

City and County of Denver
State of Colorado

City and County of Denver
Department of Aviation

Contract Documents
For

Former Stapleton International Airport

Highline Canal Phase IV and
Section 10 Restoration Project

Contract No. 201736001
August 1, 2017

AECOM

**CITY AND COUNTY OF DENVER
DEPARTMENT OF AVIATION
Revenue Management Division**

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SECTION 01010

SUMMARY OF THE WORK

PART 1 – GENERAL

1.1 GENERAL SUMMARY OF THE WORK:

A. General

1. This project includes the following:
 - a) Mobilization to the site (Task 1 and Task 2)
 - b) Perform General Conditions
 - c) Create, submit, obtain approval, and inactivate a site SWMP (Task1)
 - d) Install and maintain SWMP soil controls and security fencing
 - e) Providing all required permits
 - f) Remove and stockpile overburden soil
 - g) Remove and dispose of crusher fines soil
 - h) Perform excavated canal confirmation environmental sampling and testing prior to backfill operations
 - i) Perform backfilling and compaction (95% or 100%) of soil from onsite and offsite
 - j) Perform geotechnical (and environmental pre-testing of backfill soils) QA/QC testing before and during backfill operations
 - k) Perform periodic surveying and submit an As-Built drawing
 - l) Perform seeding and mulching of finished site
 - m) Submit a closeout report and obtain a NAD for the site
 - n) Demobilization from the site (Task 1 and Task 2)
 - o) Size, segregate, and dispose of concrete, asphalt, and debris in Section 10 (Task 2)
 - p) Collect, transport and dispose of all Section 10 remaining material to facilitate sale of Land (Task 2)
2. The above listed components throughout the Contract Documents will be referred to as the Highline Canal Phase IV and Section 10 Restoration Project. All work associated with this project will be performed in accordance with these specification, the project drawings, the Voluntary Clean Up Plan (VCUP) Supplement, and the Materials Management Plan located in the appendices of these specifications. The project consists of two tasks including Task 1 for the removal and stockpiling of overburden soil, removing and disposing of crusher fines from the canal to a designated location/facility, and backfilling and compacting clean soil to a minimum compaction of 95 to 100 percent standard proctor maximum density. Task 2 includes the removal and disposal of any remaining runway, taxiway, or debris material to prepare the property for land transfer. The general project limits shall be to the limits shown on the drawings as described in the project plans and specifications.
3. The remediation interfaces are shown on the Contract Drawings. Except where otherwise noted, all activities will terminate at the removal interface indicated on the Contract

Drawings.

4. The drawings and exhibits provided as a part of this contract package show the overall dimensions. They are provided for contractor's information and convenience only. They do not reflect the complete extent and nature of materials within the project site. The contractor's bid for the project shall be based upon their own examination of the project site and a thorough review of the performance requirements established within the Contract Documents.
5. The contractor shall protect all existing utilities with the project work area.

B. Quality Control

1. The contractor shall prepare, maintain and use a written QC System manual for the work performed. The QC System manual shall be submitted to the Project Manager for acceptance prior to the Notice to Proceed. The QC Manual shall include requirements to ensure the contractor is using the latest design documents and approved changes. The contractor shall develop and maintain appropriate records to track utility disconnect points, utilities that are to remain in service, Certificates of Destruction, inspection records, and appropriate approval signatures for acceptance of the work performed.
2. The contractor shall provide communication and coordination with adjacent tenants, landowners, utility providers, and contractors on all safety related issues. The contractor shall not interfere with ongoing tenant operations in adjacent properties.

C. Hazardous Materials

1. All soils encountered during removal that appear to be contaminated with other than known materials, shall be removed, handled, and stored as further outlined in the project specifications, Section 02089. The contractor shall protect its workers and equipment and immediately notify the Project Manager for further direction.
2. The contractor shall remove all debris, trash, and abandoned materials that are within the project area. If re-usable, these materials may be recycled or sold. If they are to be disposed of, they must be transported to DADS for disposal as demolition debris, as described in these specifications.
3. The contractor shall inspect all areas within the project area for other containerized hazardous materials. These may include ACM, paints, lubricants, cleaners, HVAC chemicals, maintenance materials, radioactive sources, firefighting foam, and all other materials, which may not be legally disposed of at DADS. The contractor shall collect all discovered materials into a central staging area and prepare these materials for transportation and disposal at appropriate facilities. The contractor shall submit the final transportation and disposal entities for acceptance by the Project Manager sufficiently in advance of the shipments to allow each entity to be evaluated. The contractor shall refer to the Materials Management Plan located in Appendix A of these specifications for the removal of non-asbestos containing hazardous materials.

E. Storm Drain

1. Storm drain lines within the project site shall be preserved and protected during the course of the project.
2. The contractor shall protect and preserve these utilities. Should the contractor's activities damage any utility, the contractor shall immediately repair and restore service, or provide alternative service, at no additional cost to CCOD.

F. Temporary Facilities

1. The contractor shall be responsible for providing power, water, telephone, sanitary facilities, office, trailer space, fencing, signage, and any other temporary utility or support during the execution of the work. Public utility connections will not be available on site. Water from hydrants in the project area must be obtained from the City of Aurora with the proper use on a water meter.

G. Submittal of Work Plan/Excavation Plan

1. Prior to the Notice To Proceed, the contractor shall submit a work plan/excavation plan for acceptance by the City that details the manner and sequence that will be used complete the project, protect existing facilities to remain, describe excavation techniques and methods, protect workers as well as the public and the environment, support its activities on-site, provide for safe hauling of materials (traffic plan), and all other project performance requirements established within the Contract Documents. This plan shall have a specific section on the sequence of excavation to maintain stability. The Excavation Plan will follow the guidelines in Specification 01550 and shall be signed and sealed by a professional engineer registered in the state of Colorado, if required. The contractor is responsible for the stability of the excavation.
2. The contractor shall protect the following:
 - a) Storm sewer, sanitary sewer, electrical, gas, telephone, and water facilities identified to remain, sidewalks
 - b) Monitor well locations to remain,
 - c) Telephone, power, water, and gas services to nearby tenants and users.

H. Coordination and Interfaces with Ongoing Operations

1. The contractor shall recognize that numerous other activities, contractors, consultants, tenants, and agencies will be working around and adjacent to the work area and that coordination with the City in all aspects of the demolition activities is part of the overall execution of his work and shall be included in the contractor's bid.
2. This contract requires the excavation and removal of crusher fines concrete material as identified on the project drawings. The contractor shall provide all necessary permits, traffic controls, soils controls devices, ingress/egress gravel mats, protective devices, backfill, paving, and detours necessary to comply with the requirements of Denver Public

Works, the Denver Building Department, the City of Aurora, and to protect the traveling public. At no time shall public streets be closed to traffic without alternate detours being in place. At no time shall the contractor block or impede traffic without alternate routes being coordinated with Project Manager and the other site users.

I. Permits

1. The contractor shall secure and pay for all permits necessary to complete the work within the time frames indicated in the Contract Documents. The contractor shall secure permits from the cities of Denver and Aurora, the State of Colorado, and all other necessary agencies.

J. Contractor's Superintendent

1. The contractor shall maintain a full time qualified superintendent at the site during all hours of operation, including operations of subcontractor's. The superintendent shall be a permanent, full-time employee of the general contractor, possess appropriate construction management, OSHA supervisor certifications, have appropriate supervisory experience, and not be a subcontracted employee. The superintendent will perform only the duties of a superintendent and not multiple positions such as equipment operator or laborer and must be approved by the CCoD Project Manager.

