are drained from the construction equipment, a suitable containment vessel and plastic sheeting will be placed under the equipment to collect any spilled material. The Contractor will take necessary precautions to ensure that material that might accumulate on the liner does not spill on the ground surface.

The Contractor will appoint a Spill Coordinator who will be responsible for the reporting of spills, coordinating Contractor personnel for spill cleanup, subsequent site investigations, and associated incident reports.

## 10.11 Confined Space Entry

Confined spaces include, but are not limited to, tunnels, manholes, utility vaults, pumping stations, storage tanks, process vessels, pits, vats, vaults or similar types of enclosures with limited access and without proper ventilation. Entry into confined spaces may be for the purpose of inspection, testing of equipment, maintenance (repair and cleaning) or an emergency. The characteristics of a confined space are:

- a. A space that is large enough and so configured that an employee can enter and perform assigned work, and
- b. A space that by design that has limited openings for entry and exit; and
- c. A space not designed for continuous employee occupancy.

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All confined spaces on CCD property are considered “permit-required confined spaces”. A permit-required confined space has one or more of the following characteristics:

- A potential to contain a hazardous atmosphere
- Material that can cause the engulfment of an employee
- An internal configuration that might cause an employee to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section
- Contains any other recognized serious health or safety hazard

## 10.11.1 Entering A Permit-Required Confined Space

Entry is defined as occurring when any part of the body passes through the opening of a confined space. Prior to entry, an entry permit should be completed and signed by the entry supervisor verifying that the space is safe to enter. The entry permit must also be posted at the entrance or otherwise made available to entrants before they enter the permit space.

The contractor must complete their internal confined space entry permit before an employee enters a confined space – this permit must be posted at or near the confined space. Permits are valid for one shift only – a new permit must be completed for the next shift. The contractors’ internal permit shall contain the following types of specific information concerning:

- a. Identification of space;
- b. Purpose of entry;
- c. Date and duration of permit;
- d. List of authorized entrants;
- e. Names of current attendants and entry supervisor;
- f. The hazards of the permit space to be entered;
- g. The measures used to isolate the permit space and eliminate or control hazards;
- h. The acceptable entry conditions;
- i. The results of atmospheric monitoring;
- j. Rescue and emergency services that can be summoned and the means for summoning those services;
- k. The communication methods used by entrants and attendants to maintain contact;
- l. Any other safety information necessary for the specific space;
- m. Any additional permits, such as for "hot work" (welding).

The entry permit is the document that certifies that the Contractor complies with the requirements of the standard for entries in permit required confined spaces. Also, the entry supervisor must close off the space and cancel permits when an assignment has been completed or when prohibited conditions exist. All new conditions must be noted on the canceled permit and used in revising the permit space program.

## 10.11.2 Air Monitoring

Before entering the area, the Contractor must always test for oxygen content of the air, then flammable or explosive gases or vapors, and finally toxic chemicals such as hydrogen sulfide. This sampling should be done with a remote monitor on a wand attached to the toxic gas meter. The monitor should be able to reach the lowest point in the confined space. Oxygen monitoring should be done first as the explosive gas monitor will not be accurate if there is an oxygen deficiency.

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It is important to remember that some gases or vapors are heavier than air and will settle at the bottom of the confined space. Also, some gases are lighter than air and will be found around the top of the confined space. Thus, during the sampling process it will be necessary to test all areas (top, middle and bottom) of the confined space.

In sewers or other areas which are part of a continuous system where new hazards may enter at any time, continuous air monitoring must be conducted.

## 10.11.3 Ventilation

If the atmosphere is found to lack oxygen, or contain toxic gases and vapors, the space must be ventilated before entry. An air powered ventilator placed at the top of the opening can blow breathable air into the space. Never assume that the space is safe until it is monitored again. Ventilation shall continue while the employee is working in the space. A trained person must determine whether the air must be blown or sucked, and how the ventilation should be conducted.

The air intake should be placed in an area that will draw in fresh air only. Ventilation should be continuous where possible, because in many confined spaces the hazardous atmosphere will form again when the flow of air is stopped.

The forced air ventilation should ventilate the immediate areas where an employee is or will be present within the space and should continue until all employees have left the space.

## 10.11.4 Protective Equipment

Personal protective equipment shall be used to protect workers only after all other feasible means have been used to control or eliminate hazards. A full body or chest harness and a lifeline should be used when entering a confined space.

In some situations, a respirator will also be needed. A respirator will allow the employee to breathe without inhaling toxic gases or particles.

Air-purifying respirators can filter dangerous substances from the air, but they provide no protection in an oxygen deficient environment and shall not be used when working in a confined space. Only air-supplying respirators (SAR/SCBA) should be used in confined spaces that have low oxygen levels or high levels of toxic gasses.

In vertical entries, the safety harness should be attached to a retrieval device that will allow quick removal of an employee in the event of an emergency. In the event of an emergency, the attendant located on the outside should be able to initiate a rescue without entering the space.

Hard hats, safety goggles, face shields, gloves, safety boots, disposable suits, earplugs or muffs, non-sparking flashlight and tools may also be needed when entering a confined space.

## 10.11.5 Rescue

In order to facilitate rescue without having a rescuer enter a space, the Contractor must require the use of "non-entry" rescue, retrieval systems or methods, such as tripods and winches to lift unconscious or injured entrants out of a space that is more than five feet deep.

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## 10.11.6 Training

Proper training, careful preparation and good judgment are essential to safe confined space entry. The Contractor is required to provide initial and refresher training to equip employees with the understanding, skills and knowledge necessary to perform the confined space entry safely.

Training must be provided to each affected employee before the employee starts performing assigned duties in confined spaces and must be certified by the Contractor. Authorized entrants, attendants, supervisors and rescuers require different levels of training according to their specific duties and responsibilities.

## 10.12 Silica

### 10.12.1 Potential Exposures

The following activities may cause crystalline silica dust to be present in the air:

- Sawing, hammering, cutting, drilling, grinding, and chipping of concrete or masonry
- Chipping, hammering, and drilling rock
- Dry sweeping or pressurized air blowing of concrete, rock, or sand dust
- Crushing, loading, hauling, and dumping rock
- Sandblasting
- Demolition of concrete and masonry structures
- Concrete mixing
- Working with ceramics, clay, and pottery

### 10.12.2 Safe Work Practices

The primary means of protecting workers will be using fewer toxic materials, enclosed systems, local exhaust ventilation, wet methods, and good work practices. Silica sand or other substances containing more than 1% crystalline silica will not be used for abrasive blasting. Good personal hygiene will be practiced avoiding unnecessary exposure. Eating, drinking, use of tobacco products, or applying cosmetics will not be done in areas where there is dust containing crystalline silica. If possible, employees will shower and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.

If Contractor shall use OSHA 1926.1153(c)(1) or the following measures to reduce exposure to crystalline silica in the workplace:

- a. Wet down the dust at the point of generation.
- b. Install local exhaust ventilation to prevent dust from being released into the air.
- c. During rock drilling, flow water through the drill stem.
- d. Install dust collection systems onto machines or equipment that generated dust.
- e. Use concrete/masonry saws that provide water to the blade. Water may be used to suppress dust produced by pneumatic, hydraulic, or gasoline-powered saws. Water is typically applied to the blade through one or two nozzles to suppress dust emissions. Water may be supplied from a portable pressurized tank or a hose. The recommended flow rate is 0.5 liters (17 ounces) of water per minute to suppress dust. Less water will not be as effective.
- f. When using vacuum cleaners, the vacuum should have the following features:

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- g. Enough flow rate to capture the dust and transport it to the vacuum source. One study showed that an air flow rate of 70 cubic feet per minute (cfm) was required to achieve effective dust control.
  - i. High-efficiency particulate air (HEPA) filter to reduce the chances of releasing dust containing RCS from the vacuum into the worksite.
  - ii. A pre-filter or cyclone to increase the length of service of the HEPA filter.
  - iii. A filter replacement indicator, such as a pressure gauge. If the vacuum cleaner does not have a pressure gauge, workers can monitor the air flow by checking to see if a dust plume is escaping from around the shroud.
  - iv. The ability to clean and replace filters and full collection bowls or bags without exposing the operators to dust.
  - v. A motor that draws at least 10 amps.

NOTE: The above measures will be required to protect the general public, adjacent workers and CCD facilities as necessary.

### 10.12.3 Air Monitoring

The Contractor will inspect each work operation to determine if employees are exposed to silica above the PEL. Indicators that an evaluation of employee exposure should be undertaken include:

- a. Information or observation which would indicate employee exposure to silica.
- b. Employee complaint of symptoms which may be attributed to exposure to silica.
- c. Change which may result in an increase in the airborne concentration of silica.

The Contractor will conduct air monitoring to measure worker exposures and ensure that engineering controls and respiratory protection are providing adequate protection. Air monitoring information will be made available to workers and CCD ROCIP Safety Team. If employees are exposed to silica in excess of the PEL, monitoring will be repeated quarterly.

### 10.13 Electrical

- a. Only qualified electricians may perform electrical work.
- b. Temporary electrical service shall be installed and maintained to conform to all of the requirements along with all applicable provisions of the NESC, NEC and OSHA.
- c. Where required, appropriate warning signs will be posted. All temporary components shall be plainly marked to indicate the maximum operating voltage.
- d. All circuits shall be protected against overload and grounded with Ground Fault Circuit Interrupters (GFCI).
- e. When using permanent power, a GFCI "pigtail" device will be required between the power source and the extension cord.
- f. Flexible temporary cord and light sets shall be hard service or junior hard service usage for construction as specified in NEC Table 400.4.
- g. Non-metallic sheathed cable shall not be used for temporary service on the project.
- h. Temporary power cords of any size shall not be spliced.
- i. Extension cords shall not be plugged into each other to increase length, if power is needed further than the length of the cord, another power supply should be provided.
- j. Electric wire and flexible cord passing through work areas shall be protected from damage (including that caused by foot traffic, vehicles, sharp corners, protections, and pinching).



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- k. Flexible cords and cables passing through holes shall be protected by bushings or fittings.
- l. Temporary electrical distribution systems and devices shall be checked and found acceptable for polarity, ground continuity and ground resistance before initial use and before use after modification.
- m. Temporary power boxes and GFCI's shall be tested monthly and documentation of tests for each device shall be made available upon request.

## 10.13.1 Lock-Out Procedures

The procedures used for energy isolation, be it electrical, mechanical, hydraulic, pneumatic or other types need to be both uniform and coordinated. Therefore, the ROCIP has adopted the following procedures which must be communicated to Contractors, Subcontractors, and employees. Make sure they are aware of, understand, and follow these lock-out procedures and cooperate with other Contractors who require a lock-out that involves your work. Note that the ROCIP requires the use of lock-out energy isolation devices (that is, using padlocks) throughout this project. Tag-outs (simply tagging the switch, valve, etc.) will not be used unless prior approval is provided by the CCD ROCIP Safety Team.

### 10.13.1.1 Individual Lock-out Procedures

This procedure is used in the event power is either interrupted or restored unexpectedly. If interrupting or restoring power unexpectedly will endanger an employee of any other Contractor, including your own Subcontractors, use the steps in the Complex Lock-out Procedures that follow. Only an authorized employee shall perform the following steps:

- a. Notify affected employees of the lock-out and the reason for it.
- b. Shutdown the affected equipment in a manner consistent with good operating practices.
- c. Verify that the equipment or system is inoperative by trying to operate it, etc.
- d. Shutdown the power at the switch, valve, etc., that will be locked. Be certain the correct device or devices to shut down and lock were located.
- e. Safely dissipate any stored energy in pressure lines, flywheels, capacitors, etc., consistent with good operating practices.
- f. Lock the switch, valve, etc., using a padlock with only one key. Make sure the company name is on the lock.
- g. Complete and place on the lock a standard lock-out warning tag indicating what power source was shutdown, the date of the shutdown, authorized employee's name, and the company's name.
- h. Verify that the equipment or system is inoperative by trying to start it. (Do not forget to turn all controls back to their off or neutral position).
- i. Complete and file on site a Lock-Out Documentation form
- j. When power is ready to be restored, replace all missing guards. Ensure that no one will be endangered by power restoration prior to removing the lock.
- k. After removing the lock, remove and properly destroy the warning tag. (Tags and their attachment devices are not to be reused unless designed for reuse).

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## 10.13.1.2 Complex Lock-out Procedures

This procedure must be used when one or more employees of another Contractor or Subcontractor may be exposed to danger in the event power is either interrupted or restored unexpectedly. Only an authorized employee shall perform all of the following steps as the originator of a complex lock-out. Every affected Contractor (including affected Subcontractors) is to have an authorized employee to coordinate the lock-out for their company.

- a. Notify all affected employees of the lock-out and the reason for it.
- b. Shutdown the affected equipment in a manner consistent with good operating practices and have each affected Contractor and Subcontractor do likewise.
- c. Verify that the equipment or system is inoperative by trying to operate it and have each affected Contractor and Subcontractor do likewise.
- d. Shutdown the power at the switch, valve, etc., that will be locked. Be certain the correct device or devices to shut down and lock were located.
- e. Safely dissipate any stored energy in pressure lines, flywheels, capacitors, etc., consistent with good operating practices and, as necessary, have each affected Contractor and Subcontractor do likewise.
- f. Place a chain or lock-out device on the switch, valve, etc., that will be locked.
- g. Place a chain or lock-out device using a padlock with only one key. Make sure the company's name is on the lock.
- h. Once all the valves and switches are locked out, place all the keys for all the locks in the group lock-out box.
- i. The authorized employee then places a group lock-out device (Christmas tree) on the hasp and places their lock on the group lock-out device. Each employee must place their personal lock, with their name on the lock, on the group lock device.
- j. Complete and place on the lock a standard lock-out warning tag indicating what power source was shutdown, the date of the shutdown, authorized employee's name, and the company's name.
- k. Verify that the equipment or system is inoperative by trying to start it and have each affected Contractor and Subcontractor do likewise. (Do not forget to turn all controls back to their off or neutral position).
- l. Complete and file on site a Lock-Out documentation form.
- m. When power is ready to be restored, replace all missing guards. Each affected employee must remove their lock when their work is completed. The authorized employee then removes their lock and removes the keys from the lock box and begins to restore the equipment to working condition. As the originator of the lock-out, the authorized employee will always remove their lock last. This is only after it has been determined that no one will be endangered by power restoration.
- n. Restore power.
- o. After removing the lock, remove and properly destroy the warning tag. (Tags and their attachment devices are not to be reused unless designed for reuse).

## 10.13.1.3 General Lock-out Information

- a. Padlocks, hasps, tags, and other lock-out devices must be durable enough to withstand the environment to which they will be exposed.

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- b. Locked-out switches, valves, etc., must not be operated regardless of the circumstances.
- c. Only the employee, who placed the lock on the switch, valve, hasp, etc., can remove it. Anyone who removes or defeats another's lock-out is subject to removal from the project site.
- d. Locked-out switches, valves, etc. must be inspected at the beginning of each shift to ensure that the locks and tags are still in place.

## 10.13.2 Energized Electrical Work

Work on Energized Equipment is not permitted. If there is no other way for the work to be performed, an Arc Flash Hazard Analysis must be conducted by a qualified person and verified by a third-party electrical engineer.

## 10.14 Steel Erection

Steel erection requires compliance with the following:

- a. 100% fall protection provisions, such as lifeline attachments, dynamic fall restraints and other such devices shall be considered during shop drawing preparation and incorporated into fabricated pieces. The use of a Controlled Decking Zone (CDZ) is not permitted to be used as a primary fall protection method. CDZ can be used in combination with conventional fall protection methods (PFAS)
- b. Lifelines or other fall protection devices shall be attached prior to erection where possible.
- c. Employees of Contractors and Subcontractors, of any tier, must comply with the fall protection requirements covered earlier in this section.
- d. The running length of wire rope protection, when used for perimeter protection, shall not exceed two bay widths or 24 feet, and will be equipped with support stanchions every 8 feet to maintain the required deflection.
- e. A turnbuckle may be installed for maintenance of the perimeter protection to keep tight: a minimum of 3 Crosby clamps will be installed and torqued to specification. The use of lap joints is prohibited.
- f. When Christmas Treeing, only 3 pieces shall be allowed, and a multiple lift rigging assembly shall be used.
- g. The Contractor shall not erect steel unless it has received written notification that the concrete in the footings, piers and walls or the mortar in masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.
- h. Pre-planning shall be conducted and documented for landing deck bundles and installing the perimeter protection for interior/exterior fall hazards.
- i. All columns shall be anchored by a minimum of 4 anchor rods (anchor bolts).
- j. All columns shall be evaluated by a competent person to determine whether guying or bracing is needed; if guying or bracing is needed, it shall be installed.
- k. Anchor rods (anchor bolts) shall not be repaired, replaced or field-modified without the approval of the project structural engineer of record. Prior to the erection of a column, the Contractor shall provide written notification to the steel erector if there has been any repair, replacement or modification of the anchor rods (anchor bolts) of that column.

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- I. Conduct and document appropriate pre-task planning and a job hazard analysis for all steel erection. Keep this documentation on site for review by the CCD ROCIP Safety Team.

## 10.15 Welding and Cutting

Recommended and required (where indicated) safe practices:

- a. A welder shall wear:
  - i. Safety steel-toed boots, preferably high-top ones because low-cut boots and shoes put you at a higher risk of catching slag that is hot. (Required)
  - ii. Helmets or any other head gear to protect from sharp and falling objects. (Required)
  - iii. Goggles or helmets to protect your eyes from the transmission of radiant energy being emitted by the welding tool. (Required)
  - iv. Hearing protection as necessitated by noise levels.
  - v. Respirators to prevent inhalation of hazardous fumes, dust and gases as necessitated by exposures.
- b. A welder shall remove flammable clothing and should wear protective gear to shield their entire body using the following examples:
  - i. Aprons that are made from flame-resistant material.
  - ii. Greater protection can be obtained from reflection under the face shield if clothing with the dark colors are worn. Clothing made of wool is also preferred over clothing made of cotton because wool can resist deterioration better than cotton. Pants should not have pockets on the front that may catch sparks.

### 10.15.1 Electric Arc Welding

- a. Screens, shields, or other safeguards should be provided for the protection of men or materials, below or otherwise exposed to sparks, slab, falling objects, or the direct rays of the arc.
- b. The welder shall wear approved eye and head protection. Workers assisting the welder shall also wear protective glasses, head protection and protective clothing.
- c. Adequate exhaust ventilation shall be maintained at all welding and cutting work areas.
- d. Electric welding equipment, including cables, shall meet the requirements of the National Electric Code.
- e. All arc welding and cutting cables shall be of the completely insulated flexible type capable of handling the maximum current requirements of the work.
- f. Cables in need of repair shall not be used.
- g. Welding leads shall not be repaired with tape or by any other means.
- h. Leads shall be inspected before each use, leads in need of repair will be tagged "do not use" and taken off the project site at the end of the day's work shift.
- i. The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable connecting the circuit connector or through a separate wire which is grounded at the source of the current. All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.
- j. Welding practices shall comply with all applicable regulations.

### 10.15.2 Gas Welding or Cutting

- a. All hose used for carrying acetylene, oxygen or other fuel gas shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.

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- b. Oxygen cylinders and fittings shall be kept away from oil and grease. Oxygen shall not be directed at oily surfaces, greasy clothes or hands.
- c. Regulators, gauges, backflow check valves, and torches shall be kept in proper working order.
- d. Appropriate personal protective equipment, such as burning glasses, shields, and/or gloves shall be used. Adequate exhaust ventilation shall be maintained at all welding and cutting work areas.
- e. All oxygen/acetylene setups shall have a "flashback" arrestor check valve at the regulators, not at the torch head.
- f. Check valves shall be tested for proper function at least every six months and documentation of the test shall be readily available upon request.

### 10.16 Compressed Gas Cylinders

- a. When gas cylinders are stored, moved, or transported, the valve protection cap shall be in place. All cylinders must be thoroughly inspected for defects, damage, and deficiencies prior to acceptance to the worksite.
- b. All workers inspecting, handling, and using compressed gas cylinders must have completed training as required by OSHA.
- c. When cylinders are hoisted, they shall be secured in an approved cage or basket. The valve cap shall never be used for hoisting. All cylinders shall be stored, transported, and used in an upright position. If the cylinder is not equipped with a valve wheel, a key shall be kept on the valve stem while in use.
- d. Cylinders should be transported using hand trucks designed for that purpose.
- e. Gas cylinders shall be properly secured at all times to prevent tipping, falling or rolling. They can be secured with straps or chains connected to a wall bracket or other fixed surface, or by use of a cylinder stand.
- f. Oxygen cylinders (empty or full) in storage should be separated from fuel-gas cylinders and combustible materials by a minimum distance of 20 feet or by a barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
- g. Full and empty cylinders of all gases should be stored separately and identified by signs to prevent confusion.
- h. Close valves on empty cylinders and mark the cylinder "empty" or "M.T."
- i. At the end of each work day or if work is suspended for a substantial period of time, compressed gas cylinder valves shall be closed, regulators removed and properly stored.
- j. Cylinders containing oxygen, acetylene, or other fuel gas shall not be taken into confined spaces.
- k. Cylinders containing oxygen, acetylene, or other fuel gas shall be stored in designated areas outside the structure.
- l. No one shall use a cylinder's contents for purposes other than those intended by the supplier.
- m. Always use the proper regulator for the gas in the cylinder. Always check the regulator before attaching it to a cylinder. If the connections do not fit together readily, the wrong regulator is being used.
- n. Before attaching cylinders to a connection, be sure that the threads on the cylinder and the connection mate are of a type intended for the gas service.
- o. Do not permit oil or grease to come in contact with cylinders or their valves.
- p. Wipe the outlet with a clean, dry, lint-free cloth before attaching connections or regulators. The threads and mating surfaces of the regulator and hose connections should be cleaned before the regulator is attached.

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- q. Attach the regulator securely before opening the valve wide. Always use a cylinder wrench or another tightly fitting wrench to tighten the regulator nut and hose connections.
- r. Open cylinder valves SLOWLY. Do not use a wrench to open or close a hand wheel type cylinder valve. If it cannot be operated by hand, the valve should be repaired.
- s. Stand to the side of the regulator when opening the cylinder valve.
- t. Do not attempt to repair cylinder valves or their relief devices while a cylinder contains gas pressure. Tag leaking cylinders or cylinders with stuck valves and move to a safe, secure outdoor location.

## 10.17 Hot Work Permits

Hot work operations include tasks such as welding, brazing, torch cutting, grinding, and torch soldering. These operations create heat, sparks and hot slag that have the potential to ignite flammable and combustible materials in the area surrounding hot work activities. In addition to the Contractor's Hot Work Permit, a permit must also be obtained from the Denver Fire Department and all provisions adhered to.

### General Guidelines

- a. Work should be performed using alternative methods other than hot work whenever possible.
- b. Hot work should be performed in designated hot work rooms whenever it is practical.
- c. A Hot Work Permit is valid for one day and one area and shall be posted in the area of hot work for the duration of the activity.  
See Appendix N for Sample Hot Work Permit
- d. A copy of every permit shall be maintained onsite and readily available for review.
- e. Hot Work Permit must be completed daily for each work area and posted in the area where hot work is to be performed. All hot work permits will be closed out at the end of the day and kept for 30 days.
- f. Employees who perform hot work operations must always obtain a Hot Work Permit before beginning hot work.
- g. A Fire Watch is posted to monitor the safety of hot work operations and watch for fires.
- h. Fire Watches are posted if the situation requires one, during hot work, and for at least 30 minutes after hot work has been completed. Any employee who has successfully completed hot work safety training can serve as the Fire Watch.
- i. All flammable and combustible materials within a 35-foot radius of hot work must be removed. When flammable and combustible materials within a 35-foot radius of hot work cannot be removed they must be covered with flame retardant tarps and a fire watch must be posted.
- j. Floors and surfaces within a 35-foot radius of the hot work area must be swept free of combustible dust or debris.
- k. All openings or cracks in the walls, floors, or ducts that are potential travel passages for sparks, heat and flames must be covered.
- l. Two fire extinguishers (minimum 10 lbs. each) of the appropriate type must be readily available and accessible with at least one being within reach of the worker performing the welding, cutting or brazing activity.
- m. Entire building smoke detection and alarms systems may not be shut down. Instead smoke detectors in the area of hot work may be covered for the duration of hot work to prevent false alarms.

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- n. Automatic sprinkler systems may not be shut down to perform hot work. Instead, individual sprinkler heads in the area of hot work may be covered with a wet rag to prevent accidental activation.
- o. Adjacent workers, the general public, and CCD facilities must be protected during hot work.
- p. The contractor is required to adhere to their respiratory program PPE requirements and SDS identified hazards for PPE selection.

### 10.18 Fire Prevention and Protection

- a. Open fires are prohibited.
- b. Subcontractors performing torch-applied roofing operations must submit NRCA (National Roofing Construction Manager Association)-recognized CERTA (Certified Roofing Torch Applicator) training documentation for each of their personnel involved in such operations prior to those personnel commencing work on the project.
- c. Locations for storage of all fuels, lubricants, starting fluids, etc., shall be reviewed by CCD ROCIP Safety prior to use by Contractor for storage and shall conform to the requirements of the NFPA as well as the local Fire Marshal. Plastic containers are not permitted per OSHA specification.
- d. Storage of fuels shall be away from ignition sources
- e. Only containers approved by Underwriters Laboratories, Factory Mutual or DOT, and clearly labeled to identify contents shall be used for transporting or storing flammable or combustible liquids. Metal safety cans with self-closing spouts and flash arresters are required for the storage, handling, and transporting of flammable and combustible liquids.
- f. Smoking is not permitted within building structures or work areas.
- g. Flammable or combustible liquids or gases shall not be stored inside any building unless approved by the Program Manager in writing. When indoor storage is approved by the Program Manager in writing, such storage shall comply at a minimum with OSHA 1926.152 and NFPA requirements. Storage is defined as maintaining quantities in excess of what can be used in the course of normal work during the intended shift.
- h. Vessels or tanks containing flammable or combustible liquids or gases shall be placed in a fuel storage area designated by the Contractor. This area will be located a minimum distance from buildings, construction equipment, parking lots, etc. to minimize the exposure to a fire involving the tank. The Contractor shall meet local, state, and federal safety requirements when placing vessels or tanks. Such locations will be equipped with substantial barricades or bollards to prevent vehicles and equipment from striking the vessels or tanks. This is also required of any fuel container that provides temporary heat for a structure.
- i. Flammable or combustible liquids or gases shall not be stored on roofs when not in use including after work shifts.
- j. Storage tanks shall be equipped with self-closing dispensing nozzles and shall be provided with atmospheric and emergency relief vents equipped with flame arresters.
- k. Tanks or drums from which flammable liquids are dispensed shall be electrically grounded and shall be equipped with bonding wire to complete the grounding with the vessel into which the liquid is dispensed.
- l. There shall be no smoking or open flame in flammable or combustible liquid or gas storage areas. Conspicuous and legible signs prohibiting smoking shall be posted by the Contractor.
- m. The Contractor will provide portable, dry chemical fire extinguishers (minimum 20-pound ABC) for the fuel storage areas.
- n. Portable fire extinguishers suitable for the potential hazard shall be provided by each Contractor for their equipment, office area, and work activities. A fire extinguisher must be in the immediate work

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area when any spark or open flame producing work is taking place. The Contractor shall be responsible for general area fire extinguisher placement and maintenance until the building is turned over to the Owner. In addition, the Contractor shall have on site personnel trained in the proper use of fire extinguishers.

- o. Any work involving or producing spark, open flame, arc or heat requires a hot work permit.
- p. The Contractor shall be responsible for ensuring the removal (protection when removal is not feasible) of all combustible or flammable materials in the area and shall provide appropriate fire extinguishers and fire watch as required by the work.
- q. In order to summon firefighting assistance, call 911. Immediately report all fires (even those that have been extinguished) to the CCD ROCIP Safety Team.
- r. Replace or recharge temporary firefighting and fire protection equipment immediately after use. Also report to the CCD ROCIP Safety Team (within eight hours) any discharge of firefighting equipment.

## 10.19 Powder Actuated Tools

Powder actuated tools are prohibited unless expressly allowed by contract or CCD grants a variance.

**NOTE:** Typically, variances will NOT be granted when security is an issue.

Contractors/Subcontractors, of any tier, shall ensure that employees using powder actuated tools be certified by the manufacturer's representative prior to use. Certification cards must be available for immediate inspection if requested.

Contractors/Subcontractors using powder actuated tools shall ensure that all cartridges, whether used, not used or misfired, have been picked up and removed from the work area. Powder actuated tools shall not be left unattended while loaded. If found unattended and loaded, the operator shall be subject to removal from the project. All cartridges must be accounted for whether used or unused.

The use of hardhat, safety glasses, full face shield and hearing protection shall be used while operating a powder actuated tool. Signs shall be posted in areas where powder actuated tools are in use.

## 10.20 Traffic Control

All work shall be planned well in advance to keep traffic obstructions, public inconvenience and lost work time to a minimum. Flaggers must be certified and are required:

- a. Where workers or equipment intermittently block a traffic lane;
- b. Where plans or permit allow the use of one lane for two directions of traffic (one person is required to direct vehicles for each direction of traffic); and
- c. Where the safety of the public and/or workers determines there is a need.

Traffic control plans in place for public roadways must be inspected and documented daily to ensure the protection is being maintained.

## 10.21 Personal Protective Equipment

All employees and visitors to the project site must use the protective equipment prescribed by local, state, federal, and project rules and regulations. It is the intent of ROCIP to control or minimize exposures that will or could lead to illness or injury.

All personnel on the construction site must adhere to the following PPE policies.



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## 10.21.1 Eye Protection

- a. ANSI Z87.1 safety glasses with side shields shall always be worn while in the work area.
- b. Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments may represent an additional hazard to contact lens wearers. Hazardous environments may include but are not limited to those in which a respirator may be required or where welding is being performed.
- c. Where appropriate, contact lenses may be worn if approved by both the Contractor and the employee's physician. These approvals are to be documented and kept in the Contractor's file on site.
- d. If the task requires an employee to wear goggles, basic eye protection should not be worn since a good seal cannot be obtained.
- e. When Contractors' or Subcontractors' employees are exposed to flying particles, splashes, mists, etc., they must wear an approved face shield as well as basic eye protection (since a face shield provides only protection to the face and eyes from direct impact objects).
- f. When welding, a welding hood as well as both basic eye protection and a hard hat must be worn. This is to protect employees from hot slag when the hood is raised and from overhead work exposures.

## 10.21.2 Head Protection

- a. All project work areas are considered "hard hat areas".
- b. Everyone, including delivery personnel, vendors and visitors must wear approved hard hats while on the project. Hard hats are not required in construction parking lots and office trailers.
- c. Employee's first, last name, Contractor/Subcontractor company names are to be displayed on the front of all employee hard hats that are issued to their employees.
- d. Employees must also have an official ROCIP project-specific sticker on their hardhat, indicating that they have successfully completed safety orientation and pre-project drug testing. This is confirmed and issued by the Contractor.

## 10.21.3 Hearing Protection

- a. Contractors, Subcontractors, vendors, and visitors shall be required to wear hearing protection when working in or passing through high noise areas. It shall be the responsibility of the Contractor or Subcontractor to provide the hearing protection for their staff and document that training is provided. In addition, employees shall be issued or made readily available hearing protection such as but not limited to disposable ear plugs with an NRR 30.
- b. The Contractor's safety representative or designee will monitor work areas to recognize and post high noise areas.

## 10.21.4 Foot Protection

- a. All workers must wear at least a 6" safety or steel-toe boot. Footwear must at a minimum conform to ASTM F2413-11.
- b. No one is permitted to wear sneakers (including ANSI approved sneakers), tennis shoes or athletic shoes of any type, sandals, high heels or flip flop thongs on this project.

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- c. Any work tasks requiring special footwear requires a PPE hazard assessment to be completed. This may include the need for additional protections such as: metatarsal impact protection (Mt), conductive properties (Cd), electrical hazard (EH), static dissipative (SD), puncture resistance (PR), or to meet another ASTM standard.
- d. Metatarsal covers are required for operating jackhammers, earth compacting equipment (jumping jacks), and other similar activities when designated.

### 10.21.5 Clothing

- a. Clothing suitable for the weather and your work shall be worn. Torn or loose clothing, cuffs, jewelry or neckwear that may be a hazard are not allowed. Shirts shall be worn and have sleeves measured at least four inches from the shoulder seam. Pants shall be worn- no shorts allowed.
- b. Clothing shall be maintained in a clean, neat and repaired fashion. Clothing and personal protective equipment shall not exhibit any form of inappropriate or profane drawing, photographs, or language (foreign or English) related to sex, race, national origin, gang related, or that reflects personal opinions.
- c. All employees working with electrical energy must be protected by clothing covered by NEC 70 E.
- d. Shoulder length or longer hair must be tied back and put under the hard hat or worn in a hair net.
- e. High visibility/reflective vests, shirts or jackets shall be worn by all personnel working in all construction areas. The high visibility/reflective PPE must meet the requirements of ANSI/ISEA 107-2015 publication entitled "American National Standard for High Visibility Safety Apparel and Headwear" or equivalent revisions and labeled as meeting the ANSI/ISEA 107-2015 standard performance for Class 2 or 3 risk exposure for the respective project sites.
  - Exception: Workers who are welding, cutting or brazing are exempt from wearing a high visibility vest while performing the task, however once completed and moving about the project, the high visibility vest shall be worn.

### 10.21.6 Hand Protection

The Contractor is required to implement a 100% glove policy for the project. During the pre-project hazard analysis or JHA development, hand protection shall be selected based upon the hazard and performance characteristics of the glove. Gloves must be available and worn by Contractor employees performing a task:

- a. When materials with sharp edges are exposed or being handled such as but not limited to:
  - Sheet metal siding, roofing, etc.;
  - Metal materials, such as Unistrut and all thread rods;
  - Tie-wire;
  - Metal floor grating;
  - Wire rope;
  - Metal studs;
  - Metal ductwork;
  - Metal light fixtures;
  - All metal material which has the potential to inflict a cut/laceration;
  - Handling of glass;

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- Cutting operations involving handheld, non-power operated cutting tools,
  - Handling of wood materials such as, plywood sheeting on floors, scaffolds, unloading and loading of any wood type, movement and transfer of wood;
  - During the use of utility knives, razors or knives of any kind;
  - While pulling wire in and around electrical panels.
- b. When performing the following tasks:
- Concrete operations where hands are exposed to power and trowel operations;
  - Cleaning chutes used for delivery of cement; concrete removal operations;
  - During the use of impact tools Anti-Vibration Gloves shall be used such as, hammers to chip concrete, jackhammers, fence post drivers, compactors or jumping jacks;
  - Working on or near materials affected by extreme temperatures such as items in excess of 60 degrees centigrade, items below 0 degrees centigrade;
  - While working with hazardous materials such as caustics, corrosives, oxidizers, solvents, paints, adhesives, and petroleum products;
  - Workers involved with the removal and handling of trash.
  - Whenever an MSDS suggests or requires the use of hand protection to avoid skin contact.

Exceptions to the 100% glove policy are:

- a. In cases where gloves may present a greater hazard, the Contractor shall submit in writing justification for working without this protection.
- b. Anytime equipment or manufacturers manual states the use of gloves presents a greater hazard.
- c. Moving machinery where gloves can become entangled or caught between.

## 10.21.7 Respiratory Protection

Respirators should be used for protection only when engineering controls have been shown to be infeasible for the control of the hazard or during the interim period when engineering controls are being installed.

## 10.22 Motor Vehicles & Equipment

### 10.22.1 Personal Vehicles

- a. Must be parked in designated areas that are free of construction activities, at least 200' away from active work areas.
- b. Personal vehicles are prohibited from accessing the project. If parked on-site without authorization, they shall be removed at the vehicle owner's expense.
- c. Approved routes will be limited and appropriately marked.

### 10.22.2 Jobsite Vehicles & Equipment

- a. All equipment shall be inspected daily before use by each operator. All moving construction equipment (such as but not limited to forklifts, scissor/boom lifts, loaders) shall have a daily written checklist inspection available during each work shift. Equipment that does not pass all checklist items will not be operated on site until repaired by qualified personnel.

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- b. Defective equipment shall be repaired or removed from service immediately. If removed from service, a “red tag” shall be attached with an explanation of the defect and the date and name of the individual placing the equipment out of service.
- c. All Contractors’ operators of construction equipment shall be properly licensed (where required), certified and classified as a competent person for that equipment. Copies of the certifications (and licenses if required) shall be maintained on project site by Contractor and made available upon request.
- d. Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be transported. All passengers shall be properly seated with seatbelt used. Standing/kneeling on the back of moving vehicles or equipment is prohibited.
- e. Drivers of motor vehicles and equipment shall have a valid state driver’s license (CDL- Commercial Driver’s License when applicable) and be instructed to exercise good judgment as well as observe posted speed limits.
- f. Drivers must operate appropriately for existing weather conditions. This may require speeds below the posted speed limit.
- g. All Contractors’ means of ingress and egress shall be adequately marked and kept clear of stored material, debris and equipment.
- h. Pedestrians always have right-of-way over motorized traffic.
- i. Horns shall be sounded at blind corners, when passing, when backing up, and/or for warning.
- j. Established hand signals or turn signals are to be used.
- k. The use of cellular telephones, PDA’s or other wireless devices (collectively referred to as “wireless devices”) while operating motor vehicles and mobile equipment on projects site(s) is prohibited.
  - Communication devices in vehicles for constant use for access control and emergency response purposes are exempted from this policy.
- l. Reckless driving or other non-observance of these instructions will be cause for withdrawal of driving privileges on the project.
- m. Speed limits on the project site and haul roads acceptable to the CCD ROCIP Safety Team will be posted by the Contractor. Violations of the posted speed limit or traffic control devices may be cause for removal from the project site.
- n. All vehicles permitted access to the site shall display the name of their company on the side, front or rear of the vehicle at all times while on the project. The company name or identification shall be visible and legible from a distance of 50 feet. Vehicles without proper identification will be removed at the Contractor’s expense.
- o. Seat belts shall be worn by all employees operating motor vehicles and any equipment with rollover protection structures during performance of work.
- p. Golf carts, Kawasaki Mule buggies, John Deere Gators, or vehicles of such type must have Roll over protection that has been designed by the manufacturer, an orange flag for visibility, a horn, back up alarm and a seat belt installed before the vehicle is allowed on site.
- q. Motorcycles and bicycles are not permitted on the project site.

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## 10.23 General Rules

Good conduct is essential to the common good of all employees and the speedy progress of the job. Undesirable conduct including, but not limited to the following will not be tolerated and employees will be subject to removal from project:

- a. Unauthorized possession of any project property or material
- b. Possession of or use of intoxicants on premises, regardless of source
- c. Engaging in disorderly conduct
- d. Gambling, including sale of chances
- e. Fighting on project premises
- f. Failure to wear or use required safety equipment
- g. Failure to observe safety, sanitary or medical rules and practices
- h. Illegal possession or use of narcotics or non-prescribed tranquilizers or pep pills on premises, or attempting to bring them on job site
- i. Possession or use of firearms, weapons, or explosives is expressly prohibited on the project premises
- j. Willful defacing or damaging of equipment, tools, material or other property of the project or Contractors.
- k. Offensive language is prohibited.

Contractor and Subcontractor employees are required to report unsafe behaviors and conditions to their supervisor. When possible, employees shall correct hazards immediately. Employees should look out for their fellow worker and advise them to work safely, assisting them if necessary. Employee suggestions for improved safety performance are encouraged.

## 10.24 Housekeeping

- a. Materials shall be piled and stacked so that safe clearances are maintained, and toppling is prevented.
- b. Spillage of fuel, oil or hazardous materials shall be reported to the CCD ROCIP Safety Team. Spills shall be cleaned up or contained immediately. The Contractor must have a Spill Cleanup Kit available on site. On-site disposal of oil or hazardous material is prohibited.
- c. Trash and garbage shall be placed by the Contractors into appropriate containers. Debris is to be cleaned up daily. This project will have a "clean-as-you-go" policy. The Contractor is responsible for monitoring this policy and pursuing any Subcontractor that is not in compliance.
- d. Nails protruding from lumber shall be removed or bent over immediately.
- e. Trash dumpsters may be located at the site. The disposal of trash into these dumpsters is the responsibility of each Contractor. Trash removal from upper floors/work levels will require the use of trash chutes or some other safe means of trash removal. No one is permitted to throw or drop trash/debris from upper floors/levels to the dumpster or ground below.
- f. Cords or hoses must be hung overhead, out of designated walkways, whenever possible. Cords or hoses on the ground must be bundled or covered to minimize trip hazards.
- g. Unobstructed passageways for the movement of fire trucks, ambulances or similar emergency vehicles shall be maintained. A minimum of 15 feet (or as stipulated by the governing fire official) of clear, unobstructed access shall be maintained leading to fire hydrants and Siamese connections.
- h. All loose and combustible material shall be removed from work areas at the end of the workday or as wind and weather conditions dictate.
- i. Gang boxes, Conex boxes and toolboxes shall not have materials stored on top of or under them.

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## 10.25 Protection of the Public and Property

The Contractor and Subcontractors shall take the necessary precautions to protect the general public (individuals not contractually related to the project) from injury and prevent damage to property and shall follow the contract requirements. The precautions to be taken at a minimum are as follows:

- a. Perform no work in any area occupied or in use by the public unless specifically permitted by the contract.
- b. Maintain work areas where public use may be necessary, especially involving sidewalks, entrances to buildings, lobbies, corridors, aisles, stairways, and vehicular roadways. Protect the public with appropriate guardrails, barricades, temporary fences, overhead protection, temporary partitions, shields, and adequate visibility. Such protection shall guard against harmful radioactive rays or particles, flying materials, falling or moving materials and equipment, hot or poisonous materials, explosives and explosive atmospheres, flammable or toxic liquids and gases, open flames, energized electric circuits, or other harmful exposures.
- c. Keep sidewalks, entrances to buildings, lobbies, corridors, aisles, doors, or exits that remain in use by the public clear of obstructions to permit safe ingress and egress of the public at all times.
- d. Appropriate warning signs and instructional safety signs shall be posted where necessary. In addition, a signalman shall control the movement of motorized equipment in areas where the public might be endangered.
- e. Provide sidewalk sheds, canopies, catch platforms, and appropriate fences when it is necessary to maintain public pedestrian traffic adjacent to the erection, or structural alternation of outside walls on any structure.
- f. Provide temporary fences around the perimeter of above ground operations adjacent to public areas except where a sidewalk, shed, or fence is provided by the contract or as required (2) above. Perimeter fences shall be at least six (6) feet high. They may be constructed of wood or metal frame and sheathing, wire mesh or a combination of both. When the fence is adjacent to a sidewalk near a street intersection, at least the upper section of the fence shall be open wire mesh from a point not over four (4) feet above the sidewalk and extending at least twenty-five (25) feet in both directions from the corner of the fence or otherwise required by the City and County of Denver.
- g. Provide warning signs and lights, including electric lights during periods of severely restricted visibility, and continuously from dusk to sunrise along the guardrails, barricades, temporary sidewalks, and at every obstruction to the public as needed. They shall be placed at both ends of such protection or obstructions and not over twenty (20) feet apart alongside of such protection or obstruction.
- h. Provide temporary sidewalks when a permanent sidewalk is obstructed by the operations. They shall be in accordance with the requirements of the local ordinances. Guardrails shall be provided on both sides of temporary sidewalks.
- i. Provide guardrails on each side of vehicular and pedestrian bridges, ramps, runways, and platforms. Pedestrian walkways elevated above adjoining surfaces, or walkways within six (6) feet of the top of excavated slopes or vertical banks shall be protected with guardrails, except where sidewalk sheds or fences are provided. Guardrails shall be made of rigid materials capable of withstanding a force of at least two hundred (200) pounds applied in any direction at any point in their structure. Their height shall be approximately forty-two (42 + or - 3) inches. Top rails and posts may be two inches by four inches (2 x 4) dressed wood or equal materials. Posts shall not be more than eight (8) feet apart.
- j. Provide barricades where sidewalk sheds fences or guardrails as referenced above are not required between work areas and pedestrian walkways, roadways or occupied buildings. Barricades shall be

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secured against accidental displacement and shall be maintained in place except where temporary removal is necessary to perform the work. When a barricade is temporarily removed, a watchman shall be placed at all openings.