1.2 RELATED DOCUMENTS:

1. Drawings, General Conditions of the Contract (GCC) as referred to the City and County of Denver's "Yellow Book", the site Soil Characterization Management Plan, the Materials Management Plan, the VCUP, and other General and Supplementary Conditions, plans and the specification sections apply to the Work described within this section.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01010

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SCOPE

This section covers the methods and procedures, which will be used to measure the Contractor's work and to provide payment. The general outline of the principal features of each item as listed does not in any way limit the responsibility of the bidder for thoroughly reviewing the drawings and specifications to understand the intent of the project and to thoroughly investigate the actual conditions of the building demolition or soil remediation to determine the scope of work included in each bid item. Payment to the Contractor of the prices stipulated in the bid form will constitute complete compensation for all work shown on the drawings, provided in the specifications or other Contract Documents, and all costs of accepting the general risks, liabilities, and obligations expressed or implied. Payment under all items shall include, but may not necessarily be limited to, compensation for furnishing all supervision, labor, equipment, overhead, profit, materials and services, and performing all work to accomplish and complete the work described in the plans and specifications and determined by the Contractor to be required based on his own review of existing conditions.

1.2 RELATED SECTIONS:

- A. General Conditions of the Contract referred to as the City and County of Denver's "Yellow Book." (in its entirety).

1.3 METHODS:

- A. **Lump Sum Items.** The quantities of work performed under lump sum items will not be measured except for the purpose of determining reasonable progress payments; and progress payments will be made in accordance with the General Conditions.
- B. **Unit Price Items.** Payments will be made for unit prices in accordance with the measurement methods set forth in this section. The unit prices will apply for all quantities of the items.

1.4 ITEM DESCRIPTIONS:

001. **Mobilization.** This item consists of providing all labor, equipment and materials to mobilize all construction equipment and personnel to the project site and provide the services and installation of facilities as described within the Contract Documents.

This item will be measured and paid for as a Lump Sum Item.

002. **General Conditions.** This item consists of providing all labor, equipment and materials to provide the initial project submittals, plans, insurance, permits, bonds, and other documents as well as submittals and reports, plans and other documents required throughout the execution of the work, as described in the Contract Documents. Included in this section shall be the costs of the site superintendent, utilities, vehicles, temporary facilities, and project management.

This item will be measured and paid for as a Lump Sum Item.

003. **SWMP Submittal, Approval, and Inactivation.** This item consists of providing all labor, equipment and materials to either transfer the present SWMP or develop, submit, and receive an approval notice for a project SWMP as described within the Contract Documents. This item includes developing and submitting a SWMP and an Inactivation Request to the State and delivering an approval SWMP letter and inactivation request letter from the State to the CCoD Project Manager. An integral part of this item is to insure the contractor meets the vegetation growth requirement for closure of the SWMP.

This item will be measured and paid for as a Lump Sum Item.

004. **SWMP Controls, BMPs, and Fence Installation and Maintenance.** This item consists of providing all labor, equipment, and materials to install all the SWMP controls and BMPs and temporary north perimeter security fencing (approximately 2,100 ft.) described within the approved SWMP and maintain the controls within the area as described in the Project Documents.

This item will be measured and paid for as a Lump Sum Item.

005. **Overburden Soil Stockpiling.** This item consists of providing all labor, equipment, and materials to excavate, transport, and stockpile the overburden clean soils as described in the VCUP, technical specifications, and project drawings. This item will be unit priced in cubic yards.

This item will be measured and paid for as a Unit Rate Item

006. **Removal and Disposal of Crusher Fines.** This item consists of providing all labor, equipment, and materials to remove, transport, and dispose of concrete crusher fines material from the site as described in the VCUP, project specifications, and project drawings to the DADS facility.

This item will be measured for payment in cubic yards or by the ton, with an approved conversion factor.

Disposal fees at the Denver Arapahoe Disposal Site (DADS) for the project will be paid directly to DADS by the City and are not part of the bid, if packaged, transported, and delivered to DADS as required by these specifications. CCoD will supply the manifests and profiles.

007. **Confirmation Sampling and Analysis.** This item consists of providing all labor,

equipment, and materials to assist in the field sampling of soils as directed by the CCoD environmental sampling subcontractor as described in the VCUP, project specifications, and project drawings.

This item will be measured for payment as a Lump Sum item..

008. **Backfill and Compaction of Stockpiled Soil.** This item consists of providing all labor, equipment, and materials to excavate, transport, backfill and compact clean soils as described in the VCUP, technical specifications, and project drawings from the on site soil stockpile. The operations will be in compliance with the SIA Earthwork specifications in the project documents. This item will be unit priced in cubic yards.

This item will be measured and paid for as a Unit Rate Item

009. **Backfill and Compaction of Import Soil.** This item consists of providing all labor, equipment, and materials to excavate, transport, backfill and compact clean soils as described in the VCUP, technical specifications, and project drawings. The operations will be in compliance with the SIA Earthwork specifications contained within the project documents. This item will be unit priced in cubic yards and include the removal of soil from the CCoD 56th Ave. backfill stockpile area and transported to the site.

This item will be measured and paid for as a Unit Rate Item

010. **Geotechnical (and Environmental) Testing.** This item consists of providing all labor, equipment, and the materials required for pre-backfilling geotechnical and environmental testing to determine acceptable use of the soil as well as required ongoing backfilling confirmation geotechnical field testing of the soil for compaction and moisture content, and laboratory reports documenting compliance with the requirements for backfill as required in the VCUP, project documents, and project drawings.

This item will be measured and paid for as a Lump Sum

011. **Surveying.** This item consists of providing all labor, equipment, and materials to perform surveying activities including initial control establishment, pre and post topographic surveying, grid layouts, periodic elevation checks, periodic topographic volume calculations, creation of an As-Built Final Excavation Map, and miscellaneous surveying and CADD services. All surveying will be performed using the Modified Colorado State Plane Coordinate System 1983 datum for vertical and horizontal reference.

This item will be measured and paid for as a Lump Sum Item.

012. **Demobilization.** This item consists of providing all labor, equipment and materials to demobilize and decontaminate all construction equipment and personnel to the project site and provide the demobilization of all services and installation of facilities as described within the Contract Documents.

This item will be measured and paid for as a Lump Sum Item.

013. **Closeout Report and NAD Acquisition.** This item consists of providing all labor, equipment and materials to assist in writing a project closeout report to be submitted in conjunction with a NAD Request to the State and obtain the NAD. The NAD will assist CCoD in its effort to transfer the land for development.

This item will be measured and paid for as a Lumps Sum Item.

014. **Seed and Mulch.** This item consists of providing all labor, equipment and materials to grade, seed, and mulch the final site to the specification as described within the Contract Documents, technical specifications, and project drawings. The contractor will perform the seeding and mulching in accordance with the Aurora standards and Appendix D of this document. Assume 24 acres will be required to be seeded and mulched for bidding purposes. Additional acres will be paid at the vendor's per acre rate.

This item will be measured and paid for as a Unit Rate Item.

016. **Size, Segregate, and Dispose of Debris in Section 10-** This item consists of providing all labor, equipment and materials to size and segregate concrete, asphalt, steel, and trash, transport, and disposing/recycling material at DADS. The contractor will attempt to recycle any materials before disposal. This item also includes cleanup and removal of any remaining material to facilitate sale of the property to the developer.

CCoD will supply any manifests and pay the fees at DADS.

This item will be measured and paid for as a Unit Rate item.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01025

SECTION 01070

ABBREVIATIONS AND SYMBOLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Abbreviations for organizations, acronyms and standards.