- k. Prohibit fuel-burning types of lanterns, torches, flares or other open flame devices.
- l. Maintain all equipment, devices and structures so as to not pose a hazard to the public, property or employees, and to perform their intended functions properly at all times.
- m. Each point of access to the project will be controlled.

## 10.26 Security

The Contractor shall be responsible for maintaining the security of their jobsite, vehicles, tools, stockpiled materials, waste, and hazardous materials at all times. CCD shall not be liable for any lost, stolen, or otherwise damaged vehicles, tools, stockpiled materials or any other Contractor- owned materials.

All vehicles will be subject to search upon entering and exiting the construction site and designated parking areas. Any unauthorized vehicle parked on the project site (other than in designated parking areas) may be physically removed at the expense of the vehicle owner. Loitering on the job site before or after assigned shift is prohibited.

## 10.27 Smoking

The primary purpose of this policy is the establishment of a completely smoke-free environment in the workplace in order to protect life, health and property. Employees and visitors are not permitted to smoke in any buildings on CCD property. Employees and visitors may smoke at designated smoking areas on site. At each construction jobsite, the Contractor will designate a smoking area. Smoking is not permitted in the immediate work area to include onsite vehicles and equipment. CCD reserves the right to designate specific smoking areas at its discretion.

The area will include but will not be limited to the following conditions:

- a. Smoking will be permitted only at designated smoking areas, at least 100 feet from work areas.
- b. Designated smoking areas must have a "Smoking" sign that indicates the designated smoking area. A cigarette butt container with sand must be available to extinguish smoking materials. Cigarette butts will not be permitted to be discarded on the ground, roadway, or work area.
- c. A charged, 20# ABC fire extinguisher must be available at the designated smoking area. The fire extinguisher must be within 25 feet traveling distance in any direction of the designated smoking area.
- d. Contractor and Subcontractor employees must be trained in the proper use of fire extinguishers.
- e. No smoking is permitted within 100 feet of flammable liquids, approved flammable liquid containers, and flammable materials.
- f. No smoking is permitted within 100 feet of storage and/or in use flammable compressed gas cylinders, or gas cylinders that support combustion.
- g. No smoking is permitted within 100 feet of combustible materials or gas pump areas.

## 10.28 Sanitation

### 10.28.1 Potable water

The Contractor must adequately supply potable water on the project site. Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap.

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Water shall not be dipped from containers. Any container used to distribute drinking water shall be maintained in a sanitary condition, shall be clearly marked as to the nature of its contents, and not used for any other purpose. A common drinking cup is prohibited.

### 10.28.2 Toilets

Toilet facilities shall be maintained in a sanitary condition. Toilets shall be provided for employees according to the following table:

Number of Employees	
20 or less	1
20 or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

### 10.28.3 Washing Facilities

The Contractor shall provide adequate washing facilities for employees engaged in the application of paints, coating, herbicides, or insecticides, or in other operations where contaminants may be harmful to the employees. Such facilities shall be in near proximity to the worksite and shall be so equipped as to enable employees to remove such substances.

- a. Hand soap or similar cleansing agents shall be provided.
- b. Individual hand towels of cloth or paper, warm air blowers or clean sections of continuous cloth toweling, convenient to wash facilities, shall be provided.
- c. Washing facilities shall be maintained in a sanitary condition.



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## APPENDIX A – MODEL SITE-SPECIFIC SAFETY PLAN

Every Contractor and Subcontractor, and their Subcontractors, must develop and implement a written site-specific safety plan (SSSP) and a copy must be maintained at each work site.

This model program has been prepared only as an aid for use by Contractors and Subcontractors. Contractors and Subcontractors are solely responsible for the content of their own SSSPs. This model program was written for a broad spectrum of employers and it should be modified as appropriate to provide the essential framework required for a SSSP on this Project. Proper use of this model program requires the Project Manager/Superintendent and the Contractor Safety Representative to carefully review the requirements for each of the SSSP elements found in this model.

If your company uses this model SSSP, complete the appropriate blank spaces and check those items that are applicable to your workplace. Sample forms for hazard assessment and correction, accident/exposure investigation, and worker training and instruction are provided with this model program. This model program must be maintained by the Contractor's/Subcontractor's Project Manager in order to be effective.

### 1. Responsibility/Identification of Key Line Personnel

Contractor:

Address:

Telephone:

Fax:

Email:

Company Executive responsible for project:

Office #

Cell #

Manager/Superintendent:

Office #

Cell #

Safety Representative/Manager:

Office #

Cell #

Field Supervisors or Forepersons:

Office #

Cell #

- Provide 24/7 phone numbers for key personnel.
- Provide roles and responsibilities of persons listed above.

All managers and supervisors are responsible for implementing and maintaining the SSSP in their work areas and for answering worker questions about the SSSP. A copy of this SSSP is available from each manager and supervisor.

### 2. Statement of Subcontractor's Safety and Health Policy (Include your company statement here)

### 3. Identification of Competent/Qualified Persons (List/Submit Certificate)

### 4. Scope of Work Evaluation (List Major Activities)

### 5. Hazard/Risk/Exposure Assessment Major hazards or risks and exposures associated with the scope of work evaluation must be listed here. Each major activity must be evaluated, and a Job Hazard Analysis developed before the start of work.

### 6. Control Measures/Hazard Analysis/Pre-Task Planning (Provide an Appendix to include Hazard Control Measures and Job Hazard Analysis for Risks Listed in #5)

### 7. Subcontractor Daily Safety Inspections Daily inspections to identify and evaluate on-going workplace hazards must be performed by the following competent persons or observers in the following areas of our workplace:

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Competent Person/Observer	Area of Expertise/Responsibility
---------------------------	----------------------------------

Periodic inspections are performed according to the following schedule:

- When the SSSP is first implemented;
- Daily;
- When new substances, processes, procedures or equipment which present potential new hazards are introduced into our workplace;
- When new, previously unidentified hazards are recognized;
- When occupational injuries and illnesses occur;
- When we hire and/or reassign permanent or intermittent workers to processes, operations, or tasks for which a hazard evaluation has not been previously conducted; and
- Whenever workplace conditions warrant an additional inspection.

**8. Contractor Risk Mitigation Two-Week Look-Ahead Planning Submission** The form in the appendices can be used to plan risk mitigation strategies at weekly progress meetings.

**9. Compliance Requirements Policy** Management is responsible for ensuring all safety and health policies and procedures are clearly communicated and understood by all employees. Managers and supervisors are expected to enforce the rules fairly and uniformly. All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment. Our system of ensuring that all workers comply with the rules and maintain a safe work environment includes:

- Informing workers of the provisions of our SSSP and the ROCIP Safety Manual.
- Evaluating the safety performance of all workers.
- Recognizing employees who perform safe and healthful work practices.
- Providing training to workers whose safety performance is deficient.
- Disciplining workers for failure to comply with safe and healthful work practices; and
- The following practices:

**10. Written Disciplinary Program** (Explain or attach written program)

**11. Hazard Identification and Correction Process** Unsafe or unhealthful work conditions; practices or procedures must be corrected in a timely manner based on the severity of the hazards. Hazards must be corrected according to the following procedures:

- When observed or discovered;
- When an imminent hazard cannot be immediately abated without endangering employees or property, all exposed workers will be removed from the area except those necessary to correct the existing condition. Workers needed to correct the hazardous condition must be provided with the necessary protection. All corrective actions taken must be documented, with completion date, on the appropriate forms.

**12. Training and Instruction Policy** All workers, including managers and supervisors, must have training and instruction on general and job-specific safety and health practices. Training and instruction must be provided as follows:

- When the SSSP is first established;
- To all new workers;

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- To all workers given new job assignments for which training has not previously provided;
- Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;
- Whenever the employer is made aware of a new or previously unrecognized hazard;
- To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed; and
- To all workers with respect to hazards specific to each employee's job assignment.
- When employee actions indicate that retraining is necessary.

Workplace safety and health practices for all locations include, but are not limited to, the following:

- Explanation of the employer's SSSP, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instruction is needed.
- Use of required personal protective equipment.
- Information about chemical hazards to which employees could be exposed and other hazard communication program information.
- Availability of toilet, handwashing, and drinking water facilities.
- Provisions for medical services and first aid including emergency procedures.

In addition, employees will receive specific instructions regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

**13. Employee Site Safety Orientation Program** All new employees will receive a site safety orientation prior to work on the project. The site safety orientation will include the following elements:

- Employee jobsite safety and health requirements and policies
- Review of site-specific safety plan to include emergency procedures/phone numbers and Crisis Management Plan
- Employer and employee rights and responsibilities
- Hazard communication
- Fall Protection
- PPE and work attire
- Personal conduct and disciplinary actions
- Authorized access and parking
- Good housekeeping practices
- Job Hazard Analysis (JHA)
- Pre-Task Planning
- Return to work programs, incident reporting procedures (to include near misses), workers compensation requirements, and designated provider information.
- Drug free workplace and substance abuse testing.
- Other job specific hazards.

**14. Employee Communication System and Policy** The following system of communication is designed to facilitate a continuous flow of safety and health information between management and staff in a form that is readily understandable and consists of one or more of the following checked items:

- New worker orientation including a discussion of safety and health policies and procedures.

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- Review of our SSSP and ROCIP Safety Manual.
- Workplace safety and health training programs.
- Regular weekly and daily safety meetings.
- Effective communication of safety and health concerns between workers and supervisors, including translation where appropriate.
- Posted or distributed safety information.
- A system for workers to anonymously inform management about workplace hazards.
- Lessons learned.
- Other: \_\_\_\_\_

**15. Recordkeeping Policy** We have taken the following steps to document the implementation of the SSSP:

- Records of hazard assessment inspections, including the persons conducting the inspection, the unsafe conditions and work practices that have been identified and, the action taken to correct the identified unsafe conditions and work practices are recorded on a hazard assessment and correction form
- Documentation of safety and health training for each worker, including the worker's name or other identifier, training dates, types of training, and training providers are recorded on a worker training and instruction form.
- Other records are retained as required by contract specifications or by local, state or federal (OSHA regulations). Where regulations do not specify the length of records retention, a period of three years after project completion will be used.

**16. Accident Investigation Policy** Procedures for investigating workplace accidents include:

- Responding to the accident scene as soon as possible;
- Reporting immediately to the appropriate Program Manager point-of-contact and ROCIP
- Interviewing injured workers and witnesses;
- Post-accident substance abuse testing.
- Examining the workplace for factors associated with the accident;
- Determining the cause of the accident;
- Taking corrective action to prevent the accident from reoccurring;
- Recording the findings and corrective actions taken; and
- Communicating lessons learned.

**17. Crisis Communication Plan/Emergency Action Plan** (Define assembly areas, head count procedure etc.)

**18. Site Specific Medical Emergency Plan** (Define/ provide emergency contact numbers, competent first-aider, provider locations, etc.)

**19. Hazard Communication Program** (Attach written program, safety data sheets, and hazardous materials list)

**20. Written Trenching and Shoring Plan** (Attach if applicable)

**21. Written 100% Fall Protection Plan** (Attach if applicable)

**22. Written Substance Abuse Program**

**23. Written Respiratory Protection Program** (Attach if applicable)

**24. Written Heat Illness Prevention Plan** (Attach if applicable)

**25. Written Hot Work Permit Procedure** (Attach if applicable)

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**26. Written Silica Exposure Control Program** (Attach if applicable)

**27. Written Confined Space Entry Procedure** (Attach if applicable)

**28. Written Lockout/Tagout Procedures** (Attach if applicable)

**29. List of Attachments**

- Daily Safety Inspection Record
- Accident Inspection Report Form
- Training Record
- Contractors Weekly Safety Planning Submission
- Other: \_\_\_\_\_

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## APPENDIX B – JOB HAZARD ANALYSIS

### Job Hazard Analysis (JHA)

JHA #:	Overall Risk Assessment Code (RAC) (Use highest code)						
Activity/Work Task:	Risk Assessment Code (RAC) Matrix						
Date Prepared:	Severity	Probability					
		Frequent (F)	Likely (L)	Occasional (O)	Seldom (S)	Unlikely (U)	
Prepared by:	Catastrophic (C)	E	E	H	H	M	
	Critical (Cr)	E	H	H	M	L	
Reviewed by:	Marginal (M)	H	M	M	L	L	
	Negligible (N)	M	L	L	L	L	
Notes: (Field Notes, Review Comments, etc.):	<b>Step 1:</b> Review each "Hazard" with identified safety "Controls" and determine RAC (See above). <b>The RAC is developed after correctly identifying all the hazards and fully implementing all controls.</b>						
References:	<b>P "Probability"</b> is the likelihood to cause an incident, near miss, or accident and identified as: Frequent (F), Likely (L), Occasional (O), Seldom (S) or Unlikely (U).					<b>RAC Chart</b> E = Extremely High Risk H = High Risk M = Moderate Risk L = Low Risk	
	<b>S "Severity"</b> is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic (C), Critical (Cr), Marginal (M), or Negligible (N)						
	<b>Step 2:</b> Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.						
Job Steps	Hazards	Controls			P	S	RAC
Equipment to be Used	Training Requirements/Competent or Qualified Personnel	Inspection Requirements					

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## APPENDIX C – DAILY PRE-TASK PLANNING

### Daily Pre-Task Planning

Supervisor/Foreman: \_\_\_\_\_ Date: \_\_\_\_\_

Job Activity: \_\_\_\_\_

Signature – Supervisor/Foreman

Signature – Project Manager/Safety Manager

LIST TASKS	
1. _____	6. _____
2. _____	7. _____
3. _____	8. _____
4. _____	9. _____
5. _____	10. _____

**REQUIRED TOOLS**

Air Compressor _____	Electrical Drill _____	Port Bandsaw _____
Electrical Grinder _____	Roto Hammer _____	Chipping Gun _____
Generator _____	Sawzall _____	Welding Machine _____
Chop Saw _____	Hydraulic Jacks _____	Skill Saw _____
Cutting Torch _____	Impact Wrench _____	Other Tool: _____
Ladder _____	Electric Cords _____	Other Tool: _____
Powder Actuated _____	Welding Leathers _____	Other Tool: _____

**REQUIRED EQUIPMENT**

Crane _____	Dump Truck _____	Aerial Lift: _____
Motor Grader _____	Scraper _____	Suspended Personnel _____
Compactor _____	Roller _____	Platforms/Manbaskets: _____
Excavator _____	Dozer _____	Other: _____

**IDENTIFY POTENTIAL HAZARDS**

Particles in Eye _____	Chemical Burn _____	Thermal Burn _____
Overexertion _____	Elevated Load _____	Live Utilities (above /below grade) _____
Abrasion/Cuts _____	Struck By _____	Dropping Material & Tools to Lower Level _____
Falls Over 6' _____	Overhead Work _____	Moving Machinery _____
Strains/Sprains _____	Trip/Slip/Fall _____	Moving Aircraft _____
Fire _____	Cave-in _____	Other: _____
Loud Noises _____	Heat/Cold Exp. _____	Other: _____
Pinch Points _____	Electrical Shock _____	
Other: _____	Other: _____	

**IDENTIFY HAZARD ELIMINATION**

Fall Protection _____	Toeboards/Netting _____	Be in the Proper Position /Situational Awareness _____
Keep Area Cleaned _____	Sloping/Shoring _____	Tools/Materials Secured _____
Guardrails _____	Proper Rigging _____	Coordination with Other Trades _____
Fire Watch/Exting _____	Taglines _____	
Make Eye Contact _____	Get Help _____	

Additional Hazard Controls: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**REQUIRED PERSONAL PROTECTIVE EQUIPMENT**

Hardhat _____	Hearing Protection _____	Safety Goggles _____
Safety Glasses _____	Face Shield _____	Welding Leathers _____
Reflective Vest _____	Metatarsal Guards _____	Welding Hood _____
Safety Boots _____	Rubber Boots _____	Other PPE: _____
Work Gloves _____	Rubber Gloves _____	Other PPE: _____

**Permits and Plans Issued? (Check all that Apply)**

Fall Protection Plan _____	Crane: Critical Lift Plan _____	Confined Space Permit _____
Energized Electrical Work Permit _____	Hot Work Permit _____	Excavation Plan _____
Other: _____	Other: _____	Other: _____

List each employee covered by this Pre-Task Planning Sheet: (Print name and have each employee initial to acknowledge understanding of job specific hazards/mitigations identified by this Pre-Task Planning Sheet)

Name	Initials	Name	Initials
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Near Miss Report

Time of Occurrence: \_\_\_\_\_  
 Describe Near Miss: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Actions Taken to Correct/Prevent Similar Incidents: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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## APPENDIX D – CONTRACTOR TWO-WEEK LOOK AHEAD

Contractor's Two Week Look Ahead- Hazard Mitigation				
Enter all information in yellow below. Cells will auto-format.				
Project Name:		Date Submitted:		
Project Number (#'s only, no symbols):				
Prepared by:		Phone:		
<b>DUE EVERY THURSDAY by Close of Business for the following 2 weeks</b>				
Email to: <a href="mailto:NWCROCIPSafety@denvergov.org">NWCROCIPSafety@denvergov.org</a> in original Excel format. PDFs and scanned copies will not be accepted.				
Provide requested information in ALL spaces highlighted green. If you select yes, please provide dates and any additional information below				
2 WEEK HAZARDOUS TASK LOOK AHEAD				
Are you conducting any of these hazardous tasks in the next 2 weeks?	Yes/No	Start Date	End Date	Additional Actions
Crane Lift (new work sequence, critical, or near public)				CCD Safety Review Plans/attend planning meeting
Crane Lift (repetitive work, pick plans already reviewed)				
Crane- bringing to site				submit crane specifications to <a href="mailto:NWCROCIPSafety@denvergov.org">NWCROCIPSafety@denvergov.org</a>
New Trenching/Excavation <4'				CCD Safety may Review Plans/attend planning meeting
New Trenching/Excavation 4'-20'				CCD Safety may Review Plans/attend planning meeting
New Trenching/Excavation >20'				CCD Safety may Review Plans/attend planning meeting
Trenching/Excavation- ongoing				
Hot Work (new task, not ongoing)				
Confined Space- NEW				
Confined Space- ongoing				
Multi-Employer Lock-Out				GC coordination meeting with stakeholders
Work Near Public Occupied Spaces that poses significant risk				
Elevated Work requiring fall protection/guardrails (new task or erection)				
Haul Route Changes or non-routine Public Road MHT changes				send new maps to CCD safety at <a href="mailto:NWCROCIPSafety@denvergov.org">NWCROCIPSafety@denvergov.org</a>
Evening/Night Work				
OTHER:				
Hauling		Days of Week:		
ADDITIONAL LOOK AHEAD				
Additional Job Hazard Analysis Required for New Upcoming Work Above	Task/Work Description:			
	Task/Work Description:			
Planned Task or Hazard Specific Safety Training	Date/Time:		Task/Type:	
	Date/Time:		Task/Type:	
Pre-planning Meetings	Date/Time:		Task/Type:	
	Date/Time:		Task/Type:	
SUBCONTRACTOR AND EMPLOYEE CHANGES/INFORMATION				
Subs Mobilized:	Name	Date:		Pre-Mob Meeting Date:
		Date:		Pre-Mob Meeting Date:
		Date:		Pre-Mob Meeting Date:
Subs Demobilized:		Date:		
		Date:		
		Date:		
Competent Person (NEW)		Task/Type:		
		Task/Type:		
		Task/Type:		
GC SAFETY PROFESSIONAL INFORMATION (always provide, update as needed)				
Day Shift		Cell Phone:		Email:
		Cell Phone:		Email:
Night Shift (if applicable)		Cell Phone:		Email:
		Cell Phone:		Email:
PROJECT CONTACT INFORMATION (always provide, update as needed)				
CCD Project Manager		Cell Phone:		Email:
GC Project Manager		Cell Phone:		Email:
GC Lead Superintendent		Cell Phone:		Email:
ADDITIONAL INFORMATION				
(i.e. additional safety reps, subcontractor pertinent information, other high hazards you would like to review, etc.)				



## Exhibit F

## APPENDIX E – SUBCONTRACTOR PREMOBILIZATION SAFETY MEETING

**Subcontractor Premobilization Safety Meeting**

Date: \_\_\_\_\_ Project/Location: \_\_\_\_\_

Contractor Representatives: \_\_\_\_\_

Subcontractor Representatives: \_\_\_\_\_

The following project site safety, health and security requirements, procedures, and hazards have been identified and reviewed with the Subcontractor.

	SSSP/Emergency Planning/Crisis Com		Demolition
	Competent/Qualified Person		Personal Protective Equipment
	Hazardous Materials/Waste		Cranes/Hoists/Annual Inspection Certificate
	Vehicle/Heavy Equipment		Overhead Power Lines
	Lockout/Tagout		Confined Spaces (Permit/Non-Permit)
	Electrical		Excavations/Trenching
	Fire Protection		Site Security/Visitor Control/Public Exposure
	Hot Work/Welding/Cutting		Risk Mitigation Two Week Look Ahead, Daily Pre-Task Planning Sheet, Job Hazard Analysis
	Fall Protection/Guardrails/Scaffolding/Ladders		Permits (Excavation/Scaffolding/Demolition/Traffic/Confined Space/etc.)

**Additional Project Concerns:**


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**Other Attendees:**

Name	Title	Company

# Exhibit F

## APPENDIX F – CRITICAL LIFT PLAN (CRANES)

### Critical Lift Plan

Crane Make/Model/Serial #: \_\_\_\_\_ Anticipated Lift Date: \_\_\_\_\_

Lift Location: \_\_\_\_\_

Load Description: \_\_\_\_\_

- Required Attachments:  Copy of load chart for applicable crane configuration  Diagram of crane lift & load placement
- Rigging certifications  Diagram of rigging configuration with load  Copy of crane's annual inspection calculation

**A. Load**

1. Wt. of load \_\_\_\_\_ lbs.
2. Wt. of auxiliary block \_\_\_\_\_ lbs.
3. Wt. of main block \_\_\_\_\_ lbs.
4. Wt. of lifting beam \_\_\_\_\_ lbs.
5. Wt. of slings/shackles/other rigging \_\_\_\_\_ lbs.
6. Wt. of jib (erected/stowed/stored) \_\_\_\_\_ lbs.
7. Wt. of hoist rope (#parts X L X unit wt.) \_\_\_\_\_ lbs.
8. Wt. of excess load material \_\_\_\_\_ lbs.
9. Other \_\_\_\_\_ lbs.

**GROSS WEIGHT** \_\_\_\_\_ lbs.

Source of load wt. information (drawings, calcs, etc.) \_\_\_\_\_

Load wt. confirmed by: \_\_\_\_\_

**B. Crane**

1. Type of crane \_\_\_\_\_
2. Counterweight \_\_\_\_\_ lbs.
3. Boom length \_\_\_\_\_ ft./boom configuration \_\_\_\_\_
4. Radius at pick up \_\_\_\_\_ ft./set down \_\_\_\_\_ ft.
5. Max rated capacity of crane at this boom length, radius and boom angle for this lift \_\_\_\_\_ lbs.
6. Max. load on crane for this lift is \_\_\_\_\_ lbs.
7. Lift is \_\_\_\_\_% of the crane's rated capacity

**C. Jib/Fly**

1. Erected \_\_\_\_\_ Stowed \_\_\_\_\_ Stored \_\_\_\_\_
2. If jib/fly to be used: length \_\_\_\_\_ angle \_\_\_\_\_
3. Rated capacity of jib/fly from chart \_\_\_\_\_ lbs.

**D. Hoist Rope**

1. Rope diameter \_\_\_\_\_ Number of parts \_\_\_\_\_
2. Lift capacity based on parts \_\_\_\_\_

**E. Rigging**

1. Sling configuration (choker, basket, straight)
2. Sling material \_\_\_\_\_
3. No. of slings \_\_\_\_\_ size \_\_\_\_\_ length \_\_\_\_\_
4. Sling assembly rated capacity \_\_\_\_\_ lbs.
5. Shackle size \_\_\_\_\_ No. of shackles \_\_\_\_\_
6. Shackle rated capacity \_\_\_\_\_ lbs.
7. Shackle secured to load by \_\_\_\_\_
8. Spreader beam capacity \_\_\_\_\_ lbs.

**F. Crane Placement**

1. Any deviation from smooth, solid foundation? \_\_\_\_\_
2. Distance to nearest overhead power line? \_\_\_\_\_
3. Buildings, equipment, plant, or services to lift or swing over? \_\_\_\_\_
4. Crane travel during lift? \_\_\_\_\_
5. Swing direction? \_\_\_\_\_
6. Will crane be set up away from excavations? \_\_\_\_\_ (horizontal clearance shall be greater than hole depth)

**G. Considerations**

1. Multiple crane lifts require a separate plan for each crane.
2. Any changes in crane configuration, placement, rigging, lifting scheme, or calculations require that a new lift plan be developed.
3. Number of taglines required to stabilize load \_\_\_\_\_.
4. If other personnel or equipment, other than lift team and their equipment, are near lift. Barricade and evacuate the lift area.
5. Check crane's operator manual for maximum wind speed a lift may be executed \_\_\_\_\_ mph.
6. Surface area of load should be considered for impact due to wind.
7. Method of communication between signal person and operator  Radio  Hand Signals

**Crane Operator:** I have been briefed of the contents of this lift plan and accept the duty of ensuring the lift is carried out to the agreed procedure, to the limits of my responsibilities.

\_\_\_\_\_  
Name Signature Date

**Lifting Supervisor:** I have been briefed of the contents of this lift plan and accept the duty of ensuring the lift is carried out to the agreed procedure.

\_\_\_\_\_  
Name Signature Date

# Exhibit F

## APPENDIX G – SAMPLE SHARED SPACE AGREEMENT (CRANE)

### Shared Airspace Agreement

(Date)

#### GENERAL TERMS, DEFINITIONS AND BACKGROUND INFORMATION

1. This **Shared Airspace Agreement** is between (Named Contractor) and (Named Contractor).
2. (Contractor) is operating a (crane model, type) crane at (Specific Location and Project Name) near the intersection of (street, intersection, city and state).
3. (Contractor) is operating a (crane model, type) crane at (Specific Location and Project Name) located near the intersection of (street, intersection, city and state).
4. The (Contractor's) (crane model, type) crane and the (Contractor's) (crane model, type) share a common or overlapping airspace with the potential for the two crane booms and/or associated rigging to collide.
5. The (Contractor) tower crane is positioned on an engineered foundation. The radius, swing or operational area of the tower crane cannot be adjusted or changed. The (Contractor's) crawler crane is mobile. The location of the (Contractor's) crawler crane can be altered, thereby changing the radius, swing or operation area of the crawler crane. Relocation of the (Contractor's) crawler crane may change or alter the size or location of the overlapping airspace of the two cranes.
6. Under normal operating conditions, assuming no shared, common or overlapping airspace, the (Contractor's) tower crane would weathervane (swing freely) during non-operating hours. The risk associated with the ability of the (Contractor's) tower crane to weathervane when not in operation is unacceptable whenever (Contractor) plans to work and (Contractor) is not operating or manning their tower crane.
7. Both the (Contractor) (crane model, type) crane and the (Contractor) (crane model, type) crane have established safe operating air speed limits for operation. The maximum air speed for safe operation of the (Contractor's) (crane model, type) crane is **(XX) miles per hour**. The maximum air speed for safe operation of the (Contractor's) (crane model, type) crane is **(XX) miles per hour**.
8. The (Contractor's) tower crane can be guyed off or tied down safely without placing any additional loads on the tower crane foundation at all air speeds below **(XX) miles per hour**. Guying off the tower crane when not in operation and ensuring that the boom is anchored outside the common or shared airspace would allow (Contractor) to operate their crane without (Contractor) manning their tower crane.
9. All cranes in the State of (Name) are regulated by OSHA. Both (Contractor) and (Contractor) will operate their respective cranes within OSHA regulations at all times.
10. The (Contractor) crawler crane was in operation before the installation of the (Contractor) tower crane. (Contractor) requested and received prior approval from OSHA before installing the tower crane. The OSHA prior approval was conditioned upon both crane operators having instant, continuous, dedicated mobile communication at all times. OSHA was aware of the existence of the (Contractor) (crane model, type) crane and the shared airspace problem before giving approval to (Contractor) to install the (crane model, type).
11. After installation of the (Contractor) tower crane OSHA requested that both (Contractor) and (Contractor) sign a written agreement to ensure that both cranes would operate in the shared or common airspace safely. This original agreement was the (Contractor) letter to OSHA signed by both (Contractor) and (Contractor) and dated (Day-Month-Year).

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## SPECIFIC TERMS TO INCLUDE OPERATING PROCEDURES

1. (Contractor) and (Contractor) both agree that the (Contractor) letter to (Name) of OSHA dated (Day-Month-Year) is hereby null and void. This original agreement did not include a procedure for dealing with the excessive amount of overtime crane operations by (Contractor). The original agreement did not discuss the conditions under which the tower crane would weathervane. The operating procedures defined in the (Contractor) letter to OSHA dated (Day-Month-Year) are hereby replaced by the operating procedures in this Shared Airspace Agreement. This Shared Airspace Agreement has been reviewed and approved by OSHA.
2. When both cranes are in operation at the same, time both crane operators will have instant, continuous, dedicated mobile communication. Before either crane approaches the shared or common airspace the other crane operator must provide clearance. If any doubt or confusion exists, the crane operator will not enter or even approach the shared airspace. (Contractor) and (Contractor) agree to allow both operators to communicate, share information and work together to ensure safe crane operations for both companies.
3. (Contractor) and/or (Contractor) will not, under any circumstances, operate their crane when the air speed exceeds the safe operating air speed for that crane. (Reference Line Item # 7)
4. (Contractor) will place the boom of their tower crane outside the shared or common airspace at the end of every work shift. (Contractor) will guy off or secure the boom in this safe location allowing (Contractor) to operate within the shared airspace without (Contractor) manning their tower crane. (Contractor) must release the guying cables and allow the tower crane to weathervane (swing freely) when air speeds exceed (XX) miles per hour.
5. (Contractor) will place the boom of their crane well beyond or outside the shared airspace at the end of every work shift. Although the Sumitomo SC 1500 crawler crane does not weathervane, (Contractor) is responsible for ensuring that their crane boom remains outside the shared airspace whenever their crane is not manned or in operation.
6. (Contractor) will install and monitor an air speed indicator on their tower crane. (Contractor) will confirm the weather report before leaving the jobsite after each work shift. (Contractor) will provide air speed and/or weather forecast information to (Contractor) upon request. The intent is to communicate weather information that may predict air speeds and/or weather conditions that are unsafe for continued crane operations. (Contractor) cannot operate their crane under extreme weather conditions. (Contractor) cannot guy off or secure their tower crane under extreme weather conditions.
7. Before the end of every (Contractor) work shift the (Contractor) superintendent will review the current air speed and weather forecasts. If these weather reports and/or air speed monitor(s) indicate or forecast that weather conditions may deteriorate and cause air speeds in excess of (XX) miles per hour (the maximum safe operating air speed for the {Contractor} mobile crane) Contractors will discuss their intention to continue crane operations under these severe weather conditions.
8. (Contractor) or (Contractor) may decide to start operating their crane when the other company is not manning their crane. This may happen during overtime conditions to include weekday nights, weekends or holidays. If either (Contractor) or (Contractor) commences crane operations when the other crane is not manned, they must confirm that the other crane is safely outside the shared or common airspace. DO NOT ASSUME THAT THE OTHER CRANE IS GUYED OFF, SECURED OR OUTSIDE THE SHARED AIRSPACE AREA BEFORE STARTING CRANE OPERATIONS. A simple visual inspection will confirm that the (Contractor) tower crane is safely guyed off and secured. The guying cables are clearly visible and (Contractor) can easily confirm that the guyed off and secured tower crane will remain outside the shared or common airspace. Confirmation that the (Contractor) tower crane is safely guyed off before commencing an overtime (Contractor) shift is important given that the (Contractor) tower crane has the potential to weathervane into the shared or common airspace. Confirmation that the (Contractor) tower crane is safely guyed off and secured is critical after a major storm has passed through the area. A major storm may have forced

# Exhibit F

(Contractor) to release the guyed cables and allow the tower crane to weathervane. (Contractor) will also ensure that the (Contractor) crane is safely outside the shared airspace area before commencing crane operations.

- 9. Under normal weather conditions (Contractor) agrees to take all actions necessary to ensure that their tower crane is safely guyed off and secured; and out of the shared or common airspace when their tower crane is not manned. (Contractor) must release the guying cables and allow the tower crane to weathervane when air speeds approach (XX) miles per hour.
- 10. Both (Contractor) and (Contractor) agree to provide the other party to this Shared Airspace Agreement with advance written notification of any change to crane configuration, size, location or operation that may possibly impact the size or location of the shared airspace zone.
- 11. Both parties to this Shared Airspace Agreement reserve the right to contact OSHA if the other party violates the letter or intent of this Shared Airspace Agreement. OSHA has the authority to shut down one or both cranes. Both parties agree to work together to ensure a safe operating environment for both cranes. A copy of this fully executed Shared Airspace Agreement will be provided to OSHA.
- 12. This Shared Airspace Agreement will remain in effect until either (Contractor) or (Contractor) permanently remove their crane(s) from their jobsite thereby eliminating any shared airspace problem.
- 13. This Shared Airspace Agreement can only be modified in writing. Any changes must be agreed to, signed by both parties to this agreement.

## **ACCEPTED AND AGREED:**

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(Contractor) Joint Venture Date

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(Contractor) Date

## Exhibit F

## APPENDIX H – SUSPENDED PERSONNEL PLATFORM CHECKLIST

Date:	Competent Person:	
Crane Make:	Model:	Serial Number:
Equipment Number:	Hours:	Crane Capacity:
Crane Type:	Hydraulic	Conventional
<b>(1.) CRANE REQUIREMENTS</b>		
Contractors and/or users must ensure that all items in this checklist are satisfied, including compliance with all safety requirements prior to making a lift. All precautions and instructions on the decals attached to the crane and the platform must be strictly adhered to.		
Circle Items "Yes" to verify compliance:		
No	Yes	Use of a man basket is the safest and most practical way to accomplish the task.
No	Yes	All crane inspections are current per ANSI B30.5 requirements.
No	Yes	All hooks have a current inspection per ANSI B30.10 and have positive locking type hook latches.
No	Yes	The correct load chart is with the crane and the operator is thoroughly familiar with all special notes and manufacturer recommendations given on the chart.
No	Yes	All operational aids and safety devices in the crane are functioning and the operator is fully versed in their operation.
No	Yes	The load lines have a 7:1 safety factor (10:1 when using non-spin rope). NOTE: This is achieved by a 50 percent de-rating of the crane load chart.
No	Yes	The crane is on firm footing and the crane outriggers are all the way out, down, and locked as applicable.
No	Yes	The crane is level within 1 percent, (1 foot in 100 feet) and is on firm surface. NOTE: Stability of the footing will be verified during the full cycle of the operation test.
No	Yes	Means have been provided to enable the operator to ensure that the crane is level.
No	Yes	A firm, level surface has been prepared and designated as a "runway" or path of travel for the weight and configuration of the crane begin used.
No	Yes	The crane counterweights are per manufacturer specification.
No	Yes	All load lines are properly revved and laying properly on the drums.
No	Yes	All drum hoists have full control load lowering. NOTE: Free fall is not to be used.
No	Yes	The boom is fully powered up and down, live boom is not to be used.
No	Yes	The boom angle and radius indicator work. NOTE: Measure radius with tape measure on conventional cranes.
No	Yes	The boom length indicator on telescoping booms is fully functional.
No	Yes	The positive anti two-block device is functioning properly. NOTE: A warning system alone does not suffice.
<b>(2.) RIGGING REQUIREMENTS</b>		
No	Yes	Each bridle leg is connected to the master link, or shackle in a way that ensures the load is evenly distributed between all the bridle legs.
No	Yes	All rigging, wire rope, shackles, rings, master links, and other rigging hardware, have a minimum safety factor of 5:1. NOTE: When non-spin cable is used, a minimum safety factor of 10:1 is required.
No	Yes	All wire rope eye fittings are provided with thimbles.
No	Yes	All load hooks are closed with locking type latches.
No	Yes	All rigging equipment for the man basket is exclusively for that use only.
No	Yes	All rigging has been inspected for kinks or damage of any kind.
No	Yes	Shackle pins are of the nut-with-pin-retainer-type.
<b>(3.) MAN BASKET REQUIREMENTS</b>		
No	Yes	The basket has been designed with a 5:1 safety factor by a qualified engineer and welded by a qualified welder.
No	Yes	The suspension rigging system has been designed in such a way as to minimize tipping of the man basket
No	Yes	The maximum rated load and maximum capacity is posted on a permanently affixed plate on the man basket.
No	Yes	The guardrail designed to enclose the platform is provided and is enclosed from the toe board to the mid-rail.
No	Yes	Body harness anchorage provided.
No	Yes	The access gate has been designed to open in and is positively prevented from swinging outward while the man basket is in use.
No	Yes	The access gate must have a positive locking system to prevent accidental opening during operation.
No	Yes	The design allows enough headroom for employees to stand upright.
No	Yes	There are no rough edges on any man basket surface.
No	Yes	In addition to hard hats, overhead protection is provided when employees are exposed to falling objects.
No	Yes	A trial-lift meeting has been attended by the crane or derrick operator, signal person(s) (if necessary for the lift), employee(s) to be lifted, and the employee responsible for the task to be performed

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No	Yes	Precautions have been taken to protect employees from any special hazards in the area where the crane and man basket will be operating; for example, power lines or areas where the man basket will be out of the operator's view.
No	Yes	Special precautions have been taken to protect personnel from electrical hazards. When the crane with a man basket is working near electrical lines or devices, the minimum working clearances shall be at least twice those for material handling operations.
No	Yes	A man basket use authorization has been issued dated and properly signed for the task at hand.
No	Yes	The man basket and rigging has been proof-tested to 125 percent of the platform rated capacity.
No	Yes	An unoccupied trial lift loaded to at least the anticipated lift weight has been performed and hoisted to each location where work is to be performed, or to any point where employees are expected to enter or exit the platform. NOTE: The trial lift must be performed each time the crane is moved.
No	Yes	A post trial-lift inspection of the crane has been carried out by a designated employee.
No	Yes	The loading is less than 50 percent of the crane-rating chart for all work locations.
No	Yes	The operator has determined that all systems, controls, and safety devices are activated and functioning properly and that no interferences exist.
No	Yes	The man basket has been hoisted a few inches and has been re-inspected after the trial lift for any deficiencies.
No	Yes	Prior to hoisting personnel, the man basket has been hoisted a few inches to verify its hang level.
No	Yes	All hoist ropes are free of kinks.
No	Yes	Multipart lines are not twisted around each other.
No	Yes	The hook is centered over the load.
No	Yes	The hoist lines are laying properly on hoist drums and in the sheaves.
No	Yes	All post trial lift defects have been corrected.
No	Yes	The crane-bearing surface has been rechecked and crane re-leveled as required.
No	Yes	Have the crane safety components, dogs, pawls, brakes, etc., have been re-inspected after the trial lift.
No	Yes	Travel with the crane is not permitted except where all requirements are satisfied and where not to do so would endanger life
No	Yes	The operator has been advised that the load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs must be engaged when the occupied personnel platform is in a stationary working position.
No	Yes	The operator has been advised that the platform must be hoisted in a slow, controlled, cautious manner with no sudden movement of the crane, derrick or platform.
No	Yes	The operator has been advised that the platform must be hoisted in a slow, controlled, cautious manner with no sudden movement of the crane, derrick or platform.
No	Yes	Employees have been advised to perform tasks specified in the man basket authorized only. NOTE: Only the number of employees needed for the task at hand is allowed to be hoisted.
No	Yes	All employees have been advised to keep all body parts inside the platform during raising. NOTE: This provision does not apply to an occupant of the platform performing the duties of a signal person.
No	Yes	All employees have been advised that they are not allowed to enter or exit the platform when it is secured to the structure where the work is to be performed unless securing to the structure creates an unsafe situation.
No	Yes	All employees have been advised that they are not allowed to exit the platform before landing.
No	Yes	All employees have been advised that taglines must be used unless their use would create an unsafe condition.
No	Yes	The operator has been advised to remain at the controls at all times while the crane engine is running, and the platform is occupied.
No	Yes	All employees have been advised that platform use must be promptly discontinued if there is any indication of dangerous weather conditions or other impending danger.
No	Yes	The operator is in constant contact by standard hand signals or voice communications during operation of crane and man basket.
No	Yes	All employees have been advised to remain in continuous sight of or in direct communication with the operator or signal person.
No	Yes	All employees have been advised that the use of a radio is permissible when direct visual contact is not possible, or where the use of a signal person could create a greater hazard.
No	Yes	All employees occupying the platform have been advised to wear a body belt or harness system, with the lanyard appropriately attached to the lower load block, overhaul ball, or structural member within the personnel platform capable of supporting the fall impact for employees using the anchorage.
No	Yes	All employees have been advised to wear a life vest when working over water.
No	Yes	Employees have been advised to secure materials and tools to prevent displacement during the lift.
No	Yes	All employees have been advised to load the man basket evenly and to only carry tools and materials needed for the task at hand.
No	Yes	The operator, and all employees that will be using the platform, have been advised that no other object may be lifted on any of the crane load lines while the platform is suspended.
No	Yes	An audible and visual device has been provided to the personnel in the platform so that they can signal for assistance in the event of an emergency.
No	Yes	Personnel have been advised to stand firmly on the floor of the platform and to not sit or climb on the edge of the platform or use planks, ladders, or other devices for attaining a work position.

# Exhibit F

No	Yes	If welding is to be performed by employees occupying the platform, the electrode must be protected from touching the metal components of the platform.
No	Yes	Any needed repairs to the crane or man basket used only original manufacturer parts to ensure that the new components are compatible with their original counterparts.
No	Yes	Care taken to prevent ropes, electrical cords, and hoses from becoming entangled in the platform when the platform is being moved.
No	Yes	Operator aids or interlocks have not been altered, modified, or disabled in any way.
No	Yes	The crane operator responsible for operating the cranes used for personnel handling is a thoroughly trained operator and has related experience operating the subject crane.
No	Yes	All manuals, operating instructions, and load charts provided have been read and understood by the operating personnel prior to starting the operation.
No	Yes	The operator has ensured that the area surrounding the platform is clear of personnel and equipment before moving the platform.
No	Yes	Prior to the trial lift at each new location, a pre-lift meeting has been held, and is also held for any new employee assigned to the man basket.
No	Yes	All deficiencies discovered in post-trial-lift inspection have been corrected.
No	Yes	All employees attending the pre-lift meeting signed the roster for the meeting.
No	Yes	The trial-lift calculation sheet has been completed, signed and dated.