1.02 ORGANIZATIONS, ACRONYMS AND STANDARDS

AECOM	AECOM, Inc.
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing & Material
CCOD	City and County of Denver
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CFR	Code Federal Regulations
CS	Commercial Standard
DADS	Denver Arapahoe Disposal Site
DOT	U.S. Department of Transportation
DWB	Denver Water Board
FAR	Federal Acquisition Regulations
MP	Materials Management Plan
MSDS	Material Safety Data Sheets
NAD	No Action Determination
NFA	No Further Action
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute for Standards and Technology
OSHA	Occupational Safety & Health Administration
SCMP	Soil Characterization Management Plan
SHSP	Site Health and Safety Plan
SIA	Stapleton International Airport

SNC Stapleton Numeric Criteria
SWMP Stormwater Management Plan
USEPA U.S. Environmental Protection Agency
WMD Wastewater Management Division

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

N/A

END OF SECTION 01070

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 GENERAL

- A. The following is a partial submittal list that is provided for the convenience of the contractor. The City in no way warrants that this list is complete, nor does the inclusion of this list in any way absolve the contractor from reading the Contract Documents and complying with all requirements therein. The City reserves the right to investigate any notice of violations within the State of Colorado.
- B. Submittal List:
1. Draft Work Plan to be submitted with Bid,
 2. List of previous projects that are similar in scope up to \$3,000,000 contract cost,
 3. Site Work Plan (includes Excavation Plan stamped by a Colorado Registered Engineer)
 4. Safety Plan,
 5. Phone List,
 6. Demolition Notifications,
 7. Demolition Permit from the City of Denver,
 8. List of Subcontractors, current CCOD class contractor's license held by each subcontractor,
 9. List of Suppliers,
 10. Copy of the contractor's state tax exemption certificate or application,
 11. Copy of Schedule of Values,
 12. Copy of the contractor's initial and weekly Construction Progress Schedules, bar chart/critical path scheduling format, hard copy and electronic formats,
 13. Letter appointing a Project Superintendent with associated certifications,
 14. List of people with signing authority for payments, change orders, and other contractual authority and their phone numbers, mailing addresses and FAX numbers,
 15. MSDS Information,
 16. QC Plan.
 17. Approved Storm Water Management Plan (City of Aurora)
- C. All submittals shall be completed in a neatly compiled format with index and all

attachments included. All submittals shall be transmitted and accepted by the Project Manager prior to beginning work. The contractor shall include adequate time in its schedule and cost in its initial bid for the preparation of the documents and their review before the schedule start of work.

1.02 WORK PLAN

- A. The Work Plan shall be submitted to the Project Manager for review as a draft document. The contractor shall address all comments, and all comment responses shall be reviewed and approved by the Project Manager prior to the contractor submitting the final document. The Work Plan shall include those items listed elsewhere in these specifications.

1.03 OTHER PLAN SUBMITTALS

- A. Other Plan submittal shall include the following and shall include those items listed elsewhere in these specifications:
 - 1. Fire Prevention and Protection Plan
 - 2. Site Health and Safety Plan
 - 3. As-Built Survey

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.1 SUBMITTALS:

- A. All required submittals shall be transmitted to the Project Manager with a transmittal letter indicating the number, content, and action required.
- B. One copy of all required submittals shall be transmitted.
- C. The contractor shall allow 10 working days for the Project Manager to review and provide comments.
- D. All submittals shall be complete and in good form prior to being transmitted to the Project Manager. Incomplete or unacceptable submittals shall be replaced and resubmitted at contractor's sole cost. Time or cost extension claims caused by unacceptable submittals shall not be allowable.

- E. As-Built Drawing and Summary Letter – The As-Built drawings shall include those items listed elsewhere in the specifications. In addition, the contractor shall provide a summary letter identifying utilities that the contractor has discovered through conversations with existing tenants, utility providers, or others regarding existing utilities not shown on the drawings or discrepancies shown on the drawings.
- F. Closeout Documents – The closeout documents shall include the following as defined elsewhere in these specifications:
1. Closure Report with a NAD request to CDPHE.
 2. Closeout Survey.
 3. Summary Report for removal and disposal of components containing hazardous materials.
 4. Inventory of all materials recycled, sold, salvaged or disposed of by means other than disposal at DADS.
 5. Safety Report indicating the number of man-hours worked at the site for all prime and subcontractors, the number of lost time accidents with accident reports, the number of near misses with reports, and all other information collected by the Contractor to support its safety record on the project.
 6. Inactivation Request and City of Aurora closure acceptance letter for the SWMP.
- G. Schedule – The schedule shall be submitted in graphic and electronic formats using Microsoft Project, Primavera P3, or Primavera SureTrak software. The schedule shall utilize a work breakdown structure that substantially matches the submitted schedule of values. Each schedule of value item shall be further refined into a work breakdown structure that fully illustrates the effort and relationship of critical path events. General work items that take more than 14 calendar days to complete shall be refined into shorter duration work elements. The objective of the schedule will be to provide a baseline document that can be used to monitor the progress of the project and administer Contractor pay requests. The work breakdown structure shall contain sufficient detail to achieve this objective.
- H. Schedule of Values – The contractor shall submit a schedule of values that is consistent with the Bid Form. The submitted schedule of values shall be further refined to coincide with the work breakdown structure of the submitted schedule. Items on the schedule of values shall be representative of the actual value of the work. This schedule of values, once accepted by the Project Manager, shall become the basis for determining progress payments.
- I. Hazardous Material Transporters and Disposal Recycling Sites – The contractor shall submit the names, credentials, contact data, licenses, permits, and audit packages for each entity that will handle, transport, store, destroy, dispose, or recycle any of the hazardous components identified in this project. The credentials licenses permits, and audit data submitted shall be sufficient for the Project Manager to determine that the

proposed entity is experienced, permitted, and appropriate to perform in conformance with these specifications. Each entity shall submit data on investigations; Notices of Violations; sanctions; lawsuits; citations; civil and criminal actions against the entity or personnel; lawsuits; bankruptcy actions; or other activities adversely impacting the entity's operation that are current or have been current within the past 3 years. The contractor shall submit the data sufficiently in advance of the intended use of the subject entity to allow the Project Manager to fully evaluate the submitted and accept the entity, in no case shall this be less than 15 working days in advance of the intended use.

Failure to submit contract submittals in the required time frame will result in a monetary penalty determined by the CCoD Project Manager.

END OF SECTION 01300

SECTION 01511

FIRE PREVENTION AND PROTECTION

PART 1 - GENERAL

1.1 SUMMARY:

- A. This section covers the requirements for fire prevention and protection for the project. The Contractor shall develop and implement a written Fire Prevention and Protection Plan, which at a minimum meets the requirements of this section and complies with applicable federal, state, and local fire prevention/protection regulations. Fire prevention and protection procedures shall be prepared and presented in the Work Plan.

1.2 RELATED SECTIONS:

- A. General Conditions of the Contract referred to as the City and County of Denver's "Yellow Book."
- B. Section 01561 – Site Health and Safety Procedures
- C. Section 02061 – General Demolition
- D. Section 02089 – Removal of Components Containing Hazardous Materials

1.3 REFERENCES:

- A. 2009 International Fire Code (IFC)
- B. Building Code for the City and County of Denver, latest edition, which is based upon the 2009 International Building Code of the International Code Council with Denver Amendments to this code
- C. IFPA 72

1.4 SUBMITTALS:

- A. Fire Prevention and Protection Plan. Submit to the Project Manager for review and acceptance prior to commencing any demolition operations. The approved Fire Protection and Prevention Plan complete with all comments addressed shall be made a part of the Contract Documents.

PART 2 - PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 FIRE PREVENTION

- A. The prevention portion of the Fire Prevention and Protection Plan shall, at a minimum, address the following items:
1. Smoking shall be prohibited at or in the vicinity of demolition operations and in all airport structures. Such areas shall be posted “No Smoking or Open Flame.” Smoking shall be prohibited at all areas of the Stapleton site inside the permitted security fence. This includes contractor work site office facility, inside vehicles on site and all areas where combustible or flammable materials exist.
 2. Flammable and combustible liquids shall be labeled, handled, and stored in accordance with applicable laws and regulations.
 3. Transfer of flammable liquids from one container to another shall be done only when the containers are electrically interconnected (bonded).
 4. Equipment motors shall be shut off during fueling.
 5. Flammable/combustible liquids shall be stored only in metal cans or drums, which are equipped with self-closing safety faucets, vent bung fittings, and drip pans. Such containers shall be stored outside buildings in an area approved by the Project Manager. Such metal drums shall be properly bonded and grounded.
 6. The use and storage of explosives will not be allowed on-site.
 7. No open fires shall be permitted.
 8. Storage of bulk fuel and lubrication products shall not be inside structures. Tanks and drums shall be properly labeled and secured. All bulk fuel facilities shall be permitted by Aurora Fire Department. A copy of the permit shall be posted at the bulk fuel facility and submitted to the Project Manager prior to the first filling of the facility. The facility shall be shown on the submitted work plan for acceptance by the Project Manager.

3.02 FIRE PROTECTION

- A. The protection portion of the Fire Prevention and Protection Plan shall, at a minimum, address the following items:
1. All vehicles, construction equipment, temporary offices, work areas, and storage areas shall be equipped with a sufficient number of fire extinguishers of 2A – 10 B: C

areas shall be equipped with a sufficient number of fire extinguishers of 2A – 10 B:C or higher. Locations of fire extinguishers shall be prominently displayed. Fire extinguishers in hazardous areas shall be so located so that travel distance to the nearest fire extinguisher shall not exceed 50 feet.

2. All fire extinguishers shall be inspected and maintained in accordance with NFPA 10.
3. Storage areas shall be kept free of weeds, debris, and other combustible material.
4. The contractor shall maintain adequate Fire Department access to all building areas at all times, including adjacent fire hydrants and the access roads to all SIA tenants.
5. Designate at least one person in a supervisory capacity on each shift that shall be assigned and held responsible for calling the Fire Department immediately whenever a fire occurs. The designated supervisor shall also inspect the premises for possible fires whenever shifts are changed or work is stopped for any reason.

3.03 HOT WORK:

- A. Whenever a cutting torch or other equipment that might cause a fire is being used, fire extinguishers shall be kept nearby and ready for instant use. Users of such equipment shall be instructed in the proper method to prevent fire and to extinguish a fire. All “Hot Work” shall require a fire watch spotter who shall verify that all sparks and ignition sources are tended to and shall have no other duties during the “Hot Work” period. “Hot Work” procedures shall be addressed in the Fire Prevention and Protection Plan. “Hot Work” shall include operations requiring an open flame, torches, cutters, or grinder-producing sparks, cutting tools with internal combustion engines, or other devices capable of igniting trash, debris, wood, sawdust or similar combustible materials. All fire watchmen shall wear a red vest to identify their function and shall remain on fire watch for a minimum of 1 hour following the end of any hot work. All combustible material shall be cleared from the hot work area for a distance of 35 feet from the cutting area prior to the start of work. It shall be the responsibility of the supervisor, cutter, and fire watchman to verify that both sides of the cut surfaces are clear of combustible materials, concealed areas, and other hazards that could contribute to a fire or explosion.
- B. Fuel for torches, engines, cutters, etc. shall not be allowed inside the hangars, buildings, or tunnels at any time in excess of that required for a single days operation. During not attended times, off shifts, or at times when cutting operations are not in progress, all fuel, bottles, cans, drums, etc. shall be removed from the structures and tunnels and are stored in accordance with NFPA and Denver Fire Department requirements away from the structures.

END OF SECTION 01511

SECTION 01550

EXCAVATION PROCEDURES

GENERAL

1.01 Purpose and Scope

This procedure is intended to protect personnel from the hazards associated with excavation entry activities.

1.02 Implementation

Field Operations - Implementation of this program is the responsibility of the contractor's Project Manager and field staff.

An approach that does not require employees or subcontractors to enter an excavation is always preferred. If employees or subcontractors must enter an excavation, compliance with this specification or similar client/contractor procedures is required. If conditions warrant it, an Excavation Plan written and stamped by a state certified engineer (if necessary) will be submitted in accordance with all regulatory requirements.

1.03 Requirements

A. Competent Person

Appoint an Excavation Competent Person for excavation activities. The Excavation Competent Person:

1. Is responsible for conducting daily inspections of excavations, adjacent areas, and protective systems prior to each shift.
2. Is responsible for inspection after every rainstorm or other hazard.
3. Must have knowledge of soils and soil classification.
4. Understands design and use of protective systems.
5. Has authority to stop work and take corrective action when conditions change.
6. Has the ability to recognize and test hazardous atmospheres.
7. Has formal documentation of training as an Excavation Competent Person.
8. Is physically located at the excavation while work is in progress.

B. Access/Egress

Trench excavations will have ramps or ladders within 25 feet (8 meters) of the entrants.

C. Soil Classification

If a sloping or benching system is issued, soil classifications must be conducted by a Professional Engineer. For the purposes of this standard, all soils will be classified by a person meeting the qualifications of a competent person as described in 29 CFR 1929 Subpart P. The competent person shall consult with a Registered Professional Engineer in the event the soil classification requires additional technical expertise.

D. Protective Systems

Protect employees in excavations deeper than 4 feet (1.2 meters) by means of properly designed protective systems. All protective systems must comply with 29 CFR 1926 Subpart P Appendices B, C, D, and E.

1. Sloping and Benching

Sloping and Benching must be designed and stamped by a Professional Engineer in accordance with 29 CFR 1926 Subpart P, Appendix B.

2. Timber Shoring for Trenches

Timber shoring for trenches must be designed and stamped by a Registered Professional Engineer in accordance with 29 CFR 1926 Subpart P, Appendix C.

3. Aluminum Hydraulic Shoring for Trenches

Aluminum hydraulic shoring for trenches must be approved by a Registered Professional Engineer in accordance with 29 CFR 1926 Subpart P, Appendix D.

4. Alternatives to Timber Shoring

Trench shields and boxes must be either pre-manufactured with listed load ratings or designed, stamped and constructed under the direction of a Registered Professional Engineer. See 29 CFR 1926 Subpart C, Appendix E for examples.

5. Protective systems designed to protect employees in excavations must be designed and stamped by a Registered Professional Engineer.

6. Excavations will be clearly identified and barricaded to keep unauthorized individuals out.

1. E. Permit Authorization and Inspections

1. An approved Excavation Authorization Form shall address the following:
 - a. Employee training/briefings.
 - b. Electrical safety.
 - c. Surface Encumbrances.
 - d. Underground installations and utilities.
 - e. Protective systems.
 - f. Access and egress.
 - g. Exposure to vehicular traffic.
 - h. Exposure to falling loads.
 - i. Warning systems for mobile equipment.
 - j. Testing for hazardous atmospheres.
 - k. Emergency rescue equipment.
 - l. Protection from hazards associated with water accumulation.
 - m. Stability of adjacent structures.
 - n. Protection of employees from loose rock.
 - o. Inspections.
 - p. Fall protection.
2. Require daily inspections of excavations to be conducted by Competent Person using an approved form.

F. Training/Briefings

Conduct daily safety briefings for all employees associated with excavation activities and document on an approved form. Discuss excavation hazards, protective measures, and work practices that will be applicable to the day's activities.

1.04 **Documentation Summary**

Records required for the Project Safety File:

- A. Competent Person qualifications.
- B. Excavation Authorization Form.
- C. Daily Competent Person inspections.
- D. Daily worker briefing documentation.
- E. Daily inspection records.

1.05 **Resources**

U.S. OSHA Standard 0 Excavations – 29 CFR 1926, Subpart P

- A. Appendix B, Sloping and Benching
- B. Appendix C, Timber Shoring
- C. Appendix D, Aluminum Hydraulic Shoring
- D. Appendix E, Alternatives to Timber Shoring

END OF SECTION 01550

SECTION 01561

SITE HEALTH AND SAFETY PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY:

- A. This section covers the requirements for safety, health, and emergency response for the project. The contractor shall develop and implement a written Site Health and Safety Plan (SHSP), which at a minimum meets the requirements of this section and complies with applicable federal, state, and local regulations.
- B. It is the responsibility of the contractor to provide all facilities, equipment, materials, and personnel necessary to protect contractor, subcontractor, and visitor personnel from physical injury and potential adverse health effects due to exposure to chemical and physical hazards.
- C. The SIA site is a secured facility. This section presents site access requirements that shall be fully complied with by all the contractor personnel, subcontractors, material, suppliers, vendors, and visitors.