## (4.) PERSONNEL PLATFORM WEIGHT CALCULATION SHEET

- Platform Rated Capacity \_\_\_\_\_
- 125 Percent Proof Test (**NOTE:** Suspended load for 5 minutes) \_\_\_\_\_
- Number of Occupants x 250 lb. each \_\_\_\_\_
- Tools plus materials in platform \_\_\_\_\_
- Misc. weight not otherwise listed \_\_\_\_\_
- Tare weight of platform plus rigging \_\_\_\_\_
- Total occupied weight of platform \_\_\_\_\_
- Hoist line cable weight \_\_\_\_\_
- Headache ball weight \_\_\_\_\_
- Load block weight \_\_\_\_\_
- Rooster sheave weight \_\_\_\_\_
- Effective JIB weight (If Hoisting on Main Loadline) \_\_\_\_\_
- JIB weight stowed \_\_\_\_\_
- Misc. weight not otherwise listed \_\_\_\_\_
- Total load chard deductions \_\_\_\_\_
- Total weight, "W" (Total Load Chart Deductions Plus) \_\_\_\_\_
  - Total Occupied Weight of Platform \_\_\_\_\_
  - Capacity of Crane at Minimum Radius \_\_\_\_\_
  - Capacity of Crane at Platform Work Radius \_\_\_\_\_
- 50 Percent of Crane Capacity at Minimum Radius \_\_\_\_\_
- 50 Percent of Crane Capacity at Platform Working Radius \_\_\_\_\_
- Total Load, "W" Divided by 50 Percent Crane Rating = Percent of De-rated Capacity Used \_\_\_\_\_

**Crane Operator Signature:**

**Rigger Signature:**

**Lift Supervisor Signature**



# Exhibit F

## APPENDIX I – VISITOR’S WAIVER AND RELEASE

The City and County of Denver is pleased to welcome you to this project. Because of the hazards and risks associated with this construction site, we require every visitor to the Site to be alert for their own safety and to sign a written Waiver and Release absolving the Owner and others associated with this project of any and all responsibility in connection with all risks encountered at the Site. While on the Construction Premises, please be on guard constantly and follow good safety practices including, but not limited to, the following:

1. Hard-hats, safety glasses and high visibility vests must be worn by all visitors at all times.
2. Although work boots are not required, all visitors shall wear low-heeled leather shoes. High heels of any kind or open-toed sandals are not permitted.
3. All visitors are to be escorted at all times by an authorized employee while on the Project Site.
4. Display visitor’s badge on the outer garment at all time
5. BE ALERT for changing conditions and ongoing construction activities while walking on the Project Site. LOOK and LISTEN before you move from one position to another.
6. Be aware of uneven walking surfaces and extreme care shall be taken with each step.
7. No firearms, drugs or alcoholic beverages are permitted on the site.
8. All warning signs and barricades must be obeyed.
9. Do not stray from the approved path for ingress and egress.
10. Do not enter areas with inadequate lighting.
11. Be aware of and stay clear of any overhead hazards.
12. Smoking is only permitted in designated areas.
13. Do not touch construction materials of any kind without written authorization.
14. Do not lean on or reach beyond any handrails or barricades.
15. Report any hazards to the prior to leaving the site.
16. No written correspondence regarding any hazards observed on the site shall be written or forwarded after leaving the site unless previously agreed upon at the site.
17. Call 911 in the event of an emergency

I agree to abide by the Instructions set forth above.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Visitor’s Signature

**CHECK WITH PROGRAM MANAGEMENT TO SEE IF THERE IS A JOB SPECIFIC VISITOR WAIVER**

# Exhibit F

# VISITOR

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

NAME OF COMPANY/PERSON VISITING: \_\_\_\_\_

DATE: \_\_\_\_\_

## **WAIVER AND RELEASE**

In consideration of granting the undersigned permission to enter upon the premises at the Project and for other good and valuable consideration, I hereby waive and forever discharge the Owner, Owner’s representatives, Program Manager, Construction Manager, all Subcontractors on the project (the “Released Parties”) from and against any claim for damages that may arise due to injury to my person or property while on the project whether caused in whole or in part by any negligence, actions or inactions of the Released Parties. As a license, I assume the risk of all dangerous conditions on or about the premises and waive notice of the existence of any such conditions.

I acknowledge the confidential nature of the Owner construction procedures and processes and agree not to photograph, reproduce or divulge the same without the written consent of the Owner.

I HAVE READ THE ABOVE AND AGREE TO SAME:

Signature: \_\_\_\_\_

Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Escort’s First and Last Name: \_\_\_\_\_

## Exhibit F

## APPENDIX J – SAFETY ORIENTATION TRAINING ACKNOWLEDGEMENT

<b>Project:</b>	<b>General Contractor:</b>
<b>Name of Employee: (Print Name)</b>	<b>Date:</b>
<b>Company:</b>	<b>Person Conducting the Orientation:</b>
<p><b>The following topics are to be reviewed with all employees during their initial site orientation.</b></p> <p><b>Topics</b></p> <ol style="list-style-type: none"> <li>1. Information to acquaint the employee with special safety requirements of the work site, including security and traffic regulations;</li> <li>2. Employer and employee rights and responsibilities</li> <li>3. Description of the nature of the project;</li> <li>4. Drug free workplace and substance abuse testing</li> <li>5. Accident reporting procedures;</li> <li>6. How to report unsafe acts or conditions;</li> <li>7. Site disciplinary procedures;</li> <li>8. Personal protection equipment requirements;</li> <li>9. Hazards prevalent for the work being performed (fall protection, trenching, ladder usage, scaffold safety, etc.); and</li> <li>10. Hazard Communication Program</li> <li>11. Emergency Evacuation Procedures</li> <li>12. Good housekeeping practices</li> <li>13. Job Hazard Analysis (JHA)</li> <li>14. Pre-Task Planning</li> <li>15. Return to work programs, incident (to include near misses) reporting procedures, workers compensation requirements, and medical provider list.</li> <li>16. Other _____</li> </ol>	
<b>Comments:</b>	
<p><b>Contractor confirmed negative pre-employment drug screen?</b> Initial for yes _____</p> <p><b>Attach test results to Orientation Acknowledgement and keep on file for duration of project.</b></p>	

By signing this orientation form, I hereby acknowledge that the basic site safety controls outlined above have been thoroughly reviewed with me and that I agree to obey by the contents of the site safety requirements.

Employee Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Any employee questions regarding the Safety Requirements shall be directed to the Contractor's Project Safety Representative.

## APPENDIX K – NEAR MISS REPORT FORM

EXAMPLE NEAR MISS REPORT FORM DOES NOT REPLACE THE REQUIRED CONTRACTOR SAFETY REPRESENTATIVE NARRATIVE

Near Miss Reporting is the process of identifying and preventing an unsafe act or condition before it causes an injury, illness or damage to property and equipment. This form is used to formally document the recognition of a hazard, the change that is made to prevent a reoccurrence of the hazard and to share the lessons learned with the Contractors on the CCD ROCIP. *All information is required*

**Contractor/Subcontractor Name:** \_\_\_\_\_

**Fact Finding:** Please explain the following. (To be completed by employee)

Who was involved in the near miss (employee names optional): \_\_\_\_\_?

Describe what happened:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Where did the near miss occur: \_\_\_\_\_

When did the near miss occur: \_\_\_\_\_

How did the near miss occur:

\_\_\_\_\_  
\_\_\_\_\_

**Preventative Measures Taken.** (To be completed by Contractor’s Safety Representative)

What acts or conditions led directly to the near miss incidents?

\_\_\_\_\_  
\_\_\_\_\_

What steps have/will be taken to prevent a similar incident?

\_\_\_\_\_  
\_\_\_\_\_

Who is responsible for taking these actions and following up to ensure that they are completed?

\_\_\_\_\_

Expected completion date: \_\_\_\_\_

Actual completion date: \_\_\_\_\_

# Exhibit F

## APPENDIX L – SAMPLE WEEKLY TOOLBOX ATTENDANCE ROSTER

### Weekly Safety Toolbox Attendance Roster

Topics Discussed: \_\_\_\_\_  
(Attach pertinent information discussed)

Date of Meeting: \_\_\_\_\_ Discussion Leader: \_\_\_\_\_

Print Name	Signature	Company

EXAMPLE INVESTIGATION FORMS DO NOT  
REPLACE THE REQUIRED CONTRACTOR SAFETY  
REPRESENTATIVE NARRATIVE REPORT.

## APPENDIX M – INVESTIGATION FORMS

### Example: Employee Injury Investigation Form

1. Injured Employee's Name	2. Contractors Name	3. Date/Time of Injury	4. Supervisors/Foreman Name	5. Specific Location of Injury			
6. Employee's Occupation	7. Employee's Job Task at time of Injury		8. Length of Service on Project	9. Length of Service with Employer			
10. Description of what happened							
11. Part of Body Injured or Affected			12. Nature of Injury				
13. Severity	<input type="checkbox"/> First Aid	<input type="checkbox"/> Medical treatment beyond first aid	<input type="checkbox"/> Lost workdays	<input type="checkbox"/> Fatality	<input type="checkbox"/> Other: Specify		
14. Contributing Causes to Injury							
15. Root Cause of Injury							
16. Probable Recurrence	<input type="checkbox"/> Frequent	<input type="checkbox"/> Occasional	<input type="checkbox"/> Rare	17. Loss Severity Potential	<input type="checkbox"/> Major	<input type="checkbox"/> Serious	<input type="checkbox"/> Minor

# Exhibit F

<b>18. Preventive Measures</b>			
<b>19. Injured employee's description of what happened (attach sheet for additional comments)</b>			
<b>20. Witness names and description of incident (attach sheet for additional comments)</b>			
<b>21. Supervisors description of incident (attach sheet for additional comments)</b>			
<b>22. Specific corrective actions or preventative measures taken</b>			
Corrective action taken	Person responsible	Target completion date	Date completed
<b>23. Attached supporting documentation (required)</b>			
<input type="checkbox"/> Photos	<input type="checkbox"/> Diagram of work area	<input type="checkbox"/> Applicable training documentation for parties involved	<input type="checkbox"/> Contractor's investigation report
			<input type="checkbox"/> Witness statements
<input type="checkbox"/> JHA (if applicable)		<input type="checkbox"/> Daily Pre-Task Planning Sheet	<input type="checkbox"/> Corrective action supporting documentation

---

 Supervisor's Signature

---

 Safety Representatives' Signature

---

 Project Manager's Signature

## Exhibit F

## Example: Builders' Risk/General Liability Investigation Form

1. Names of parties involved	2. Contractors Name	3. Date/Time of Injury	4. Supervisors/Foreman Name
5. Description of incident			
6. Description of damages			
7. Contributing causes to incident			
8. Root cause of incident			
9. Probable Recurrence	<input type="checkbox"/> Frequent	<input type="checkbox"/> Occasional	<input type="checkbox"/> Rare
10. Loss Severity Potential	<input type="checkbox"/> Major	<input type="checkbox"/> Serious	<input type="checkbox"/> Minor
11. Preventive Measures			



# Exhibit F

**12.** Employee's description of what happened (attach sheet for additional comments)

**13.** Witness names and description of incident (attach sheet for additional comments)

**14.** Supervisors description of incident (attach sheet for additional comments)

**15.** Specific corrective actions or preventative measures taken

Corrective action taken	Person responsible	Target completion date	Date completed

**16.** Attached supporting documentation (required)

<input type="checkbox"/> Photos	<input type="checkbox"/> Diagram of work area	<input type="checkbox"/> Applicable training documentation for parties involved	<input type="checkbox"/> Contractor's investigation report	<input type="checkbox"/> Witness statements
<input type="checkbox"/> JHA (if applicable)	<input type="checkbox"/> Daily Pre-Task Planning Sheet	<input type="checkbox"/> Corrective action supporting documentation		

\_\_\_\_\_  
Supervisor's Signature

\_\_\_\_\_  
Safety Representatives' Signature

\_\_\_\_\_  
Project Manager's Signature

# Exhibit F

## APPENDIX N – SAMPLE HOT WORK PERMIT

### Hot Work Permit

Authorization: The information on this permit has been evaluated, the site has been examined, and all safety measures are in place.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_  
(Qualified Person Authorizing Hot Work Permit)

Date: \_\_\_\_\_ Location: \_\_\_\_\_

Description of hot work: \_\_\_\_\_

Authorized workers: \_\_\_\_\_  
\_\_\_\_\_

Is a fire watch required?

- Yes      Name of Fire Watch \_\_\_\_\_
- No

A Fire Watch will be posted if:

- 17.** Flammable and combustible materials cannot be moved 35' from the point of operation
- 18.** Wall or floor openings within the immediate work area expose combustible materials in adjacent areas, including concealed spaces in walls or floors
- 19.** Combustible materials are adjacent to the opposite side of partitions, walls, ceilings or roofs, and are likely to be ignited

Permit Checklist

- Flammable and combustible materials within 35' of the point of operation have been removed, covered with fire retardant tarps, or otherwise shielded
- All floors and surfaces have been swept free of combustible dust or debris
- Any openings or cracks in the walls, floors, or ducts that are potential travel passages for sparks, heat and flames have been covered.
- An operable fire extinguisher is nearby and accessible
- Sprinkler heads that could be activated by hot work have been covered by a wet rag
- Smoke detectors in the area of hot work have been covered to prevent false alarms
- A Fire Watch has been posted during the hot work operation and for 30 minutes afterwards to verify that there are no live embers, sparks, or smoldering fires.

# Exhibit F

## APPENDIX O – LESSONS LEARNED FORM

### Lessons Learned Communication

**Date:**  
**What:**  
**When:**  
**Where:**

**Incident Summary:**

**Discussion of Activities:**

**Analysis of What Went Wrong:**

**Immediate and System Cause:**

**Resolutions and Recommendations**

**Cost Savings/Avoidance**

**Work Function:**

**Hazards:**

**Originator:**

**Telephone:**  
**Email:**

**Contact:**

**Telephone:**  
**Email:**

**Distribution:**

## Exhibit F

## APPENDIX P – CONTRACTOR’S MONTHLY SAFETY REPORT

Contractor's Monthly Safety Report			
Enter all information in yellow below. Cells will auto-format.			
Project Name:		For Mo/Year:	
Project Number (#'s only, no symbols):			
Prepared by:		Phone:	
<b>DUE First Tuesday of Every Month</b>			
Email to: <a href="mailto:NWCROCIPSafety@denvergov.org">NWCROCIPSafety@denvergov.org</a> in original Excel format. PDFs and scanned copies will not be accepted.			
Enter a number in ALL spaces highlighted green. Do not leave any cells blank. If N/A, enter 0 (zero).			
INCIDENT TYPES (Includes all Subcontractors)		Number of Cases/Claims	
Complete information in Details tab for each incident from Current Month		Current Month	Year to Date
OSHA Recordable Incidents			
Lost Workday Incidents			
DART Incidents			
First Aid Incidents			
Near Misses Reported			
General Liability			
Builders Risk			
OSHA RECORDABLE AND FIRST AID INCIDENTS:		Number of Cases/Claims	
Includes Subcontractors		Current Month	Year to Date
Fall (e.g. floors, platforms, roofs)			
Struck by (e.g. falling objects, vehicles, equipment)			
Caught in/between (e.g. cave-ins, unguarded machinery, equipment)			
Electrical (e.g. overhead power lines, power tools/cords, outlets, wiring)			
Other (e.g. cuts, burns, and other items not covered above)			
PROJECT SAFETY ACTIVITIES		Count	
Includes Subcontractors		Current Month	Year to Date
Safety Orientations Completed (number of employees)			
Other Safety Training Completed (contact hours)			
Tool Box Meetings Completed (number)			
Corrective Actions of Significance (e.g. discipline, stop work, SSSP/JHA edits,			
Number of Site Safety Inspections Completed			
Number of Supervisors/Foreman Participating in Site Safety Inspections			
PROJECTIONS FOR UPCOMING MONTH		Count	
(Includes all Subcontractors)		Upcoming Month	
Average Trucks per Day (hauling and material delivery)			
Approx. Haul & Delivery trips TOTAL for the Month			
Approx. Number of Employees expected to be on site			

# Exhibit F

Contractor's Monthly Safety Report- Incident Details			
Fields in yellow will auto-populate from the Summary Page.			
Provide details for all incidents listed on the Summary Page for the current month.			
Project Name:	0	For Mo/Year:	January-00
Project Number (#'s only, no symbols):	0		
Prepared by:	0	Phone:	-
<b>DETAILS OF RECORDABLE AND FIRST AID INJURIES OR ILLNESSES FOR CURRENT MONTH: For all injuries and illnesses listed on Summary tab.</b>			
Date	Job Title/Craft	Brief Description	Corrective Actions Initiated
<b>DETAILS OF GENERAL LIABILITY CLAIMS FOR CURRENT MONTH: For all general liability claims listed on Summary tab</b>			
Date	Brief Description		Corrective Actions Initiated
<b>DETAILS OF BUILDERS RISK CLAIMS FOR CURRENT MONTH: For all builders risk claims listed on Summary tab</b>			
Date	Brief Description		Corrective Actions Initiated

Please contact your CCD ROCIP Safety representative or [CCDROCIPSafety@denvergov.org](mailto:CCDROCIPSafety@denvergov.org) for an electronic copy of this form.

## Exhibit F

### APPENDIX Q – DRUG SCREEN REQUISITION AND AUTHORIZATION FORM

Please contact your CCD ROCIP Safety representative or [CCDROCIPSafety@denvergov.org](mailto:CCDROCIPSafety@denvergov.org) for an electronic copy of this form.

# CCD ROCIP Insurance Manual for Tier I

**Project No.: TBD**

**The above Project No. is important when enrolling  
you must have this code to enroll**

**Project: To Be Finalized by  
Insurance Broker upon  
Enrollment**

**Lead Contractor: To Be Finalized by Broker upon  
Enrollment**



CITY AND COUNTY OF DENVER  
201 W. Colfax Dept. 1010  
Denver, CO 80202

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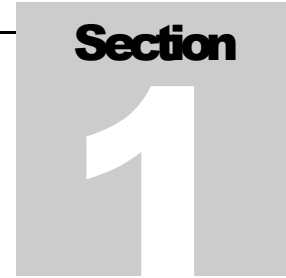
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## Overview

*Welcome to the CITY AND COUNTY OF DENVER ROCIP PROGRAM (CCD ROCIP) for Tier 1.*

A ROCIP is a program that insures the Project Owner, all Enrolled Contractors, Enrolled Subcontractors of every tier and other designated parties for Work performed for various Projects for the City and County of Denver. Certain contractors and subcontractors are ineligible for this program. These parties are identified in the definitions section of this manual and in [Section 4](#).

Coverage under the ROCIP Program includes Workers' Compensation, Employers Liability, General Liability, Excess Liability, Builders Risk and Contractors Pollution Liability.

Since the CITY AND COUNTY OF DENVER will pay insurance premiums for the ROCIP coverages described in this manual, you should notify your insurer(s) to delete from your insurance program charges for the on sites activities of this Project that are covered under the ROCIP. **Each bidder of every tier is required to exclude from its' bid price, its normal cost for the insurance coverages to be provided by the City and County of Denver under the ROCIP Program. All subsequent change orders will also exclude these costs. Excluded insurance costs are subject to verification and documentation by the ROCIP Administrator.**

**Note: PARTICIPATION IS MANDATORY-NOT OPTIONAL**

Insurance coverage and limits provided under the ROCIP are specific to CCD ROCIP Projects. Your insurance representative should review this information and assist with you in determining your insurance costs based on your insurance requirements. Any additional coverage you may wish to purchase will be at your option and expense. If you elect to do so, we have the right to review it.

# Exhibit F

## SECTION 1: INTRODUCTION

---

### About This Manual

This manual was prepared by Arthur J. Gallagher Risk Management Services, Inc., which is the insurance broker and CCD ROCIP administrator. The manual is designed to identify, define and assign responsibilities for the administration of the ROCIP for the CITY AND COUNTY OF DENVER

#### What This Manual Does

This Manual:

- Generally describes the CCD ROCIP
- Identifies responsibilities of the various parties involved in the Projects
- Provides a basic description of the CCD ROCIP operation
- Describes some audit and administrative procedures
- Provides answers to basic questions about the CCD ROCIP
- Will be updated throughout the course of the Projects as necessary

#### What this Manual Does Not Do

This Manual does not:

- Provide coverage interpretations
- Provide complete information about CCD ROCIP coverages
- Provide answers to specific claims questions

Specific questions about the CCD ROCIP, its administration or the coverage's provided, should be directed in writing to the appropriate party identified in the Project Directory section immediately following this introduction.

#### Disclaimer

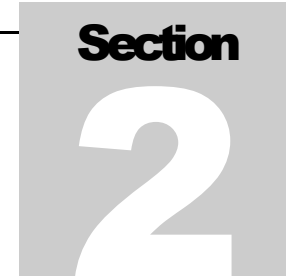
The information in this manual is intended to outline the CCD ROCIP Program. If any conflict exists between this manual and the CCD ROCIP insurance policies or Contracts between the Owner and Contractor, the policies or Contracts will govern.

### Key Information

This manual includes several important sections that provide quick reference information for contractors and subcontractors. Among these are:

- **Project Directory:** A listing of key contact people who can provide further information
- **Definitions:** A list of words used in the manual and their meanings under the ROCIP
- **Enrollment Instructions and Other Claim Reporting Forms:** Instructions for enrolling into the CCD ROCIP via Gallagher's on-line system, and claims reporting workers' compensation claims to the carrier and Gallagher are provided.

## Exhibit F

**SECTION 2: CCD ROCIP PROJECT DIRECTORY**

## CCD ROCIP Project Directory

*The following list includes key risk management and insurance personnel involved in the Projects.*

### CCD ROCIP ADMINISTRATION - GALLAGHER

<b>ROCIP Service Team – Arthur J. Gallagher Risk Management Services, Inc.</b>			
CCD ROCIP Administrator. ....	Heather Lawson	314.800.2205	heather_lawson@ajg.com
Safety/Loss Control.....	Ed Davis	303.889.2552	ed_davis@ajg.com
Safety/Loss Control.....	Terry McIntire	925.407.5451	terry_mcintire@ajg.com
CCD ROCIP Claims.....	Kendall Trump	303.889.2570	kendall_trump@ajg.com

### CCD ROCIP MANAGEMENT - GALLAGHER

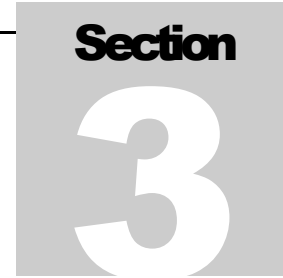
<b>Arthur J. Gallagher Risk Management Services, Inc.</b>			
Account Executive .....	Karen Graham	303.889.2538	karen_graham@ajg.com
Account Executive .....	Scott Whiteside	510.207.0115	scott_whiteside@ajg.com
CCD ROCIP Program Manager.....	Tara Tinney	303.889.2590	tara_tinney@ajg.com

### CCD ROCIP MANAGEMENT - CITY AND COUNTY OF DENVER

<b>CCD ROCIP Management Team</b>			
Owner Representative / CCD Risk Manager	Devron McMillin	720-913-3345	Devron.McMillin@denvergov.org
Overall Safety Manager	Theresa Goodwin	303-907-4488	Theresa.Goodwin@denvergov.org
Assigned Project Manager/ Safety & Health			
Assigned Project Manager/ Safety & Health			

# Exhibit F

## SECTION 3: CCD ROCIP DEFINITIONS



## Definitions

*The following is a summary of definitions applicable to the CCD ROCIP used in this manual.*

<b>Approved Additional Sites:</b>	Projects as identified in the CCD ROCIP contract documents and on file with the insurance company.
<b>Additional insured:</b>	Any other party so named in the insurance policies
<b>Broker:</b>	Arthur J. Gallagher Risk Management Services, Inc. herein referred to as “Broker” or “Gallagher”.
<b>Certificate of Insurance:</b>	A document providing evidence of the existence of coverage for a particular insurance policy or policies.
<b>Change Order:</b>	An amendment to the existing, original or most recent scope of work, either increasing or decreasing the breadth of task orders, or their numbers, which may result in greater or reduced charges.
<b>Contract:</b>	A written agreement between the CITY AND COUNTY OF DENVER and the Lead Contractor describing the Work, Contract Terms and Conditions, or a portion thereof. Also includes a written agreement between a Contractor and any tier of Subcontractor.
<b>Contractor:</b>	The person, firm, joint venture, corporation, other party or entity that has entered into a Contract with THE CITY AND COUNTY OF DENVER to perform Work at the Project Site(s).
<b>Contractor Safety Supervisor:</b>	The Safety Coordinator for each major contractor on site is responsible for the safety of that contractor, its subcontractors and their employees. This representative is also the liaison with Gallagher and CCD assigned Project Managers.
<b>Completed Operations Coverage:</b>	Completed Operations Coverage is extended for a period of eight (8) years commencing at the earliest of either: 1) completion and/or acceptance of the work by the CITY AND COUNTY OF DENVER, 2) that portion of the Project is put to its intended use by the CITY AND COUNTY OF DENVER

# Exhibit F

## SECTION 3: CCD ROCIP II DEFINITIONS

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- Employer:** Any individual, firm, corporation or other entity, which provides direct construction labor, including supervisory labor, for work performed at the Project Sites.
- Enrolled Parties:** The Contractor and those Subcontractors that have submitted all necessary enrollment information and been accepted into the ROCIP as evidenced by the issuance of a Certificate of Insurance.
- Lead Contractor** The Contractor that CITY AND COUNTY OF DENVER enters directly into a formal Contract for work performed at the Project Sites.
- Non-Enrolled:** A "Non-Enrolled" Contractor or Subcontractor is one that has not submitted the required enrollment forms. A "Non-Enrolled" Contractor or Subcontractor is also one that has submitted the required enrollment forms and has either not received written confirmation from the Owner's representative evidencing acceptance into the ROCIP or has received written confirmation from the Owner or its representative declining acceptance into the ROCIP. The ROCIP does not insure "Non-Enrolled" Contractors, Subcontractors or Sub-subcontractors.
- Ineligible Party:** Parties not covered by the ROCIP because of ineligibility. No insurance coverage provided by City and County of Denver under the CCD ROCIP shall extend to the activities or products of the following:
- (1) Any person or organization that fabricates or manufactures products, materials or supplies away from the Project Site(s) with no direct onsite installation responsibility; **however, for General Liability Coverage only, the CCD ROCIP insurance carrier may agree to extend coverage if the Lead Contractor has a written contract with the off-site fabricator or manufacturer to provide the pre-fabricated product. To consider extending coverage, the insurance carrier requires 30 days advance written notice to the CCD ROCIP Administrator with details of the work/product and a copy of the contract between the Lead Contractor and the off-site fabricator or manufacturer. Approval must be obtained from the insurance carrier before enrolling in the CCD ROCIP for General Liability coverage only.**
  - (2) Hazardous materials remediation, removal, or transportation companies and their consultants;
  - (3) Any architect, engineer or surveyor or their consultants.

# Exhibit F

## **SECTION 3: CCD ROCIP II DEFINITIONS**

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- (4) Truckers, haulers, material dealers, vendors, suppliers, and others who merely transport, pick up, deliver or carry materials, personnel, parts or equipment or any other items or persons to or from the Site;
- (5) Contractors and their subcontractors and subconsultants and any employee of an Enrolled Party, who does not work at the Project Site;
- (6) Any employees of an Enrolled Party who occasionally visits the Project Site to make deliveries, pick-up supplies or personnel, to perform supervisory or progress inspections, or for any other reason;
- (7) Persons or entities who are not enrolled parties or included as insureds within the policies;
- (8) Any Day Labor Employees (labor service employees whose coverage is provided by their employer); or
- (9) Any other person or entity specifically excluded by CCD, in its sole discretion, from participation as Enrolled Parties.

If a Contractor's employee is making deliveries to the site and is off-loading materials, the employee shall be eligible for coverage under the CCD ROCIP.

It is your responsibility to contact the CCD ROCIP Administrator and confirm your eligibility before you begin work on the project.

If you are uncertain as to whether your firm will participate in the CCD ROCIP Program, or wish confirmation of your eligibility, please contact the CCD ROCIP Administrator.

- Named Insured:** The CITY AND COUNTY OF DENVER, A MUNICIPAL CORPORATION OF THE STATE OF COLORADO, and its subsidiary and affiliated companies; Enrolled Contractors and subcontractors of any tier and any other party so named in the insurance policies.
- Insurer:** The insurance companies which provide coverages for the CCD ROCIP.

# Exhibit F

## SECTION 3: CCD ROCIP II DEFINITIONS

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<b>On-Sites Activities:</b>	Those activities “at or emanating from” the Project Site.
<b>Payroll Reports:</b>	Monthly Payroll Reports are mandatory. For purposes of the CCD ROCIP, payroll refers to <b>unburdened</b> straight time payroll per Workers’ Compensation Class Codes.
<b>Policy Owner:</b>	The CITY AND COUNTY OF DENVER, PROGRAM IDENTIFIER: CCD ROCIP
<b>Policy Term:</b>	The Policy Term will cover the period of construction through project completion, including a (8) year term for Completed Operations.
<b>Project Sites:</b>	<p>“Project Sites” shall mean those areas designated in writing by the CCD ROCIP in a Contract document for performance of the Work and such additional areas as may be designated in writing by the CITY AND COUNTY OF DENVER for Contractors’ use in performance of the Work. Subject to CCD ROCIP Insurers written approval, the term “Project Site” shall also include: (1) field office sites, (2) property used for bonded storage of material for this Project only approved by the CITY AND COUNTY OF DENVER, (3) staging areas dedicated to the Project, and (4) areas where activities incidental to the Project are being performed by Contractor or Subcontractors covered by the worker’s compensation policy included in the CCD ROCIP, but excluding any permanent locations of Contractor or such covered Subcontractors.</p> <p><u>Items 1 through 4 above must be approved by the CCD ROCIP Insurer and listed on the CCD ROCIP Policy.</u></p>
<b>ROCIP:</b>	Rolling Owner Controlled Insurance Program – A coordinated insurance program providing certain insurance coverages as generally described in this manual for Work at the Project Sites.
<b>ROCIP Administrator:</b>	Arthur J. Gallagher Risk Management Services, Inc. herein referred to as the “CCD ROCIP Administrator.”
<b>Subcontractor:</b>	Includes those persons, firms, joint venture entities, corporations, or other parties that enter into a Subcontract with Contractor to perform Work at the Project Site and any of these Subcontractor’s lower-tier subcontractors.
<b>Work:</b>	Operations as fully described in the Contract and Subcontract, performed at or emanating directly from the Project Sites. Also, the entire completed construction or the various separately identifiable parts required to be furnished under the Contract documents.

## CCD ROCIP Insurance Coverages

*This section provides a brief description of CCD ROCIP coverages. The actual policies that control the details concerning coverage, exclusions and limitations are available upon request.*

### Covered Parties

Parties covered as Named Insured's include the CITY AND COUNTY OF DENVER, its' related entities, and Enrolled Contractors and Subcontractors of any tier. Parties included as Additional Insured's include all those designated by the CITY AND COUNTY OF DENVER, and any other party that a Named Insured is required under contract to add as an additional insured.

### Those Not Covered

- A) Ineligible for coverage are: vendors, suppliers, material dealers, off-site fabricators with no on-site labor unless agreed to in advance by the carrier, and those personnel involved merely in, loading, transporting and unloading materials, personnel, parts, equipment or any other items to, from or within the Project Sites. Contractors performing jobs that are not eligible for CCD ROCIP coverage may include but are not limited to those contractors who present an exceptionally hazardous exposure or risk to the jobsites. However, Contractors and Subcontractors engaged in minor demolition work are covered under the CCD ROCIP Program.
- B) Those who are not enrolled.
- C) Those who are not added as Additional Insured's.

### Evidence of Coverage

Each Enrolled Contractor and Subcontractor will be issued a Certificate of Insurance evidencing Workers' Compensation, General Liability and Excess Liability insurance to each Enrolled Contractor and Subcontractor of any tier, each of whom will be an Insured on the policies. Other documentation including forms, posting notices, etc., will be available at the Project Sites. Policy copies will be made available upon written request to the CCD ROCIP Administrator.



## Description of ROCIP Coverages

The following sections provide a summary of the policies that the CCD ROCIP has obtained for this Project. The limits shown will be the minimum limits purchased by the Owner.

### Workers Compensation and Employers Liability:

**A policy** will be issued to each Enrolled Contractor for workers' compensation coverage.

**Part One** - Workers' Compensation: Statutory Limit

**Part Two** - Employer's Liability: Annual Limits Per Insured

Bodily Injury by Accident, each Accident	\$1,000,000
Bodily Injury by Disease, each employee	\$1,000,000
Bodily Injury by Disease, policy limit	\$1,000,000

- Other States Coverage
- Designated Projects Endorsement
- Waiver of Subrogation
- Alternate Employer Endorsement
- Maritime/Jones Act – If Required

**A single policy** will be issued to each Enrolled Party for General Liability. Contractor and Subcontractor will be issued a Certificate of Insurance.

### Commercial General Liability:

(Shared by all insured's)	<u>Limits of Liability</u>
Annual General Aggregate (Per Project and Reinstates Annually)	\$4,000,000
Products/Completed Operations Aggregate (Per Project) (Statute of Repose)	\$4,000,000
Total Products/Completed Operations Aggregate- (Statute of Repose)	\$8,000,000
Personal / Advertising Injury Limit	\$2,000,000
Each Occurrence Limit	\$2,000,000
Fire Damage Legal Liability (any one fire)	\$300,000
Medical Payments (any one person)	\$10,000

- Named Insured Endorsement
- Additional Insured Endorsements (CG 2038 and CG 2037 or their equivalent)
- Designated Projects Declaration and Schedule
- Legal Defense Outside Policy Limits
- Annual Reinstatement of Aggregates as defined in the policy
- Period of Statute of Repose Products & Completed Operations Extension commencing when your work is considered to be completed as defined in the Policy
- Primary and Non-Contributory to any insurance of self-insurance otherwise available to the insured parties
- Separation of Insureds Clause
- Waiver of Transfer of Rights of Recovery Against Others
- Limited Exclusion - Contractors Professional Liability Endorsement
- Repair Work Coverage – 3 years
- Absolute Lead and Asbestos Exclusions
- Total Pollution Exclusion with Hostile Fire, Building Heating and Air Conditioning Exceptions
- Nuclear Energy Liability Exclusion

Above is only a summary and the actual terms and conditions are contained in the policy

# Exhibit F

## **SECTION 4: CCD ROCIP INSURANCE COVERAGE**

**Exception/Notes:** The CCD ROCIP coverage is limited solely to Work performed at the Designated Project Site and the products and materials permanently incorporated into the Project. Off-site operations shall be covered only if approved by the ROCIP Insurers, designated in writing by the ROCIP Administrator, and when all operations at such site are identified and solely dedicated to the Project. It shall be the responsibility of the Contractors and Subcontractors to notify the ROCIP Administrator, in writing to request coverage for specified off-site operations.

**Claims Charge-Back:** A claims charge-back will be assessed for the amount of any loss payable under the ROCIP **Commercial General Liability Policy**. The Enrolled Party primarily responsible for causing any bodily injury or property damage liability loss shall be responsible for payment of the charge-back. The charge-back will equal the deductible under the Enrolled Party's commercial general liability policy (non-ROCIP) up to a maximum charge-back of \$25,000. The minimum charge-back shall be the actual loss or \$5,000 whichever is less. The charge-back shall be applied on the same basis as applied under the Contractor's or Subcontractor's commercial general liability insurance policy. All Enrolled Parties are required to provide the City and County of Denver, a copy of their Commercial General Liability insurance deductible endorsement for the purpose of determining the charge-back. If the loss exceeds \$5,000 and information necessary to determine an Enrolled Party's deductible as stated on its commercial general insurance certificate is not available to the City, the City and County of Denver will charge the Enrolled Party the actual loss up to a \$25,000 maximum per occurrence until receipt of documentation from the Enrolled Party's commercial general insurance policy evidencing the contractor's actual deductible. If the loss is less than \$5,000, the City and County of Denver will charge the actual loss. The charge-back does not apply to workers' compensation claims for an Enrolled Party's own employee.

### **Excess Liability:**

	<b><u>Limits of Liability shared by all Insureds</u></b>
Each Occurrence Limit :	\$200,000,000
General/Other Aggregate Limit ((Per Project Basis and Reinstates Annually)	\$200,000,000
Products/Completed Operations Aggregate Limit (applies on a Per Project Basis)	\$200,000,000
Products/Completed Operations Aggregate Maximum Policy Cap	\$400,000,000

- "Pay on behalf" wording with legal defense outside the limits
- Designated Projects Schedule
- Scheduled Underlying Coverage's: Employer's Liability; Primary Commercial General Liability
- Period of Statute of Repose for Products & Completed Operations Extension (single policy term aggregate) commencing when the Work is considered to be completed as defined in the underlying General Liability Policy
- Excludes: Automobile Liability, Asbestos; Lead, Silica, Discrimination & Wrongful Termination; War, Nuclear; Pollution (except where noted); and other policy terms and conditions

Above is only a summary and the actual terms and conditions are contained in the policies

# Exhibit F

## SECTION 4: CCD ROCIP INSURANCE COVERAGE

### Note

Contractors and Subcontractors of any tier are advised to arrange their own insurance for Contractor-owned or –leased equipment and materials not intended for inclusion in the Project. The CCD ROCIP will not cover Contractor-owned or leased property.

### Contractors Pollution Liability Insurance

(Shared by all insureds)

**Coverage:** Liability or responsibility for bodily injury, property damage or environmental damage caused by a pollution event resulting from covered operations and completed operations. Coverage includes microbial matter and legionella pneumophila in any structure on land and the atmosphere contained with the structure.

#### Limits of Liability:

Each Loss:	\$25,000,000
Policy Aggregate	\$25,000,000

Products/Completed Operations coverage will extend for eight (8) years after final completion of the Project.

**Exception/Notes:** The CCD ROCIP Contractors Pollution coverage is limited solely to Work performed at the Project Site and for Projects specifically listed on the Policy.

**Contractors Pollution Insurance Claims Chargeback.** A claims charge-back will be assessed for the amount of any loss payable under the Contractors Pollution, up to the first \$5,000 of any loss will be paid by Contractor. This includes all expenses or claim payments incurred by the ROCIP Insurer for losses attributable to the Contractor's work, acts or omissions, or the work, acts or omissions of any tier of subcontractor. Contractor may elect to pass this charge through to any responsible subcontractor but in no event may require total subcontractor reimbursement in excess of \$5,000.

### Note

The descriptions above provide a summary of coverages only. Contractors and Subcontractors should refer to the policies for actual terms and conditions.

# Exhibit F

## SECTION 4: CCD ROICIP INSURANCE COVERAGE

### Builders Risk:

**Property Excluded:** Land/Land Values, Water, Vehicles, Damage To Existing Property (unless specifically endorsed), Contractor Plant & Equipment, Prototypical or Used Equipment As Respects Testing, Property Located At Other Than The Project Site Except While In Transit Or Temporary Offsite Locations, And Others Per Policy Form

#### Limits of Insurance:

\$465,405,000 Policy Limit/Any One Occurrence

#### Sublimits:

Included in Policy Limit	Water Damage (includes surface water, back up of sewers and drains)
\$15,000,000	Damage to Existing Building
Included Policy Limit	Flood
Included in Policy limit	Earthquake
\$10,000,000	Property in Storage Off-Site
\$10,000,000	Property Temporarily Off-site
\$10,000,000	Property in Transit (Road, Rail or Inland Waterway, including Place of Storage and Accommodation and all related Loading and Unloading
25% of Loss/\$10,000,000 Maximum	Debris Removal
125%	Escalation Clause
\$2,500,000	Fire Fighting and Service Charges
\$10,000,000	Law or Ordinance (Coverage B and C only); for Coverage A (building) is included within the Project Value)
\$5,000,000	Plans, Drawings and Documents
\$5,000,000	Reproduction of Computer Records
\$20,000,000	Extra Expense
\$20,000,000	Expediting Expense
\$2,000,000	Temporary Repairs
\$2,000,000	Professional Fees
\$5,000,000	Loss Minimization Expenses and Preventative Measures
\$1,000,000	Pollution Clean Up Costs from land and water
\$500,000	Continuing Hire Costs
\$5,000,000	Soft costs

#### Deductibles

\$25,000	Per Occurrence except
\$75,000	Water Damage
\$50,000	Flood
\$50,000	Earthquake
\$150,000	Damage arising out of Defects in materials, Workmanship, Design, Plan or Specification (LEG/06)

In the event that more than one Deductible could apply, the largest single Deductible only will apply

# Exhibit F

## **SECTION 4: CCD ROICIP INSURANCE COVERAGE**

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**Coverage Extensions:**

- Beneficial Occupancy Clause – Property taken into Use Clause
- Automatic Reinstatement Clause – without additional premium
- Repeat Tests Clause
- Civil or Military Authority Clause
- Other Interests Clause

**Other Terms and Conditions:**

- Occurrence Definition – 72 hour period
- Primary Insurance Provision
- Defects Extension (LEG 2/96 or LEG 3/06)
- Concealed Damage Clause 50/50
- Permissions Clause
- Claims Procedures Clause
- Interim Payments Clause
- Cancellation Clause – Insurer may cancel only for non-payment of premium
- Inadvertent Errors and Omissions Clause
- Reasonable Precautions Clause
- Dispute Resolution Clause
- Waiver of Subrogation

**Exclusions (including but not limited to):**

- Contractors' Plant and Equipment
- Wear and Tear or Gradual Deterioration (with exception)
- Corrosion and Erosion (with exception)
- Normal Upkeep
- Penalties and Consequential Loss
- Money
- Inventory Loss (including mysterious disappearance)
- Aircraft
- War and Civil War
- Political Risks
- Radioactivity (CL 370)
- Electronic Data (Computer Virus, Corruption or Alteration, etc.) with exception for if loss is caused by an insured peril
- Deliberate Acts

# Exhibit F

## **SECTION 4: CCD ROCIP INSURANCE COVERAGE**

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**Coverages:** The CITY AND COUNTY OF DENVER shall provide Builder's Risk insurance on an "all risk" basis, and covering the work and all materials and equipment to be incorporated therein, including property in transit or elsewhere, subject to certain sub-limits, and insuring the interests of the CITY AND COUNTY OF DENVER, the Contractor, subcontractors, and material suppliers. This insurance shall not cover any personal property of the Contractor or Subcontractors, including tools, equipment, scaffolding, staging towers, and forms, rented or owned by the Contractor or any Subcontractor, the capital value of which is not included in the cost of the Work. Builder's Risk insurance will not provide coverage against loss by theft or disappearance of any materials (unless the materials are to be incorporated into the Project), tools, or equipment of the Contractor or any tier of Subcontractor, or any other person furnishing labor or materials for the Work. Contractor agrees to indemnify, defend, and hold the CITY AND COUNTY OF DENVER and its officers, agents, and employees, harmless from any such loss, theft, or disappearance.

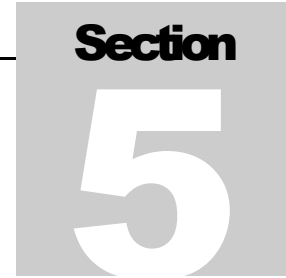
A **claims charge-back** will be assessed for the amount of any loss payable under the **Builder's Risk Policy**. The first \$5,000 of any such occurrence will be paid by Contractor. This includes all expenses or claim payments incurred by the Insurer for losses attributable to the Contractor's Work, acts or omissions, or the Work, acts or omissions of any tier of subcontractor. Contractor may elect to pass this charge through to any responsible subcontractor but in no event may require total subcontractor reimbursement in excess of \$5,000.

### **Note**

The descriptions above provide a summary of coverages only. Contractors and Subcontractors should refer to the policies for actual terms and conditions.

## **ROCIP Termination or Modification**

The CITY AND COUNTY OF DENVER reserves the right to terminate or modify the CCD ROCIP or any portion thereof. The CITY AND COUNTY OF DENVER exercises this right, Enrolled Contractors and Subcontractors of any tier will be provided notice as required by the terms of their individual Contracts. At its option, the CITY AND COUNTY OF DENVER may procure alternate coverage or may require the Lead Contractor to procure and maintain alternate insurance coverage at the costs that you identified in your bid.

**SECTION 5: CCD ROCIP CONTRACTOR AND  
SUBCONTRACTOR REQUIRED COVERAGES**

## Required Coverage for Contractors and Subcontractors

*Contractors and Subcontractors of any tier are required to maintain coverage to protect against losses that occur away from the Project Sites or that are otherwise not covered under the CCD ROCIP.*

Contractors and Subcontractors of any tier are required to maintain insurance coverage that protects the CITY AND COUNTY OF DENVER from liabilities arising from the Contractor's and Subcontractor's operations performed away from the Project Sites and for types of coverage not provided by ROCIP, and for operations performed in connection with the Contract by those who are Ineligible. Contractors and subcontractors are solely responsible for monitoring these matters.

**See Section 8**  
for sample Certificate of  
Insurance form.

Verification of insurance may be submitted in the form of a Certificate of Insurance on a standard ACORD Form 25-S. A sample of an acceptable Certificate of Insurance is provided in Section 8. Please note requirements for a thirty (30) day notice of cancellation, waiver of subrogation and additional insured status. Also, Contractor's and Subcontractor's insurance must be primary and non-contributory.

Contractors are responsible for verifying and monitoring the adequacy of insurance required to be maintained by Subcontractors and Ineligible parties' with whom the Contractor contracts. The CITY AND COUNTY OF DENVER reserves the right to disapprove use of Subcontractors unable to meet any insurance requirements. Enrollment information and Certificates evidencing compliance with any and all insurance requirements shall be sent to the CCD ROCIP Administrator.

Prior to mobilization and within 30 days of any renewal, change or replacement of coverage, Contractors and Subcontractors shall submit to the CITY AND COUNTY OF DENVER and the CCD ROCIP Administrator a Certificate of Insurance evidencing the coverage, limits and deductibles as specified in this section.

The limits of liability shown for the insurance required of the Contractor and Subcontractors are minimum limits only and are not intended to restrict or limit the liability imposed on the Contractor and Subcontractors for Work performed under their Contract.

# Exhibit F

## SECTION 5: CONTRACTOR AND SUBCONTRACTOR REQUIRED COVERAGES

### Contractor and Subcontractor Provided Coverages

#### Automobile Liability and Automobile Physical Damage

#### All Contractors and

#### Subcontractors

shall provide evidence of automobile liability. CCD ROCIP does not cover automobile liability.

Covering all owned, leased, hired and non-owned automobiles, trucks and trailers with coverage no less broad than that of the ISO Commercial Business Auto Policy in limits not less than **[\$1,000,000] combined single limit** each accident for bodily injury and property damage and automobile physical damage. Coverage shall apply both on and away from the Project Sites.

All hazardous waste or materials transporters including but not limited to any contractor or subcontractor (including fuel, oil, gasoline) must carry a minimum of \$5,000,000 combined single limit and show evidence of MCS90 Endorsement.

#### Eligible

#### Contractors and

Subcontractors shall provide evidence of workers' compensation insurance for off-site activities, including design work.

**Ineligible** Contractors and Subcontractors shall provide evidence of workers' compensation applicable to the Project.

#### Workers' Compensation and Employer's Liability

**Part One** - Workers' Compensation:

Statutory Limit

**Part Two** - Employer's Liability

#### Annual Limits: Contractor

Bodily Injury by Accident, each Accident	\$100,000
Bodily Injury by Disease, each Employee	\$100,000
Bodily Injury by Disease, Policy Limit	\$500,000

#### Commercial General Liability/Umbrella Liability

#### Ineligible

Contractors and shall provide evidence of general liability insurance for the Project and must name the CITY AND COUNTY OF DENVER, the Owner of the Project Sites and other parties as additional insured's to the policy

#### PRIME CONTRACTOR REQUIREMENTS

#### Limits of Liability

General Aggregate	\$2,000,000
Products/Completed Operations Aggregate	\$2,000,000
Personal/Advertising Injury Aggregate	\$1,000,000
Each Occurrence Limit	\$1,000,000

#### SUBCONTRACTOR REQUIREMENTS\*

#### Limits of Liability

General Aggregate	\$2,000,000
Products/Completed Operations Aggregate	\$2,000,000
Personal/Advertising Injury Aggregate	\$1,000,000
Each Occurrence Limit	\$1,000,000

\*Please refer to your Insurance Requirements as they may differ from these requirements

Coverage shall be on an occurrence form and apply to bodily injury and property damage for operations (including explosion, collapse and underground coverage), independent contractors, products and completed operations. Limits can be provided by a combination of a primary Commercial General Liability policy and Excess or Umbrella Liability policy.



# Exhibit F

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**SECTION 5: CONTRACTOR AND SUBCONTRACTOR REQUIRED COVERAGES**

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**Watercraft and Aircraft Liability**

Should watercraft or aircraft of any kind be used by a Contractor or Subcontractor of any tier, or by anyone else on its behalf, Contractor or Subcontractor shall maintain or cause the operator of the watercraft or aircraft to maintain Liability insurance with a minimum combined single limit for bodily injury and property damage including passengers in an amount agreed upon in writing with the City and County of Denver.

THE CITY AND  
COUNTY OF  
DENVER does not  
provide professional  
liability insurance for  
Contractors or Sub-  
contractors.

**Professional Liability**

All contractors with any design responsibility must provide professional liability insurance or require their design consultants provide appropriate insurance covering liability arising out of design errors and omissions with a limit of not less than \$1,000,000 per claim for each design Contractors. All such policies must be primary and non-contributory with a waiver of subrogation.

**Contractor's Equipment**

All Contractors and Subcontractors of any tier must provide a Certificate of Insurance evidencing coverage or replacement cost of Contractor's or Subcontractors [tools and] equipment, with a waiver of subrogation in favor of the CITY AND COUNTY OF DENVER, and all CCD ROCIP enrolled contractor and subs of any tier.

# Exhibit F

**SECTION 6: CCD ROCIP CONTRACTOR AND  
SUBCONTRACTOR RESPONSIBILITIES****Section****6**

## **Contractor and Subcontractor Responsibilities**

*Throughout the course of the Project, Contractors and Subcontractors will be responsible for the reporting and maintaining of certain records as outlined in this section.*

The Contractor and all Subcontractors of any tier are required to cooperate with the CITY AND COUNTY OF DENVER, its Broker, CCD ROCIP Administrator and insurance companies, in all aspects of CCD ROCIP operation and administration. Responsibilities of the Contractor and Subcontractors of any tier include:

- Enrolling in CCD ROCIP
- Including CCD ROCIP provisions in all subcontracts as appropriate
- Providing timely evidence of off-sites insurance to and the CCD ROCIP Administrator
- Notifying the CCD ROCIP Administrator of all subcontracts awarded
- Maintaining and reporting payroll records
- Cooperating with the City and County of Denver, its Broker, the CCD ROCIP Administrator's and insurance companies' requests for information
- Complying with insurance, claim and safety procedures
- Notifying the Broker and the CCD ROCIP Administrator as required by contract of any insurance cancellation or non-renewal (Contractor- and Subcontractor- required insurance)

# Exhibit F

## SECTION 6: CONTRACTOR AND SUBCONTRACTOR RESPONSIBILITIES

### Contractor Bids

**See Section 8** for sample forms that can help identify your insurance costs. See [Section 2](#) for information on contacting the CCD ROCIP Administrator.

Insurance is provided for all Eligible, Enrolled Contractors and Enrolled Subcontractors of any tier under CCD ROCIP for Work performed at the Project Site. Contractor bids and Change Orders should exclude insurance costs for these coverages. [Section 8](#) of this CCD ROCIP Insurance Manual contains information on how to enroll and submit information to the CCD ROCIP Administrator via an on-line system (VUE) to that the Contractor will be required to submit to the CCD ROCIP Administrator after award of the Contract to document insurance costs excluded by the Contractor for this Project.

**Each bidder of every tier is required to exclude from its' bid price, its normal cost for the insurance coverages to be provided by the CITY AND COUNTY OF DENVER under the CCD ROCIP Program. All subsequent change orders will also exclude these costs. Excluded insurance costs are subject to verification and documentation by the CCD ROCIP Administrator.**

#### Note

Before estimating insurance costs or contacting your insurance representative about excluding the Project from regular coverage, you should read this manual in its entirety.

### Enrollment

**See Section 8** for sample ROCIP forms

Each Contractor shall provide details about itself and its subcontractors as necessary to enroll in the CCD ROCIP. **The City and County of Denver will need all of the information requested to enroll the project, your declaration rate pages for Workers Compensation, General Liability, and Excess Liability as well as deductible endorsement on CGL policy must be completed and submitted to the CCD ROCIP Administrator prior to mobilization to obtain coverage under the CCD ROCIP.**

The CCD ROCIP Administrator must be notified of each separate contract and all change orders.

When a Contractor or Subcontractor is accepted into CCD ROCIP, they will receive a Certificate of Insurance acknowledging that they have been enrolled in CCD ROCIP.

#### Note: Enrollment is Mandatory - Not Automatic

Enrollment into the CCD ROCIP is required, but not automatic. Eligible Contractors and all Eligible Subcontractors of any tier MUST complete the enrollment forms and participate in the enrollment process for CCD ROCIP coverages to apply. Access to the Project Sites will not be permitted until enrollment is complete.

# Exhibit F

## SECTION 6: CONTRACTOR AND SUBCONTRACTOR RESPONSIBILITIES

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### Assignment of Return Premiums

The cost of the CCD ROCIP insurance coverages will be paid by the City and County of Denver. The City and County of Denver will be the sole recipient of any return CCD ROCIP premiums or dividends. All Enrolled Contractors and Subcontractors of any tier shall assign to the City and County of Denver all adjustments, refunds, premium discounts, dividends, credits or any other monies due from the CCD ROCIP insurers. Contractors shall assure that each Enrolled Subcontractor of any tier shall execute such an assignment. The *Insurance Application* that the Contractor completes on-line will be used for this purpose.

### Payroll Reports

Each Contractor and Subcontractor of any tier must submit **Payroll Reports online via the CCD ROCIP Administrator's website (VUE)** identifying labor-hours and payroll for all work performed for the Project. The monthly labor-hours and payroll reports should include supervisory and clerical personnel on-sites and shall certify all Work performed at or emanating directly from the Project Sites.

#### Note

Each Contractor and Subcontractor must submit payroll through CCD's LCP portal on conjunction with remitting to the CCD ROCIP Administrator.

This information will be used to provide the insurance companies with information required to determine the City and County of Denver premium. *Instructions are noted under Section 8 of this manual.* The Contractor and each Subcontractor must register first and enroll online. *See Section 8 of this manual for instructions.*

Once the enrollment application is approved, ***an E-mail will be sent to each Contractor and Subcontractor providing each Contractor and Subcontractor a Certificate of Insurance as evidence of participation in the CCD ROCIP. You will be required to log-in monthly to the CCD ROCIP Administrator III's website and submit monthly payroll.***

#### Note: Separate Reports Required

Separate Enrollment and Payroll Reporting is required for each Contract for Work you are performing.

# Exhibit F

## SECTION 6: CONTRACTOR AND SUBCONTRACTOR RESPONSIBILITIES

### Insurance Company Payroll Audit

Each Enrolled Contractor and Subcontractor is required to maintain payroll records for the Project in accordance with the *Basic Manual of Rules, Classifications, and Experience Rating Plan for Workers' Compensation and Employer's Liability Insurance*. Such records shall allocate the payroll by Workers' Compensation classification(s) and shall include all payrolls as defined by the State of Colorado state manual rules.

It is important that you properly classify payrolls, as these will be reported to the rating agency. All Enrolled Contractors and Subcontractors of any tier shall make available their books, vouchers, contracts, documents, and records, of any and all kinds, to the auditors of the ROCIP insurance carriers or the City and County of Denver 's representatives at any reasonable time during the policy period, any extension, or during a final audit period as required by the insurance policies.

The Insurance Company has the right to correct and reclassify payroll.

#### Note

Failure to submit the payroll reports as required may result in the withholding of payments until required documentation is received.

### Completion of Work

When an Enrolled Contractor or Subcontractor of any tier has completed its Work, each Enrolled Contractor or Subcontractor of any tier shall complete must login into the CCD ROCIP Administrator's website and complete the close out page.

Final Payment will not be released by the City and County of Denver until all necessary forms have been submitted to the CCD ROCIP Administrator.

### Claims Reporting

**A claims kit** will be provided to all Contractors. It will include details about daim reporting and is intended for use at the Project Sites.

Each Contractor and Subcontractor of any tier shall follow the claims procedures as established by the CCD ROCIP Administrator. Contractors and Subcontractors of any tier agree to assist and cooperate in every manner possible in connection with the adjustment of all claims and demands in which the City and County of Denver Insurer(s) is called on to adjust or defend. Please refer to **Section 7** of this Manual.

Contractors will be provided loss information for their respective claims. Contractors are encouraged to participate in the claims management process. The CITY AND COUNTY OF DENVER has ultimate authority in any claim settlement matter.

# Exhibit F

## SECTION 6: CONTRACTOR AND SUBCONTRACTOR RESPONSIBILITIES

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Each Contractor and Subcontractor will have the full right to participate in the management and mitigation of their own workers' compensation claims and any financial information regarding each individual contractor's workers' compensation claims will be provided.

### **A Manual**

establishing minimum standards for Contractor and Subcontractor of any tier safety programs will be provided to all Contractors and Subcontractors of any tier.

### **Safety Procedures**

Each Contractor and Subcontractor of any tier is required to establish a written safety program and to provide a full-time Safety Manager or designated safety representative who shall be on sites when any Work is in progress. Minimum standards for such programs are outlined in the CCD ROCIP Safety Program Manual.

### **Off-Sites Locations**

The Contractor and Subcontractor of any tier are responsible for applying for approval to have off-site locations covered. The Contractor shall notify the City and County of Denver of the need and shall request approval of such location. The request should include the location, address, and description of the Project Sites, the type of use to which it will be put, and the duration of the work to be performed at such location. The off-site location must be dedicated to the Project.

Coverage is not automatic until confirmed by the CCD ROCIP Administrator.

### **Change Order Procedures**

Change orders will also be priced by the Contractor and its Subcontractors to exclude their cost of insurance for the coverages provided by CCD ROCIP.

### **Close Out and Audit Procedures**

When a Contractor and/or an associated Subcontractor of any tier has completed its Work at the Project Site(s) and will no longer have on-site workers, the Contractor shall notify The CCD ROCIP Administrator of final payroll by clicking the box on the Monthly Payroll Screen. Then the Contractor should go into the Close out Tab and verify total payroll and final contract value and complete close out information.

## Claim Procedures

*This section describes basic procedures for reporting various types of claims: workers' compensation, liability, and damage to the Project.*

### Claim Contacts

The primary Claim contact for the project will be:

Kendall Trump, CIC, ARM-e  
Vice President/Sr. Claim Consultant  
Arthur J. Gallagher Risk Management Services, Inc.  
303-889-2570  
[kendall\\_trump@ajg.com](mailto:kendall_trump@ajg.com)

#### A Claims Reporting Kit

will be provided to all Contractors. It will include details about claim reporting and is intended for use at the Project Sites.

### Workers' Compensation Claims

The main responsibility for any Contractor or Subcontractor is first to see that any injured worker receives immediate medical care. Next, you should contact the Prime Contractor immediately in the event of a serious injury or accident. An Employer's First Report of Injury and the Supervisor's Report of Injury form must be completed within 24 hours and submitted in accordance with claims procedures as noted on **page 24**. Each Contractor or Subcontractor is responsible for providing to their injured employee a WC-1 form which also must be completed by the injured employee.

The claims kit will be provided to all Enrolled Contractors and Subcontractors of any tier. These packets will include claim forms. Additional claim forms will be available by contacting the CCD ROCIP Administrator.

The City and County of Denver's Insurer will arrange with preferred, local medical providers for treatment of all minor or non-life threatening injuries. The name and location of such preferred, local medical providers are provided in the claim kits as well as a poster to be posted at Project Sites.

# Exhibit F

## SECTION 7: CCD ROCIP CLAIM PROCEDURES

Enrolled Contractors of any tier must designate a representative called the Contractor Safety Supervisor at the Project Sites to take injured employees to the medical center, and to report the claim. This individual should remain with the injured employee at the medical center while such employee is being treated. The treating physician should provide a written description of whether or not the injured employee can return to work, a list of restrictions if any, and the estimated length of time such employee can stay on modified duty.

The City and County of Denver Insurer will arrange for local 911 emergency ambulance services for response to any serious, traumatic, life-threatening injuries and will provide information to be posted at the Project Sites and in the claims packet.

### **Carrier: Zurich American Insurance Co. Worker Compensation Claims Reporting Information**

Gallagher has created a claim report kit to report workers' compensation claims. The claims kit is sent out by the ROCIP Administrator with acknowledgement of your enrollment into the ROCIP. The Claims Kit is available on the CCD ROCIP Administrator's on-line system (VUE) under the Documents tab under each Contract. Contractors and Subcontractors can access the claims kit on a 24/7 basis.

Below are instructions on how to report a workers' compensation claim. You can report a claim via the INSURER's website, e-mail, fax or by telephone as noted below:

**Make sure your Policy # is included in Forms or Cover Sheets.**

#### **Report Workers Compensation Claims**

Claims are to be reported via the INSURER's website noted below:

[www.zurichna.com](http://www.zurichna.com)

*(click on the "Claims" tab and then under "Report a New Claim" click on the "file a claim online tab, click on "Workers' Compensation" on the left hand side of the screen and follow the instructions). You will need your Policy #; the Insured Name is your Employer Entity Name.*

You may report a claim by **calling or faxing** the Zurich's North American Claims Reporting Care Center as follows:

Phone: 1-800-987-33731

Fax: 1-877-962-2567

*Any questions, please contact Kendall Trump at Gallagher at 303.889.2570 for assistance.*



## Exhibit F

**SECTION 7: CCD ROCIP CLAIM PROCEDURES****Carrier: Zurich American Insurance Co.  
Worker Compensation Claims Reporting Information  
(Continued)*****Reporting via e-mail:***

You may e-mail the FIRST REPORT OF INJURY to the following E-mail address which has been specifically set up for this ROCIP; however, please note the following restrictions on the E-mail Notice of Loss:

E-mail: [usz.nwcclaims@zurichna.com](mailto:usz.nwcclaims@zurichna.com)

Additional restrictions on this e-mail program include the following:

- Send notice of loss when emailing us (no photos, color graphics, or shaded attachments)
- Send a basic attachment format that does not contain digitized logos, unstable formatting, or hyperlinks
- Any changes to the email format or types of attachments will require additional approval on the INSURER's end

Also, the Colorado First Report of Injury form (*See page 51 and the separate worksheet provided*) that is currently being used for new claim reporting does not include fields for Location Code, policy # etc. We have attached a an INSURER Workers' Compensation Worksheet for reporting claims to the INSURER. There are fields for the Location Code and your Policy #. This form can be used for E-mail reporting. The INSURER will file the Colorado First Report of Injury electronically with the State.

**Medical Bills**

Please send all medical bills to the following Zurich Office:

Zurich North America - Claims

**P.O. Box 66941**

**Chicago, IL 60666**

**Fax: 847.240.8172**

**Medical Bill Inquiries**

Please call Zurich; however, contacting the adjuster assigned is more efficient.

**Medical provide line to assist in finding claim number assigned:**

Call the Zurich Medical Provider Helpline at 719.590.8719

E-mail Zurich's Care Center at [usz\\_carecenter@zurichna.com](mailto:usz_carecenter@zurichna.com)

**Claim Documents:**

[Usz.zurich.claims.documents@zurichna.com](mailto:Usz.zurich.claims.documents@zurichna.com)

# Exhibit F

## **SECTION 7: CCD ROCIP CLAIM PROCEDURES**

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### **Liability Claims**

Accidents at or around the Project Sites resulting in damage to property of others (other than the Work itself), or personal injury or death to a member of the public, must be reported immediately to the Prime Contractor, City and County of Denver and Gallagher. The General Liability Reporting form found in the **Claim Kit** shall be completed and emailed, faxed or phoned within 24 hours of injury or damage.

Contractors and Subcontractors of any tier shall not voluntarily admit liability and shall cooperate with the CITY AND COUNTY OF DENVER, Gallagher and the Insurer representatives in the accident investigation.

### **Builder's Risk Claims**

Report any damages to your Work or the Work of any other Contractor/Subcontractor to the Prime Contractor, CITY AND COUNTY OF DENVER Assigned Project Manager, and Gallagher. In addition, complete the Builders Risk Loss Reporting form and submit it to Gallagher.

### **Automobile Claims**

No coverage is provided for automobile accidents under the CCD ROCIP. It is the sole responsibility of each Contractor and Subcontractor of any tier to report accidents involving their automobiles to their own insurers.

HOWEVER, all accidents occurring in or around the Project Sites must be reported to the Lead Contractor, the CITY AND COUNTY OF DENVER, Assigned Project Manager, and Gallagher. These accidents may be investigated with regard to any liability arising out of the Project construction activities that could result in future claims (e.g. due to the conditions of the roads, etc.) Each Contractor and Subcontractors of any tier shall cooperate in the investigation of all automobile accidents.

### **Pollution Claims**

Contractors and Subcontractors of any tier shall **immediately** notify the Lead Contractor, CITY AND COUNTY OF DENVER, Assigned Project Manager and Gallagher of any known or suspected pollution incidents.

## **Enrollment Procedures and Requirements – via Administrator's On-Line System**

*Prime Contractor Hensel Phelps Construction Co.*

*Project: 202053365*

*This section contains information on enrollment procedures and requirements including enrolling via the CCD ROCIP Administrator's website and, reporting payroll on-line and other administration of the CCD ROCIP.*

### **Note**

For assistance, please contact:

**Heather Lawson – CCD ROCIP Administrator**

**Telephone Number: 314-800-2205**

**Email: [heather\\_lawson@ajg.com](mailto:heather_lawson@ajg.com)**

**Or**

**Clayton Pennock – CCD ROCIP Administrator**

**Telephone Number or 314-800-2280**

**Email: [clayton\\_pennock@ajg.com](mailto:clayton_pennock@ajg.com)**

# Exhibit F

## SECTION 8: CCD ROCIP ENROLLMENT PROCEDURES AND REQUIREMENTS

### CCD ROCIP Enrollment Procedures and Requirements

**EVERY CCD ROCIP PARTICIPANT MUST COMPLETE THE CCD ROCIP ENROLLMENT ONLINE.**

**IMPORTANT! YOUR PROJECT NO. IS REQUIRED WHEN ENROLLING**

1. Enroll online at: <https://ajg.vuewrapup.com/contractorportal>. You must register first if you do not already have a user login. Once you register and login click “New Enrollment” and when you are prompted for a Project Code use **your Project No. 202053365**
2. Once you complete the online enrollment upload a certificate of insurance to the documents section. Please find a sample certificate after this page. The certificate must be in accordance with the CCD ROCIP enrollment provisions in the General Conditions evidencing primary Auto Liability, Workers’ Compensation, and General Liability for Project-Related Operations performed away from the CCD ROCIP Project Site. *Contact your Insurance Agent for this certificate (a sample is included). It is your responsibility to notify your Insurance Agent to exclude all work to be done at this Project Site from your regular General Liability and Workers’ Compensation policies.*
3. You must also upload a copy of your Workers Compensation, General Liability, and Excess Liability rating and declaration pages from your primary insurance policy.
4. Arthur J. Gallagher will send a Certificate of Insurance evidencing your coverage under the CCD ROCIP program. You should keep this certificate as evidence of your participation in the CCD ROCIP. It may be required by your regular insurance company to exclude this job site from your regular policy.
5. Once you begin work on site you must log in on a **monthly basis** and submit your monthly payroll. Click the box by the contract number and click the “Payroll” button at the top of the page. Verify that the dates the system pulled in are correct before saving your monthly payroll. If you have multiple class codes and are only reporting payroll under one of them for any given month you must enter \$0 for those class codes that you do not have payroll for.
6. When you have completed your work on the Project, you must login into the system and complete the closeout page. Click the box by your contract and click “Close Out” at the top of the page. You will be asked to reconcile your monthly reported payroll and provide your final contract value.

If you have any questions or concerns please don’t hesitate to contact:

**Heather Lawson**  
314-800-2280  
[Heather\\_lawson@ajg.com](mailto:Heather_lawson@ajg.com)

## Exhibit F

## SECTION 8: CCD ROPIP ENROLLMENT PROCEDURES AND REQUIREMENTS

## On-line Enrollment Instructions

### Enrolling Through the Online Portal

1. In your web browser, open the AJG Wrap-up Management Portal URL (<https://ajg.vuewrapup.com/contractorportal>). This will open the portal login screen.

If you have never registered with the AJG Wrap-up Contractor Portal nor received a login for [ajg.vuewrapup.com](https://ajg.vuewrapup.com), follow steps 2-4.

If you are already registered, proceed to step 5.

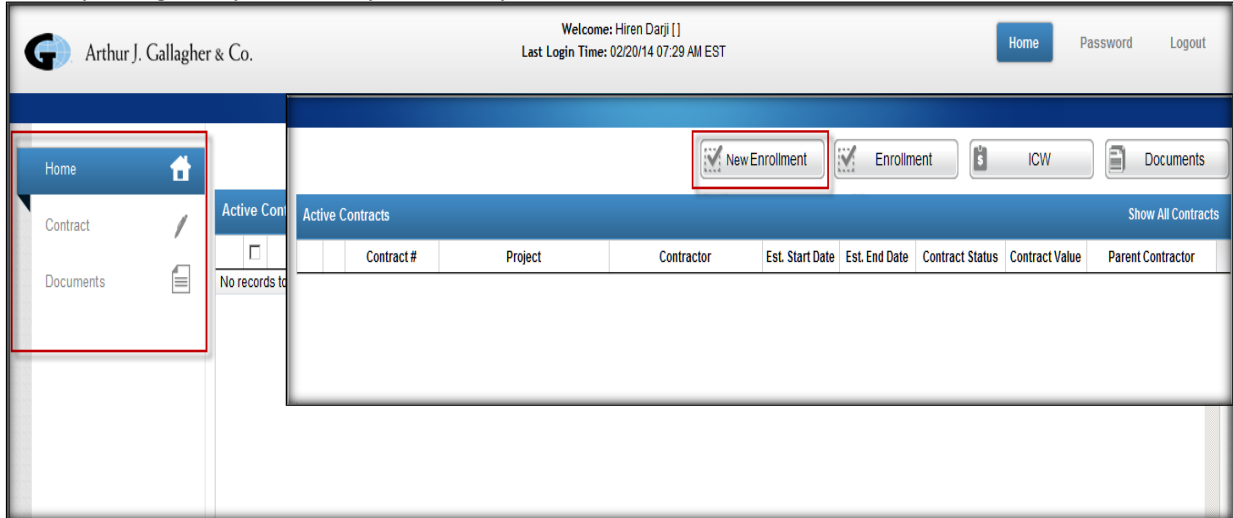
2. Click the Register Me link at the bottom right hand corner of the login box.

3. Fill in the form with your first name, last name, email ID (email address) and enter the User ID you would like to use. Your User ID can be any User ID you will easily remember, such as your first initial and last name (preferred), your company name, or your email address, and must be unique. Password may contain letters, numbers and symbols. All fields are required.

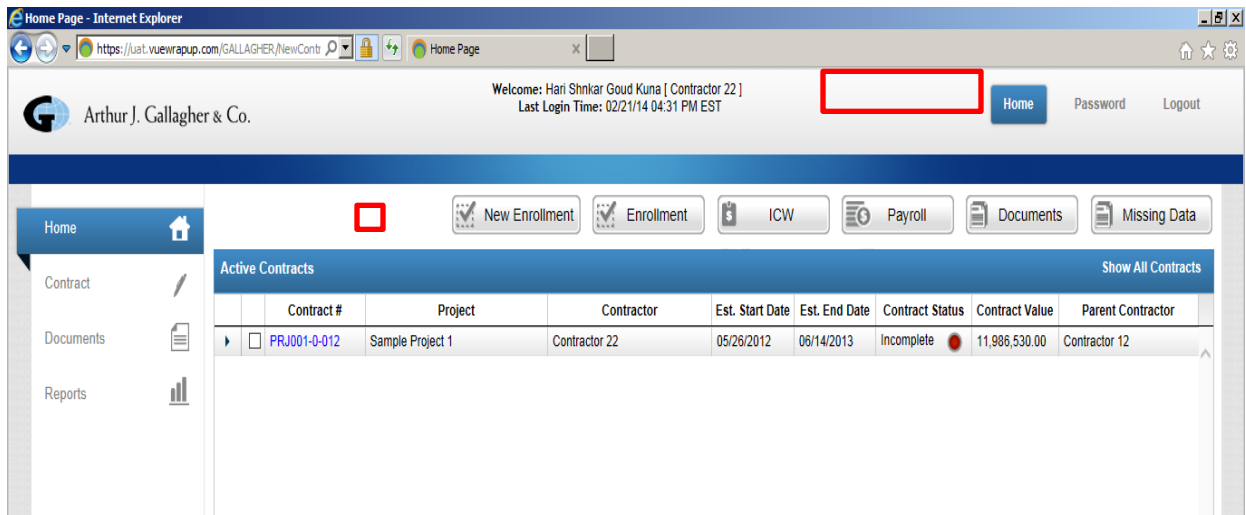
# Exhibit F

## SECTION 8: CCD ROPIP ENROLLMENT PROCEDURES AND REQUIREMENTS

- When your registration has been received successfully, you will see the message “User ID and Password are created. Please click here to login to Contractor Portal” in red. Click the link to be redirected to the login page where you can login to the portal to complete your enrollment. You will also receive an email with your User ID and Password for your records.
- When you login, if you do not yet have any contracts added, click the button “New Enrollment”.



If you already have the contract in the system, click the checkbox next to the contract you need to enroll or complete enrollment, then click the Enrollment button. If you do not see your contract, add a New Enrollment and **use project code [ 202053365]**



# Exhibit F

## SECTION 8: CCD ROPIP ENROLLMENT PROCEDURES AND REQUIREMENTS

6. You will be brought to the Enrollment Screen.

The screenshot shows the 'Enrollment' screen for Arthur J. Gallagher & Co. The user is Hiren Darji, last login on 02/20/14 at 07:29 AM EST. The page has a navigation menu on the left with 'Contract' selected. The main content area is titled 'Contract Information' and contains the following fields:

Project	North West Stadium	Parent Contractor	South West Inc.
Contractor	Bridgestone Construction LL	FEIN	12-1231231
Est Start Date	02/20/2014	Est End Date	02/20/2015
Contract Value	500,000.00		
Description	Building a New Stadium.		

A legend at the top right indicates that blue fields are 'Read Only' and yellow fields are 'Required'. The 'Contract Value' field is highlighted in yellow, indicating it is required.

The Enrollment Screen includes the following sections, each of which can be expanded or collapsed for ease of review:

- a. Contract Information
  - b. Address
  - c. Contact
  - d. Estimated Payroll
  - e. Insurance Information
7. Fill in each section with your information to the best of your ability. Fields highlighted in yellow are required. If you do not know the information for a required field, enter an X, or if a specified format is required such as a date, enter your best estimate.
- a. For a new enrollment, all fields shown should be filled in.
  - b. If you have previously started an enrollment or if a contract has been added to your portal by an administrator, you may not be able to edit some fields. Move on from those and fill in all the other fields as completely as possible. (If you notice a mistake in a non-editable field, contact your administrator).

# Exhibit F

## SECTION 8: CCD ROPIP ENROLLMENT PROCEDURES AND REQUIREMENTS

8. In the Contract Information section, please enter your contract Estimated Start Date, Estimated End Date, Contract Value and Description of Work.

**Contract Information** 1

Project:  Parent Contractor:

Contractor:  FEIN:

Est Start Date:  Est End Date:

Contract Value:  Contract Status:

Description:

Contract Description is required.

9. In the address section, enter a primary address by filling in the fields for address type, street address, city, state, zip, and checking the checkbox “Primary”. You must enter at least one address and it must be marked as primary.
- a. To add a secondary address, click the Add button in the lower right hand corner of the address section. This will open another address section.
  - b. To mark a different address as primary, first uncheck the Primary checkbox in the address originally checked as primary, then check the primary checkbox in the new primary address. If you check the Primary box in a different address first, you will get an error message. You first must un-check the original checkbox and then check the new checkbox.
  - c. To delete an address, click the delete button at the lower right hand corner of the section containing that address. (Delete will only show when there is more than one address added.)
  - d. Note: You cannot delete an address that has already been approved by the administrator. If you try to delete an address which has been approved by AJG Wrap-up Administrator, then you will get the error message: “You cannot delete Address approved by administrator. Please contact AJG Wrap-up administrator.”

**Address**

Address Type:  Primary:

Street Address1:  Street Address2:

City / State / Zip:



## Exhibit F

### SECTION 8: CCD ROICIP ENROLLMENT PROCEDURES AND REQUIREMENTS

10. In the Contact section, add your contacts. You must enter at least one contact and it must be marked as primary. You can also add additional contacts. The same rules around marking as primary, adding and deleting apply for Contact as for address. Please see the address section above for more details.
- You must provide a value for your corresponding preferred mode of contact. For example, if you select email as your preferred method of contact, you must provide an email address.

**Contact** ↑

NOTE: Please provide Primary Contact with Email and/or Fax, First Name and Phone.

Job Title <input style="width: 80%;" type="text"/>	Primary <input type="checkbox"/>
First Name <input style="width: 80%;" type="text"/>	Last Name <input style="width: 80%;" type="text"/>
Email <input style="width: 80%;" type="text"/>	Fax <input style="width: 80%;" type="text"/>
Phone <input style="width: 80%;" type="text"/>	Mobile <input style="width: 80%;" type="text"/>
Preferred Mode of Contact <input style="width: 80%;" type="text"/>	

[Add](#)

11. In the estimated payroll section, you must enter estimated payroll for at least one worker's compensation class code. For each class code, select the class code, enter the man hours and the payroll amount.

**Estimated Payroll** ↑

1

• Estimated Payroll is required.

State <input style="width: 80%;" type="text" value="NEW YORK"/>	Select WC Code <input style="width: 80%;" type="text" value="Select"/>
Man Hours <input style="width: 80%;" type="text"/>	Payroll(\$) <input style="width: 80%;" type="text"/>

[Add](#)

- If editing an existing enrollment or completing an enrollment for an administrator-added contract, the state will be driven off of the project state and will not be editable.
- To add another class code, click Add. Once there is more than one class code, the Delete button will also appear, allowing you to delete other records if needed.

# Exhibit F

## SECTION 8: CCD ROIP ENROLLMENT PROCEDURES AND REQUIREMENTS

12. The Insurance Information section is required, however items a. and b. below are not mandatory (please enter that information if available).

- a. Risk ID # (This is the ID # assigned to the Contractor by the Rating Bureau that compiles and calculates the EMR).
- b. Rating Bureau (The organization that compiles Claims history and Payroll to calculate the EMR).
- c. EMR value for current year.
- d. Anniversary Rating Date (MM/DD/YYYY) by when new EMR shall come into effect).

(Note: Contact your Broker/Producer on your worker's compensation policy to obtain these details if you do not have them.)

- e. Offsite WC (Worker's Compensation) Carrier Name
- f. WC (Worker's Compensation) Offsite Policy Number
- g. Policy Effective Date (mm/dd/yyyy) - Start date of the Policy
- h. Policy End Date (mm/dd/yyyy) – End date of the Policy

The screenshot shows a web form titled "Insurance Information". It contains the following fields:

- Risk ID: Text input field
- Rating Bureau: Dropdown menu
- EMR: Text input field
- Anniversary Rating Date: Date picker
- Offsite WC Carrier: Text input field
- WC Offsite Policy #: Text input field
- Policy Effective Date: Date picker
- Policy End Date: Date picker

Below the form is a confirmation checkbox with the text:  Statements in this application are true and accurate to the best of my knowledge.

Below the checkbox is a signature field: Signature (print your name) and Date [Text input field]

At the bottom center is a yellow "Submit" button.

13. Before you submit your enrollment information, you must check the confirmation checkbox. (Note: The text in your portal may differ from what is shown in the above screenshot.) After you verify the information is correct, check the checkbox.

- a. Once this checkbox is checked, Signature (print your name) and Date field will be visible. Please add details for sign and date.
- a. If Verification checkbox is not checked before submitting enrollment, then system will give message as "You have not verified the above information."
- b. If Signature is not entered before submitting Enrollment, then system will give message as "Signature is required."

# Exhibit F

## SECTION 8: CCD ROICIP ENROLLMENT PROCEDURES AND REQUIREMENTS

### Note:

1. If anything is incomplete, a red circle with the number of missing items will be shown on each section.
  - a. For example, if five required data points are missing in the Insurance Information section, the header shows red circled count for the # of missing data points.
2. Once your Contract is Pending / Enrolled, you cannot make changes to the enrollment for the contract.

### Submit Documentation

- As part of your enrollment, you will be required to submit the following supporting documentation:
  - WC Rating and Dec pages (Upload per instructions below)
  - Monthly Payrolls (Completed on-line and due on the 5<sup>th</sup> of every month for the preceding month)
  - Notice of Completion (When your work has been completed)
- From the home screen, you can access the document section in one of the two ways mentioned below.
  - Select the record of Contract # from the list on the Home Screen, and then click on Documents button.
  - Or
  - Click on Documents sub-menu under Contract from the left menu on the screen.
  - Or
  - Click on Documents button from the Enrollment page to upload document for a given contract.

Contract #	Project	Contractor	Est. Start Date	Est. End Date	Contract Status	Contract Value	Parent Contractor
PRJ001-0-000	Sample Project 1	CTR-1224-13	04/16/2012	06/14/2013	Enrolled	81,969,479.00	
TC-0203-14A	TP-0203-14A	CTR-1224-13	01/01/2014	12/31/2014	Incomplete	800,000.00	
PRJ-001-2-001	Sample Project 1	CTR-1224-13		06/14/2013	Incomplete	0.00	
Test_Contract_F...	TP-0203-14A	CTR-1224-13	02/05/2014	12/31/2014	New	500,000.00	
Test_Contr	TP-0203-14A	CTR-1224-13	02/04/2014	08/30/2014	Incomplete	15,000.00	

- Documents screen will be opened.
  - If you access the documents screen by selecting the contract # from the list on the home page or from the Enrollment page, then the contract # will be pre-filled on the top of the screen.
  - If you access the screen by clicking on the Documents sub-menu from the left menu, then you will need to search the Contract # by providing at least the first three characters of the contract number.

On Documents screen, there are three fields: Contract #, Select Form Type and Select File to upload the document. Refer to the image below.

# Exhibit F

## SECTION 8: CCD ROIP ENROLLMENT PROCEDURES AND REQUIREMENTS

Documents

Contract # 109300A-004

Select Form Type

- COI Reviews / Renewals
- Enrollments
- Insurance Cost Worksheet
- NKLL

Select File

Category/Form Type	Status	Document Name	Date/Sent Date	Description
NKLL	Pending	<a href="#">Certificate of Insurance</a>	Tue Aug 27 20:13:50 U...	
Contract Document		<a href="#">Other Documents</a>	Mon Jul 9 23:09:15 UT...	109300A-004 / JH Kelly, LLC
Other Documents	Completed	<a href="#">Insurance&amp;cost worksheet10b7f890-e52b-4406-9560-3...</a>	Mon Jul 9 19:40:01 UT...	

Displaying items 1 - 3 of 3

Screen 1 – Documents Screen

If there are existing document(s) for selected Contract, the system will display those under Documents section.

To add the documents to the selected Contract, please follow below steps.

1. Select Contract # or, if already displayed, go to step #2.
2. Select the Form Type from available options. Note: One can select multiple form types, i.e. Enrollment and NKLL.
3. To locate the file to upload, browse your local drive by clicking on the Browse button. The file must be on your device or computer from which you are currently accessing the portal.
4. Select the file to upload, and click the Upload File button to upload the file.
5. Once the file is successfully uploaded, that document(s) will be listed in Documents Screen.

You can return to the Home page by clicking on the Home button.

**Note:**

1. Only PDF or TIFF documents can be uploaded.
2. Once the document(s) are uploaded, the document(s) will be listed in the Documents section. Click on the link in the Document Name column to confirm it is the right document for that contract.

# Exhibit F

## SECTION 8: CCD ROCI P ENROLLMENT PROCEDURES AND REQUIREMENTS

### Add Lower Tier Subcontractors

1. For adding your lower tier Subcontractors for the respective contract, please click on Subcontract button. Please refer to the image below.

2. To add a new Subcontractor, please make sure to enter:
  - i. Expected Start Date – Estimated start date of the subcontract
  - j. Please enter Business Name, NOA Status (from the available options in the dropdown), FEIN #, Subcontract Value.
  - k. Contract # and Approval Status are read only fields.
  - l. Please enter following details for Contact Information and Payroll Contact Information for the subcontract.  
First Name, Last Name, Phone #, Fax # and Email Address.
3. To add another subcontractor; please click on the ADD button. A new subcontract block will be added under the existing section.
4. **DELETE** button is available to delete the subcontractor, if needed.
5. Please verify the information and check the checkbox next to the statement “I have reviewed the information and agree that it is correct” before submitting the subcontractor details.

#### Note:

1. Once subcontract is submitted, system will display the auto generated contract number in the given Contract # field. The Approval Status will also be shown in the Approval Status field.
2. By clicking on Back button on the top-left of the Subcontract screen, the user can go back to the Enrollment screen.

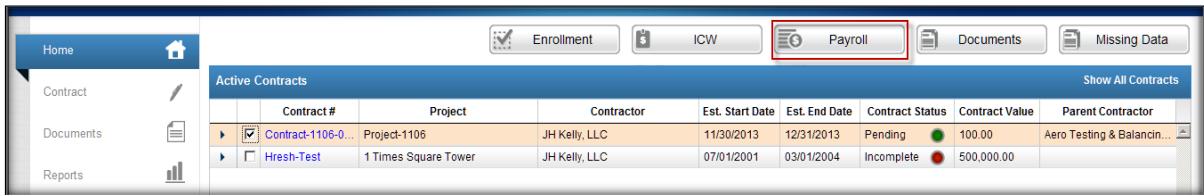
## On-line Payroll Reporting Instructions

### How to Report Payroll On-Line

- All enrolled Subcontractors **must** submit an On-Site Payroll Report **every month** from the inception of the contract until work is completed. The Payroll report is due on the **5<sup>th</sup> of every month** for the preceding month's work.
- Actual Payroll details can be submitted online through the portal <https://ajg.vuewrapup.com/contractorportal/>.

Please follow the steps below to submit the Actual Payroll online.

1. Once logged in to the portal site, the Actual Payroll details can be submitted online by using one of the following two options:
  - a. Select the Contract # listed on the Home Screen, then Click on the Payroll button. **NOTE:** If any of your Contract #'s are not listed, please contact your AJG Wrap-up Administrator to check the status of enrollment.
  - Or
  - b. Click on Payroll sub-menu under Contract from the left menu of the screen.



2. Actual Payroll screen will open. Please see the Actual Payroll Form image on following page.

The screenshot shows the 'Actual Payroll' form. At the top, there is a 'Contract #' field with the value 'PRJ-001-2-001'. Below this, there are fields for 'Report Date' (02/21/2014), 'Start Date' (02/01/2014), and 'End Date' (02/28/2014). There are also fields for 'Signed By' (joe) and 'Title'. A 'Note' field is present below these. At the bottom, there is a table with columns for 'WC Code', 'Description', 'Man Hours', 'Gross Payroll (\$)', and 'Reported Payroll (\$)'. One entry is shown: '0042 Landscapping and Gardening' with 200 Man Hours, 1000 Gross Payroll, and 1000 Reported Payroll.