1.02 RELATED SECTIONS:

PART A – GENERAL DEMOLITION

- A. General Conditions of the Contract referred to as the City and County of Denver’s “Yellow Book.”
- B. Section 01511 – Fire Prevention and Protection
- C. Section 01550 – Excavation Procedures
- D. Section 02061 – General Demolition
- E. Section 02089 – Removal of Components with Hazardous Materials

1.03 REFERENCES:

- A. Occupation Safety and Health Administration (OSHA), 29 Code of Federal Regulations (CFR) 1910, General Industry Safety and Health Standards.
- B. OSHA, 29 CFR 1926, Construction Industry Safety and Health Standards.

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- C. Federal Acquisition Regulations (FAR) 52.236-13, Accident Prevention, April 1984.
- D. 5CCR-1001-10, Regulation Number 8, Control of Hazardous Air Pollutants. (Colorado Regulation Number 8)
- E. Aurora Building Code with Amendments.

1.04 SUBMITTALS:

- A. Site Health and Safety Plan (SHSP):
Submit to Project Manager for review and acceptance prior to commencing any demolition operations. The accepted SHSP complete with all comments addressed shall be made a part of the Contract Documents.
- B. Contractor's Designated Site Safety Manager:
The contractor shall designate a competent person to oversee safety and security at the site at all times. This person shall be present at the site at all times of operation and shall have the authority to stop operations for safety related concerns.
- C. Worker and/or Supervisor Certifications:
Copies of applicable worker/supervisor certifications to include, but not necessarily limited to, 40-hour training, site specific training, CPR, and first aid.
- D. Contractor's Closeout Safety Report.
- E. Accident and Near Miss Reports.
The contractor shall submit to Project Manager within 24 hours a detailed report on all accidents or near misses that cause personal injury or property damage, or that could have caused injury or damage. Immediately report all injuries and accidents to the CCoD Project Manager verbally.
- F. Notice of Violations.
The contractor shall notify the Project Manager immediately upon receiving a notice of violation from another agency during the course of the project.
- G. Direction from Outside Agencies
The contractor shall notify the Project Manager immediately upon receiving direction from another agency during the course of the project.

1.05 SITE HEALTH AND SAFETY PLAN REQUIREMENTS:

- A. The contractor shall prepare and implement a complete SHSP in accordance with all applicable federal, state, and local regulations. The SHSP shall cover contractor, subcontractors, and visitors while on the site.

- B. SHSP Administrative Section: The SHSP shall address the following administrative requirements as a minimum:
 - 1. Administrative responsibilities for implementing the SHSP (project organization identifying contractor personnel responsible for accident prevention.)
 - 2. Local requirements, if any, that must be complied with (e.g., noise control, dust control, traffic control, etc.).
 - 3. Methods the contractor proposes to use to control and coordinate subcontractor work.
 - 4. Plans for layout of temporary decontamination facilities, including how the contractor plans to control subcontractors' activities.
 - 5. Plans for initial indoctrination, continued safety education, and training for the contractor employees.
 - 6. Plans for traffic control and marking of hazards, restricted areas, and highway intersections.
 - 7. Plans for maintaining continued job cleanup and safe access and egress.
 - 8. Plans for emergency response including fire protection, ambulance service, first aid, including the nearest medical facility and emergency phone numbers. This shall include Stapleton specific requirements including, access points, response locations, communication, evacuation, and emergency responder escorts.
 - 9. Plans for inspection of the job site by competent persons including reports to be kept, results of the inspections, and corrective actions taken.
 - 10. Procedures to be used for accident investigation.
 - 11. Description and sketch of temporary power distribution system.
 - 12. Description of safe clearance procedures.
 - 13. Description of office trailer anchoring system.
 - 14. Contingency plans for severe weather. Ensure lightning, wind, heat, cold, and extreme weather conditions are included.
 - 15. Description of methods and procedure for confined space entry including, but not limited to, testing equipment for air quality, personnel equipment and other related safety precautions.

C. Activity Hazard Analysis

1. An activity hazard-analysis shall be developed and included in the SHSP for each contract activity and operation occurring in each major phase of work.
2. The SHSP shall identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to minimize or eliminate each hazard for each activity.
3. The contractor shall specifically address activities that have the potential for personnel being exposed to physical hazards as well as chemical and biological hazards, including but not limited to contaminated soils, mercury, PCB wastes, asbestos, animal scat, mold, and fungi.
4. An activity hazard analysis shall be developed for each work operation that presents a significant hazard to property or personnel. These include, but are not limited to: hot work activities, lifting and hoisting, confined space entries, heavy equipment, trucking and traffic, falling debris, trip and fall hazards, elevated work, unprotected openings, glass projectiles, etc.

1.06 CLOSE-OUT SAFETY REPORT:

- A. At the completion of the Work, contractor shall submit a Close-Out Safety Report. The report shall be signed and dated by the contractor and submitted to the Project Manager. The report shall include procedures and techniques used to decontaminate or dispose of equipment and facilities. The report shall also include a summary of the safety and health aspects of the entire project including the number of man hours worked and the number and extent of lost time injuries and property damage.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 SITE ACCESS REQUIREMENTS

- A. The following site access rules shall be compiled with by all persons entering this site as employees, visitors, subcontractors, suppliers, or others invited or on behalf of the contractor:
1. All vehicles must have a SIA issued site access pass to enter the Stapleton site. Access is through the Moline Street Gate only unless designated another gate by Project Manager. The contractor provides full time security on any open gates. Vehicles 1½ tons or more in size that have a contractor logo or name painted on both sides of the cabin do not require site access passes during normal hours if the vehicle is traveling to/from or is working at that contractor's work area.
 2. Vehicles are required to travel directly to their authorized work site in the most

direct path, without interfering with construction activities or traffic. All vehicles must park in the area designated for that particular contract. Travel to other Stapleton sites or sightseeing is strictly prohibited.

3. The normal hours for the Gate are 7:00 am to 5:00 pm, Monday thru Friday, excluding City of Denver recognized holidays. Access outside of these hours is prohibited by the Contract unless specific arrangements are made and approved in writing by Project Manager.
 4. Access to the site by a contractor opened gate is to be controlled by that contractor's superintendent and only employees of that contractor are to be allowed through the gate. The Gate shall be locked when not attended. Employees other than the Superintendent are not allowed to open any gate for any reason.
 5. Any lock that is placed on a gate by a contractor in a manner that locks out another contractor or the City will immediately be cut off by the City or Site Security. Costs, loss of efficiency, loss of productivity, and inconvenience will be at the sole and exclusive expense of the contractor that places the errant lock. The contractor may request to place a lock in series at designated gates for the convenience of the contractor. This is a privilege that may be revoked for misuse by Project Manager. Any lock placed on any SIA gate or access location shall be key operated, no combination locks, and shall bear the name or logo of the contractor placing the lock in permanent printing or engraving. All locks not meeting these requirements will be removed by Project Manager.
 6. The site speed limit is 30 mph, when conditions allow. That limit is reduced to 10 mph in the Office Trailer Lot.
 7. When the visibility at the site is less than 1 mile, rain or snow is falling, winds are blowing in excess of 30 mph, fog or low clouds are reducing visibility, or when darkness creates a hazard ALL vehicles on site shall be operated at reduced speed to accommodate for the site conditions.
 8. All vehicles on site shall operate with their headlights on.
 9. All vehicles must stop at the gate and be waved on by the guard before proceeding.
 10. All vehicles on site must be legally registered and have valid proof of insurance.
 11. A vehicle pass does not guarantee access to the SIA site. Outside the normal gate hours, access is controlled by the individual contractors who have permission to work extended hours. They are not authorized to allow access by individuals who are not on their projects.
 12. Site visitors are limited to the VCUP Support Area, unless escorted by a contractor employee.
 13. All individuals working outside of vehicles on Stapleton property shall wear a hard hat and safety vest. Individuals within demolition areas shall also have hard toed shoes and eye protection as minimum personal protection.
- B. SIA is a no smoking site. Smoking is not allowed within the perimeter of the Stapleton site.