## Exhibit F

### **SECTION 8: CCD ROPIP ENROLLMENT PROCEDURES AND REQUIREMENTS**

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3. If you selected the Contract # from the Home Screen, the Contract # will be pre-filled on the form. If it is not, you must select the Contract # from the Contract search box above.
4. Report date is the current date, and will be filled by the System.
5. If this is the first payroll report, please enter the Start Date by either manually typing in Date textbox (MM/DD/YYYY), or using the drop down Calendar. Do the same for the End Date. While submitting subsequent payrolls, the System will populate the next calendar day as the Start Date from the previous report. The End Date needs to be entered manually.
6. Signed By textbox will be pre-filled. Title can be manually entered in the Title textbox.
7. On the payroll screen, the WC Code(s) will be filled from the estimated payroll you submitted during enrollment.
8. If you need to add another WC code, click on the green plus button located above the Reported Payroll column.
9. In the WC Code box, enter the WC Code followed by the Description in the next field. In addition, you can delete a selected WC Code by clicking the Delete (x) icon located above the Reported Payroll column. **Note:** You must leave a note in the notes field explaining to the administrator why you are entering payroll for a class code not included on your enrollment.
10. Click the Man Hours field to enter the correct hours. Enter the Gross Payroll that includes unburdened overtime pay.  
*Remember: If there are no hours worked for a WC code for that month, enter zero (0).*
11. Reported Payroll does not include the premium (excess) portion of any Overtime pay. (i.e. 48 hours. x 24.00\$/hr. = \$1,152, do not include the premium overtime pay of \$12.00 for the 8 hours of overtime). The states of PA, NV, UT, DE and applicable WC monopolistic states require the entire unburdened overtime portion as Reportable Payroll. If you are unsure whether to include the unburdened overtime portion as Reportable Payroll, you can find the information in your CCIP manual, or by calling the AJG Wrap-up Administrator.
12. If a WC Code is entered which was not included in the original Estimated Payroll section on Enrollment Application, a Note explaining the reason for the same must be added before saving the Actual Payroll.
13. If Reported Payroll is less than Man Hours then system will give the message as **“Reported payroll should be more than man hours.”**
14. If Reported Payroll is less than Gross Payroll then system will give the message as **“Reported payroll can never be greater than gross payroll.”**
15. If Payroll Start Date is before Project or Contract Start Date then system will give message as **“Payroll cannot be entered before the Project Start date / Contract Start date, which is [DATE]. Please contact AJG Wrap-up Administrator for assistance.”**
16. After all the required information has been entered, click Submit button. Please note: Once the payroll information has been submitted it cannot be changed. You must contact the AJG Wrap-up Administrator for changes.
17. To print, click Print button on the top right corner of Actual Payroll screen. A PDF file will open displaying the details of the submitted Actual Payroll.

# Exhibit F



## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
mm/dd/yyyy

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 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).

<b>PRODUCER</b> Your Insurance Agent/Broker Name  Address City _____ St _____ Zip Code _____		<b>CONTACT NAME:</b> Your Agent's Contact Name <b>PHONE (A/C No, Ext):</b> Your Agent's Phone Number <b>FAX (A/C, No):</b> Agent's Fax # <b>E-MAIL ADDRESS:</b> Your Agent's E-mail address	
<b>INSURED</b> Your company Name Address City, State, Zip Code		INSURER(S) AFFORDING COVERAGE      NAIC # INSURER A : Your Insurance Company INSURER B : Your Insurance Company INSURER C : Your Insurance Company INSURER D : INSURER E : INSURER F :	

**COVERAGES**      **CERTIFICATE NUMBER:**      **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 INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> GENERAL LIABILITY			Your Policy #	mm/dd/yy	mm/dd/yy	EACH OCCURRENCE \$ 1,000,000	
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	<input type="checkbox"/> Y	<input type="checkbox"/> Y				DAMAGE TO RENTED PREMISES (Ea occurrence) \$	
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						MED EXP (Any one person) \$	
	GEN'L AGGREGATE LIMIT APPLIES PER:							PERSONAL & ADV INJURY \$ 1,000,000
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						GENERAL AGGREGATE \$ 2,000,000	
							PRODUCTS - COMP/OP AGG \$ 2,000,000	
							\$	
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY	<input type="checkbox"/> Y	<input type="checkbox"/> Y	Your Policy Number	mm/dd/yy	mm/dd/yy	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000	
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$	
	<input type="checkbox"/> ALL OWNED AUTOS	<input type="checkbox"/> SCHEDULED AUTOS						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS	<input type="checkbox"/> NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident) \$
							\$	
							\$	
							\$	
	<input type="checkbox"/> UMBRELLA LIAB						EACH OCCURRENCE \$	
	<input type="checkbox"/> EXCESS LIAB						AGGREGATE \$	
	<input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						\$	
C	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	<input type="checkbox"/> Y/N	<input type="checkbox"/> N/A	Your Policy #	mm/dd/yy	mm/dd/yy	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER	
	<input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? (Mandatory in NH)						E.L. EACH ACCIDENT \$ 1,000,000	
	If yes, describe under DESCRIPTION OF OPERATIONS below							E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000	

Sample Document Only  
 Certificate must be issued by your primary insurance agent and include the specific wording shown at the bottom of this sample. E-mail or fax to Arthur J. Gallagher ROCIP Dept  
 EM Heather\_Lawson@ajg.com

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES** (Attach ACORD 101, Additional Remarks Schedule, if more space is required)  
 The CITY AND COUNTY OF DENVER, A MUNICIPAL CORPORATION OF THE STATE OF COLORADO, its officers, directors, employees and agents are Additional Insureds per endorsement equivalent to ISO Form CG 2038. Coverage is primary and non-contributory. Waiver of Subrogation is included for the General Liability, Workers' Compensation per Endorsements # \_\_\_\_\_ attached.

<b>CERTIFICATE HOLDER</b>  City and County of Denver c/o Arthur J. Gallagher RMS, Inc./Gallagher ROCIP Group 12444 Powerscourt Drive St. Louis, MO 63131	<b>CANCELLATION</b>  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  Your Agent's Signature
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ACORD 25 (2010/05)      The ACORD name and logo are registered marks of ACORD



## Exhibit F

# Instructions for Completing the First Report of Injury (Form follows these instructions)

Please read all pages }

**Note, the actual fillable PDF is attached as a separate document**

This is TBD Telephone Reporting Worksheet and will be used to file the Workers' Compensation Claim electronically by TBD.

This form is “**fillable**.” That means you can type the information onto the form from your computer and print the form. To save the form to your computer's hard drive, save it as a pdf with a unique name, then you can clear the form for the next incident.

Use numbers only to fill in the fields for Social Security #, phone numbers and dollar amounts. If a dollar amount contains cents, do type the period. To fill in a **check box**, click inside the box with your mouse. Some **check boxes** require you to select only one answer; you cannot check both. The “Injury Description”, “Name of Witness”, and “Name of Doctor” fields have a gray border to indicate how many lines you have to type in. Use the tab key to navigate to the next field.

# Exhibit F

## INSTRUCTIONS

### This form contains all items requested on OSHA Form No. 301, "Injuries & Illnesses Incident Report"

#### General

- All injuries no matter how trivial must be reported to your insurance company.
- All injuries or occupational diseases which result in lost time from work in excess of three shifts or calendar days, or in permanent physical impairment, must be reported to your insurance carrier on this form within ten days after notice or knowledge of the injury or disease. Fatalities must be reported to your insurance carrier immediately.
- Forms should be typed or printed legibly.
- All questions must be answered completely to meet requirements of the Colorado Workers' Compensation Act and to conform to the OSHA requirements for Form No. 301.
- The employer has the right in the first instance, to select the physician who attends the injured employee.

#### Calculation of Average Weekly Wage

- Determine the weekly wage rate.
- Add the average weekly amount of any overtime wages, tips or commissions.
- Add the average weekly value of any board, rent, housing, or lodging provided by the employer *if the employer will not be paying such benefit during the period of disability*.
- If the employee is covered by group health insurance *and* the employer does not continue the employee's health insurance coverage during the period of disability, add the employee's cost of conversion to a similar or lesser insurance plan and include this cost in the average weekly wage computation.
- Compute the total from the above categories and insert in the *Average weekly wage at time of injury* field.

#### Injury Date Information

In the case of an occupational disease, use the date of the last injurious exposure.

#### Notes

Are Wages continued per C.R.S. 8-42-124?<sup>1</sup>

(Subject to application with and approval of the Director of the Colorado Division of Workers' Compensation)

- 1 Any employer who, by separate agreement, working agreement, contract of hire, or any other procedure, continues to pay a sum in excess of the temporary total disability benefits to an employee temporarily disabled as a result of a work related injury or disease, and has not charged the employee with any earned vacation leave, sick leave, or other similar benefits, shall be reimbursed if insured by an insurance carrier or shall take credit if self-insured, to the extent of all moneys that such employee may be eligible to receive as compensation for temporary partial or temporary total disability subject to the approval of the Director of the Colorado Division of Workers' Compensation.

Injury Description (Tell us the part of the body that was affected. Tell us the nature of the injury/illness<sup>2</sup>; What was the employee doing just before the accident occurred?<sup>3</sup>; What happened?<sup>4</sup>; What object or substance directly harmed the employee?<sup>5</sup>)

- 2 Be more specific than "hurt", "pain", or "sore." Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
- 3 Describe the activity, as well as the tools, equipment or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; or "daily computer key-entry."
- 4 Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
- 5 Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank

#### Notices

You are hereby notified that if a child support obligation is owed, compensation benefits may be attached and payment of the child support obligation may be withheld and forwarded to the obligee pursuant to sections 8-42-124 and 26-13-122(4), C.R.S. YOU ARE FURTHER NOTIFIED that you must provide written notice of any award for social security, pension, disability or other source of income that might reduce your compensation benefits. This notice must be sent to the insurance carrier or self-insured employer within 20 days after learning of the payment or award. Failure to report may result in suspension of your benefits pursuant to section 8-42-113.5, C.R.S.

C.R.S. Section 10-1-128(6) (a) states: "It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purposes of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance, and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado division of insurance within the department of regulatory agencies."

## Exhibit F

**Note, the actual fillable PDF is attached as a separate document**

### WORKERS' COMPENSATION TELEPHONE REPORTING WORKSHEET

THINGS TO REMEMBER WHEN COMPLETING THE INFORMATION BELOW:

Call the Telephone Reporting Center to quickly and easily report all Workers' Compensation injuries. We will be asking you the following questions, so please have the information handy. We will produce and submit the necessary state forms.

**DO NOT DELAY IN CALLING IF YOU DO NOT HAVE ANSWERS TO ALL THE QUESTIONS.**

ACCOUNT / ACCIDENT INFORMATION			
CALLER'S PHONE NUMBER / EXTENSION ( )	CALLER'S TITLE	CALLER'S NAME	REPORTING STATE CO
SUBCONTRACTOR/SUBSIDIARY NAME	SUBCONTRACTOR'S ADDRESS (STREET, CITY, STATE & ZIP)	SUBCONTRACTOR'S MAILING ADDRESS (STREET, CITY, STATE & ZIP) <input type="checkbox"/> SAME	
DID THE ACCIDENT OCCUR AT THE LOCATION ADDRESS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF NO, ADDRESS WHERE ACCIDENT OCCURRED			
PARENT COMPANY / INSURED'S NAME <b>City and County of Denver; Program Identifier: CCD ROCIP</b>			
LOCATION CODE	POLICY SYMBOL AND NUMBER	NATURE OF BUSINESS	
DATE OF INJURY		TIME OF INJURY	
ACCIDENT DESCRIPTION			

EMPLOYEE INFORMATION			
INJURED EMPLOYEE'S SOCIAL SECURITY NUMBER:		EMPLOYEE'S NAME (FIRST, MI, LAST)	GENDER <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
DATE OF BIRTH	EMPLOYEE'S MAILING ADDRESS		
EMPLOYEE'S HOME PHONE NUMBER ( )	EMPLOYEE'S HOME ADDRESS (IF DIFFERENT FROM MAILING)		

EMPLOYEE JOB INFORMATION			
EMPLOYMENT STATUS CODE <input type="checkbox"/> FULL-TIME <input type="checkbox"/> PART-TIME <input type="checkbox"/> OTHER _____	INJURED WORKER TYPE	REGULAR OCCUPATION	
OCCUPATION WHEN INJURED			
EMPLOYEE'S WORK SCHEDULE			
REGULAR WORK HOURS	HOURS/DAY	DAYS/WEEK	
EMPLOYEE'S WAGE INFORMATION: \$ _____ / HOUR OR \$ _____ / ANNUAL OR \$ _____ / WEEKLY OVERTIME: \$ _____ ADDITIONAL BENEFITS: \$ _____			
DATE OF HIRE OR LENGTH OF EMPLOYMENT			
SUPERVISOR'S NAME:	SUPERVISOR'S PHONE NUMBER: ( )	BEST HOURS TO CONTACT	

ACCIDENT INFORMATION			
DATE CLAIM REPORTED TO EMPLOYER?	DID EMPLOYEE LOSE ANY TIME FROM WORK? <input type="checkbox"/> YES <input type="checkbox"/> NO	IS THE EMPLOYEE BACK AT WORK? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE RETURNED TO WORK?	
RETURN TO WORK STATUS <input type="checkbox"/> LIGHT <input type="checkbox"/> MODIFIED <input type="checkbox"/> REGULAR	DATE EMPLOYEE LAST WORKED	WAS INJURY FATAL? IF YES, DATE OF DEATH <input type="checkbox"/> YES <input type="checkbox"/> NO	
CAUSE OF ACCIDENT (E.G., SLIP/FALL, LIFTING, CHEMICAL)			

EQUIPMENT, MATERIAL OR SUBSTANCE INVOLVED			
DO YOU QUESTION THE VALIDITY OF THE CLAIM? <input type="checkbox"/> YES <input type="checkbox"/> NO			
WITNESS INFORMATION/OTHERS INVOLVED NAME (FIRST, MI, LAST)		ADDRESS	PHONE NUMBER

**CONTINUED ON REVERSE SIDE**

# Exhibit F

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**INJURY INFORMATION**

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PART OF BODY INJURED (E.G., HEAD, NECK, ARM, LEG)

NATURE OF INJURY (E.G., FRACTURE, SPRAIN, LACERATION)

PRIOR INJURY OR PRE-EXISTING CONDITION(S) (IF YES, DESCRIBE)

YES  NO

TREATMENT ("X" ALL THAT APPLY)

FIRST AID —

TREATMENT AND DATE OF 1<sup>ST</sup> TREATMENT

HOSPITAL/  
CLINIC —

NAME, ADDRESS, PHONE NUMBER, PHYSICIAN NAME, TREATMENT, DATE OF 1<sup>ST</sup> TREATMENT, LENGTH OF STAY, AMBULANCE USED?

WAS EMPLOYEE TREATED IN AN EMERGENCY ROOM?

YES  NO

WAS EMPLOYEE HOSPITALIZED OVERNIGHT AS AN IN-PATIENT?

YES  NO

PHYSICIAN —

---

**SEE WORKERS' COMPENSATION - FIRST REPORT OF INJURY - STATE SPECIFIC QUESTIONS  
FOR YOUR INDIVIDUAL STATE.**

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**CUSTOMER SPECIFIC INFORMATION**

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**ADDITIONAL COMMENTS & INFORMATION**

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## Exhibit F

# City and County of Denver CCD ROCIP GENERAL LIABILITY LOSS REPORT

<b>DESIGNATED PROJECT:</b>	<b>202053365</b>
----------------------------	------------------

Contractors Email to [Devron.McMillin@denvergov.org](mailto:Devron.McMillin@denvergov.org) and to [Kendall.trump@ajg.com](mailto:Kendall.trump@ajg.com) within 24 hours of incident. Once complete, CCD will submit to Arthur J. Gallagher. Contact AJG by telephone at **(303) 773-9999** about any case involving bodily injury / fatality, extensive property damage, or lawsuit.

POLICY HOLDER / COMPANY NAME					
Name					Phone Number
CITY AND COUNTY OF DENVER; PROGRAM IDENTIFIER: CCD ROCIP					
Address	Street	City	State	Zip Code	
Finance officer/Risk Mgt	201 W. Colfax Ave	Denver	CO	80203	

TIME AND PLACE OF ACCIDENT					
Date of Accident	Hour	A.M.	P.M.	Location of Accident	
Date Notified of Loss					

DESCRIPTION OF ACCIDENT					
Full description and cause of accident ( <i>Attach photos, if available</i> )					
Was accident caused by employee of subcontractor?			If "Yes," give employee's name		
<input type="checkbox"/> Yes <input type="checkbox"/> No Name of subcontractor			Address      Street      City      State & Zip Code		
Who owns premises where accident occurred?			Does your lease or contract contain any provision regarding injuries?		

WITNESSES (VERY IMPORTANT)					
Names	Addresses	Street	City	State & Zip Code	

INJURED PERSON AND INJURIES					
Name of person injured	Age	<input type="checkbox"/> Married <input type="checkbox"/> Single			
Address	Street	City	State	Phone Number	
Nature and extent of injuries					
Name of doctor or hospital	Address	Street	City	State & Zip Code	
By whom is injured person employed?	Did injured person lose time from work as a result of this injury?		Has injured returned to work?		
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		

DAMAGE TO PROPERTY OF OTHERS					
Names	Addresses	Street	City	State & Zip Code	
Kind of property				Phone Number	
Where may property be seen?				Estimated cost of repairs	



# Exhibit F

## CITY AND COUNTY OF DENVER

Michael B. Hancock  
Mayor

Do you think a claim will be made against you?

Yes  No

By whom?

Date of this report

Signed

### PROCEDURE FOR FILING A NOTICE OF CLAIM AGAINST THE CITY AND COUNTY OF DENVER

(For any party who may want to make a claim for any accident or incident involving the City and County of Denver)

1. Write and file a Notice of Claim (letter) that complies with the provisions of the Colorado Governmental Immunity Act notice requirements found in §24-10-109, 7B (2003), as amended and may be further amended by the legislature.

2. Mail or deliver your Notice of Claim to:

Mayor Michael Hancock  
1437 Bannock Street, Room 350  
Denver, CO 80202

3. The Mayor's Office will forward your Notice of Claim to the Denver City Attorney's Office. You will receive a letter, which will provide Denver's claim number and the investigator's name and phone number.

4. If you have any questions about your claim contact Kendall Trump at 303-889-2570.

-----  
**24-10-109. Notice required - contents - to whom given - limitations.** Statute text

(1) Any person claiming to have suffered an injury by a public entity or by an employee thereof while in the course of such employment, whether or not by a willful and wanton act or omission, shall file a written notice as provided in this section within one hundred eighty days after the date of the discovery of the injury, regardless of whether the person then knew all of the elements of a claim or of a cause of action for such injury. Compliance with the provisions of this section shall be a jurisdictional prerequisite to any action brought under the provisions of this article, and failure of compliance shall forever bar any such action.

(2) The notice shall contain the following:

(a) The name and address of the claimant and the name and address of his attorney, if any;

(b) A concise statement of the factual basis of the claim, including the date, time, place, and circumstances of the act, omission, or event complained of;

(c) The name and address of any public employee involved, if known;

(d) A concise statement of the nature and the extent of the injury claimed to have been suffered;

(e) A statement of the amount of monetary damages that is being requested.

## Exhibit F

- (3) If the claim is against the state or an employee thereof, the notice shall be filed with the attorney general. If the claim is against any other public entity or an employee thereof, the notice shall be filed with the governing body of the public entity or the attorney representing the public entity. Such notice shall be effective upon mailing by registered mail or upon personal service.
- (4) When the claim is one for death by wrongful act or omission, the notice may be presented by the personal representative, surviving spouse, or next of kin of the deceased.
- (5) Any action brought pursuant to this article shall be commenced within the time period provided for that type of action in articles 80 and 81 of title 13, C.R.S., relating to limitation of actions, or it shall be forever barred; except that, if compliance with the provisions of subsection (6) of this section would otherwise result in the barring of an action, such time period shall be extended by the time period required for compliance with the provisions of subsection (6) of this section.
- (6) No action brought pursuant to this article shall be commenced until after the claimant who has filed timely notice pursuant to subsection (1) of this section has received notice from the public entity that the public entity has denied the claim or until after ninety days has passed following the filing of the notice of claim required by this section, whichever occurs first.

**Source:** L. 71: p. 1207, § 1. C.R.S. 1963: § 130-11-9. L. 79: (1) amended, p. 862, § 2, effective July 1. L. 86: (1),(2)(b), (3), and (5) amended and (6) added, p. 877, § 9, effective July 1. L. 92: (1) amended, p. 1117, § 4, effective July 1.

## Exhibit F

## CCD ROCIP

## BUILDERS RISK CLAIMS

<b>DESIGNATED PROJECT:</b>	<b>202053365</b>
----------------------------	------------------

1. Take immediate steps to protect property from further damage, securing temporary board-up service if necessary. Keep records of all expenses related to your loss. **Secure all damaged equipment or parts for cause of loss and subrogation investigation by the Insurance Carrier.**
2. List all items damaged or stolen. If original purchase invoices are available, accumulate for the claim representative.
3. Call police department, if appropriate. Please note that your policy requires that all theft losses MUST BE reported to the police.
4. Save any damaged property for examination by the insurance company.
5. If a third party is responsible for the damage, obtain their name, address and telephone number or, if applicable, the make of vehicle and license plate number.
6. Complete the attached Incident Report and email to Kendall Trump at A. J. Gallagher at [Kendall.trump@ajg.com](mailto:Kendall.trump@ajg.com) or fax to 303.889.2571 within 24 hours.



## Exhibit F

# CCD ROCIP

## BUILDERS RISK LOSS REPORT

Email to Arthur J. Gallagher: [Kendall Trump@ajg.com](mailto:Kendall.Trump@ajg.com) or fax to (303) 889-2571 within 24 hours of incident.

<u>Company Name:</u> <b>City and County of Denver, ROCIP</b>					
<u>Mailing Address</u>	Street	City	State	Zip Code	
	201 W. Colfax Ave	Denver	CO	80203	
<u>Date of Loss or Accident</u>	Month	Day	Year	Time	A.M. P.M.
<u>Location where loss or accident occurred</u>	Street	City	State	Zip Code	
<u>Cause of loss (i.e., fire, wind, theft, etc.)</u>					
<u>Describe how loss or accident occurred</u>					
<u>General description of property (Attach photos or inventory if appropriate)</u>					
<u>If caused by burglary, theft or vandalism, was loss reported to police?</u> <input type="checkbox"/> Yes <input type="checkbox"/> No					
<u>If yes, police address and case number</u>					
<u>Estimate of entire loss</u> \$					
<u>Estimated salvage value of damaged articles</u> \$					
<u>Which fire department(s) attended?</u>					
<u>Name of person reporting claim</u>			<u>Phone number &amp; Email</u>		

## Exhibit G – Appropriation and Encumbrance Form

# Exhibit G



## Appropriation and Encumbrance Form

Department of Infrastructure and Transportation  
201 W. Colfax Avenue, Dept 506, Denver, CO 80202

Contractor: _____	Project Name: _____
Contract No.: _____	Vendor ID: _____
Appropriation and Encumbrance Form No.: _____ <i>(Forms to be numbered sequentially)</i>	Project Manager: _____

It is hereby mutually agreed that when this APPROPRIATION AND ENCUMBRANCE FORM has been fully executed by the contracting parties it provides the notice required by the Appropriation and Encumbrance requirements of the above referenced Contract and satisfies all appropriation and encumbrance notification requirements imposed by Colorado law including those found in C.R.S §24-91-103.6. Contractor agrees that any work performed, or costs incurred by Contractor exceeding the Total Appropriation & Encumbrance Amount stated below is done without authorization and at Contractor's sole risk.

The current request will fund Work that includes the (scope, phase or duration as appropriate) identified below:

**Total Appropriation & Encumbrance Amount<sup>5</sup> \$\_\_\_\_\_**

**The Total Appropriation & Encumbrance Amount includes City contingency totaling \$\_\_\_\_\_**

**Accepted for Contractor by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_**

<b>Appropriation History</b>	
1. Initial contract appropriation & encumbrance amount: \$ _____ <sup>1</sup> <i>(as stated in the Contract)</i>	<div style="border-top: 1px solid black; margin-top: 10px;">                     _____ Date                      Approved – Department of Finance,                      Chief Financial Officer or delegate                 </div>
2. Total increases approved to date: \$ _____ <sup>2</sup> <i>(sum of all previously approved appropriation &amp; encumbrance forms)</i>	
3. Total amount previously appropriated and encumbered: \$ _____ <sup>3</sup> <i>(1 + 2)</i>	<div style="border-top: 1px solid black; margin-top: 10px;">                     _____ Date                      Approved – DOTI – Executive Director                      or delegate                 </div>
<b>Current Appropriation</b>	
4. Amount of current request: \$ _____ <sup>4</sup>	
5. Revised Total Appropriation & Encumbrance Amount: \$ _____ <sup>5</sup> <i>(3 + 4):</i>	<div style="border-top: 1px solid black; margin-top: 10px;">                     _____ Date                      Approved – DOTI - Director                 </div> <div style="border-top: 1px solid black; margin-top: 10px;">                     _____ Date                      Approved – Using Agency (If non-DOTI)                 </div> <div style="border-top: 1px solid black; margin-top: 10px;">                     _____ Date                      Approved – Project Manager                 </div>

## Exhibit H – Civil Rights: Equal Employment Opportunity and DBE Program Requirements

## Exhibit H

### **Civil Rights: Equal Employment Opportunity and DBE Program Requirements**

# Exhibit H

The City shall perform its obligations and shall ensure Third Party Participants, regardless of the tier, perform their respective obligations under any Third Party Contract in accordance with the requirements set forth in this exhibit. The City shall insert this EXHIBIT H - Part A in its entirety and all flow-down provisions from Part B, Section 4, into its Design/Build Contract and ensure the D/BC includes the same in each Third Party Contract, regardless of the tier.

For the purposes of this EXHIBIT H, the term "Contractor" shall refer to the City, D/BC or any Third Party Contractor for the applicable agreement when not expressly named.

## PART A – CIVIL RIGHTS

### 1. APPLICABLE CIVIL RIGHTS REQUIREMENTS

#### **1.1 CIVIL RIGHTS - EMPLOYMENT**

Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, age, or disability. In addition, Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

Equal Employment Opportunity – RTD is an equal opportunity employer. The following equal employment opportunity requirements apply to the Project work:

Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 CFR Parts 60 *et seq.*, (which implements Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect activities undertaken in the course of Project work. Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated fairly during employment, without regard to their race, color, religion, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, Contractor agrees to comply with any implementing requirements FTA may issue.

Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623 and Federal transit law at 49 U.S.C. § 5332, Contractor agrees to refrain

## Exhibit H

from discrimination against present and prospective employees for reason of age. In addition, Contractor agrees to comply with any implementing requirements FTA may issue.

Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, Contractor agrees to comply with any implementing requirements FTA may issue.

### **During the performance of Project work, Contractor:**

- (i) Will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, disability or age. Contractor will ensure that equal employment opportunity is afforded to all applicants in recruitment and employment, and that employees are treated fairly, during employment, without regard to their race, color, religion, national origin, sex, disability or age. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to setting forth provisions of this nondiscrimination clause.
- (ii) Will in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, sex, disability or age. Contractor agrees to comply with any regulations promulgated by the EEOC, OFCCP, Department of Labor, Department of Justice; the Regional Transportation District, Colorado Revised Statutes and all other relevant state and local laws.

## 1.2 **CIVIL RIGHTS in FEDERAL CONTRACTING**

Contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance this agreement as a USDOT assisted contract. Contractor shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the awards and administration of USDOT assisted contracts. Failure by Contractor to carry out these requirements is a material breach of this agreement, which may result in the termination of this agreement or such other remedy as the Direct Recipient (RTD) deems appropriate, which may include, but is not limited to: 1.) Withholding monthly progress payments; 2) Assessing sanctions; 3) Liquidated damages; and/or 4) Disqualifying the Contractor from future bidding as non-responsible.

Contractor shall not discriminate on the basis of age in the performance of the USDOT assisted contract under the Age Discrimination Act of 1975, 42. U.S.C. 6101.

# Exhibit H

## **EXHIBIT H - PART B**

### **DISADVANTAGED BUSINESS ENTERPRISE PROGRAM REQUIREMENTS**

#### **1. DEFINITIONS**

Unless the context requires otherwise, capitalized terms used in this Part B - DBE Contract Requirements shall have the meanings given to them in the herein. . However, if there is a conflict, the definitions the IGA shall prevail. In addition, the following capitalized terms shall have the meanings set out below:

***Bidder/Proposer*** means a firm or a person submitting a bid or proposal in response to a solicitation by the City.

***Contract Goal*** means a goal determined by such factors as the type of work involved, the location of the work and the availability of DBEs for the work of the particular contract.

***Contractor*** means any Project Contractor that subcontracts with a DBE for performance of Project work, as applicable.

***Commercially Useful Function (CUF)*** occurs when a DBE firm is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing and supervising the work involved in substance as contemplated by the federal regulations codified at 49 CFR Part 26. The DBE firm must also be responsible for materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, installing (where applicable) and paying for the materials itself. Additionally, for a DBE to be considered as performing a commercially useful function, a DBE must perform or exercise responsibility for at least 30 percent of the total cost of its **contract** with its own work force.

***Disadvantaged Business Enterprise (DBE)*** means an entity that meets each of the following criteria:

- (a) A firm that is at least 51% owned and controlled by one or more socially and economically disadvantaged individuals or, in the case of a corporation, such individuals must own at least 51 percent of each class of voting stock outstanding and 51 percent of the aggregate of all stock outstanding; In the case of a partnership, 51 percent of each class of partnership interest must be owned by socially and economically disadvantaged individuals; In the case of a limited liability company, at least 51 percent of each class of member interest must be owned by socially and economically disadvantaged individual(s);
  - (i) Whose personal net worth does not exceed \$1,320,000. The personal net worth excludes the equity of the eligible principal's primary residence and the equity of the eligible principal's applicant firm,
  - (ii) Whose average annual gross receipts over the previous 3 fiscal years cannot exceed \$23.98 million (the cap on statutory gross receipts),
  - (iii) Who meets the ownership and control criteria as set forth under 49 CFR Part 26.
  - (iv) Who meets the group membership criteria as defined under 49 CFR Part 26 or is able to prove social disadvantage, and



## Exhibit H

- (v) Whose firm is certified as a “Disadvantaged Business Enterprise” in the state’s Unified Certification Program.

***DBE Enclosures*** means the forms provided in Appendix B of this DBE Contract Requirements.

***DBE Goal*** means the Contract Goal(s) detailed in Section 9.b of the IGA.

***DBE Liaison*** means a representative of the the City or the D/BC with direct and independent access to the D/BC’s project manager and/or chief operating officer. This can be a collateral duty. The DBE Liaison has management responsibility for implementing, managing and reporting on achievement of the DBE goals, ensuring compliance with 49 CFR Part 26, communicating to subcontracting businesses and developing supportive services activities at all tiers. The DBE Liaison is also responsible for serving as the point of contact with RTD’s Small Business Office for all reporting, submission of properly completed forms/documents, and for responding to any compliance related issues/matters.

***DBE Participation Report*** has the meaning given to it in Section 10 of this DBE Contract Requirements.

***DBE Plan*** means a required plan, prepared by or on behalf of the D/BC as required by RTD in the procurement documents that describes how the D/BC plans to satisfy requirements set forth in this Part B of the DBE Contract Requirements.

***Small Business Office*** or ***SBO*** means the RTD Department responsible for administering the DBE and SBE Programs.

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## 2. OVERVIEW OF RTD'S DBE PROGRAM POLICY

RTD's policy is to ensure nondiscrimination in the award and administration of RTD's construction contracts, professional services contracts, and in the procurement of common goods and services. The Contractor shall comply with and implement requirements of RTD's DBE Program and 49 CFR Part 26 in the award and administration of contracts for Project work. . Contractor shall not discriminate on the basis of race, color, religion, national origin, sex, age, or disability in the administration and performance of Project work. Contractor shall ensure that the nondiscrimination clause(s) found in Part A of this document as well as the flow-down provisions found in Section 4 of this DBE Contract Requirements are incorporated in all DBE subcontract agreements regardless of tier. It is RTD's intention to create a level playing field on which DBEs can compete fairly for federally funded contracts. RTD's commitment to DBE goals is not intended to and shall not be used as a justification to discriminate against any qualified company or group of companies.

### **Additionally, it is important to note and restate applicable requirements of DBE firms:**

- A. DBE size standards: The cap on statutory gross receipts of DBE firms eligible to participate in the program over the previous 3 fiscal years cannot exceed \$23.98 million. This amount includes any affiliate businesses owned in whole or part by any applicant owner or stockholder regardless of their ownership interest.
- B. The personal net worth of the eligible principal(s) must be less than \$1,320,000 (on an individual basis) - excluding the equity of the eligible principal(s) primary residence and the equity of the eligible principal's firm. At least 51% of the owners/stockholders must meet the personal net worth criteria for the business to be eligible. Applicants cannot transfer ownership solely for the purpose of qualifying for the DBE Program. If it comes to RTD's attention, that there has been a transfer of an owner's assets, RTD may request the certifying authority under the Colorado UCP to evaluate transfers of ownership within the past two years to determine compliance with the personal net worth requirements. Additionally, the socially disadvantaged owner may be disqualified if there is evidence that he or she is not economically disadvantaged due to assets and resources that indicate an ability to accumulate substantial wealth based on specific factors, similar to those used by the Small Business Administration (SBA), that are set out in the DBE regulations. (see 49 CFR Part 26.67(b))
- C. To count a DBE's participation toward the DBE Goal established for this Project or the commitments to the percentage of certified DBE utilization made by the City, the proposed DBE(s) must be certified as a DBE(s) with the City and County of Denver or CDOT (Colorado UCP) under the NAICS code that coincides with the scope of work that they will execute in the project. The DBE firm must be certified as a DBE and perform Commercially Useful Function. D/BC should also be sure that the DBE is certified as of the date that D/BC receives a bid/proposal unless some other time frame is required by the nature of the project delivery method, project duration or when the DBE is approved by RTD to be added to the Contractor's Schedule of Participation.

## 3. GENERAL REQUIREMENTS

### A. DBE GOALS AND GOOD FAITH EFFORTS

- i. A bidder/proposer who fails or refuses to complete and return the required enclosures to

## Exhibit H

this DBE Contract Requirements will be deemed non-responsive. The specified DBE participation goal applies to all post selection negotiations. Contractor's commitment to the percentage of certified DBE utilization during the term of this contract will be stated in the DBE Affidavit (Enclosure 1A). All extensions, amendments, change orders and options for Project work are subject to review by RTD's SBO. The SBO may determine that a modification may impact Contractor's ability to comply with its initial commitment. However, a partial waiver of the DBE goal will not be considered until the end of the Project work and the totality of Contractor's compliance efforts are assessed to determine its ability to comply with the initial commitment. The SBO will evaluate all decisions to self-perform scopes of work where DBE availability was present, yet not solicited, not utilized or disregarded.

- ii) RTD has specified the DBE Goal on this Project as found in the IGA, Section 9.a (18% for design and 17% for construction). Bidders/proposers must make adequate good faith efforts to meet this DBE Goal in order to be deemed as a responsive and responsible bidder. 49 CFR Part 26.53 and Appendix A of 49 CFR Part 26 shall serve as the criteria for evaluating compliance with the good faith efforts requirements. Additionally, bidders/proposers are required to solicit the support and assistance of RTD's SBO if they are unable to meet the DBE participation goal assigned to this contract. The bidders/proposers can meet this requirement in one of two ways:
  - a. First, the bidder/proposer can meet the DBE participation goal assigned to this contract by demonstrating and documenting their commitments for participation by DBEs for at least the total percentage of the DBE goal assigned to this Project work, or a percentage that exceeds the DBE Goal for the Project. 49 CFR Part 26.53 explains the procedures that recipients/agencies such as RTD should follow in this situation. For purposes of this section, RTD will only accept DBE(s) that are currently certified with the City and County of Denver or CDOT (Colorado UCP) under the NAICS code that coincides with the scope of work that they will execute in this Project. All DBEs must be certified prior to the bid/proposal submission, except in a "design-build" or "turnkey" contracting situation or some on-call or task order contracts where RTD will explain its procedures in section 3 of this document. RTD requires that all bidders/proposers submit the following information to the City under sealed bid procedures, as a matter of responsiveness, or with initial proposals, under contract negotiation procedures:
    - i. The names and addresses of DBE firms that will participate in the Project work; (please include DBE current certification letters issued by the Colorado UCP);
    - ii. Description of the work that each DBE will perform. To count toward meeting a goal, each DBE firm must be certified in a NAICS code applicable to the kind of work the firm would perform on the contract; (this is RTD Enclosure 2 – DBE Schedule of Participation and Enclosure 3 - DBE Letter of Intent, also please include DBE current certification letters issued by the Colorado UCP);
    - iii. The dollar amount of the participation of each DBE firm participating; (This is included on RTD Enclosure 2 - DBE Schedule of Participation and Enclosure 3 - DBE Letter of Intent);
    - iv. Written documentation of the bidder/proposer's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal; and (this is covered under RTD Enclosure 1A or 1B – DBE Affidavit as well as Enclosure 3 - DBE Letter of Intent);

## Exhibit H

- v. Written confirmation from each listed DBE firm that it is participating in the contract in the kind and amount of work provided in the bidders'/proposers' commitment. (This is included on RTD Enclosure 3 - DBE Letter of Intent).
- b. Second, if the bidder/proposer does not meet the DBE Goal or is able to only meet part of the DBE Goal, they must document adequate good faith efforts. Appendix A to 49 CFR part 26 clearly states, "this means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful." Additionally, 49 CFR Part 26.53 explains the good faith efforts procedures that recipients/agencies such as RTD should follow when a bidder/proposer does not meet the DBE Goal.

The following are a list of information that bidders/proposers must submit as proof of good faith efforts along with RTD Enclosure 6 – Disadvantaged Business Outreach and Enclosure 7 – DBE Unavailability Certification form. Bidders/proposers are expected to document adequate/sufficient good faith efforts to meet the DBE Goal.

The kinds of efforts that are considered demonstrative of a "good faith" effort include, but are not limited to, the following:

- a. Whether the bidders/proposers solicited through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the Project work. The bidders/proposers must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidders/proposers must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- b. Whether the bidders/proposers selected portions of the Project work to be performed by DBEs in order to increase the likelihood that the DBE Goal will be achieved. This includes, where appropriate, breaking out Project work items into economically feasible units to facilitate DBE participation, even when the City might otherwise prefer to perform these work items with its own forces.
- c. Whether the bidders/proposers provided interested DBEs with adequate information about the plans, specifications, and requirements of the Project in a timely manner to assist them in responding to a solicitation.
- d. Whether the bidders/proposers negotiated in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. The fact that a bidder/proposer may perform 100% of the work with its own workforce is not sufficient justification to fail to negotiate with DBEs or not to meet the DBE participation goal assigned to a project.
- e. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.
- f. Whether the bidders/proposers made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

## Exhibit H

- g. Whether the bidders/proposers made efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
  - h. Whether the bidders/proposers effectively used the services of available minority/women community organizations, contractors' groups and other organizations to provide assistance in the recruitment and placement of DBEs, including RTD's SBO.
  - i. Whether other bidders/proposers on the procurement met the DBE goals and submitted an acceptable DBE Plan demonstrating compliance with the DBE Program requirements for a turnkey, multi-year design-build project, alternative method contracts, other multi-year projects, On-Call or Task-Order projects.
  - j. Bidders/proposers are required to submit copies of each DBE and non-DBE subcontractor quotes submitted to them when a non-DBE subcontractor was selected over a DBE for work on the contract so RTD SBO can review whether DBE prices were substantially higher; and contact the DBEs listed on a contractor's solicitation to inquire as to whether they were contacted by the prime. Pro forma mailings to DBEs requesting bids are not alone sufficient to satisfy good faith efforts. A bidder/proposer will not be deemed to demonstrate good faith if it rejects a DBE simply because it is not the low bidder, or if it is unable to find a replacement DBE at the original price. It is important to note that a complete good faith efforts procedure is described under 49 C.F.R. §26.53 for further guidance and review.
- v) All good faith efforts information must be complete and accurate and adequately documented by the bidders/proposers and shall be submitted with the bid/proposal.

To award a Design Build Contract to a bidder/proposer that has failed to meet the DBE Goal, the RTD SBO Manager will decide whether the contractor made a "good faith effort" to actively, effectively and aggressively seek DBEs to meet those goals prior to bid/proposal submission and in its commitments as set forth in their Schedule of Participation or DBE Plan to continue its efforts to meet the DBE participation goals for subsequent phases of the project. Contractors are also responsible for collecting good faith efforts documentation of all major non-DBE subcontractors/suppliers as part of their responsibility to implement the DBE Program. If, after reviewing the "good faith efforts" documentation submitted by the bidder/proposer, the RTD SBO Manager determines that good faith efforts were met, the contract will be recommended for award to the responsive and or responsible bidder/proposer.

- vi) If RTD determines that the apparent successful bidder/proposer has failed to meet the DBE goal or make adequate/sufficient good faith efforts, before the City awards the D/BC Contract, RTD will, though the City, provide the bidder/proposer an opportunity for administrative reconsideration.
- a. The bidder/proposer will be informed in writing that their submittal was deemed non-responsive to the DBE Contract Requirements and will not be considered for contract award. The bidder/proposer may appeal the decision of the RTD SBO Manager to the reconsideration official(s). If the bidder/proposer wishes to appeal, they must do so in writing to the RTD Senior Manager of Materials Management within 5 business days of being informed of the decision of the RTD SBO Manager that their submission was non-compliant. As part of this reconsideration, the bidder/proposer must have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so.

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- b. If the decision of the SBO Manager is appealed in writing, within the 5day submission window, the reconsideration official(s) will review the documentation initially submitted by the contractor – and no other information under this Section to decide whether the DBE requirements have been satisfied through “good faith efforts”. The reconsideration official will be a member of RTD staff who did not take part in the initial “good faith efforts” decision.
- c. If the written appeal request is received after the 5 business day submission window, it will be disallowed and the determination of the RTD SBO Manager that the submission was non-compliant will stand.
- d. The bidder/proposer will have the opportunity to meet in person with RTD’s reconsideration official to discuss the issue of whether it met the goal or made adequate good faith efforts to do so.
- e. If the reconsideration official(s) determines that “good faith efforts” were met, the contract will be recommended for award to the contractor. If the reconsideration official(s) determines that the contractor has failed to meet the good faith effort requirements, the contractor will be informed in writing. RTD will send the bidder/proposer a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so.
- f. The result of the reconsideration process is not administratively appealable to the Department of Transportation.
- g. The reconsideration official will review the documentation initially submitted – and no other information - under this Section to decide whether the DBE requirements have been satisfied through good faith efforts.

### **B. MULTI-YEAR DESIGN BUILD AND OTHER ALTERNATIVE METHOD DBE (CMGC, CM AT RISK, ETC.) PROJECT REQUIREMENTS**

In a design-build or other alternative method procurement, the Bidder/Proposer must make the good faith efforts to meet or exceed the specified project DBE goal at the time of bid or proposal submission. To be considered a responsive bidder/proposer, when a DBE goal is specified for design-build and or other multi-year or other alternative method procurement projects, a bidder/proposer must meet the goal referred to in the bid specification by committing to meet the DBE Goal for each phase of the design build or other alternative method project process in its DBE Plan, specifically identifying certified DBE firms that will be performing services or providing supplies in the first year of the design/build or other alternative method contract (in both the design and construction phases, as applicable) and DBE Contract Requirements enclosures or make a good faith effort to attain the goal. The documentation evidencing good faith efforts shall be submitted with the bid/proposal. At a minimum, the bidder/proposer must identify the value of both the design and construction services to be spent during the first year (unless a greater timeframe is specified/required) in the instructions to bidders/proposers. If awarded the Design Build Contract, the DB/C will be required to make good faith efforts to fulfill their commitment to DBE participation/utilization throughout the duration of the Design Build Contract.

### **C. OTHER MULTI-YEAR DBE PROJECT REQUIREMENTS**

## Exhibit H

Does Not Apply.

### D. TASK ORDER OR ON-CALL DBE CONTRACT REQUIREMENTS

Does Not Apply.

### E. DBE PLAN

The DBE Plan is the proposer's written approach and strategy to the overall administration of their DBE Program (including the expectations of the lower tier DBE contractors). Proposers will be required on all turnkey, Multi-Year Design/Build projects, alternative methods contracts, other Multi-Year projects, On-Call or Task-Order Contracts as well as other specified projects to submit a comprehensive detailed DBE Plan & Program with their proposal. The DBE Plan is subject to the SBO's approval and must comply with several provisions as defined under 49 CFR Part 26 requirements. The DBE Plan must minimally incorporate the first two years of the Project work and will be required to cover each phase (i.e. design and construction phases, base contract) of the project.

If the proposer is selected as the D/BC, the successful D/BC will be required to formalize and use as basis the proposed DBE plan submitted with their RFP to implement their official DBE Plan upon Notice to Proceed from the City. The DBE Plan must be reviewed and approved by the RTD SBO. Thereafter, the D/BC is required to prepare and submit to the SBO an updated DBE Plan on an annual basis throughout the Project duration.

As it relates to the Design Build Contract bids and proposals, the DBE Plan should be innovative and comprehensive and include the following program fundamentals listed below. It should be noted that the following is not an exhausted list as creativity, diversity and originality may cause change within the plan.

- i. Submitting their overall subcontracting process and program including how they will communicate and coordinate the scheduling with the DBEs;
- ii. Describing how DBE participation will be solicited and incorporated into the proposer's overall procurement process;
- iii. Describing the DBE project goal and the proposer's DBE commitment/utilization;
- iv. Promoting a level playing field and non-discrimination, by providing an open and transparent process;
- v. Identifying how the DBE Liaison Officer will be incorporated into the procurement process;
- vi. Incorporating mandatory federal non-discrimination clauses into each subcontract regardless of the tier (Must include the entire clauses included in Part A of this Exhibit H and cannot simply be a reference to another document);
- vii. Describing a positive approach to business initiatives, support services, bonding assistance, mentoring programs, joint ventures, etc.;
- viii. Defining good faith efforts requirements and evaluation criteria for post award solicitation process;
- ix. Identifying the DBE Plan & Program Annual Update Process;
- x. Describing the debriefing process, how bid selections are made and keeping record of each;
- xi. Describing the prompt payment and release of retainage provisions and ensure compliance with RTD requirements regardless of tier;
- xii. Describing compliance with the removal, replacement, substitution and termination of DBEs as it relates to 49 CFR Part 26.53 (f) and the commitment to not include termination for convenience clauses in any subcontract agreements, regardless of the tier, as this is

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- inconsistent with federal regulations;
- xiii. Ensuring that the DBE Plan is signed and dated by the D/BC contractor; and
- xiv. Describing the monthly reporting relationship with RTD's SBO and compliance with overall reporting requirements.

### F. DBE LIAISON

The City shall include in its RFP that a D/BC designate a DBE Liaison. The DBE Liaison shall be responsible for the following:

- i. Day-to-day operational components of the DBE Plan;
- ii. Effectively responding to and reporting to the RTD SBO on the status of any DBE contractor/supplier;
- iii. Submitting executed DBE subcontracts/purchase orders and any subsequent material amendments thereto to the SBO within thirty (30) days of the execution of a Third Party Contract (however, no DBE shall commence any work or provide any material/supply without an executed subcontract/purchase order);
- iv. Submitting a written monthly report detailing the activities and documentation of good faith efforts of the previous month;
- v. Interfacing with the SBO regarding DBEs' issues and obtaining approvals for all DBE replacements, substitutions or terminations;
- vi. Preparing, completing and submitting all required compliance documentation, inclusive of subcontract agreements, schedule of participation enclosure, monthly payment form (Form E); as well as submitting DBE Participation Reports;
- vii. Ensure all contractual requirements of the DBE program inclusive but not limited to non-discrimination clause, prompt payment, termination/substitution/replacement/reduction of scope, changes, non-discrimination are complied with and in their subcontract agreements with all of their subcontractors regardless of tier;
- viii. Carrying out or implementing technical assistance activities so that the playing field is level for DBEs;
- ix. A representative of the D/BC having management responsibility for implementing, managing and reporting on achievement of the DBE Goals, communicating subcontracting, business development and supportive services activity at all tiers, ensuring compliance with the non-discrimination provisions and the affirmative action and equal employment opportunity provisions;
- x. Monitoring lower tier subcontractors and suppliers to ensure that they comply with the DBE Program requirements and the DBE Plan submitted by the D/BC; and
- xi. The DBE Liaison shall schedule monthly meetings between the D/BC and SBO to provide status updates and address goal attainment, issues or concerns.

### G. COUNTING DBE PARTICIPATION



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The DBE Goal applies to the total value of all Project work which includes the value of all change orders, amendments and modifications. Any partial waiver determination will be made at or near the conclusion of the contract when the totality of the circumstances can be taken into consideration and Contractor's efforts can be objectively evaluated. To count DBE participation toward the DBE Goal, the proposed DBE(s) must be certified as a DBE(s) with the City and County of Denver or CDOT under the appropriate NAICS code that coincides with the scope of work that they will execute on the project/contract. Additionally, the DBE firm must be certified as a DBE and perform a "commercially useful function" as defined in this DBE Contract Requirements. DBE certification does not, however, constitute a representation or warranty by RTD as to the qualification of any listed firm. In accordance with 49 CFR Part 26, RTD will require the total DBE participation commitment to be achieved in accordance with the following:

- i. DBE proposers can count themselves for self-performance toward meeting the DBE goal, but only for the scope of work that they are certified in as a DBE and at a percentage level they will be actually performing themselves with their own forces;
- ii. Work actually performed by DBEs is deemed to include the cost of materials and supplies purchased and equipment leased by the DBE from non-DBE sources. Work subcontracted can only count if the subcontractor is another eligible DBE;
- iii. The entire fee or commission charged by a DBE, if reasonable and not excessive, will be counted;
- iv. Each DBE must perform a CUF to be counted toward the DBE Goal and at least 30% of the work must be performed by a DBE of the total cost of its contract for the DBE to be presumed to be performing a CUF;
- v. Use the following factors in determining whether a DBE trucking company is performing a commercially useful function:
  - (1) The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
  - (2) The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
  - (3) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
  - (4) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (5) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers.
- vi. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:

## Exhibit H

- (1) If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies toward DBE goals.
- (2) If the materials or supplies are purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE goals. For purposes of this section, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the [contract](#) are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. Manufacturers' representatives and packagers shall be counted in the same manner as brokers; and
- (3) In utilizing the DBE participation of a broker, only the bona fide fees and or commissions earned by them for their performance of a commercially useful function will count toward meeting the project goals. The Proposer must separate the bona fide brokerage fees and or commissions from the actual cost of the supplies or materials provided to determine the actual dollar amount of participation that can be counted towards meeting the goal.

### H. JOINT VENTURES

- i. A Joint Venture is an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.
- ii. RTD will count toward the DBE goal a portion of the total dollar value of a contract with a joint venture equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward the DBE goal(s) and such services/supplies/NAICS codes are approved for DBE participation credit. The joint venture agreement MUST specify the services, dollar value, reporting structure and details of the DBEs' performance requirements associated with the percentage of the joint venture ownership.

### 4. FLOW-DOWN PROVISIONS

**While no subcontractor will be considered a third party beneficiary to the IGA between RTD and City, the City is responsible to ensure that every contractor of every tier be held to all the requirements of the IGA. With that understanding, the City is advised to ensure its Design Build Contractor conform all subcontracts to the terms and conditions found in the IGA. Contractor must include the following provisions in their Third Party Agreements with their DBE subcontractors as well as ensure that all tiered-subcontractors comply with and insert the provisions of Part A - the Non-discrimination clause and Part B Sections 5., Prompt Payment provisions; 6., Joint Check Utilization; 7., DBE Removal/Termination/Substitution/Reduction of Scope provisions;, and 8., Changes.**

The contractor will be required to submit to the RTD Small Business Office all DBE subcontracts/purchase orders within 30 days of the execution of its contract with RTD or issuance of the notice to proceed (whichever occurs first). Throughout any Design Build Contract, if the D/BC makes good faith efforts and engages or subcontracts with additional DBEs, the D/BC must get approval from RTD if the D/BC intends to count DBE participation from those additional DBEs.

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To count DBE participation toward the DBE Goal established for this IGA or commitments made by the City for DBE utilization, the RTD SBO must ensure that those additional DBEs are properly certified as a DBE(s) with the City and County of Denver or CDOT under the appropriate NAICS code that coincides with the scope of work that they will execute on the project/contract. Notwithstanding, RTD SBO shall also request any appropriate documents it deems necessary including subcontract agreements for review. The City shall ensure that this information flows down to all tier contractors that intend to subcontract with DBEs.

### 5. PROMPT PAYMENT OF SUBCONTRACTORS:

#### A. DBE CONTRACTORS: THE CONTRACTOR SHALL ENSURE THAT:

i) The D/BC shall pay its DBE contractor(s) any undisputed amounts for the satisfactory performance of their work within 30 days of the DB/C's receipt of the DBE contractor's invoice, regardless of whether the City has paid the D/BC for such invoice;

ii) Its approval of DBE contractor invoices shall not be unreasonably delayed, and it shall approve or reject them with written notice of deficiency or dispute to the payee DBE subcontractor within ten days of the Contractor's receipt of invoice;

iii) Within 30 days after a DBE contractor's work has been satisfactorily completed and accepted by RTD's Project Manager or by the DB/C, whichever is earlier, the D/BC shall make full payment to the DBE contractor of any retainage the D/BC has kept related to such work, unless a claim is filed against the DBE Contractor related to such work;

iv) Failure to comply with the above may give RTD just cause to impose one or more of the following penalties, until the required payment(s) to the D/BC's DBE contractor(s) is satisfied, unless RTD has given prior written approval to the D/BC for the delay or postponement of payment(s): (1) instruct the City to withhold payments to the D/BC; (2) assess sanctions against the City; (3) assess the DBE contractor's indirect or consequential damages against the City; (4) disqualify the D/BC or City from future bidding on RTD contracts *as non-responsible*; (5) enforce the payment bond against the Contractor; (6) pay the DBE contractor(s) directly and deduct this amount from any retainage owed to the City; (7) *provide notice of default to the Contractor, stating the potential for termination or suspension of the contract, in whole or in part*; (8) issue a stop-work order until the DBE contractor(s) is paid, which order shall constitute an unauthorized delay under the contract that could result in liquidated damages against the Contractor. Unless approved by RTD, the Contractor's failure to comply with this Section 5 is a material breach of the IGA;

v) It shall ensure that tiered Third Party Participants comply with this Section 5 and that provisions (i), (ii), and (iii) of this Section 7 are inserted into all lower-tiered Third Party Contracts with DBE firms; and

vi) On a monthly basis, it shall submit a report of its payments to its DBE subcontractors, using Form E, and a report of its payments to its non-DBE subcontractors, using Form F. The Contractor shall ensure that its DBE subcontractors at every tier submit a monthly report of their receipt of payments from the Contractor, using Form E-2, and that its non-DBE subcontractors at every tier submit a monthly report of their receipt of payments from the Contractor, using Form F-2. All report forms are attached to the Contract and shall be submitted to the RTD Small Business Office, 1660 Blake Street – BLK-31, Denver, Colorado 80202 or by email to RTD SBO's designated compliance officer for this Contract.

## Exhibit H

### B. NON-DBE CONTRACTORS: THE CONTRACTOR SHALL ENSURE THAT:

- i) It shall pay its Third Party Participants any undisputed amounts for the satisfactory performance of their Project work within seven days of the City's receipt of payment from RTD for such Project work;
- ii) Within 30 days after a Third Party Participant's Project work has been satisfactorily completed and accepted by RTD's Project Manager or by the City, whichever is earlier, the D/BC shall make full payment to the Third Party Participant of any retainage the D/BC has kept related to such Third Party Participant's Project work, unless a claim is filed against the Third Party Participant related to such Project work;
- iii) Failure to comply with the above may give RTD just cause to impose one or more of the following penalties, until the required payment(s) to the Contractor's subcontractor(s) is satisfied, unless RTD has given prior written approval to the Contractor for the delay or postponement of payment(s): (1) withhold payments to the Contractor; (2) assess sanctions against the Contractor; (3) assess the subcontractor's indirect or consequential damages against the Contractor; (4) disqualify the Contractor from future bidding on RTD contracts *as non-responsible*; (5) enforce the payment bond against the Contractor; (6) pay the subcontractor(s) directly and deduct this amount from any retainage owed to the Contractor; (7) *provide notice of default to the Contractor, stating the potential for termination or suspension of the Contract*, in whole or in part; (8) issue a stop-work order until the subcontractor(s) is paid, which order shall constitute an unauthorized delay under the Contract that could result in liquidated damages against the Contractor. Unless approved by RTD, the Contractor's failure to comply with this Section 5 is a material breach of the IGA;
- iv) It shall ensure that tiered Third Party Participant comply with this Section 5 and that they insert provisions (i) and (ii) of this Section 5 B .into all lower-tiered Third Party Contract; and
- v) On a monthly basis, it shall submit a report of its payments to its non-DBE subcontractors, using Form F. The D/BC shall ensure that its non-DBE subcontractors at every tier submit a monthly report of their receipt of payments from the D/BC, using Form F-2. All report forms are attached to the contract and shall be submitted to the RTD Small Business Office, 1660 Blake Street – BLK-31, Denver, Colorado 80202 or by email to RTD SBO's designated compliance officer for this Contract.

For federally funded contracts with a DBE goal, see the DBE Contract Requirements' provisions on prompt payment of DBE subcontractors (Section 5 A), which include monthly reporting requirements. The DBE Contract Requirements shall control in the event of a conflict with this Section 5 B.

### 6. JOINT CHECK UTILIZATION

A joint check is a two party check between a DBE, a prime contractor and a regular dealer of materials/supplies. All joint check arrangements with DBE subs must be pre-approved by the RTD SBO and must strictly adhere to the joint check requirements set forth in USDOT guidance regarding same. At a minimum, the request must be initiated by the DBE to remedy a financial hardship for a

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specific period of time. There are monthly reporting requirements that must be complied with in order to receive DBE participation credit. The SBO will closely monitor the use of joint checks to ensure that the independence of the DBE firm is not compromised. Joint check usage will not be approved merely for the convenience of the prime contractor. Please note, if joint checks are applicable, monthly reporting as defined by the RTD SBO will also be required.

### **7. DBE REMOVAL/TERMINATION/SUBSTITUTION/REDUCTION OF SCOPE FROM CONTRACT**

A Contractor must have good cause to remove/terminate/substitute/replace a DBE contractor and such removal/termination/substitution requires the prior consent and approval of RTD's SBO. This section also includes reductions to a DBE contractor's scope of services and/or commitment values. The City shall ensure that its D/BC does not contain a "termination for convenience" clause/provision in a DBE subcontract because any termination for convenience provision/clause is contrary to the objectives of this part and the objectives of 49 CFR Part 26. To initiate the termination, substitution, removal or replacement process with a DBE contractor/supplier (regardless of the tier), the D/BC or lower tier contractor/subcontractor must do the following:

- i) Before transmitting to RTD's SBO its request to terminate and/or substitute a DBE contractor, the D/BC must give notice in writing to the DBE contractor and provide RTD SBO with a contemporaneous copy of such notice. The notice must include its request to terminate and/or substitute, replace and/or remove the DBE, the reason for the request and all documentation to support its claim. The D/BC must submit a copy of the notice and support documentation to RTD's SBO at the time the original letter is sent to the DBE contractor;
- ii) The D/BC must give the DBE contractor five (5) business days to respond to the notice and provide the RTD SBO with reasons, if any, why it objects to the proposed termination of its DBE contract and why the SBO should not consent the D/BC's action;
- iii) RTD's SBO will then open a formal investigation inclusive of review of all documentation, conduct interviews and site visits, if necessary. The D/BC carries the burden of proof to demonstrate good cause for the termination and/or substitution;
- iv) If RTD's SBO determines the D/BC has good cause to terminate the DBE firm, the SBO will provide written consent of DBE removal and the requirements to substitute work to another DBE firm. If RTD's SBO finds that good cause does not exist to terminate the DBE firm, the SBO will provide a written denial of the request to terminate/replace the DBE contractor and will immediately request a corrective action plan from the D/BC. Please note that if the D/BC elects to terminate, substitute and or reduce the scope of work initially committed to a DBE without the approval or consent of the RTD SBO, this constitutes a material breach of a IGA, which may result in the termination of the IGA or such other remedy as the recipient/RTD deems necessary as set forth under 49 C.F.R. §26.13.
- v) For purposes of good cause to remove, replace, or terminate a DBE the following circumstances should exist: (1) failure or refusal by the DBE contractor to execute a written contract without good cause, (2) failure or refusal by the DBE contractor to perform the work of its subcontract in a way consistent with normal industry practice and the contractor has not acted in bad faith, (3) failure by the DBE contractor to meet the contractor's reasonable bonding or insurance requirements, (4) insolvency, bankruptcy or credit unworthiness by the DBE contractor that creates a risk for the contract, (5) ineligibility by the DBE contractor to work on public works project because of suspension or debarment proceedings, (6) a determination by RTD that the DBE is not a responsible contractor, (7) voluntary withdrawal from the project by written notification that has been verified, (8) ineligibility to receive DBE participation credit for the type of work to be performed, (9) other

## Exhibit H

documented good cause that compels the replacement of the DBE.

- vi) When a DBE contractor is terminated with the approval of RTD SBO, or fails to complete its work on the contract for any reason, the D/BC is required to make good faith efforts to find another DBE contractor to substitute for the original DBE.
- vii) The D/BC must show that it took all necessary and reasonable steps to find another DBE contractor to perform at least the same amount of Project work as the DBE that was terminated, to the extent needed to meet the contract goal RTD SBO has established for this project and or commitments made by the D/BC for DBE utilization/participation. 49 CFR Part 26.53 shall serve as the criteria for evaluating compliance with the good faith efforts requirements. Additionally, bidders/proposers are required to solicit the support and assistance of RTD's SBO if they are unable to meet the DBE Goal.
- viii) The good faith efforts shall be documented by the D/BC. If RTD SBO requests documentation under this provision, the D/BC shall submit the documentation to RTD SBO Compliance Officer within 7 days, which may be extended for an additional 7 days if necessary at the request of the contractor, and RTD SBO shall provide a written determination to the D/BC stating whether or not good faith efforts have been demonstrated.
- ix) The D/BC is required to comply with good faith efforts procedures as defined under 49 CFR Part 26.53 and detailed under this Section 7. The D/BC is required to comply with this section of the DBE requirements or any DBE program requirements and failure by the D/BC to carry out the requirements of this part as they administer Project work is a material breach of contract, which may result in remedies, including those set forth under 49 C.F.R. §26.13.

The City shall ensure that its D/BC require its DBE tiered subcontractors comply with this Section 7 and insert the provisions of this Section 7 into all DBE lower tiered subcontractor agreements, regardless of their certification status.

### **8. CHANGES**

- i) The DBE Goal shall apply to the performance/dollar value of all obligations under this IGA, including any changes, modifications, amendments and change orders whether initiated by the City or the D/BC. Post award requests for partial waivers may be considered by RTD's SBO, but a final determination shall not be rendered until the Project work has been substantially completed and the City demonstrates lack of ability to satisfy the DBE participation goal.
- ii) Changes to the value or scope of work committed to a DBE must be pre-approved by the RTD SBO and must be for good cause as set forth in the termination, substitution, replacement provisions set forth in this Part B - DBE Contract Requirements.

### **9. REQUIREMENTS OF DBE CONTRACT REQUIREMENTS ENCLOSURES**

The D/BC must complete and return all applicable Enclosures in the forms set out in this Part B - DBE Contract Requirements with each DBE bid/proposal. All enclosures must also be submitted with each DBE bid/proposal.

- i) The Enclosure 2, Schedule of DBE Participation must be submitted with the initial bid/proposal. Subsequent to the award of the contract, the D/BC will be responsible for revising the initial Schedule of DBE Participation any time a new DBE is added to the Project. The D/BC must also submit a copy of the DBE certification letter to RTD SBO with any new DBE(s) added to the Project. RTD will only accept and approve new DBE(s) that are currently certified with the City

## Exhibit H

and County of Denver or CDOT (Colorado UCP) under the NAICS code that coincides with the scope of work that they will execute in this project.

- ii) The Enclosure 3, DBE Letter of Intent (LOI) must be submitted with the initial bid/proposal. Subsequent to the award of the Design Build Contract, the D/BC will also be responsible for submitting to RTD SBO individual DBE Letters of Intent for each new DBE that is added to the Project after the award of the Design Build Contract.
- iii) The D/BC completing the DBE Contract Requirements Enclosures is advised to contact the RTD's SBO main office at (303) 299-2111 if they have any questions or concerns prior to submitting bid/proposal documentation, unless otherwise specified in the bid/proposal that all questions must be submitted through RTD designated Procurement Officer. Additional DBE Contract Requirements documentation will not be accepted after the D/BC submits their bid/proposal to the City and is reviewed by RTD, unless otherwise stated in the bid or proposal.

**As a condition of [payment, the City's D/BC must use those DBEs listed to perform the specific work items or supply the materials as committed in the Enclosure 2 Schedule of DBE Participation and Enclosure 3 Letter(s) of Intent (LOI) and is not entitled to any payment for work or materials performed by its own or any other forces if the work or supplies were committed to a DBE, unless it receives prior written consent by RTD Small Business Office for a replacement of the DBE for good cause.**

**Failure to submit all required DBE Enclosures may result in a bid or proposal being deemed non-responsive by RTD. Modification of any DBE Contract Requirements Enclosures prior to the official award of the contract may result in your proposal being deemed Non-Responsive. Inconsistencies within the following Enclosures: Enclosure 1A, Enclosure 1B, Enclosure 2 and Enclosure 3 may also result in your proposal being deemed Non-Responsive.**

**Periodically, after award of the contract, RTD's SBO in conjunction with the City may determine that an Enclosure is more beneficial with modifications or that an additional Enclosure is necessary to more effectively report the status of DBE participation or performance and resolution of DBE concerns/issues. RTD has the right to ask for a modification. Such a revised enclosure shall be incorporated into the D/BC as an additional requirement.**

### **10. REPORTING, AUDITS, REVIEWS AND ORIENTATION REQUIREMENTS**

- i) The Contractor(s) are required to submit a report to RTD SBO on a monthly basis, on a form designated as the DBE Participation Report/Form E (*Form of DBE Participation Report*). The Contractor shall submit each completed DBE Participation Report to RTD's SBO.
- ii) Contractor acknowledges that the RTD SBO has the right to independently confirm the information contained in the submitted DBE Participation Reports by soliciting such information from each DBE contractor as may be required to verify payments received, distribution of payments received, subcontracting practices, participation credit, and sharing of resources/personnel. Contractor shall not attempt to dissuade any such DBE contractor from disclosing any such information or cooperating in any investigation initiated by the SBO.
- iii) Contractor shall submit to RTD's SBO a Subcontractors' Participation and Payment Form documenting all payments made to all DBEs and non-DBEs on a form provided/approved by RTD's SBO.
- iv) The DBE contractor shall submit to RTD's SBO a summary of payments received from its contractor, regardless of their lower tier, on a form approved by RTD's SBO.

## Exhibit H

- v) By committing to working on this RTD project which is subjected to DBE requirements set forth under 49 CFR Part 26, all DBE contractors participating in this Project are required to undergo a Commercially Useful Function review or a DBE compliance review before their contract can be closed by RTD SBO. DBEs are required to fully cooperate with RTD's SBO or its designee in the compliance review process. The CUF review process will be initiated with a request for documents relating to contract performance and management of the actual work performed on the contract. The scope and intensity of each CUF review will depend on the specific facts and circumstances. The CUF is purposed to verify the amount of DBE participation credit, to ensure that work is actually performed by the DBE consistent with the DBE Program requirements and/or to ensure that there is no activity engaged in by the DBE that would be inconsistent with the intent and objectives of the DBE Program. The CUF review is more formal and will be initiated with an orientation/explanation process and closed out with a briefing and determination. The DBE contractor may be subjected to an informal compliance review by RTD's SBO or its designee with or without notice. The informal compliance review will generally be conducted at the work site where RTD actually observes and assesses the services/supplies being provided by the DBE.
- vi) The D/BC or any of its lower tier non-DBE subcontractors that is utilizing a DBE subcontractor may be selected for DBE compliance review to ensure that they are in compliance with the DBE Program requirements. This process will be initiated in a formal manner by RTD with written notice and instructions sent to the D/BC or its major subcontractor. The process will conclude with a close-out interview or debriefing where the D/BC or non-DBE subcontractor firm will be given an opportunity to refute the determination or add to any corrective action requested by RTD SBO. The D/BC must cooperate with any DBE Program audit or compliance review. Failure to cooperate can result in part or all of the DBE participation credit being denied / removed from counting toward the DBE Goal for the Project work.
- vii) All DBEs are required to participate in the RTD's SBO DBE Orientation Program if awarded a contract, subcontract or purchase order for Project work before commencing Project work or providing supplies on the Project. Failure to participate in the DBE orientation program may result in a denial of DBE participation credit for the Project. For good cause, the orientation may be delayed if pre-approved by RTD. DBEs may be required to repeat the orientation if there are changes to the DBE Program requirements, changes in the DBE regulations, changes in the DBE personnel, or if the DBE is experiencing challenges in complying with the reporting requirements.
- viii) If Project work is subject to Davis Bacon requirements and RTD SPSP Program, monthly reporting to RTD SBO will be required. The RTD SBO will communicate and describe the reporting provisions. Additionally, if joint checks are applicable per Section 6, monthly reporting as stipulated by the RTD SBO will also be required.
- ix) All contractors that perform Project work are required to retain all records of participation on this project for three (3) years from the completion of the Project. This requirement flows down to all tier contractors and must be included their subcontract agreements.



# Exhibit H

## **APPENDICES to EXHIBIT H**

### B. DBE Enclosures

- Enclosure 1A DBE Affidavit
- Enclosure 1B DBE Affidavit
- Enclosure 2 Schedule of DBE Subcontractor Participation
- Enclosure 3 Letter of Intent to Perform as a Subcontractor
- Enclosure 4 Solicitation Statistics
- Enclosure 5 Employer Certification of Workforce
- Enclosure 6 Disadvantaged Business Outreach
- Enclosure 7 DBE Unavailability Certification
- Form E Monthly DBE Participation Report

# Exhibit H

RTD has specified a \_\_\_\_\_% DBE Participation goal on this project.

THIS BIDDER/PROPOSER IS COMMITTED TO MEETING \_\_\_\_\_% - DBE (Disadvantaged Business Enterprise) PARTICIPATION IN THIS CONTRACT.

Per 49 CFR Part 26 bidders/proposers must make adequate good faith efforts to meet this goal in order to be deemed as a responsive and responsible bidder. Award of the contract will be conditioned on meeting the requirements of this section.

**The undersigned contractor hereby agrees and understands that they must comply with their DBE commitments in this project in conformity with the Requirements, Terms, and Conditions of this DBE Contract Requirements.**

Business Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING STATEMENTS ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF \_\_\_\_\_ TO MAKE THIS AFFIDAVIT.

(Name of Business Entity)

\_\_\_\_\_  
(Date) (Affiant Print Name) (Title)

\_\_\_\_\_  
(Affiant's Signature)

State of \_\_\_\_\_:

City and County of \_\_\_\_\_:

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me, the undersigned officer, personally appeared \_\_\_\_\_, known to me to be the person described in the foregoing Affidavit, and acknowledged that he (she) executed the same in the capacity therein stated and for the purposes therein contained.

In witness thereof, I hereunto set my hand and official seal.

My Commission Expires: \_\_\_\_\_

(Notary Public) (SEAL)

# Exhibit H

## APPENDIX B- DBE ENCLOSURES ENCLOSURE 1B- DBE AFFIDAVIT

THIS PAGE MUST BE COMPLETED BY THE DISADVANTAGED BUSINESS ENTERPRISE PRIME CONTRACTOR (PROPOSER/BIDDER)

I HEREBY DECLARE AND AFFIRM that I am the \_\_\_\_\_  
(Title)

And duly authorized representative of (the firm of) \_\_\_\_\_  
(Name of Corporation or Joint Venture)

whose address is \_\_\_\_\_

\_\_\_\_\_  
(Telephone No.)

I hereby declare and affirm that I am a Disadvantaged Business Enterprise (DBE) and am certified as of the date that the RTD receives this bid/proposal and as defined by the Regional Transportation District in DBE Contract Requirements for

\_\_\_\_\_ and that I will provide information and/or the  
(Contract number and name)

certification to document this fact with this enclosure.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING STATEMENTS ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF THE ABOVE FIRM, TO MAKE THIS AFFIDAVIT.

\_\_\_\_\_  
(Date) (Affiant Print Name) (Title)

\_\_\_\_\_  
(Affiant's Signature)

State of \_\_\_\_\_:

City and County of \_\_\_\_\_:

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me, the

Undersigned officer, personally appeared \_\_\_\_\_, known to me to be the person described in the foregoing Affidavit, and acknowledged that he (she)executed the same in the capacity therein stated and for the purposes therein contained.

In witness thereof, I hereunto set my hand and official seal.

My Commission Expires: \_\_\_\_\_

(Notary Public) (SEAL)

# Exhibit H

## APPENDIX B – DBE ENCLOSURES

### ENCLOSURE 2 – SCHEDULE OF [DBE] PARTICIPATION

NAME OF CONTRACTOR:

RTD Contract No.

Total Proposed Contract Cost: US \$ \_\_\_\_\_

DBE FIRM NAME	ADDRESS	TYPE OF WORK (ELECTRICAL, PAVING, ETC.) AND CONTRACT ITEMS OR PART THEREOF TO BE PERFORMED	NAICS code(s)	PROJECTED START & COMPLETION DATES FOR DBE	AGREED PRICE TO BE PAID TO DBE /ANTICIPATED

1. Please list all DBEs involved on the contract including the Prime Contractor if it is a DBE. All DBEs listed on this enclosure must be properly certified under the NAICS code(s) that coincides with the scope of work they will execute in this project. Work performed by DBEs for which they are not certified to perform will not count towards the DBE participation and/commitments. A current DBE certification for each listed DBE recorded on this schedule from the Colorado UCP (City and County of Denver or CDOT) must accompany this enclosure. Failure to provide proof of current DBE certification for any or all listed DBEs will eliminate such listed DBE's participation, and work performed by such DBE will not count towards satisfaction of the DBE participation and/commitments. If additional pages are required to list all contracted DBEs, photocopy this enclosure as required to make a complete list.

2. Contracts with DBEs for materials or supplies will be counted toward the DBE Goal as follows:

- (i) Materials or supplies obtained from a DBE manufacturer will be counted at 100% toward the DBE Goal;
- (ii) Materials or supplies obtained from a DBE regular dealer will be counted at 60% toward the DBE Goals. Please refer to 49 CFR §26.55 for specifics with respect to how DBE participation is counted toward DBE Goal; and
- (iii) Materials or supplies obtained from a DBE broker firm only fees/commission will be counted toward the DBE Goal.

Contractor must submit copies of all DBE subcontracts, purchase orders or change orders within 30 Days of execution of the notice to proceed. There may be exceptions to Design Build contracts, multi-year contracts and other alternative method contracts as DBEs are added throughout the course of the contracts and in some instances at different phases of the contract. DBE subs should not commence any work on this project without an executed subcontract agreement or purchase order. Failure to submit a copy of the subcontract agreement with a DBE sub to RTD may result in RTD not counting DBE participation towards the DBE goal.

\_\_\_\_\_  
NAME OF CONTRACTOR

\_\_\_\_\_  
SIGNATURE OF CONTRACTOR & DATE



# Exhibit H

## APPENDIX B, ENCLOSURE 4 – SOLICITATION STATISTICS

RTD is required to create and maintain bidder statistics for all firms bidding on prime contracts and bidding or quoting Subcontracts on USDOT-assisted projects per 49 CFR Part 26.11. The Contractor is required to make copies of this form, send a copy with its initial contact to each Subcontractor (whether DBE or non-DBE) and require each Subcontractor to return a completed form with its Subcontract bid to the Contractor. The Contractor must submit all completed forms with each submission of DBE Enclosures to the SBO.

Firm Name:

Firm Address (Office Reporting):

Status as a DBE or Non-DBE (check one):

DBE \_\_\_\_\_ Non-DBE \_\_\_\_\_

Annual Gross Receipts of the Firm: (check one):

U.S. \$0 to U.S. \$500,000 \_\_\_\_\_ U.S. \$500,000 to U.S. \$1,000,000 \_\_\_\_\_ U.S. \$1 Million to U.S. \$5 Million \_\_\_\_\_

U.S. \$5 Million to U.S. \$10 Million \_\_\_\_\_ U.S. \$10 Million to U.S. \$23.98 Million \_\_\_\_\_ Above U.S. \$23.98 Million \_\_\_\_\_

Age of the firm: \_\_\_\_\_

Signature: \_\_\_\_\_

Name:

Title:

Date: \_\_\_\_\_



# Exhibit H

## **DESCRIPTION OF JOB CATEGORIES**

*Officials and Managers* – Occupations requiring administrative personnel who set board policies, exercise full responsibility for execution of these policies, and individual departments or special phases of the operations.

*Professionals* – Occupations requiring either college education or experience of such kind and amount as to provide a comparable background.

*Technicians* – Occupations requiring a combination of specific scientific knowledge and manual skill which can be obtained through about 2 years of post-high school education, such as is offered in many technical institutes and junior colleges, or through equivalent on-the-job training.

*Sales* – Occupations engaging wholly or primarily in selling.

*Office and clerical* – Includes all clerical-type work, regardless of level of difficulty, where the activities are predominately non-manual though some manual work directly involved with altering or transporting the products is included.

*Craft Worker (skilled)* – Manual workers of relatively high skill level having a thorough and comprehensive knowledge of the processes involved in their work. Exercises considerable independent judgment and usually requires an extensive period of training.

*Operatives (semi-skilled)* – Workers who operate machines or processing equipment or perform other factory-related duties of intermediate skill level which can be mastered in a few weeks and require only limited training.

*Laborers (unskilled)* – Workers in manual occupations which generally require no special training perform rudimentary duties that may be learned in a few days and require the application of little or no independent judgment.

*Service Workers* – Workers in both protective and non-protective service occupations.

## **RACE/ETHNIC IDENTIFICATION**

*White (not Hispanic origin)* – All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East

*Black Americans (not Hispanic origin)* – All persons having origins in any of the Black racial groups of Africa

*Hispanic Americans* – All persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race

*Asian-Pacific Americans* – All persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong

*Subcontinent Asian Americans* – All persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka

*Native American* – All persons having origins in any of the original peoples of North America, including American Indians, Eskimos, Aleuts, or Native Hawaiians



# Exhibit H

## APPENDIX B, ENCLOSURE 6 – DISADVANTAGED BUSINESS OUTREACH

As part of RTD's ongoing outreach activities to the Denver-metro Disadvantaged Business community, it is our goal to identify and to establish a relationship with the Disadvantaged Business outreach programs sponsored by the prime and subcontractors we partner with.

The prime and all contracted subcontractors are requested to provide the following information pertaining to their current DBE outreach efforts – additional sheets may be used if necessary:

RTD Contract Name and Number:

Contract No. (the *Contract*).

Proposer:

---

Subcontractor – if applicable:

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Disadvantaged Business Outreach Contact (if none, list contact for the Contract):

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Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Website: \_\_\_\_\_

Currently Sponsored Disadvantaged Business Outreach Activities:

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How can RTD assist you in your current Disadvantaged Business outreach efforts?

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Would you be interested becoming involved in current and future RTD-sponsored outreach activities and committees: [ ] Yes [ ] No

If so, how? \_\_\_\_\_

---

# Exhibit H

## APPENDIX B, ENCLOSURE 7– DBE UNAVAILABILITY CERTIFICATION

I, \_\_\_\_\_, \_\_\_\_\_,  
 Name Title

of \_\_\_\_\_, certify that [*the Contractor*], made the following efforts to meet the DBE Goals on Regional Transportation District Contract No. for the Project:

[Please attach any additional efforts that do not fit on this form]

- A Contractor representative attended the pre-bid meeting. Yes \_\_\_\_\_ No \_\_\_\_\_
- Newspaper Advertisement Log: (attach copies of ads)

Newspaper/Publication	Type of Publication Minority/General/Trade	Dates of Advertisement

- Selected portions of the work to be performed by [DBEs]

Work Categories	Type of Bid (Subcontractor or Supplier)	Contractor's Estimated Budget	Additional Comments

- Made efforts to assist interested DBEs in obtaining bonding, lines of credit, insurance or any necessary equipment, supplies, materials, etc.
- [List any specific offers made by Contractor]

- Solicited the following DBEs

## Exhibit H

Date Contacted	Name of DBE Firm	Contact Person	Phone #	Work Category

▪ Followed up with initial contacts

Date	Name of DBE	Phone #	Bidding (Yes or No)	Additional Comments

▪ Contacted the following other agencies, organizations in recruitment of DBE including RTD:

Date	Organization	Phone #

As shown by the documentation provided to RTD, we feel that we have made good faith effort to attain the DBE Goals.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



## Exhibit I - Wage Rate Schedule

"General Decision Number: CO20200009 01/03/2020

Superseded General Decision Number: CO20190009

State: Colorado

Construction Type: Highway

Counties: Denver and Douglas Counties in Colorado.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/03/2020

\* CARP9901-008 11/01/2019

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 26.50	10.32
-----		

ELEC0068-016 03/01/2011

	Rates	Fringes
--	-------	---------

TRAFFIC SIGNALIZATION:

Traffic Signal Installation

Zone 1.....	\$ 26.42	4.75%+8.68
Zone 2.....	\$ 29.42	4.75%+8.68

TRAFFIC SIGNAL INSTALLER ZONE DEFINITIONS

Zone 1 shall be a 35 mile radius, measured from the following addresses in each of the following cities:

- Colorado Springs - Nevada & Bijou
- Denver - Ellsworth Avenue & Broadway
- Ft. Collins - Prospect & College
- Grand Junction - 12th & North Avenue
- Pueblo - I-25 & Highway 50

All work outside of these areas shall be paid Zone 2 rates.

-----  
 ENGI0009-008 05/01/2018

Rates	Fringes
-------	---------

POWER EQUIPMENT OPERATOR:

(3)-Hydraulic Backhoe (Wheel Mounted, under 3/4 yds), Hydraulic Backhoe (Backhoe/Loader combination), Drill Rig Caisson (smaller than Watson 2500 and similar), Loader (up to and including 6 cu. yd.).....	\$ 28.25	10.70
(3)-Loader (under 6 cu. yd.) Denver County.....	\$ 28.25	10.70
(3)-Motor Grader (blade- rough) Douglas County.....	\$ 28.25	10.70
(4)-Crane (50 tons and under), Scraper (single bowl, under 40 cu. yd).....	\$ 28.40	10.70
(4)-Loader (over 6 cu. yd) Denver County.....	\$ 28.40	10.70
(5)-Drill Rig Caisson (Watson 2500 similar or larger), Crane (51-90 tons), Scraper (40 cu.yd and over),.....	\$ 28.57	10.70
(5)-Motor Grader (blade- finish) Douglas County.....	\$ 28.57	10.70
(6)-Crane (91-140 tons).....	\$ 29.55	10.70

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 SUCO2011-004 09/15/2011

	Rates	Fringes
CARPENTER (Excludes Form Work)...	\$ 19.27	5.08
CEMENT MASON/CONCRETE FINISHER		
Denver.....	\$ 20.18	5.75
Douglas.....	\$ 18.75	3.00
ELECTRICIAN (Excludes Traffic Signal Installation).....	\$ 35.13	6.83
FENCE ERECTOR (Excludes Link/Cyclone Fence Erection).....	\$ 13.02	3.20
GUARDRAIL INSTALLER.....	\$ 12.89	3.20
HIGHWAY/PARKING LOT STRIPING:Painter		
Denver.....	\$ 12.62	3.21
Douglas.....	\$ 13.89	3.21
IRONWORKER, REINFORCING (Excludes Guardrail Installation).....	\$ 16.69	5.45
IRONWORKER, STRUCTURAL (Includes Link/Cyclone Fence Erection, Excludes Guardrail Installation).....	\$ 18.22	6.01
LABORER		
Asphalt Raker.....	\$ 16.29	4.25
Asphalt Shoveler.....	\$ 21.21	4.25
Asphalt Spreader.....	\$ 18.58	4.65
Common or General		
Denver.....	\$ 16.76	6.77
Douglas.....	\$ 16.29	4.25
Concrete Saw (Hand Held)....	\$ 16.29	6.14
Landscape and Irrigation....	\$ 12.26	3.16
Mason Tender- Cement/Concrete		
Denver.....	\$ 16.96	4.04
Douglas.....	\$ 16.29	4.25
Pipelayer		
Denver.....	\$ 13.55	2.41
Douglas.....	\$ 16.30	2.18
Traffic Control (Flagger)...	\$ 9.55	3.05
Traffic Control (Sets Up/Moves Barrels, Cones,		



Install Signs, Arrow Boards and Place Stationary Flags) (Excludes Flaggers).....	\$ 12.43	3.22
PAINTER (Spray Only).....	\$ 16.99	2.87
POWER EQUIPMENT OPERATOR:		
Asphalt Laydown		
Denver.....	\$ 22.67	8.72
Douglas.....	\$ 23.67	8.47
Asphalt Paver		
Denver.....	\$ 24.97	6.13
Douglas.....	\$ 25.44	3.50
Asphalt Roller		
Denver.....	\$ 23.13	7.55
Douglas.....	\$ 23.63	6.43
Asphalt Spreader.....	\$ 22.67	8.72
Backhoe/Trackhoe		
Douglas.....	\$ 23.82	6.00
Bobcat/Skid Loader.....	\$ 15.37	4.28
Boom.....	\$ 22.67	8.72
Broom/Sweeper		
Denver.....	\$ 22.47	8.72
Douglas.....	\$ 22.96	8.22
Bulldozer.....	\$ 26.90	5.59
Concrete Pump.....	\$ 21.60	5.21
Drill		
Denver.....	\$ 20.48	4.71
Douglas.....	\$ 20.71	2.66
Forklift.....	\$ 15.91	4.68
Grader/Blade		
Denver.....	\$ 22.67	8.72
Guardrail/Post Driver.....	\$ 16.07	4.41
Loader (Front End)		
Douglas.....	\$ 21.67	8.22
Mechanic		
Denver.....	\$ 22.89	8.72
Douglas.....	\$ 23.88	8.22
Oiler		
Denver.....	\$ 23.73	8.41
Douglas.....	\$ 24.90	7.67
Roller/Compactor (Dirt and Grade Compaction)		
Denver.....	\$ 20.30	5.51
Douglas.....	\$ 22.78	4.86
Rotomill.....	\$ 16.22	4.41
Screed		
Denver.....	\$ 22.67	8.38
Douglas.....	\$ 29.99	1.40
Tractor.....	\$ 13.13	2.95

## TRAFFIC SIGNALIZATION:

## Groundsman

Denver.....	\$ 17.90	3.41
Douglas.....	\$ 18.67	7.17

## TRUCK DRIVER

## Distributor

Denver.....	\$ 17.81	5.82
Douglas.....	\$ 16.98	5.27

## Dump Truck

Denver.....	\$ 15.27	5.27
Douglas.....	\$ 16.39	5.27

Lowboy Truck.....	\$ 17.25	5.27
Mechanic.....	\$ 26.48	3.50

## Multi-Purpose Specialty &amp;

## Hoisting Truck

Denver.....	\$ 17.49	3.17
Douglas.....	\$ 20.05	2.88

## Pickup and Pilot Car

Denver.....	\$ 14.24	3.77
Douglas.....	\$ 16.43	3.68

Semi/Trailer Truck.....	\$ 18.39	4.13
-------------------------	----------	------

Truck Mounted Attenuator....	\$ 12.43	3.22
------------------------------	----------	------

## Water Truck

Denver.....	\$ 26.27	5.27
Douglas.....	\$ 19.46	2.58

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

## Exhibit J - City and County of Denver Equal Employment Opportunity Provisions

## Equal Employment Opportunity Provisions

**RULES AND REGULATIONS  
REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

Promulgated and adopted by the Manager of Public Works, and incorporated within these documents by the Department of Transportation and Infrastructure pursuant to and by authority of Article III, Division 2, Chapter 28 of the Revised Municipal Code of the City and County of Denver, and for the purpose of insuring that contractors, subcontractors and suppliers soliciting and receiving compensation for contract work from or through the City and County of Denver provide equal opportunity in employment without regard to race, color, creed, sex, national origin, age, religion, marital status, political opinion or affiliation or mental or physical handicap and meet certain requirements for the hiring, training, promotion, and treatment during employment of members of ethnic groups subject to differential treatment, including persons of African descent (Black), Spanish-surnamed (Hispanic), Asian-American and American Indian Groups.