The contractor shall inform all employees of this requirement and shall enforce compliance. No smoking is allowed in SIA buildings or structures, in addition to the general site area. Individual Contractor office trailers shall comply with their own corporate policies. The contractor may establish one designated smoking area to accommodate employees. Designated smoking areas are the responsibility of the contractor and are to be provided for the convenience of its employees. This is a privilege that can be revoked by Project Manager at any time for failure to comply with site requirements or if conditions indicate that the smoking area has become a hazard. This smoking area shall be marked and clearly signed. It shall not be within 25 feet of any structure, debris pile, fuel location, material storage area, open field, or combustible materials. An ash container with closed top appropriate for cigarette disposal shall be provided at the designated smoking area. All employees shall utilize the ash container for the disposal of smoking materials. The contractor shall clean the smoking area daily and empty the ash container regularly to eliminate smoking materials on the ground and to ensure the ash container has adequate capacity. Smoking within vehicles is allowed if the vehicles are at least 50 feet from structures, debris, fuel sites, and open fields. No smoking materials may be disposed of on the ground from the vehicles.

- C. There shall be no salvage of materials from the project area or other areas on Stapleton by individual employees.
- D. No alcoholic beverages or illegal substances shall be brought onto Stapleton property for any reason.
- E. No firearms, cutting weapons, martial arts weapons, clubs, bats, spikes, striking weapons, or any other device that may be used as a weapon may be brought onto Stapleton property for any reason. This includes personal knives with blades longer than 3 inches.
- F. CCOD provides oversight for all demolition activities that occur at Stapleton. This coverage is for 40 normal working hours per week. Contractors shall conduct all of their activities within this established period and shall include in their bids all costs for this requirement. Should the contractor desire to work extended shifts, Denver recognized holidays, weekends, or after normal working hours, the contractor shall be responsible for the cost of providing the extended oversight effort. All requests for extended coverage shall include the scope of the intended work, the name of the contractor's superintendent who will be at the site full time during the extended period, the date and time of the requested coverage, acknowledgement that contractor will be responsible for the cost of any required extended oversight. The cost of the extended oversight will be included in the next executed change order. All requests for extended oversight must be requested and approved in writing by the CCOD Project Manager at least 48 hours prior to the anticipated work period. The granting of permission to work extended hours is not a right of the Contract and is done at the sole discretion and judgement of the Project Manager. Project Manager shall determine the level and amount of oversight required based on the proposed scope of work, performance period, Contractor performance, and other issues that he may determine are appropriate and relevant. Normal Work Hours for the Stapleton site are within 7:00am to 5:30pm Monday through Friday, excluding Denver recognized holidays, unless adjusted with the written authorization of Project Manager.

END OF SECTION 01561

SECTION 02061
GENERAL PROJECT
DESIGN

PART 1 -GENERAL

1.1 DESCRIPTION OF WORK:

- A. This project includes the following:
1. Secure site for public safety
 2. SWMP approval, controls installation, and closure approval
 3. Overburden removal/stockpiling
 4. Removing, transport, and disposal of concrete crusher fines to landfill
 5. Confirmation sampling and clearance
 6. Backfilling/compacting and geotechnical/environmental testing of onsite and imported soils
 7. Surveying for remediation, topography, As-Built, etc.
 8. Seeding and mulching of affected areas
 9. Obtain a NAD for property transfer
 10. Sizing, segregating, and disposal of all remaining Section 10 materials to facilitate sale of the property to the developer.
- B. The following site items are not to be removed as a part of this remediation Contract:
1. Storm sewer, sanitary sewer, telephone, gas, fuel, electrical, and water facilities identified to remain,
 2. Monitor wells and CP Test Station locations to remain,
 3. All fencing except as noted in the Plans and these Specifications.
- C. All work associated with this project shall be performed in accordance with these specifications, the Project Drawings, the VCUP, and the SCMP. The project consists of the excavation and removal of soil and concrete crusher fines and the backfilling of surrounding areas with the clean soil from the area identified on the drawings. The project shall be to the limits shown on the project drawings.

Backfill materials shall be in accordance with these specifications.

General Requirements

1. Perform all concrete crusher fines material removal as addressed in these specifications, the VCUP, and the SCMP.
2. The contractor shall preserve and protect the storm sewer labeled on the Contract Drawings.
3. The contractor shall salvage and recycle as much material as possible from the

demolition activities. All waste debris must be transported to the DADS. Disposal fees at the DADS will be directly paid by the City and are not a part of this contract, subject to the limitations stated in these specifications.

4. The contractor is responsible for obtaining all permits required.

1.2 RELATED SECTIONS:

- A. General Conditions of the Contract referred to as the City and County of Denver's "Yellow Book."
- B. Section 01511 - Fire Protection
- C. Section 01561 - Site Health and Safety Procedures
- D. Section 02089 - Removal of Components with Hazardous Materials
- E. Stapleton Earthwork Specifications located in Appendix B of these specifications
- F. Materials Management Plan located in Appendix A of these specifications
- G. Contamination Discovery Report located in Appendix C of these specifications
- H. Aurora Seeding and Mulching Specification in Appendix D of these specifications

1.3 SUBMITTALS:

A. **Work Plan**

- 1. The Work Plan shall be submitted per Section 01300 – Submittals and shall include the following:
 - a) Draft Work Plan to be submitted with Bid
 - b) Schedule showing the commencement, order, and completion dates for the parts of this Work. The schedule shall be of sufficient detail to show all key work elements, their expected duration, their relationship to other components and key milestones.
 - c) Excavation Plan stamped by a Colorado Registered Engineer
 - d) Staging Plan – Where the Contractor plans on storage of equipment, employee parking, scale set-up, and trailer set-up.
 - e) Traffic Plan – Provide route for site ingress and egress, scale routes, and routes to DADS, and sidewalk access re-routing.
 - f) Dust Control
 - g) Backfill Procedures
 - h) Equipment to be used
 - i) Indicate in the work plan that a Close-Out Survey will be provided per the requirements of this section.

B. Utility Termination Plan (UTP).

1. The UTP shall be submitted per Section 01300 – Submittals. The UTP shall detail the contractors plan of operation and procedures for identifying, verifying, protecting, and terminating existing utilities (where indicated on the drawings) within the demolition area. In preparing the UTP, Contractor shall include, at a minimum, the following:
 - a) Identification of and protection plan for existing utilities that are to remain,
 - b) Utility agency representative contact name,
 - c) Schedule for above activities using an accepted critical path method,
 - d) Emergency plans for unplanned events such as damaging any unidentified utility. The emergency plan shall include contractor’s method of repair for broken waterlines and gravity systems. Include the methods that will minimize introduction of silts/clay and other debris into the storm drain system,

C. Permits.

The contractor shall secure the following permits and submit copies thereof to the Project Manager prior to commencing work:

1. Demolition permits from the State of Colorado and the Aurora Building Inspection Department.
2. Building permits from the Aurora Department.
3. Hydrant Permit (agreement to purchase water) from the Aurora Water Board if purchase of water is elected.
4. Any other permits required for completion of work.
5. Storm Water Management Plan from the Aurora Wastewater Management Division

D. Dump Tickets.

The contractor shall provide dump tickets to the Project Manager prior to, and as an additional condition of payment for work performed, with verified, original receipts from

DADS, evidencing that all waste material from the job site contracted herein was disposed of in a proper manner. Receipts shall bear the date, time of arrival at DADS, DADS receipt stamp, the tonnage dumped, and the printed name of Contractor's driver. Submit tickets for the prior week's disposal on the Monday following the week in which the activities took place. In the event such landfill receipts are not provided, the City shall withhold payment until received and accepted.