***RULE I - DEFINITIONS***

- A. "City" means the City and County of Denver.
- B. "Manager" shall mean the Manager of Public Works for the City and County of Denver.
- C. "Contract" means a contract entered into with the City and County of Denver, financed in whole or in part by local resources or funds of the City and County of Denver, for the construction of any public building or prosecution or completion of any public work.
- D. "Contractor" means the original party to a contract with the City and County of Denver, also referred to as the "general" or "prime" contractor.
- E. "Director" means the Director of the Division of Small Business Opportunity.
- F. "Subcontractor" means any person, company, association, partnership, corporation, or other entity, which assumes by subordinate agreement some or all of the obligations of the general or prime contractor.
- G. The phrase "Bidding Specifications" as used in Article III, Division 2 of Chapter 28 of the Revised Municipal Code shall include BID CONDITION, INVITATION TO BID, and NOTICE OF PROPOSAL.
- H. "Affirmative Action Program" means a set of specific and result-oriented procedures or steps to which a contractor commits himself to apply every good faith effort to employ members of ethnic minority groups, to include persons of African descent (Black), Spanish surnamed (Hispanic), Asian-American, American Indians, and persons with mental or physical handicap.
- I. "Division of Small Business Opportunity" means the City agency established pursuant to Article III, Division 1 of Chapter 28 of the Denver Revised Municipal Code.

***RULE II - NOTICE OF HEARING***

When results of conciliation efforts are unsatisfactory to the Manager and he is informed in accordance with Article III, Division 2 of Chapter 28 of the Revised Municipal code that a contractor or subcontractor has apparently failed to meet affirmative action and equal employment opportunity requirements after a reasonable period of notice to correct deficiencies, the Manager will, prior to imposition of any sanctions, afford the general contractor a hearing

## Equal Employment Opportunity Provisions

in order to determine whether the contractor or his subcontractors have failed to comply with the affirmative action and equal employment opportunity requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or of the contract. Written notice of such hearing shall be delivered personally or sent by certified mail, return receipt requested, to the contractor and to any subcontractor involved, at least ten (10) days prior to the date scheduled for the hearing.

### **RULE III - HEARING**

- A. Contractors will appear at hearings and may be represented by counsel, and may present testimony orally and other evidence.
- B. Hearings shall be conducted by one or more hearing examiners designated as such by the Manager.
- C. The Director of the Division of Small Business Opportunity may participate in hearings as a witness.
- D. Hearings shall be held at the place specified in the notice of hearing.
- E. All oral testimony shall be given under oath or affirmation and a record of such proceedings shall be made.
- F. All hearings shall be open to the public.
- G. The hearing officer shall make recommendations to the Manager who shall make a final decision.

### **REGULATIONS**

#### **REGULATION NO. 1 - ORDINANCE:**

The Rules and Regulations of the Manager shall be inserted in the bidding specifications for every contract for which bidding is required.

#### **REGULATION NO. 2 - EXEMPTIONS:**

Each contract and subcontract, regardless of the dollar amount, shall be subject to affirmative action requirements unless specifically exempted in writing individually by the Manager. Exemptions apply only to "affirmative action" in equal employment opportunity, and are not to be construed as condonation in any manner of "discrimination" or "discriminatory practices" in employment because of race, color, creed, sex, age, national origin, religion, marital status, political opinion or mental or physical handicap.

#### **REGULATION NO. 3 - DIRECTOR OF CONTRACT COMPLIANCE:**

The Director of the Division of Small Business Opportunity shall perform the duties assigned to such official by Article III, Division 2 Chapter 28 of the Revised Municipal Code and by the Manager. (1) The Director of the Division of Small Business Opportunity or designated representatives shall inform bidders and contractors of affirmative action procedures, programs, and goals in accordance with the Ordinance at pre-bid and pre-construction conference; (2) make regular on-site inspections; (3) supply contractors and subcontractors with report forms to be completed by them when requested, and furnished to the Director of the Division of Small Business Opportunity; and (4) review payroll records, employment records and practices of general contractors and their subcontractors and suppliers during the performance of any contract. The Director of the Division of Small Business Opportunity shall promptly report apparent affirmative action deficiencies to the Manager.

## Equal Employment Opportunity Provisions

### **REGULATION NO. 4 - GOALS AND TIMETABLES:**

In general, goals and timetables should take into account anticipated vacancies and the availability of skills in the market place from which employees should be drawn. In addition, where discrimination in employment by a general contractor or any of his subcontractors is indicated, a corrective action program will take into account the need by the general contractor and his subcontractors to correct past discriminatory practices and reach goals of minority manpower utilization on a timely basis through such recruiting and advertising efforts as are necessary and appropriate.

### **REGULATION NO. 5 - AWARD OF CONTRACTS:**

It shall be the responsibility of the Director of the Division of Small Business Opportunity to determine the affirmative action capability of bidders, contractors and subcontractors and to recommend to the Manager the award of contracts to those bidders, contractors and subcontractors and suppliers who demonstrate the ability and willingness to comply with the terms of their contract.

### **REGULATION NO. 6 - PUBLICATION AND DUPLICATION:**

Copies of these Rules and Regulations as amended by the Manager from time to time, shall as soon as practicable and after Notice being published will be made a part of all City Contracts.

### **REGULATION NO. 7 - NOTICE TO PROCEED:**

Prior to issuance of the Notice to Proceed, a sign-off will be required of the Director of the Division of Small Business Opportunity or his designee.

### **REGULATION NO. 8 - CONTRACTS WITH SUBCONTRACTORS:**

To the greatest extent possible, the contractor shall make a good faith effort to contract with minority contractors, subcontractors and suppliers for services and supplies by taking affirmative actions, which include but are not limited to the following:

1. Advertise invitations for subcontractor bids in minority community news media.
2. Contact minority contractor organizations for referral of prospective subcontractors.
3. Purchase materials and supplies from minority material suppliers.

### **REGULATION NO. 9 - AGENCY REFERRALS:**

It shall be no excuse that the union with which the contractor or subcontractor has an agreement providing for referral, exclusive or otherwise, failed to refer minority employees.

### **REGULATION NO. 10 - CLAUSES:**

The Manager shall include the appropriate clauses in every contract and the contractor shall cause to be inserted in every subcontract the appropriate clauses:

1. APPENDIX A: City and County of Denver Equal Opportunity Clause - ALL CONTRACTS funded only with City and County of Denver monies.(NOT APPLICABLE )
2. APPENDIX B: Equal Opportunity Clause (11246) - ALL FEDERAL ASSISTED.
3. APPENDIX C: Section 3 - Assurance of Compliance - HUD ASSISTED PROJECTS.(NOT APPLICABLE)
4. APPENDIX D: Section 3 - Clause - HUD ASSISTED PROJECTS. (NOT APPLICABLE)

All amendments to the appendices shall be included by reference.

### **REGULATION NO. 11 - SHOW CAUSE NOTICES:**

When the Manager has reasonable cause to believe that a contractor has violated Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, he may issue a notice requiring the contractor to show cause, within fifteen (15) days why enforcement procedures, or other appropriate action to insure compliance, should not be instituted.

Equal Employment Opportunity Provisions

**REGULATION NO. 12 - BID CONDITIONS - AFFIRMATIVE ACTION  
REQUIREMENTS - EQUAL EMPLOYMENT OPPORTUNITY:**

1. APPENDIX E: The Bid Conditions - Affirmative Action Requirements - Equal Employment Opportunity as amended and published by the U.S. Department of Labor Employment Standards Administration, Office of Federal Contract Compliance, shall be inserted verbatim for bidding specification for every non-exempt contract involving the use of Federal funds. (NOT APPLICABLE)
2. APPENDIX F: The Bid Conditions - Affirmative Action Requirements - Equal Employment Opportunity as published by the Department of Public Works, City and County of Denver, shall be inserted verbatim as bidding specifications for every non-exempt contract using City funds.

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]**

Equal Employment Opportunity Provisions

**APPENDIX A**

**NOT APPLICABLE**



## Equal Employment Opportunity Provisions

APPENDIX B

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies

## Equal Employment Opportunity Provisions

invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

APPENDIX C--NOT APPLICABLE

APPENDIX D--NOT APPLICABLE

APPENDIX E--NOT APPLICABLE

Equal Employment Opportunity Provisions

**APPENDIX F**

**AFFIRMATIVE ACTION REQUIREMENTS**

**EQUAL EMPLOYMENT OPPORTUNITY**

For All Non-Exempt Construction Contracts to Be Awarded by the  
City and County of Denver, Department of Public Works.

**NOTICE**

EACH BIDDER, CONTRACTOR OR SUBCONTRACTOR (HEREINAFTER THE CONTRACTOR) MUST FULLY COMPLY WITH THE REQUIREMENTS OF THESE BID CONDITIONS AS TO EACH CONSTRUCTION TRADE IT INTENDS TO USE ON THIS CONSTRUCTION CONTRACT, AND ALL OTHER CONSTRUCTION WORK (BOTH CITY AND NON-CITY) IN THE DENVER AREA DURING THE PERFORMANCE OF THIS CONTRACT OR SUBCONTRACT. THE CONTRACTOR COMMITS ITSELF TO THE GOALS FOR MINORITY MANPOWER UTILIZATION, AS APPLICABLE, AND ALL OTHER REQUIREMENTS, TERMS AND CONDITION OF THESE BID CONDITIONS BY SUBMITTING A PROPERLY SIGNED BID.

THE CONTRACTOR SHALL APPOINT A COMPANY EXECUTIVE TO ASSUME THE RESPONSIBILITY FOR THE IMPLEMENTATION OF THE REQUIREMENTS, TERMS AND CONDITIONS OF THESE BID CONDITIONS.

/s/

\_\_\_\_\_  
Manager of Department of Public Works  
City and County of Denver

## Equal Employment Opportunity Provisions

### A. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:

Contractors shall be subject to the provisions and requirements of these bid conditions including the goals and timetables for minority\* and female utilization, and specific affirmative action steps set forth by the Division of Small Business Opportunity (DSBO). The contractor's commitment to the goals for minority, and female utilization as required constitutes a commitment that it will make every good faith effort to meet such goals.

#### 1. GOALS AND TIMETABLES:

The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade are as follows:

GOALS FOR MINORITY PARTICIPATION FOR EACH TRADE	GOALS FOR FEMALE PARTICIPATION FOR EACH TRADE
From January 1, 1982 to Until Further Notice	From January 1, 1982 to Until Further Notice
<b>21.7% - 23.5%</b>	<b>6.9%</b>

The goals for minority and female utilization above are expressed in terms of hours of training and employment as a proportion of the total number of hours to be worked by the contractor's aggregate workforce, which includes all supervisory personnel, in each trade, on all projects for the City and County of Denver during the performance of its contract (i.e., The period beginning with the first day of work on the City and County of Denver funded construction contract and ending with the last day of work).

The hours of minority and female employment and training must be substantially uniform throughout the length of the contract in each trade and minorities and females must be employed evenly on each of a contractor's projects. Therefore, the transfer of minority or female employees from contractor to contractor or from project to project for the purpose of meeting the contractor's goals shall be a violation of these Bid Conditions.

If the Contractor counts the nonworking hours of apprentices they must be employed by the Contractor during the training period; the Contractor must have made a commitment to employ apprentices at the completion of their training subject to the availability of employment opportunities; and the apprentices must be trained pursuant to training programs approved by the Bureau of Apprenticeship and Training.

\* "Minority" is defined as including, Blacks, Spanish Surname Americans, Asian Americans, and American Indians, and includes both men and minority women.

#### 2. SPECIFIC AFFIRMATIVE ACTION STEPS:

No contractor shall be found to be in noncompliance solely on account of its failure to meet its goals, but will be given an opportunity to demonstrate that the contractor has instituted all the specific affirmative action steps specified and has made every good faith effort to make these steps work toward the attainment of its goals within the timetables, all to the purpose of expanding minority and female utilization in its aggregate workforce. A contractor, who fails to comply with its obligation under the Equal Opportunity Clause of its contract and fails to achieve its commitments to the goals for minority and female utilization has the burden of proving that it has engaged in an Affirmative Action Program

## Equal Employment Opportunity Provisions

directed at increasing minority and female utilization and that such efforts were at least as extensive and as specific as the following:

- a. The Contractor should have notified minority and female organizations when employment opportunities were available and should have maintained records of the organization's response.
- b. The Contractor should have maintained a file of the names and addresses of each minority and female referred to it by any individual or organization and what action was taken with respect to each such referred individual, and if the individual was not employed by the Contractor, the reasons. If such individual was sent to the union hiring hall for referral and not referred back by the union or if referred, not employed by the Contractor, the file should have documented this and their reasons.
- c. The Contractor should have promptly notified the Department of Public Works, and the Division of Small Business Opportunity when the union or unions with which the Contractor has collective bargaining agreements did not refer to the contractor a minority or female sent by the contractor, or when the Contractor has other information that the union referral process has impeded efforts to meet its goals.
- d. The Contractor should have disseminated its EEO policy within its organization by including it in any employee handbook or policy manual; by publicizing it in company newspapers and annual reports and by advertising such policy at reasonable intervals in union publications. The EEO policy should be further disseminated by conducting staff meetings to explain and discuss the policy; by posting of the policy; and by review of the policy with minority and female employees.
- e. The Contractor should have disseminated its EEO policy externally by informing and discussing it with all recruitment sources; by advertising in news media, specifically including minority and female news media; and by notifying and discussing it with all subcontractors.
- f. The Contractor should have made both specific and reasonably recurrent written and oral recruitment efforts. Such efforts should have been directed at minority and female organizations, schools with substantial minority and female enrollment, and minority and female recruitment and training organizations within the Contractor's recruitment area.
- g. The Contractor should have evidence available for inspection that all tests and other selection techniques used to select from among candidates for hire, transfer, promotion, training, or retention are being used in a manner that does not violate the OFCCP Testing Guidelines in 41 CFR Part 60-3.
- h. The Contractor should have made sure that seniority practices and job classifications do not have a discriminatory effect.
- i. The Contractor should have made certain that all facilities are not segregated by race.
- j. The Contractor should have continually monitored all personnel activities to ensure that its EEO policy was being carried out including the evaluation of minority and female employees for promotional opportunities on a quarterly basis and the encouragement of such employees to seek those opportunities.
- k. The Contractor should have solicited bids for subcontracts from available minority and female subcontractors engaged in the trades covered by these Bid Conditions, including circulation of minority and female contractor associations.

NOTE: The Director and the Division of Small Business Opportunity will provide technical assistance on questions pertaining to minority and female recruitment sources, minority and female community organizations, and minority and female news media upon receipt of a request for assistance from a contractor.

## Equal Employment Opportunity Provisions

### **3. NON - DISCRIMINATION:**

In no event may a contractor utilize the goals and affirmative action steps required in such a manner as to cause or result in discrimination against any person on account of race, color, religion, sex, marital status, national origin, age, mental or physical handicap, political opinion or affiliation.

### **4. COMPLIANCE AND ENFORCEMENT:**

In all cases, the compliance of a contractor will be determined in accordance with its obligations under the terms of these Bid Conditions. All contractors performing or to perform work on projects subject to these Bid Conditions hereby agree to inform their subcontractors in writing of their respective obligations under the terms and requirements of these Bid Conditions, including the provisions relating to goals of minority and female employment and training.

## **B. CONTRACTORS SUBJECT TO THESE BID CONDITIONS:**

In regard to these Bid Conditions, if the Contractor meets the goals set forth therein or can demonstrate that it has made every good faith effort to meet these goals, the Contractor shall be presumed to be in compliance with Article III, Division 2 of Chapter 28 of the Revised Municipal Code, the implementing regulations and its obligations under these Bid Conditions. In the event, no formal sanctions or proceedings leading toward sanctions shall be instituted unless the contracting or administering agency otherwise determines that the contractor is violating the Equal Opportunity Clause.

1. Where the Office of Contract Compliance finds that a contractor failed to comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or the implementing regulations and the obligations under these Bid Conditions, and so informs the Manager, the Manager shall take such action and impose such sanctions, which include suspension, termination, cancellation, and debarment, as may be appropriate under the Ordinance and its regulations. When the Manager proceeds with such formal action it has the burden of proving that the Contractor has not met the goals contained in these Bid Conditions. The Contractor's failure to meet its goals shall shift to it the requirement to come forward with evidence to show that it has met the good faith requirements of these Bid Conditions.
2. The pendency of such proceedings shall be taken into consideration by the Department of Public Works in determining whether such contractor can comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and is therefore a "responsible prospective contractor".
3. The Division of Small Business Opportunity shall review the Contractor's employment practices during the performance of the contract. If the Division of Small Business Opportunity determines that the Contractor's Affirmative Action Plan is no longer an acceptable program, the Director shall notify the Manager.

## **C. OBLIGATIONS APPLICABLE TO CONTRACTORS:**

It shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority or female employees. Discrimination in referral for employment, even if pursuant to provisions of a collective bargaining agreement, is prohibited by the National Labor Relations Act, as amended, Title VI of the Civil Rights Act of 1964, as amended, and Article III, Division 2 of Chapter 28 of the Revised Municipal Code. It is the policy of the Department of Public Works that contractors have a responsibility to provide equal employment opportunity, if they wish to participate in City and County of Denver contracts. To the extent they have delegated the responsibility for some of their employment practices to a labor organization and, as a result, are prevented from meeting their obligations pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code, such Contractors cannot be considered to be in compliance with Article III, Division 2, Chapter 28 of the Revised Municipal Code, or its implementing rules and regulations.

## Equal Employment Opportunity Provisions

**D. GENERAL REQUIREMENTS:**

Contractors are responsible for informing their subcontractors in writing regardless of tier, as to their respective obligations. Whenever a Contractor subcontracts a portion of work in any trade covered by these Bid Conditions, **it shall include these Bid Conditions in such subcontracts and each subcontractor shall be bound by these Bid Conditions to the full extent as if it were the prime contractor.** The Contractor shall not, however, be held accountable for the failure of its subcontractors to fulfill their obligations under these Bid Conditions. However, the prime contractor shall give notice to the Director of any refusal or failure of any subcontractor to fulfill the obligations under these Bid Conditions. A subcontractor's failure to comply will be treated in the same manner as such failure by a prime contractor.

1. Contractors hereby agree to refrain from entering into any contract or contract modification subject to Article III, Division 2, Chapter 28 of the Revised Municipal Code with a contractor debarred from, or who is determined not to be a "responsive" bidder for the City and County of Denver contracts pursuant to the Ordinance.
2. The Contractor shall carry out such sanctions and penalties for violation of these Bid Conditions and the Equal Opportunity Clause including suspension, termination and cancellation of existing subcontracts and debarment from future contracts as may be ordered by the Manager pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code and its implementing regulations.
3. Nothing herein is intended to relieve any contractor during the term of its contract from compliance with Article III, Division 2, Chapter 28 of the Revised Municipal Code, and the Equal Opportunity Clause of its contract with respect to matters not covered in these Bid Conditions.
4. Contractors must keep such records and file such reports relating to the provisions of these Bid Conditions as shall be required by the Office of Contract Compliance.
5. Requests for exemptions from these Bid Conditions must be made in writing, with justification, to the Manager of the Department of Transportation and Infrastructure, 201 W. Colfax, Dept. 608, Denver, Colorado 80202, and shall be forwarded through and with the endorsement of the Director.

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Exhibit M - General Contract Conditions (Index)



**General Contract Conditions  
2011 Edition**

**CITY AND COUNTY OF DENVER  
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

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## Exhibit N - Special Contract Conditions

**Exhibit N**  
**16<sup>th</sup> STREET MALL DESIGN-BUILD CONTRACT**  
**SPECIAL CONTRACT CONDITIONS**

**Contract Control Number: 202157899**

**The General Contract Conditions were developed and intended to apply to a traditional design-bid-build construction format. When applied to a design/build project delivery format, a number of provisions of the City’s standard General Contract Conditions (the “Yellow Book”) may be inapplicable or require modification to apply to a design/build delivery methodology. Without redrafting the City’s standard General Contract Conditions, it is the intent of these Special Contract Conditions to modify the most clearly inapplicable or contrary provisions of the General Contract Conditions. The remaining General Contract Conditions and these Special Contract Conditions shall be interpreted and applied in a manner consistent with a design/build project delivery format. In the event of an express conflict, contradiction, or inconsistency between a word, phrase, or provision of the General Contract Conditions and a word, phrase, or provision of these Special Contract Conditions, the word, phrase, or provision of these Special Contract conditions shall prevail over the conflicting, contradictory, or inconsistent word, phrase, or provision of the General Contract Conditions.**

**SC-1 CONSTRUCTION SPECIFICATIONS**

Except as amended herein or in the attached Technical Specifications, all Work performed under the terms of this Contract shall be governed by the applicable provisions of the following latest editions:

City and County of Denver:

*Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS,*  
(2011 Edition)

*Transportation Standards and Details for the Engineering Division*

*City and County of Denver Traffic Standard Drawings*

*Wastewater Capital Projects Management*

<https://www.denvergov.org/content/denvergov/en/wastewater-management/capital-projects-management.html>

Colorado Department of Transportation:

*Standard Specifications for Road and Bridge Construction*  
(Sections 200 through 700 of the 2019 Edition)

Federal Highway Administration:

*Manual on Uniform Traffic Control Devices for Streets & Highways (MUTCD)*

Building & Fire Codes:

*Building Code of the City and County of Denver*

(International Building Code 2018 Series, City and County of Denver Amendments 2019)

<https://www.denvergov.org/content/denvergov/en/denver-development-services/help-me-find-/building-codes-and-policies.html>

*National Fire Protection Association Standards*

(As referenced in the Building Code of the City and County of Denver)

## Exhibit N

The aforementioned City and County of Denver documents are available for review at the Capital Projects Management Office, 201 W. Colfax Ave., Dept. 506, (5<sup>th</sup> floor), Denver, CO 80202.

The *Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS* is available at: <https://www.denvergov.org/content/denvergov/en/contract-administration/contractor-resources.html>

*Transportation Standards and Details for the Engineering Division* and the Wastewater Management Division – *Standard Detail Drawings*, are available at <http://www.denvergov.org>.

The “*Colorado Department of Transportation Standard Specifications for Road and Bridge Construction*” is available for review on CDOT’s website at <http://www.coloradodot.info/> and can be purchased from the Colorado Department of Transportation.

The *Manual on Uniform Traffic Control Devices for Streets & Highways* is available for review at the Federal Highway Administration Website at: [www.fhwa.dot.gov](http://www.fhwa.dot.gov).

### **SC-2 Contract Documents (Replaces General Contract Condition 104)**

General Condition 104 CONTRACT DOCUMENTS is hereby deleted in its entirety and replaced with the following:

“The Contract Documents” consist of the documents that are listed in Section 2 of the Design-Build Contract.

### **SC-3 Contractor Definition (Replaces General Contract Condition 106)**

General Condition 106 CONTRACTOR is hereby deleted in its entirety and replaced with the following:

"Contractor" means the person, partnership, corporation, limited liability company, joint venture, or other entity that has contracted with the City to perform the Work as an independent contractor.

### **SC-4 Contractor Definition (Modifies General Contract Condition 108)**

General Condition 108 DAYS is hereby modified and supplemented as follows:

“Calendar Day” means each and every day shown on the calendar, beginning and ending at midnight and “Working Day” means any calendar day other than Saturday, Sunday, or a Holiday. It will be presumed that the Contractor, at the time of bidding, took into account the number of Calendar Days and Working Days which might be unavailable for Work during the Contract Time.

### **SC-5 Designer (Replaces General Contract Condition 110)**

General Contract Condition 110 DESIGNER is hereby deleted in its entirety and replace with the following:

Collectively (if more than one) the “Designer,” also sometimes referred to as “Architect”, “Engineer” “Lead Engineer,” “Lead Design Engineer,” “Design Professional,” “Designer of Record” or “Engineer of Record,” means the architect and/or engineer who design the Project and prepare the specifications or direct the effort of designing the Project and preparing the specifications. The Designer is identified in the Contract Documents and is an employee of the Contractor or is retained by the Contractor as an independent contractor under a professional services agreement with the Contractor.

### **SC-6 Contractor Definition (Replaces General Contract Condition 114)**

General Condition 114 PROJECT is hereby deleted in its entirety and replace with the following:



## Exhibit N

The “Project” means the total design and construction of the Work as described in the Design-Build Contract and Contract Documents.

### **SC-7 Definition of Substantial Completion (Replaces General Contract Condition 119)**

General Condition 119 SUBSTANTIAL COMPLETION is hereby deleted in its entirety and replace with the following:

The term “Substantial Completion” shall mean the achievement of the following two (2) conditions:

- (a) “Block Substantial Completion” which means the Work within a one block portion of the Project (a “Project Block”) has progressed to the point that the City can beneficially occupy and utilize the Work within that Project Block for the purposes for which it is intended, including, without limitation, the achievement of the following specific conditions: (1) The full and operational status of all drainage and water quality elements; (2) The full and operational status of all Utilities, technology infrastructure, and safety features; (3) The Mall transit way, all cross street roadways and intersections, alley ways, and business accesses are safe and open to traffic and Mall users; (4) All amenity zones and pedestrian walkways are safe, ADA compliant, and open to pedestrians and Mall users; (5) All business access is fully restored and operational; (6) All Public Life and FFE products to be procured, fabricated, or provided by the City are installed and available for public use; (7) All Mall trees are installed and in good health, and irrigation systems are in place and functional; (8) Closeout of all Nonconformance Reports; and (9) All Work is in compliance with all Applicable Laws and the Contract Documents. Block Substantial Completion dates for each Project Block shall not exceed more than 18-months from the Contractor’s Approved ACZ Date (as defined in the Technical Requirements) for such Project Block (the “Block Start Date”).

and

- (b) “Project Substantial Completion” which means (1) the Project Work has progressed to the point that the City can beneficially occupy and utilize the Work for the purposes for which it is intended, and (2) Block Substantial Completion for all of the Project Blocks have been achieved.

The achievement of Block Substantial Completion and/or Project Substantial Completion shall be determined by the Manager in his sole discretion. The Manager will advise the Contractor in writing when Block Substantial Completion and/or Project Substantial Completion of the Work has been achieved.

### **SC-8 Definition of Work (Replaces General Contract Condition 121)**

General Condition 121 WORK is hereby deleted in its entirety and replaced with the following:

“Work” shall have the meaning given to it in Section 3.9 of the Design-Build Contract.

### **SC-9 Department of Transportation and Infrastructure (Replaces General Contract Condition 203)**

General Condition 203 DEPARTMENT OF PUBLIC WORKS is hereby deleted in its entirety and replace with the following:

As of January 1, 2020, the functions of Public Works are housed in the new Department of Transportation and Infrastructure (DOTI). For purposes of this Design-Build Contract all references (including, but not limited to, references appearing in the body of the Contract, General Conditions, Special Contract Conditions, Exhibits, Contract Documents, or Policies and Procedures) to the Department of Public Works will have the same meaning as the Department of Transportation and Infrastructure.

Vested exclusively in the Department of Transportation and Infrastructure is the management and control of the design and construction of general and local public improvements undertaken by the City and County of Denver, except for: (i) work which is under the management and control of the Department of Aviation; (ii) that work performed by the Denver Board of Water Commissioners; (iii) any such work that the Mayor has specifically assigned to another department or agency; and (iv) work under the authority

## Exhibit N

of the Department of Transportation and Infrastructure that is performed with the permission of the Manager of Transportation and Infrastructure by private entities at their own expense.

### **SC-10 Manager of Department of Transportation and Infrastructure (Replaces General Contract Condition 204)**

General Condition 204 MANAGER OF PUBLIC WORKS is hereby deleted in its entirety and replaced with the following:

As of January 1, 2020, the functions of Public Works are housed in the new Department of Transportation and Infrastructure. The Manager of Public Works / Executive Director of Public Works is now the Executive Director of Transportation and Infrastructure. Manager of Public Works, Executive Director of Public Works, Executive Director of Transportation and Infrastructure and Manager of Transportation and Infrastructure will have the same meaning for purposes of this Agreement.

### **SC-11 City's Contract Administration Line of Authority (Replaces General Contract Condition 212)**

General Condition 212 CITY'S CONTRACT ADMINISTRATION LINE OF AUTHORITY is hereby deleted in its entirety and replaced with the following:

### **See Section 1.1 of the Design-Build Contract. SC-12 Working Hours and Schedule (Modifies General Contract Condition 306)**

General Contract Condition 306 WORKING HOURS AND SCHEDULE is hereby modified and supplemented as follows:

The terms and provisions set forth in Section 2 Project Management of the Technical Requirements of the RFP are hereby incorporated herein by this reference. In the event of any inconsistency between the terms of General Condition 306 and the terms and conditions set forth in Section 2 Project Management of the Technical Requirements, the terms of Section 2 Project Management of the Technical Requirements shall control.

### **SC-13 Contractor's Superintendent (Replaces General Contract Condition 307)**

General Contract Condition 307 CONTRACTOR'S SUPERINTENDENT is hereby deleted in its entirety and replaced with the following:

The Contractor shall employ and designate to the Deputy Manager in writing a competent Design-Build Manager, Design Manager, Project Quality Manager, and Superintendent. The qualifications of these staff shall be acceptable to the Deputy Manager. The Design-Build Manager, Project Quality Manager and Superintendent shall serve on a full-time basis at the Work site and shall be authorized to act on behalf of the Contractor in all matters related to the Work. The same person(s) shall continue in their defined roles until the Work has been completed, unless the Deputy Manager requests that they be replaced, or they cease to be employed by the Contractor or they become sick or disabled.

### **SC-14 Permits and Licenses (Replaces General Contract Condition 317.1)**

General Contract Condition 317.1 PERMIT AND LICENSES is hereby deleted in its entirety and replaced with the following:

- .1 The Contractor is required to possess the appropriate contractor and engineering licenses issued by the Department of Transportation and Infrastructure and the State of Colorado, respectively, pertaining to the Work to be performed. The Contractor is also required to obtain all necessary permits for the Project.

## Exhibit N

### **SC-15 Cleanup During Construction (Modify General Contract Condition 325)**

General Contract Condition 325 CLEANUP DURING CONSTRUCTION is hereby modified and supplemented as follows:

- .6 The Contractor shall maintain the Mall in accordance with Technical Requirements Section 17 Construction Phasing and Maintenance of Traffic.

### **SC-16 Construction Surveys (Modify General Contract Condition 318.1 and 318.3)**

General Contract Condition 318 CONSTRUCTION SURVEYS are hereby deleted in its entirety and replaced with the following:

- .1 The City does not take responsibility for the accuracy of any survey data provided by the City. The Contractor shall validate that this data is accurate and ensure that all elements of the Work are correctly located. The Contractor shall provide all verification and supplemental survey required for the completion of the design and construction Work.
- .2 Any Work that the Contractor begins before confirming the reference points provided may be rejected. The Contractor shall reset and replace with new monuments all monumentation, of any kind, damaged, lost or destroyed during the progression of Work.

### **SC-17 Contract Drawings and Technical Specifications Issued to the Contractor (Replaces General Contract Condition 403.1 and 403.2)**

General Contract Condition 403.1 CONTRACT DRAWINGS AND TECHNICAL SPECIFICATIONS ISSUED TO THE CONTRACTOR is hereby deleted in its entirety and General Contract Condition 403.2 is hereby deleted in its entirety and replaced with the following:

- .2 The Contractor is responsible for keeping an accurate record of drawings and specifications to record the construction of the Work in its As-Built condition at the Project construction site. The Contractor shall daily record all changes and deviations in a neat and legible manner on the Contract Documents. Any deviation from the Contract Documents or Technical Specifications and the Work done, no matter how insignificant, must be recorded. Underground Utility structures encountered in performing the Work shall be correctly located on such drawings through physical ties or dimensions to permanent monuments or structures. When the Work is completed, the Contractor must deliver a single set of signed and stamped record drawings that accurately reflect the as built condition of the Project elements and Technical Specifications along with electronic copies to the Project Manager. These drawings (including electronic copies) must be provided and be approved by the Project Manager before final payment can be made. Electronic copies must be completely useable by the City (AutoCad with binded reference files).

### **SC-18 Shop Drawings, Product Data and Samples (Replaces General Contract Condition 405)**

General Contract Condition 405 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES is hereby deleted in its entirety and replaced with the following:

- .1 The Contractor shall submit all Shop Drawings, as defined in these General Conditions, to the Designer, with a copy to the Project Manager if concurrent review is approved. Shop Drawings sent to the Project Manager which have not been reviewed or concurrently approved will be sent back to the Contractor. The Project Manager will review the shop drawings with reasonable promptness following receipt of the shop drawings. The Project Manager will indicate its review with the following messages: Does not object; Does not object, but conditioned as noted, or, Objects.

## Exhibit N

- .2 The Contractor shall prepare, review, certify, endorse and submit, to the Designer, with reasonable promptness, and in such sequence as to cause no delay in the Work, all Shop Drawings, required by the Contract Documents. The Contractor shall prepare and deliver to the City a submittal schedule for Shop Drawings, as required by the Contract Documents. All such drawings and other material shall contain identifying nomenclature and each submittal shall be accompanied by a transmittal identifying in detail all enclosures. Facsimile reproductions of Contract Documents shall not be used, in whole or in part, for the direct submittal of Shop Drawings unless specifically approved by the Project Manager.
- .3 By preparing, certifying, and submitting Shop Drawings, the Contractor represents that the Contractor has determined and verified all materials, field measurements, and field construction criteria related thereto, and has checked and coordinated the information contained within such submittals with the requirements of the Work, the Project, the Contract Documents and previously reviewed and accepted submittals.
- .4 The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the City's review. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data, or Samples by the City's review of them. Review of a specific item by the City shall not indicate the City's acceptance thereof. City review of the Shop Drawings shall not be construed as approval of the adequacy of the documents and shall not constitute a waiver of any remedies the City may have in law or inequity.
- .5 All re-submittals shall either on their face, or in the accompanying transmittal, clearly indicate all revisions that have been made since the previous submittal.
- .6 The Project Manager may review the Contractor's submittal such as Shop Drawings, for conformance with the Contract Documents. Review by the Project Manager shall not relieve the Contractor of its responsibilities under the Contract Documents.

### **SC-19 Subcontracts (Modifies General Contract Condition 501)**

General Contract Condition 501.1 SUBCONTRACTS is hereby supplemented as follows:

- .1 In accordance with General Contract Condition 501 SUBCONTRACTS, no limit shall apply to that percentage of the Work, which may be sublet providing that the subcontractors receive prior approval in accordance with General Contract Condition 502 SUBCONTRACTOR ACCEPTANCE.

### **SC-20 Subcontractor Acceptance (Replaces General Contract Condition 502.3)**

General Contract Condition 502.3 SUBCONTRACTOR ACCEPTANCE is hereby deleted in its entirety and replaced with the following:

- .3 The Contractor shall submit 30 Calendar Days prior to the subcontractor doing the Work of award a statement signed by an officer or principal of the Contractor certifying that the Contractor has investigated the qualifications and background of each proposed Subcontractor and certifying under oath that, to the best of his or her knowledge, none of the bases for rejection listed above exist. In lieu of this certification, the Contractor may identify, for each proposed Subcontractor, any of the issues listed above applicable to that subcontractor and attach to that statement a list of all judicial and administrative proceedings in the last five (5) years in which any proposed Subcontractor is or was a party, the proceedings involving any of the issues listed above or in which any proposed Subcontractor filed for bankruptcy.

## Exhibit N

### **SC-21 Liquidated Damages; Administrative Costs; Actual Damages (Replaces General Contract Condition 602)**

General Contract Conditions 602.1, 602.2, and 602.3 are hereby deleted and replaced by the provisions set forth in Section 4 of the Design-Build Contract. General Contract Condition 602.4 is hereby deleted in its entirety and replaced with the following:

The City reserves all of its rights to actual damages from the Contractor for injury or loss suffered by the City from actions or omissions of the Contractor, including but not limited to any other breach or default of the Design-Build Contract, outside of the scope of the provisions concerning Liquidated Damages as set forth in Section 4 of the Design-Build Contract and other Contract Documents. Administrative costs incurred by the City may be included in damages payable to the City hereunder and shall be determined based upon the following representative hourly rates (as the same may be revised from time to time):

Project Manager:	\$69 per hour
Project Engineer:	\$63 per hour
Inspector:	\$49 per hour
Surveying:	\$100 per hour

Reference is hereby made to Section 4 of the Design-Build Contract.

### **SC-22 Cooperation with Other Work Forces (Replaces General Contract Conditions 701.4 and 701.5)**

General Contract Conditions 701.4 and 701.5 COOPERATION WITH OTHER WORK FORCES are hereby deleted in its entirety and replaced with the following:

- .4 If the Contractor, through its acts or omissions, causes loss, damage or delay to the Work or other property, the Contractor shall, upon due notice, promptly use its best efforts to remedy such loss, damage or delay, at no additional cost to the City.
- .5 If the Contractor, through its acts or omissions, causes loss, damage or delay to the Work or property of any other Contractors, Subcontractors, tenants, government agencies, and municipal, public service or utility systems, the Contractor shall, upon due notice, promptly use its best efforts to remedy such loss, damage or delay, or otherwise settle with such other person or entity by agreement or otherwise, at no additional cost to the City.

### **SC-23 Protection of Municipal, Public or Public Utility Systems (Replaces General Contract Condition 804.2)**

The introductory portion of the General Contract Condition 804.2 PROTECTION OF MUNICIPAL, PUBLIC SERVICE OR PUBLIC UTILITY SYSTEMS is hereby deleted in its entirety and replaced with the following:

The list that follows is not intended to be complete and all inclusive, but merely to identify the systems that Contractors encounter most frequently. The names of the listed organizations are subject to change from time to time. Refer to the Utility Contact Matrix reference in Section 7 Utilities of the Technical Requirements of the RFP:

### **SC-24 General Contract Condition 803.1 PROTECTION OF PROPERTY AND WORK IN PROGRESS is hereby supplemented to add section 803.1.D as follows:**

- 1.D. Existing materials, furnishings, and other property items to be reused will be the responsibility of the Contractor to store and protect on or off the Work site at the Contractor's expense.

## Exhibit N

### **SC-25 Coordination of Public Contact (Replaces General Contract Condition 703.2)**

General Contract Condition 703.2 COORDINATION OF PUBLIC CONTACT is hereby deleted in its entirety and replaced with the following:

The Contractor shall obtain the approval of the Project Manager and notify all other affected persons of other contractors at least five (5) Working Days before starting Work that may block access to otherwise cause undue difficulty to occupants or users of property affected, and shall restore such access to a usable condition or, with the Project Manager’s permission, provide replacement access as soon as possible.

### **SC-26 Payments to Contractors (Replaces General Contract Condition 902)**

General Contract Condition 902 PAYMENT PROCEDURE is hereby deleted in its entirety and replaced with the following:

The application for payment shall be submitted through the Textura® Payment Management (TPM) website. Contractor recognizes and agrees that it shall be required to use the TPM system for this Project to request payment from the City and to pay subcontractors. All certified subcontractors or suppliers who are listed for participation towards any assigned program goal must be paid via TPM. Contractor further agrees that, to the fullest extent possible within the system, the City shall be entitled to all non-Confidential records, reports, data and other information related to the project that are available to Contractor through the TPM system, including, but not limited to, information related to Contractor and subcontractor billings. To that end, Contractor agrees that it will activate any available settings within the TPM System that are necessary to grant the City access to such non-Confidential information related to the contract and the project. Applications for payment shall be based on the Contract Unit Prices or the approved Schedule of Values described in GC 903.1.

In accordance with General Contract Condition 902, PAYMENT PROCEDURE, the party(ies) responsible for review of all Pay Applications shall be:

<u>Agency/Firm</u>	<u>Name</u>	<u>Telephone</u>
Department of Transportation & Infrastructure	TBD	

## Exhibit N

In accordance with General Contract Condition 906, APPLICATIONS FOR PAYMENT, each Application submitted shall include the following:

1. The estimate of Work completed shall be based on the approved schedule of values or unit prices, as applicable, and the percent of the Work complete.
2. Each Application for Payment shall include each and every independent subcontractor's payroll information including pay dates and pay amounts.
3. The Contractor shall also submit to the Auditor and other appropriate officials of the City in a timely fashion, information required by General Contract Condition 1004, REPORTING WAGES PAID.
4. Applications for Payment must be accompanied by completed Partial or Final Claim Release Form, as appropriate, from EACH subcontractor and supplier, **AND** the Contractors' Certification of Payment Form (CCP), unless an exception is approved pursuant to General Contract Condition 907.
5. Applications of payment shall be accompanied for Form E and Form E-2, as referenced in the DBE Requirements attached to this Contract.


The forms, Final/Partial Release and Certificate of Payment (Subcontractor/Supplier) and the Contractor's Certification of Payment (CCP), both of which must be used are attached below. If subcontractor or supplier payments are disbursed via Textura® CPM, those systems generated Release and CCP forms are acceptable.