E. Contractors Hauling Certification.

The contractor shall cause each truck that will be utilizing in the hauling to visit the scale prior to being loaded to be weighed empty for Tare Weight records. Each truck shall be reweighed whenever its configuration is modified, trailer changed, or the Tare Weight of the truck is modified in any way. The contractor is responsible for maintaining the original ticket and delivering a copy of all tickets to the City on a weekly basis. Any truck failing to weigh out and provide a ticket to DADS will cause the contractor to incur the full cost of disposal.

F. Monthly Summaries

The contractor shall provide a monthly summary to the Project Manager of the nature and weight of all materials that are sent from the site for recycling, including copper, aluminum, steel, tin, timbers, masonry, and concrete and an itemized list of salvaged materials including electrical gear, lights, mechanical units, pumps, motors, etc.

G. Waste Manifests

The contractor shall submit originating copies of all waste manifests that are sent from the site on a weekly basis by Tuesday of the following week of activity). CCoD will provide all manifests to the contractor.

H. Close-Out Survey.

The contractor shall perform a Close-out Survey using the Modified Colorado State Plane 1983 coordinate system for horizontal location and vertical datum showing all items remaining on the site following demolition. The Close-out Survey shall be submitted per Section 01300. Close-out Survey items include the following items:

1. Horizontal and vertical limits of the excavations,
2. Storm sewers,
3. Storm lines to remain in service, horizontal and vertical of all structures in the work area,
4. Center point of all protected monitor well locations,
5. All other utility disconnect points; and
6. Existing survey monuments.

The contractor shall submit the Close-out Survey in paper and electronic formats (field notes and field note reduction to generate 22-inch x 34-inch drawing(s), signed and sealed by a Land Surveyor registered in the State of Colorado. The paper and electronic format shall include a drawing showing the above information based on the Modified NAD 83/92 Colorado Central Zone State Plane Coordinate System and NAVD 88 Vertical Datum on AUTOCAD. The contractor shall coordinate with the Project Manager regarding the formats for CD transmittal.

The contractor shall mark and protect any locations requiring surveying as they are generated to preserve the location for this final survey effort.

1.4 PROJECT/SITE CONDITIONS:

A. Environmental Requirements.

- 1) If suspected petroleum contaminated soils are encountered before removal, the contractor shall immediately notify the Project Manager for direction and shall cease operations in the area until direction is received.

Should petroleum contaminated soils be discovered after they are excavated, contractor shall provide a lined (10 mil polyethylene film) bermed area for storage of up to 300 cubic yards. The bermed containment area shall be constructed in a manner that prevents contaminated stormwater runoff and blowing dust. The contractor shall submit shop drawings for the soils storage area for acceptance by Project Manager as well as appropriate agency approvals. Suspected contaminated soils encountered during construction will be verified, and sampled if necessary, by the Project Manager. The bermed area shall only be constructed if petroleum contaminated soils are found and Project Manager directs that they be excavated and stored. The contractor shall provide training and instruction to equipment operators, laborers, and supervisors in the identification of contaminated soils as well as the procedures for responding to their discovery.

- 2) Any items of salvageable value to the contractor shall be removed from the structure as Work progresses. Salvaged items and materials must be transported from the site within 72 hours. Storage or sale of removed items or materials on the site will not be permitted.
- 3) Noise Control. The contractor shall comply with all City noise requirements.
- 4) General Dust Control. The contractor shall make every effort to take all necessary precautions to prevent and control dust, debris, and dirt from rising, including but not limited to wetting demolished masonry, concrete, plaster, and similar debris. The contractor is fully responsible for compliance with the City standards for dust control. No visible emissions from the work area will be permitted at any time. The contractor shall as a minimum provide one operating water spray for each piece of operating or loading equipment and shall water all access roads as necessary to prevent dust from rising from the contractor's activities.

The contractor is advised that adjacent demolition activities are in progress and shall protect the work area from fugitive emissions.

- 5) Compliance with governing regulations pertaining to environmental protection is required.
- 6) A hydrant permit from the Aurora Water Department is required for water use necessary for this portion of the Work. The contractor will need to purchase water from one department. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution. Excess runoff water shall not be allowed to enter the site stormwater system. The contractor shall provide a meter, flow reducer, backflow preventer, and all necessary plumbing to attach to available hydrant systems per city requirements.
- 7) Erosion Control – The contractor shall develop and submit an approved Storm Water Management Plan (SWMP) and follow the requirements (including the inspection regiment) of the SWMP. The SWMP is completed through the Colorado State and the Aurora Wastewater Management Division. Best Management Practices (BMPs) listed in the SWMP for the project are shown in the site-wide SWMP. The intent of the BMPs is to prevent sediment and debris from entering the storm sewer systems. The contractor will perform the required maintenance and inspections during the course of the project and obtain all approvals of the Inactivation Request to close the SWMP at the end of the project.

B. Existing Conditions.

1. Conditions existing at time of inspection for bidding purposes will be maintained by the City insofar as practicable. However, variations within the remediation area may occur by the City's removal and salvage operations prior to start of remediation work. The City's salvage of equipment prior to Notice to Proceed shall not constitute cause for additional compensation. The City assumes no responsibility for the condition of the remediation area. Contractor shall fully investigate the conditions of the project site prior to preparing and submitting its bid. The contractor shall include all costs in its bid necessary to fully execute the project.
2. Verify exact locations and depths of utilities that may interfere with the Work. All such exploratory excavations shall be performed within 15 days after award of the Contract to avoid possible delays to contractor's work. When such exploratory
3. Call the Utility Notification Center of Colorado for location of underground utility lines and cable locations before commencing any digging. The number is (800) 922-1987.

4. No utility services are available from within the facility. The contractor shall provide all temporary facilities required at the time of the demolition operation including trailers, telephones, toilets, temporary water, potable water, sanitary facilities, temporary electric, etc. The contractor shall coordinate with the Project Manager to identify a sewer manhole location for wastewater disposal. Disposal shall be limited to disposal of rinse water from asbestos abatement activities if permits from Denver Waste Water have been obtained.

1.5 PROTECTION OF ADJACENT BUILDINGS AND SURROUNDINGS:

- A. The contractor shall protect roads and fences not identified for removal in the project vicinity.
- B. The contractor shall provide safety to the general public.
- C. The contractor shall clean and maintain streets and airport tarmac designated as haulage routes during the demolition operation in a manner and as often as necessary to maintain safe and clean access, to the satisfaction of the Project Manager.
- D. Remediation truck traffic shall be evenly spaced throughout the “rush-hour” time periods. Rush-hour is defined as follows:
 1. Monday through Friday 7:00 a.m. to 9:30 a.m.,
 2. Monday through Friday 4:00 p.m. to 6:30 p.m.
- E. The speed limit within Stapleton property is 30 miles per hour, where conditions permit.
- F. Use of explosives will not be permitted.
- G. The contractor shall protect all public and private property adjacent to and on the job site and including utility lines, streets, sidewalks, parking structures, light standards, street signs, and make all repairs necessitated by reason of or in the course of operations under this Contract to the complete satisfaction of the owner of the damaged property.
- H. Site Security
 1. The contractor shall provide barricades and fencing on all sides of the work and add entrance gates to prevent unauthorized access to the immediate work area to the satisfaction of the Project Manager. The contractor shall install required signs describing remediation activities and prohibiting unauthorized entry to the site, securely anchored to the fencing to resist high winds and posted at several demolition activities. Submit sign layout, language and location to Project Manager prior to obtaining the signs.
 2. Watchman Service. The contractor may provide a guard service that will fully cooperate with the guard service currently on site including but not

limited to coordination of all radio communications, guard shifts, gate traffic, fire watch, and security issues such as unauthorized personnel on the site. The contractor shall provide a full-time gate attendant at all gates opened to facilitate contractor's operation to prevent unauthorized site access when no operations are ongoing in the immediate area or when the public can easily gain access to the site without authorization. During working hours, security and fire watchmen may be Contractor's supervisory personnel, but these designated personnel must be on the site at all times.