Project Value	Project Fee (GC + Sub Usage)
\$250,000 - \$499,999.99	\$1,625
\$500,000 - \$999,999.99	\$3,250
\$1,000,000 - \$2,999,999.99	\$5,850
\$3,000,000 - \$4,999,999.99	\$9,100
\$5,000,000 - \$9,999,999.99	\$12,220
\$10,000,000 - \$19,999,999.99	\$20,345
\$20,000,000 - \$49,999,999.99	\$32,500
\$50,000,000 - \$99,999,999.99	\$48,750
\$100,000,000 - \$199,999,999.99	\$69,095
\$200,000,000 - \$299,999,999.99	\$85,345
\$300,000,000 - \$399,999,999.99	\$109,720
\$400,000,000 - \$499,999,999.99	\$142,220
\$500,000,000 - \$999,999,999.99	\$162,500
\$1,000,000,000 - \$1,999,999,999.99	\$345,345
\$2,000,000,000 - \$4,999,999,999.99	\$650,000
\$5,000,000,000 - \$9,999,999,999.99	\$1,015,625
\$10,000,000,000 or greater	\$1,503,125





## Exhibit N

 <p><b>DENVER</b> THE MILE HIGH CITY</p>	<p><b>Instructions for Completing the Contractor/Consultant Certification of Payment Form</b></p>	<p>Office of Economic Development Division of Small Business Opportunity <b>Compliance Unit</b> 201 W. Colfax Ave., Dept. 907 Denver, CO 80202 Phone: 720-913-1999 Fax: 720-913-1803 <a href="mailto:dsbo@denvergov.org">dsbo@denvergov.org</a></p>
<p><b>Note:</b> The attached Contractor/Consultant Certification of Payment form must be completed by the Contractor/ Subconsultant and all subcontractors/subconsultant or suppliers used on the project at <b>any tier</b> and submitted with each pay application. The Contractor/Consultant is responsible for the accuracy of all information provided and is required to have each subcontractor/subconsultant or supplier fill out the appropriate forms. Please be sure to complete all information requested at the top of the form, including the name of the person who prepared this form.</p> <p>If you reproduce this form, you must continue to list each of the originally listed firms, as well as any additional firms used during the performance period of the contract.</p> <p>If you have any questions, please call the Compliance Unit of DSBO at 720.913.1999.</p>		
<p><b>Instructions for Completing the Contractor/Consultant Certification of Payment Form, per Column</b></p>		
<p><b>Contractor/Subcontractor or Subconsultant/Supplier Name:</b> In the space provided, list all subcontractors/ subconsultants and suppliers used on the project. For all M/W/S/DBEs use the exact name listed in the DSBO Directory.</p>		
<p><b>M/W/S/DBE/NON:</b> For each name listed, indicate whether the entity is a certified M/W/S/DBE.</p>		
<b>Column A:</b>	Provide the contract amount, as listed at bid time, for the Contractor/Consultant and each subcontractor/subconsultant or supplier.	
<b>Column B:</b>	Provide the percentage portion of each listed subcontractor/subconsultant or supplier contract amount (Column A) compared to the total original contract amount in (I).	
<b>Column C:</b>	Provide the original contract amount (Column A) for each subcontractor/subconsultant or supplier plus any awarded alternate and/or change order amounts applicable. If an alternate/change order does not apply to the listed firm, re-enter the original contract amount (Column A).	
<b>Column D:</b>	Provide the percent portion of each listed subcontractor/subconsultant or supplier contract amount (Column C) compare to the current total contract amount in (II).	
<b>Column E:</b>	Provide the amount requested for work performed or materials supplied by each listed subcontractor/subconsultant or supplier for this pay application. The sum of the items in this column should equal the estimated amount requested for this pay application.	
<b>Column F:</b>	Provide the amount paid to each subcontractor/subconsultant or supplier on the previous pay application. Enter the previous pay application number in the column heading. The sum of the items listed in this column should equal the warrant amount paid to the Contractor/Consultant on the previous pay application. The amounts paid to the subcontractor/subcontractor or suppliers should be the actual amount of each check issued.	
<b>Column G:</b>	Provide the net paid to date for the Contractor/Subconsultant and each listed subcontractor/subconsultant or supplier.	
<b>Column H:</b>	Provide the percent portion of the net paid to date (Column G) for the Contractor/Subconsultant and each listed subcontractor/subconsultant or supplier of the current total contract amount in (II).	

COMP-REF-031

Rev 032211 JG

**Exhibit N**  
**DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**  
**FINAL/PARTIAL RELEASE AND CERTIFICATE OF PAYMENT**  
**(SUBCONTRACTOR/SUPPLIER)**

\_\_\_\_\_  
(CITY PROJECT NAME AND NUMBER)

Date: , 20\_.

\_\_\_\_\_  
(NAME OF CONTRACTOR)

Subcontract #:

Subcontract Value: \$

\_\_\_\_\_  
(NAME OF SUBCONTRACTOR/SUPPLIER)

Last Progress Payment: \$\_.

Date: \_.

k Applicable Box:

Total Paid to Date: \$\_.

DBE

Date of Last Work: \_.

The Undersigned hereby certifies that all costs, charges or expenses incurred by the undersigned or on behalf of the undersigned for any Work, labor or services performed and for any materials, supplies or equipment provided on the above referenced Project or used in connection with the above referenced Subcontract (the "Work Effort") have been duly paid in full.

The Undersigned further certifies that each of the undersigned's subcontractors and suppliers that incurred or caused to be incurred, on their behalf, costs, charges or expenses in connection with the undersigned's Work Effort on the above referenced Project have been duly paid in full.

In consideration of \$ representing the Last Progress Payment referenced above and in further consideration of the Total Paid to Date, also referenced above, and other good and valuable consideration received and accepted by the undersigned this day of , 20\_, the Undersigned hereby releases and discharges the City and County of Denver (the "City"), the above referenced City Project, the City's premises and property and the above referenced Contractor from all claims, liens, rights, liabilities, demands and obligations, whether known or unknown, of every nature arising out of or in connection with the performance of the Work effort.

As additional consideration for the payments referenced above, the undersigned agrees to defend, indemnify and hold harmless the City, its officers, employees, agents and assigns and the above-referenced Contractor from and against all costs, losses, damages, causes of action, judgments under the subcontract and expenses arising out of or in connection with any claim or claims against the City or the Contractor which arise out of the Undersigned's performance of the Work Effort and which may be asserted by the Undersigned or any of its suppliers or subcontractors of any tier or any of their representatives, officers, agents, or employees.

It is acknowledged that this release is for the benefit of and may be relied upon by the City and the referenced Contractor.

The foregoing shall not relieve the undersigned of any obligation under the provisions of the Undersigned's subcontract, as the subcontract may have been amended, which by their nature survive completion of the Undersigned's Work effort including, without limitation, warranties, guarantees, insurance requirements and indemnities.

STATE OF COLORADO ) s.  
CITY OF )

\_\_\_\_\_  
(Name of Subcontractor)

Signed and sworn before me this  
day of , 20\_.

By: \_\_\_\_\_

## Exhibit N

Notary Public/Commissioner of  
Oaths  
My Commission Expires

Title: \_\_\_\_\_

## DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE

### PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned \_\_\_\_\_  
\_\_\_\_\_  
a corporation organized and existing under and by virtue of the laws of the State of \_\_\_\_\_,  
hereafter referred to as the "Contractor", and \_\_\_\_\_,  
a corporation organized and existing under and by virtue of the laws of the State of \_\_\_\_\_,  
and authorized to transact business in the State of Colorado, as Surety, are held and firmly bound unto the CITY

AND COUNTY OF DENVER, a municipal corporation of the State of Colorado, hereinafter referred to as the

"City", in the penal sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_),  
lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves and our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents;

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT:

WHEREAS, the above bounden Contractor has entered into a written contract with the aforesaid City for furnishing all labor and tools, supplies, equipment, superintendence, materials and everything necessary for and required to do, perform and complete the construction of **CONTRACT NO. «CONTRACT\_NO» «PROJECT\_NAME»**, Denver, Colorado, and has bound itself to complete the project within the time or times specified or pay liquidated damages, all as designated, defined and described in the said Contract and Conditions thereof, and in accordance with the Plans and Technical Specifications therefore, a copy of said Contract being made a part hereof;

NOW, THEREFORE, if the said Contractor shall and will, in all particulars well and truly and faithfully observe, perform and abide by each and every Covenant, Condition and part of said Contract, and the Conditions, Technical Specifications, Plans, and other Contract Documents thereto attached, or by reference made a part thereof and any alterations in and additions thereto, according to the true intent and meaning in such case, then this obligation shall be and become null and void; otherwise, it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor shall satisfy all claims and demands incurred by the Contractor in the performance of said Contract, and shall fully indemnify and save harmless the City from all damages, claims, demands, expense and charge of every kind (including claims of patent infringement) arising from any act, omission, or neglect of said Contractor, its agents, or employees with relation to said Work; and shall fully reimburse and repay to the City all costs, damages, and expenses which it may incur in making good any default based upon the failure of the Contractor to fulfill its obligation to furnish maintenance, repairs or replacements for the full guarantee period provided in the Contract Documents, then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if said Contractor shall at all times promptly make payments of all amounts lawfully due to all persons supplying or furnishing it or its subcontractors with labor and materials, rental machinery, tools or equipment used or performed in the prosecution of Work provided for in the above Contract and that if the Contractor will indemnify and save harmless the City for the extent of any and all payments in connection with the carrying out of such Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor fails to duly pay for any labor, materials, team hire, sustenance, provisions, provender, gasoline, lubricating oils, fuel oils, grease, coal, or any other supplies or materials used or consumed by said Contractor or its subcontractors in performance of the Work contracted to be done, or fails to pay any person who supplies rental machinery, tools or equipment, all amounts due as the result of the use of such machinery, tools or equipment in the prosecution of the Work, the Surety will pay the same in any amount not exceeding the amount of this obligation, together with interest as provided by law;

## Exhibit N

PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to contracts with others in connection with this project, or the Work to be performed thereunder, or the Technical Specifications and Plans accompanying the same, shall in any way affect its obligation on this bond and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or contracts, or to the Work, or to the Technical Specifications and Plans.

IN WITNESS WHEREOF, said Contractor and said Surety have executed these presents as of this  
\_day of , 20\_.

Attest:

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
**Contractor**

By: \_\_\_\_\_

**President**

\_\_\_\_\_  
**Surety**

By: \_\_\_\_\_

**Attorney-In-Fact**

(Accompany this bond with Attorney-in-Fact's authority from the Surety to execute bond, certified to include the date of the bond).

APPROVED AS TO FORM:  
Attorney for the City and County of  
Denver

By: \_\_\_\_\_

\_\_\_\_\_  
**Assistant City Attorney**

APPROVED FOR THE CITY AND COUNTY OF  
DENVER

By: \_\_\_\_\_

**MAYOR**

By: \_\_\_\_\_

**EXECUTIVE DIRECTOR OF DEPARTMENT OF  
TRANSPORTATION AND INFRASTRUCTURE**

# Exhibit N

## PERFORMANCE AND PAYMENT BOND SURETY AUTHORIZATION (SAMPLE)

FAX NUMBER: 720-913-3183  
TELEPHONE NUMBER: 720-913-3267

Assistant City Attorney  
201 W. Colfax Ave. Dept 1207  
Denver, Colorado 80202

RE: (Company name)

Contract No: «Contract\_No»  
Project Name: «Project\_Name»  
Contract Amount:  
Performance and Payment Bond No.:

Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency, through \_\_\_\_\_ insurance company, on \_\_\_\_\_, 20\_\_.

We hereby authorize the City and County of Denver, Department of Transportation and Infrastructure, to date all bonds and powers of attorney to coincide with the date of the contract.

If you should have any additional questions or concerns, please don't hesitate to give me a call at \_\_\_\_\_.

Thank you.

Sincerely,

Department of Transportation and Infrastructure/Office of the Executive Director  
201 West Colfax Avenue, Dept 608 | Denver, CO 80202  
[www.denvergov.org/dpw](http://www.denvergov.org/dpw)  
p. 720.865.8630 | f. 720.865.8795

## Exhibit N

### **SC-27 Schedule of Values in Lump Sum Contracts (Replaces General Contract Condition 903.1)**

.1 General Contract Condition 903.1 SCHEDULE OF VAULES IN LUMP SUM CONTRACTS is hereby deleted in its entirety and replaced with the following:

The Schedule of Values shall be the Schedule of Values generated as part of the Proposal and is attached as Exhibit C and incorporated into the Design-Build Contract.

### **SC-28 Applications for Payment (Replaces General Contract Condition 906.3)**

General Contract Condition 906.3 APPLICATIONS FOR PAYMENT is hereby deleted in its entirety and replaced with the following:

No payment for stored materials shall be permitted.

### **SC-29 Retainage (Replaces General Contract Condition 908.2)**

General Contract Condition 908.2 RETAINAGE is hereby deleted in its entirety and replaced with the following:

After achievement of Project Substantial Completion of the Work under the Contract has been satisfactorily accomplished by the Contractor, the Manager, in his sole discretion, may decrease the retained amount to a level that is no less than twice the value of the estimate of remaining Work.

### **SC-30 Hazardous and Explosive Materials or Substances (Adds General Contract Condition 808.3)**

General Contract Condition 808.3 is hereby added to General Contract Condition 808:

As used herein, the phrase “hazardous materials or substances” (or similar words or phrases) shall mean and refer collectively to all applicable local, state, and federal environmental guidelines, rules, regulations, statutes, laws, and orders applicable to the Work (collectively, the “**Environmental Requirements**”), including but not limited to Environmental Requirements regarding the storage, use, transportation, and disposal of Hazardous Materials and regarding releases or threatened releases of Hazardous Materials to the environment. The term “**Hazardous Materials**” shall mean asbestos, asbestos-contaminated soils, and asbestos-containing materials, special wastes, polychlorinated biphenyls (PCBs), any petroleum products, natural gas, radioactive source material, pesticides, any hazardous waste as defined at 42 U.S.C. § 6903(5) of the Solid Waste Disposal Act, any hazardous substance as defined at 42 U.S.C. § 9601(14) of the Comprehensive Environmental Response, Compensation and Liability Act, and chemical substance as defined at 15 U.S.C. § 2602(2) of the Toxic Substances Control Act, and any guidelines issued and rules or regulations promulgated pursuant to such statutes, or any other applicable federal or state statute.

### **SC-31 Change Order (Modifies and Supplements General Contract Condition 1101)**

General Contract Condition 1101 CHANGE ORDER is hereby supplemented as follows:

## Exhibit N

- .3 No revision or change furnished or requested by either party to the other in connection with the preparation, submission, review, comment, approval, or identification of the Design Development Documents or Construction Documents will be considered a change entitling the Contractor to a change in the Contract Time, unless such change shall be expressly evidenced by a Change Order.
- .4 Changes in design and construction required to conform to the requirements of the Contract Documents, unless the Contract Documents have been modified by Change Order, shall be completed by Contractor without any increase in the Contract Amount or adjustment to the date for Contractual Milestones, Substantial Completion, and Final Completion regardless of the stage of completion of design and/or construction and regardless of whether any design or construction has been otherwise approved by the City. Changes to the Contract Documents, including, without limitation, changes in the Contract Amount or extensions of the date for Substantial Completion, shall only be by Change Order issued by the City.
- .5 Revisions to the design shall not exceed the percentage of the Project's overall design fee as a percentage of the total construction cost – consistent with the Schedule of Values – for Change Order conditions, unless Approved by the City.

### **SC-32 Adjustment to Contract Amount (Replaces General Contract Condition 1104.2.E)**

General Contract Condition 1104.2.E is hereby deleted in its entirety and replaced with the following:

#### **E. Mark Up for Overhead and Profit**

- (1) The total markup for overhead and profit on change orders, shall not exceed 12% of the actual costs for the Contractor and shall not exceed 3% of the actual costs for the subcontractor as set forth in GC 1104.2.A-D.
- (2) Neither General Contractors nor Subcontractors shall receive markup on markup.
- (3) All of the Contractor's and Subcontractor's field and office overhead and supervision costs are included in the markups listed above
- (4) Neither the Contractor nor Subcontractor of any tier, nor the City in the case of a credit, will apply or attempt to apply these percentage adjustments in a way that would pyramid either the cost or credit because of the involvement of a Subcontractor or sub-subcontractor. Written justification and approval shall be required for any percentages exceeding a total of twelve percent (12%).
- (5) The Contractor shall be allowed a three percent (3%) markup on the actual price charged by a Subcontractor who actually performs the Work; provided that, in no event shall the total markup exceed the amount allowed under GC 1104.2.E(1) above.

### **SC-33 Surety Bonds (Modifies and Supplements General Contract Condition 1501)**

General Contract Condition 1501 SURETY BONDS is hereby supplemented as follows:

- .4 The Performance and Payment Bonds required under GC 1502 and 1503 shall remain in full force and effect throughout the Warranty period following Final Completion. This obligation of the Contractor shall continue notwithstanding the making or acceptance of final payment under GC 2003.



## Exhibit N

### **SC-34 Insurance (Replaces General Contract Condition 1601)**

General Contract Condition 1601 INSURANCE is hereby amended and supplemented by the addition of the following:

The City intends to utilize a Rolling Owner Controlled Insurance Program (“ROCIP”) for this Project. The proposed requirements for this program are attached as Exhibit F of the Design-Build Agreement. The Contractor shall strictly comply and insure that its subcontractors comply with the requirements of the ROCIP program as finalized. Contractor will contact the City’s Risk Management Office (“Risk”) before finalizing each task to determine if any additional coverage at the task level will be required. The Contractor will provide documentation requested by Risk, including the scope of Work, location where Work will be performed and known projects risks so that risk can determine what additional insurance coverages, if any, will be required for that Work. Additional coverages may include, but are not limited to, Railroad Protective Liability Insurance. Contractor will obtain, or require that its subcontractors obtain, additional phase specific coverage required by Risk. Contractor will provide the City with a certificate of insurance, preferably an ACORD certificate, confirming that the required coverage, at the required limits, is in place before starting Work. Certificate(s) of insurance for any additional coverage will be attached to each task. Any coverage that Contractor or its subcontractors are required to purchase and any additional insurance required on a task basis shall comply with the following requirements:

### **SC-35 Construction Inspection by the City (Replaces General Contract Condition 1701.1)**

General Contract Condition 1701.1 is hereby is hereby deleted in its entirety and replaced with the following:

- .1 Persons who are employees of the City or who are under contract to the City or the City as lessee will be assigned to inspect and test the Work. These persons may perform any tests and observe the Work to determine whether or not designs, materials used, manufacturing and construction processes and methods applied, and equipment installed satisfy the requirements of the drawings and specifications, accepted Shop Drawings, Product Data and Samples, and the Contractor's warranties and guarantees. The Contractor shall permit these inspectors unlimited access to the Work and provide means of safe access to the Work, which cost shall be included as a cost of the Work without any increase to the Lump Sum Contract Price. In addition, Contractor shall provide whatever access and means of access are needed to off-site facilities used to store or manufacture materials and equipment to be incorporated into the Work and shall respond to any other reasonable request to further the inspector's ability to observe or complete any tests. Such inspections shall not relieve the Contractor of any of its quality control responsibilities or any other obligations under the Design-Build Contract. All inspections and all tests conducted by the City are for the convenience and benefit of the City. These inspections and tests do not constitute acceptance of the materials or Work tested or inspected, and the City may reject or accept any Work or materials at any time prior to the inspections pursuant to General Contract Condition 2002, whether or not previous inspections or tests were conducted by the inspector or a City representative.

### **SC-36 Contractor’s Warranties, Guarantees and Correction of Work (Replaces General Contract Condition 1801.1)**

General Contract Condition 1801.1 CONTRACTOR’S WARRANTIES, GUARANTEES AND CORRECTION OF WORK is hereby deleted in its entirety and replaced with the following:

- .1 The Contractor warrants that all parts, materials, components, equipment, systems and other items incorporated into the Work shall be new, unless otherwise specified, and

## Exhibit N

suitable for the purpose used, and will be of good quality, free from faults and defects and in conformance with the Contract Documents. The Contractor also warrants that its workers will be sufficiently skilled to produce quality Work that is free of faults and defects. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor, when requested, shall furnish the City with satisfactory evidence of the kind and quality of materials and equipment proposed to be incorporated into the Work. The Contractor further warrants that the construction processes and methods employed to perform the Work shall have in the past proven to be suitable for the results expected. If the Contractor proposes to use unproven or untried processes, products, products or methods, the Project Manager must be advised of that proposal, in writing, prior to using the proposed process. The City may permit such experimentation, and it may require special guarantees of the Contractor to cover the Work produced by any new untried process, method or product. The Contractor further warrants that the Work and completed Project shall (1) conform to all professional engineering principles generally accepted as standards in the industry in the State of Colorado, (2) be free from defects (including design errors), and (3) incorporate specifications and/or drawings selected or prepared for use during construction that are appropriate for their intended purposes.

### **SC-37 Contractor's Warranties, Guarantees and Correction of Work (Replaces General Contract Condition 1801.4.A)**

General Contract Condition 1801.4.A CONTRACTOR'S WARRANTIES, GUARANTEES AND CORRECTION OF WORK is hereby deleted in its entirety and replaced with the following:

- .4 The Contractor's warranties and guarantees for all Work components shall continue for the following periods:
  - A For Contracts executed under the authority of the Manager of DOTI, following the achievement of Block Substantial Completion for a period of three (3) years after the date of such Block Substantial Completion for all elements and aspects of the Work included within each corresponding Block Substantial Completion scope; or for such longer period of time as may be prescribed by the terms of any special warranties and guarantees required by the Contract Documents.

The obligations of GC 1801.4 shall survive termination of the Contract under the provisions of Title 22.

### **SC-38 Site Inspections and Investigations**

Contractor hereby acknowledges that, prior to submitting its bid, the Contractor has the opportunity to inspect the Work site and its surroundings. Although the Contractor is not required to make such an inspection before bidding, for purposes of the Design-Build Contract, it shall be conclusively presumed that by failing to make such an inspection, the Contractor has waived the right to later claim additional compensation or time extensions for conditions which would have been evident had the site been inspected. Since the bid information cannot be guaranteed, the Contractor shall have assumed the risks attendant to successful performance of the Work and shall never make claim

## Exhibit N

for additional compensation or time extensions on the grounds that the nature or amount of Work to be done was not understood by the Contractor at the time of the bidding.

### **SC-39 Contract Forms**

In accordance with the terms and conditions of the Contract Documents, the City requires the use of certain form documents in complying with or satisfying various obligations, notifications and conditions in contracting with the City or performing Work hereunder. These form documents are referenced by title throughout the Contract Documents for mandatory use as directed; provided that Contractor acknowledges that, during the term of the Design-Build Contract, changes may be made to the forms by the City and/or additional or different forms may be added or substituted for use by the City so long as such changes shall not be inconsistent with the terms and conditions set forth in the Contract Documents. The City's current Certificate of Contract Release form is attached on the following page.

)

# Exhibit N



Date

Name

Company

Street

City/State/Zip

(SAMPLE)

RE: Certificate of Contract Release for  
CITY OF DENVER CONTRACT NO. DESIGN/BUILD

Certificate of Contract Release

Received this date of the City and County of Denver, as full and final payment of the cost of the improvements provided for in the foregoing contract, dollars and cents (\$\_), in cash, being the remainder of the full amount accruing to the undersigned by virtue of said contract; said cash also covering and including full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, and the undersigned hereby releases said City and County of Denver from any and all claims or demands whatsoever, regardless of how denominated, growing out of said contract.

And these presents are to certify that all persons performing work upon or furnishing materials for said improvements under the foregoing contract have been paid in full and this payment to be made is the last or final payment.

Contractor's Signature

Date Signed

If there are any questions, please contact me by telephone at (720) 913-XXXX. Please return this document via facsimile at (720) 913-1805 and mail to original to the above address.



## Exhibit N

### **SC-40 Disposal of Non-Hazardous Waste at DADS**

In accordance with the Landfill Agreement made between the City and Waste Management of Colorado, Inc., the Contractor may be required to haul dedicated loads to the Denver-Arapahoe Disposal Site (“DADS”) for disposal in accordance with the Technical Requirements Section 5 Environmental Requirements. DADS is located at Highway 30 and Hampden Avenue in Arapahoe County, Colorado. The City will pay all fees associated with such disposal but the Contractor shall be responsible for the costs of transporting the loads. The Contractor shall not use Gun Club Road between I-70 and Mississippi Avenue as a means of access to DADS.

### **SC-41 Greenprint Denver Requirements**

In accordance with the City and County of Denver Executive Order 123: Greenprint Denver Office and Sustainability Policy, as amended, Contractor shall adhere to sections of Executive Order 123 pertinent to the construction of the built environment. This includes but is not limited to: all construction and renovation of buildings shall follow instructions and memorandum for high performance buildings; horizontal projects shall include the use of fly ash concrete and recycled aggregate where possible; and, all projects shall recycle construction and demolition waste, and install materials that contain recycled content whenever possible using the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) as guidance. Non-hazardous solid waste that is eligible for reuse or recycling is not subject to the DADS disposal requirement defined in SC-40.

A completed “Greenprint Denver Closeout Form for Construction Projects” shall be delivered to the Project Manager as a submittal requirement of Final Completion.

### **SC-42 Prohibition on Use of CCA-Treated Wood Products**

The use of any wood products pressure-treated with chromated copper arsenate (CCA) is prohibited. Examples of CCA-treated wood products include wood used in play structures, decks, picnic tables, landscaping timbers, fencing, patios, walkways and boardwalks.

### **SC-43 Waiver of: Part 8 of Article 20 of Title 13, Colorado Revised Statutes**

The Contractor specifically waives all the provisions of Part 8 of Article 20 of Title 13, Colorado Revised Statutes regarding defects in the Work under this Construction Contract.

### **SC-44 Debarred Subcontractors Prohibited**

The Contractor is prohibited from hiring any subcontractor currently debarred by the City in accordance with section 20-77 of the Denver Revised Municipal Code. Without limiting the foregoing, the Contractor is prohibited from hiring any subcontractor ineligible under any of the Federal Provisions of this Contract, including those in Part 4 of the Contract.

### **SC-45 Attorney’s Fees**

Colorado Revised Statute 38-26-107 requires that in the event any person or company files a verified statement of amounts due and unpaid in connection with a claim for labor and materials supplied on this Project, the City shall withhold from payments to the Contractor sufficient funds to insure the payment of any such claims. Should the City and County of Denver be made a party to any lawsuit to enforce such unpaid claims or any lawsuit arising out of or relating to such withheld funds, the Contractor agrees to pay to the City its costs and a reasonable attorney’s fee which cost shall be included as a Cost of the Work.

## Exhibit N

Because the City Attorney Staff does not bill the City for legal services on an hourly basis, the Contractor agrees a reasonable fee shall be computed at the rate of one hundred dollars per hour of City Attorney time.

### **SC-46 Acceptance or Approval by City**

Pursuant to the Design-Build Contract, and the other contract documents, the City may be required to review various documents, design, specifications and other information submitted by the Contractor and /or Designer. It is expressly understood and agreed by the Contractor that under no circumstances shall any review by the City, or its agents or representative relieve the Contractor or the Designer, or any engineer, architect or other consultant retained by, through or under the Contractor, of any liability, obligation, or responsibility, whether by statute, regulation, contract, custom or otherwise, for the design and construction of the Project and the compliance of the Work with the requirements of this Contract, including without limitation, compliance with all Contract Documents, except to the extent amended by Change Order. The City's acceptance or approval of any deviation or omission from, or conflict or contradiction with the Contract Documents must be in writing and an appropriate Change Order issued modifying the requirements of the Contract Documents.

### **SC-47 Spare Parts**

Prior to Substantial Completion, the Contractor shall deliver new, unopened containers of maintenance supplies, tools, spare parts, extra stocks of materials, finish materials, paint, and similar physical items to the City for those items typically requiring repair or replacement during the first two (2) years of building operation in quantities as directed by the City. Such maintenance supplies, tools, spare parts, extra stocks of materials, and similar physical items may include, but not necessarily be limited to, any special manufactured items, paint, devices or parts that are not available through regular procurement procedures and shall be delivered to the Project and placed in a location as directed by the City.

### **SC-48 Start-Up**

The Contractor, with the assistance of operating personnel made available by the City, will direct the checkout of utilities and operations of systems and equipment for readiness, perform initial start-up and testing procedures, and instruct operating personnel in the operation of said utilities, systems and equipment.

### **SC-49 Warranty Inspection Services**

At the time of Final Completion and during the applicable general warranty period, the Contractor shall provide quarterly, or as otherwise agreed to by the City, on-site review and inspection services. At the end of the month preceding the last month of the applicable general warranty period, the City Project Manager and Contractor shall visit the Project to conduct a final review and inspection of the completed construction to identify additional warranty work required of the Contractor prior to expiration of the applicable general warranty period. The Contractor shall provide for the City's review and approval a written report of the findings of the Contractor, a list of all warranty work to be completed, and a schedule for that completion.

### **SC-50 Mitigation of Damages**

1. Notwithstanding any right or obligation of the City or the Contractor to suspend, abandon, terminate, or otherwise delay or stop Work under this Contract, or to impose Liquidated Damages under this Contract, each party shall have an affirmative duty to take any and all reasonable actions

## Exhibit N

to mitigate loss or damage to each party as a result of such suspension, abandonment, termination, or other delay or stoppage of Work, or imposition of Liquidated Damages.

2. The duty to mitigate damages shall apply to both the City and the Contractor.
3. Neither the City nor the Contractor shall take any steps or perform any act or refuse or fail to perform any act that would unreasonably interfere with or preclude the other party from taking reasonable action to mitigate losses. No provision of this Contract shall be applied, interpreted, or invoked in a manner that would unreasonably interfere with or preclude the other party from taking such reasonable action to mitigate losses.

### SC-51 Defense and Indemnification

General Condition 1602, DEFENSE AND INDEMNIFICATION, is modified to read in full as follows:

#### 1602 DEFENSE AND INDEMNIFICATION

- (a) To the fullest extent permitted by law, the Contractor hereby agrees to defend, indemnify, and hold harmless City, its appointed and elected officials, agents and employees against all liabilities, claims, judgments, suits or demands for damages to persons or property arising out of, resulting from, or related to the Work performed under this Contract that are due to the negligence or fault of the Contractor or the Contractor's agents, representatives, subcontractors, or suppliers ("Claims"). This indemnity shall be interpreted in the broadest possible manner consistent with the applicable law to indemnify the City.
- (b) Contractor'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 suit has been filed and even if Contractor is not named as a Defendant.
- (c) Contractor will defend any and all Claims which may be brought or threatened against City and will 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 shall be in addition to any other legal remedies available to City and shall not be considered City's exclusive remedy.
- (d) Insurance coverage requirements specified in this Contract shall in no way lessen or limit the liability of the Contractor under the terms of this indemnification obligation. The Contractor shall 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 Contract.

### SC-52 Use of the Colorado Department of Transportation's Specifications

The Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction section 200 through 700, and as specifically provided in this Special Contract Condition for 100 sections, shall be used for this contract.

- A. **All Sections 200 through 700 are revised as follows:** Delete all Method of Measurement and Basis of Payment specifications.
- B. **Include Section 101. References to Subsections 101.09, 101.28, 101.47 and 101.54** are hereby amended as follows, to replace references to CDOT positions with the applicable City positions:

## Exhibit N

“Engineer,” “Resident Engineer,” “Project Engineer,” and “Area Engineer” are replaced by “the City Project Manager.”

“Region Transportation Director” is replaced by “the City Engineer.”

“Chief Engineer” is replaced by “the City’s Manager of DOTI.”

- C. References to Sections 102, 103, and 104** in Sections 200 through 700 are revised as follows:

CDOT	CITY
Section	Contract Condition
104.02(a)	Title 14
104.02 (b), (c)	Title 11, 21
104.03	Title 11
104.04	Title 8 and the Technical Requirements

- D. References to Section 105 in Section 200 through 700,** are revised as follows:

<u>CDOT</u>	<u>CITY</u>
Section	Contract Condition
105.01	Titles 2 and 3
105.02	Title 4 and Section 2 of the Technical Requirements
105.03	Title 3 and performance conditions throughout the Contract Documents
105.04	Title 3 and performance conditions throughout the Contract Documents
105.05	Title 3 and performance conditions throughout the Contract Documents
105.06	Title 3 and performance conditions throughout the Contract Documents
105.07	Title 3 and performance conditions throughout the Contract Documents
105.09	Section 2.4 of Contract
105.10	Titles 7 and 8
105.11	Titles 7 and 8
105.12	Title 7
105.13	Title 3, SC 16
105.14	Title 2 and/or as amended by SC-11 and/or the Contract
105.15	Title 17 and Quality Control Requirements
105.16	Title 17
105.17	Title 8 and Title 3
105.18	Title 8
105.19	Title 8 and Title 3
105.20	Title 8 and Title 3
105.21	Titles 19 and 20
105.22	Title 13 and the Contract
105.23	Title 13 and the Contract
105.24	Title 12

(1) – References to Incentive/ Disincentives Payment. There are no incentive payments only disincentive payments on this project.



## Exhibit N

- E. Include Section 106 Control of Material.**
- F. References to Sections 107, 108, and 109 in Sections 200 through 700 are redirected as follows:**

<b>CDOT</b>	<b>CITY</b>
<u>Section</u>	<u>Contract Condition</u>
107.01	Title 3 and Title 8
107.02	Title 3
107.03	Title 3
107.04	Titles 3 and 8
107.05	Title 23
107.06	Title 3 and Title 8
107.07	Titles 3 and 8
107.08	Title 8
107.09	Title 8
107.10	Title 8
107.11	Title 8
107.12	Title 8
107.13	Title 8
107.14	Title 8
107.15	Title 16
107.16	Title 19
107.17	Titles 3 and 8
107.19	Technical Requirements Section 8 Right-of-Way, and Section 1.4 of the Instruction to Proposers.
107.20	There is not a corresponding City condition beyond indemnity per GC-Title 16
107.21	Titles 17, 18, 19, 20, and 23
107.22	Title 23
107.23	Title 8 and the technical requirements
107.24	Title 8 and performance conditions throughout the Contract Documents
107.25	Title 8 and performance conditions throughout the Contract Documents
108.08	Titles 3, 6, 7, and 11
109.02	Title 9
109.03	Not applicable
109.04	Titles 11 and 21
109.05	Not applicable
109.06	Title 9 and SC-26
109.07	Title 9
109.09	Title 20
109.10	Titles 11, 12 and 13

Exhibit O - Notice to Proceed (Sample)

**NOTICE TO PROCEED  
(SAMPLE)**

Current Date

Name  
Company  
Street  
City/State/Zip**CONTRACT NO. 202054607 – CM/GC Services for Wastewater Building Improvements**

In accordance with General Contract Condition 302 of the Standard Specifications for Construction, General Contract Conditions, 2011 Edition, you are hereby authorized and directed to proceed on \_\_\_\_\_ with the work of constructing contract number 202054607, as set forth in detail in the contract documents for the City and County of Denver.

With a contract time of 300 calendar days, the project must be complete on or before \_\_\_\_\_.

If you have not already done so, you must submit your construction schedule, in accordance with General Contract Condition 306.2.B, to the Project Manager within 10 days. Additionally, you must submit your tax-exempt certificate, and copies of your subcontractors' certificates, in accordance with General Contract Condition 323.5, to the Project Manager as soon as possible. Failure to submit these certificates will delay processing of payment applications.

Sincerely,

By: \_\_\_\_\_  
Lesley B. Thomas  
City Engineer

cc:

Exhibit P - Insurance ACORD



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
03/01/2021

**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).**

<b>PRODUCER</b> Aon Risk Services Central, Inc. Chicago IL Office 200 East Randolph Chicago IL 60601 USA	<b>CONTACT NAME:</b> PHONE (A/C. No. Ext): (866) 283-7122      FAX (A/C. No.): (800) 363-0105	
	<b>E-MAIL ADDRESS:</b>	
<b>INSURER(S) AFFORDING COVERAGE</b>		<b>NAIC #</b>
<b>INSURED</b> PCL Constructors Inc. 2000 South Colorado Blvd. Tower Two, Suite 2-500 Denver CO 80222 USA	<b>INSURER A:</b> Indian Harbor Insurance Company      36940	
	<b>INSURER B:</b>	
	<b>INSURER C:</b>	
	<b>INSURER D:</b>	
	<b>INSURER E:</b>	
	<b>INSURER F:</b>	

Holder Identifier :

**COVERAGES      CERTIFICATE NUMBER: 570086210824      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. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG
	<b>AUTOMOBILE LIABILITY</b>  <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY ( Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED    RETENTION						EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y / <input type="checkbox"/> N	N / A				<input type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT
A	Env Contr Prof			CE0744694804 CPX742008704 SIR applies per policy terms & conditions	07/01/2020	07/01/2021	Per Claim/Aggr \$2,000,000 Per Claim/Aggr \$5,000,000 SIR \$25,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
 Re: 16th St. Mall Redevelopment - Contract 202157899.

Certificate No : 570086210824

**CERTIFICATE HOLDER**

**CANCELLATION**

City and County of Denver, Department of Transportation & Infrastructure Attn: Dani Abbott 201 West Colfax Ave. Denver CO 80202 USA	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  
--	---



## CERTIFICATE OF LIABILITY INSURANCE

DATE (MMDD/YYYY)  
02/26/2021

**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).**

<b>PRODUCER</b> MARSH USA INC. 540 W. MADISON CHICAGO, IL 60661  CN102291939-GAWX-20-21	<b>CONTACT NAME:</b> PHONE (A/C, No, Ext):      FAX (A/C, No): E-MAIL: ADDRESS:  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 70%;">INSURER(S) AFFORDING COVERAGE</th> <th style="width: 30%;">NAIC #</th> </tr> <tr> <td>INSURER A : Old Republic Insurance Company</td> <td>24147</td> </tr> <tr> <td>INSURER B : Indian Harbor Insurance Company</td> <td>36940</td> </tr> <tr> <td>INSURER C :</td> <td></td> </tr> <tr> <td>INSURER D :</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Old Republic Insurance Company	24147	INSURER B : Indian Harbor Insurance Company	36940	INSURER C :		INSURER D :		INSURER E :		INSURER F :	
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INSURER C :															
INSURER D :															
INSURER E :															
INSURER F :															
<b>INSURED</b> PCL Construction Services, Inc. 2000 South Colorado Blvd., Tower Two, Suite 2-800 Denver, CO 80222															

**COVERAGES      CERTIFICATE NUMBER:** CHI-009785473-03      **REVISION NUMBER:** 3

**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 INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MMDD/YYYY)	POLICY EXP (MMDD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:			MWZY 313941 20	07/01/2020	07/01/2021	EACH OCCURRENCE \$ 10,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 10,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 10,000,000 GENERAL AGGREGATE \$ 10,000,000 PRODUCTS - COM/OP AGG \$ 10,000,000 \$
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY			MWTS 313942 20	07/01/2020	07/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED    RETENTION \$			CPX742008707	07/01/2020	07/01/2021	EACH OCCURRENCE \$ 20,000,000 AGGREGATE \$ 20,000,000 \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	MWC 313940 20 (AL, AZ, CA, CO, CT, FL, GA, HI, KY, LA, MD, MN, MO, NC, NJ, NY, OK, OR, SC, TN, TX, UT, VA, VT, WI)	07/01/2020	07/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 2,000,000 E.L. DISEASE - EA EMPLOYEE \$ 2,000,000 E.L. DISEASE - POLICY LIMIT \$ 2,000,000

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)**  
 Re: 16th Street Mall - Contract 202157899; PCL Job/Contract #: 202157899

City and County of Denver, its Elected and Appointed Officials, Employees and Volunteers are included as Additional Insured (except Workers' Compensation) where required by written contract. This insurance is primary and non-contributory over any existing insurance and limited to liability arising out of the operations of the named insured subject to policy terms and conditions. Waiver of Subrogation is applicable where required by written contract, subject to policy terms and conditions. The General Liability policy includes Separation of Insureds, subject to policy terms and conditions.

<b>CERTIFICATE HOLDER</b>  City and County of Denver Department of Transportation & Infrastructure 201 West Colfax Ave. Denver, CO 80202	<b>CANCELLATION</b>  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 USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>
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## IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### BLANKET NOTIFICATION TO OTHERS CANCELLATION

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

#### SCHEDULE

**Number of Days Notice:** 120

**Person or Organization:** All certificate holders where notice of cancellation is required by written contract with the named insured subject to the following procedures:

We will mail or deliver notification that such coverage part has been cancelled to each person or organization shown in an accurate schedule provided to us by the first named insured at inception of the policy or as periodically updated. Notice will be mailed or delivered as soon as practicable after an accurate list of names and addresses is provided to us by the first named insured in response to our request.

- A.** If we cancel this Policy by written notice to the first Named Insured for any reason other than nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation:
- 1.** To the name and address corresponding to each Person or Organization shown in the above Schedule, and
  - 2.** At least 10 days prior to the effective date of the cancellation, as advised in our notice to the first Named Insured, or the longer Number of Days Notice if indicated in the above Schedule.
- B.** If we cancel this Policy by written notice to the first Named Insured for nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation to the name and address corresponding to each Person or Organization shown in the above Schedule at least 10 days prior to the effective date of such cancellation.
- C.** If notice as described in paragraphs **A.** or **B.** of this endorsement is mailed, proof of mailing will be sufficient proof of such notice.

## IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### BLANKET NOTIFICATION TO OTHERS CANCELLATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART/FORM

#### SCHEDULE

**Number of Days Notice:** 120

**Person or Organization:** All certificate holders where notice of cancellation is required by written contract with the named insured subject to the following procedures:

We will mail or deliver notification that such coverage part has been cancelled to each person or organization shown in an accurate schedule provided to us by the first named insured at inception of the policy or as periodically updated. Notice will be mailed or delivered as soon as practicable after an accurate list of names and addresses is provided to us by the first named insured in response to our request.

- A.** If we cancel this Policy by written notice to the first Named Insured for any reason other than nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation:
- 1.** To the name and address corresponding to each Person or Organization shown in the above Schedule, and
  - 2.** At least 10 days prior to the effective date of the cancellation, as advised in our notice to the first Named Insured, or the longer Number of Days Notice if indicated in the above Schedule.
- B.** If we cancel this Policy by written notice to the first Named Insured for nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation to the name and address corresponding to each Person or Organization shown in the above Schedule at least 10 days prior to the effective date of such cancellation.
- C.** If notice as described in paragraphs **A.** or **B.** of this endorsement is mailed, proof of mailing will be sufficient proof of such notice.



## IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

### BLANKET NOTIFICATION TO OTHERS CANCELLATION

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY

#### SCHEDULE

NUMBER OF DAYS NOTICE: 120

PERSON OR ORGANIZATION: ALL CERTIFICATE HOLDERS WHERE NOTICE OF CANCELLATION IS REQUIRED BY WRITTEN CONTRACT OR AGREEMENT WITH THE NAMED INSURED SUBJECT TO THE FOLLOWING PROCEDURES:

WE WILL MAIL OR DELIVER NOTIFICATION THAT SUCH COVERAGE PART HAS BEEN CANCELLED TO EACH PERSON OR ORGANIZATION SHOWN IN AN ACCURATE SCHEDULE PROVIDED TO US BY THE FIRST NAMED INSURED AT INCEPTION OF THE POLICY OR AS PERIODICALLY UPDATED.

NOTICE WILL BE MAILED OR DELIVERED AS SOON AS PRACTICABLE AFTER AN ACCURATE LIST OF NAMES AND ADDRESSES IS PROVIDED TO US BY THE FIRST NAMED INSURED IN RESPONSE TO OUR REQUEST.

A. IF WE CANCEL THIS POLICY BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR ANY REASON OTHER THAN NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION:

1. TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE ABOVE SCHEDULE AND
2. AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF THE CANCELLATION, AS ADVISED IN OUR NOTICE TO THE FIRST NAMED INSURED, OR THE LONGER NUMBER OF DAYS NOTICE IF INDICATED IN THE ABOVE SCHEDULE.

FORM A

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**IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY**

- B. IF WE CANCEL THIS POLICY BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE ABOVE SCHEDULE AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF SUCH CANCELLATION.
  
- C. IF NOTICE AS DESCRIBED IN PARAGRAPHS A. OR B. OF THIS ENDORSEMENT IS MAILED, PROOF OF MAILING WILL BE SUFFICIENT PROOF OF SUCH NOTICE.

**FORM A**

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