1.6 PROTECTION OF EXISTING UTILITIES.

A. **Monitoring and Environmental Remediation.**

The contractor shall protect and not disturb CP Test stations along with monitor and environmental remediation wells surrounding the site within the contractor's designated work area and outside of his work area. The contractor shall verify monitoring well locations with the Project Manager prior to start of work.

B. **Underground Utilities.**

Existing utility lines that are indicated or the locations of which are made known to the contractor (through utility locates or by the Project Manager) prior to excavation and that are to be retained shall be protected from damage during demolition. If the utilities are damaged the contractor shall immediately report to the Project Manager and repairs made at the contractor's own expense.

C. **Utilities.**

All unanticipated or un-shown utilities shall be marked and preserved until the contractor's surveyor adequately documents the location of the discovery.

D. **Acceptance of Repairs.**

All repairs to a damaged utility or improvements are subject to inspection and acceptance by an authorized representative of the utility or improvement authority before being concealed by backfill or other work.

E. **Fire Hydrants.**

All fire hydrants and water control valves not scheduled for demolition shall be kept free

from obstruction. The contractor shall mark every non-useable hydrant as “Out of Service”.

F. Maintaining in Service.

Water mains, telephone manholes and ducts, power lines and equipment, gas lines, fuel lines and pits, sanitary sewer lines and storm drain lines are to remain. If utilities are encountered during demolition are not shown on the drawings, the contractor shall notify the Project Manager. The contractor shall be responsible for and shall repair all damage due to its operations. The provisions of this section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.7 PUBLICITY:

- A. The contractor shall comply with all tenets of General Conditions of the Contract referred to as the City and County of Denver’s “Yellow Book.” The media may not access the remediation site without specific approval of the Project Manager. The contractor is specifically precluded from scheduling or promoting any type or form of publicity for the remediation project.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Materials furnished by the contractor for termination of existing utilities shall meet the requirements of the governing utility agency.
- B. Backfill material shall meet the requirements of the Stapleton Earthwork Specifications, the SNC Environmental Specifications, the VCUP Application, CDOT Section 203, Latest Revision of the Standard Specifications for Roadway and Bridge Construction or approval of the Project Manager.
- C. In areas for utility disconnect where the asphalt will be replaced and the road or access will be used as such, the contractor shall backfill these areas to 95% or 100% of the Standard Proctor maximum Density and the asphalt surface will be replaced. The contractor shall match the existing thickness of asphalt.
- D. All backfill material shall be placed in maximum 6-inch thick lifts and shall be compacted to a density equivalent of a minimum compaction of 95% or 100% of the Standard Proctor Maximum Density and meet the moisture content for a similar material following ASTM D698 and the Stapleton Earthwork Specifications. The contractor may use an onsite borrow source for backfill material. The onsite borrow source shall be designated by the Project Manager.

PART 3 – EXECUTION

3.1 OSHA REQUIREMENTS

- A. All work shall be performed in accordance with the Federal Occupational Safety and Health Administration as well as state and local requirements.
- B. Keep work sprinkled with water to prevent dust migration. Provide water and necessary equipment or hydrant for this purpose.
- C. Burning of materials on site is not permitted.

3.2 LINES, LEVELS, AND EXISTING DRAWINGS:

- A. Contractor shall be solely responsible for proper layout of the Work and for all lines and measurements for all of the Work executed under the Contract Documents. The contractor shall verify the figures shown on the drawings before layout of the work and will be held responsible for any errors or inaccuracies resulting from his failure to do so. The City will in no case assume the responsibility for laying out the Work indicated on the Contract Drawings included in the Contract Documents.

3.3 MAINTAIN FENCING

The contractor shall maintain temporary security chain link fence as directed by the Project Manager. Concrete footings may be required every 100'. The concrete footings shall be a minimum of 8 inches in diameter and 2 feet deep. Barbed wire and top rails will not be required. The contractor will be responsible for the maintenance of the fence and the subcontractor's removal of the fence after the completion of the project.

3.4 ABANDONMENT OF EXISTING UTILITIES:

- A. The contractor shall be responsible for disconnecting and capping all utilities in accordance with the standards set forth by the appropriate utility companies and in accordance with any applicable state laws and/or standards.

1. Xcel (electric).

The contractor shall coordinate with the Project Manager for all known power source locations. The contractor shall be responsible to coordinate and/or verify that all power is inactive prior to commencing demolition.

2. Aurora Water.

The contractor shall coordinate with the Project Manager for all known water source locations. The contractor shall be responsible to coordinate and/or verify that the water is available for fire protection prior to commencing demolition. The water system shall

remain active during demolition and without leaks.

3. **Xcel (Gas).**

The contractor shall coordinate with the Project Manager for all known natural gas line locations. Xcel has cut and cap all gas lines coming into the site and re-routed the main line feed. The contractor shall coordinate with Xcel that all gas service has been terminated far enough from the demolition area to avoid hazards and damage to Xcel equipment.

4. **Wastewater Management Division.**

The contractor shall coordinate with the Project Manager for all known sanitary and storm sewer main lines and lateral locations. The contractor shall be responsible to coordinate and/or verify storm and sanitary sewer main lines and lateral location prior to commencing demolition. Abandonment of storm and sanitary sewer laterals shall be per Aurora Wastewater standards including capping the lateral 2 foot below grade, or at the edge of excavation, or where the lateral connects to the main line utility. If the lateral is connected at a manhole, the lateral abandonment can be made from within the manhole.

Storm sewer facilities including drop inlets, curb and gutter, pipeline, manholes, etc. shown on the drawings that provide drainage to the site shall be left in place and not disturbed unless otherwise shown on the Contract Drawings. The contractor shall leave all hay bales and equipment used in conjunction with the Storm Water Management Plan in place following demolition for continued storm water control. Storm sewer laterals from roof drains shall be capped 2-feet below the adjacent grade outside the building.

5. **Backfilling.**

Backfill, compact, and restore all surfaces where openings are made for the disconnecting of utility lines or for any other purpose in accordance with the backfill requirements of this section. Replace asphalt for utility disconnects in areas that will continue to be used as ingress and egress.

3.5 OWNERSHIP OF MATERIALS:

- A. At the time of issuance of the Notice to Proceed, the contractor takes title to all materials within the project boundaries that have not been previously indicated as remaining or to be salvaged for the benefit of the City. Material to be salvaged by the contractor shall be promptly removed from the site.

3.6 PRESERVATION OF TREES AND PROTECTED BIRDS:

- A. The contractor shall preserve and protect all trees within the project boundaries.
- B. The contractor shall identify, preserve, and protect all protected bird nests within the project boundaries. The contractor shall protect the nesting area and keep equipment, materials, and personnel away from the nesting area. The contractor shall mark the area with barricade fencing to prevent unintentional access to the area, and shall maintain the integrity of the fence for the duration of the project. The contractor shall comply with all federal, state, and local regulations regarding the protected birds and comply with all directions from wildlife officials.

3.7 INTENT OF THE PROJECT:

- A. The intent of the project is to completely remove all concrete crusher fines in the general project limits as specified in the Highline Canal Phase IV Plan. The intent further includes returning the site to its approximate final design level grade and legally disposing of debris, hazardous materials and salvageable items. It is the intent of the City to promote recycling and salvage to the maximum extent possible. Salvage and recycling shall be considered when preparing bids.

3.8 FINAL GRADING OF SITE:

- A. The contractor shall grade all disturbed soil surfaces to achieve final design grade as specified in the Contract Documents and on the drawings. The intent is to backfill the area to pre-excavation conditions as directed by the Project Manager. The contractor will seed and mulch in accordance with the Aurora stormwater requirements(see Appendix D).

END OF SECTION 02061

SECTION 02089

REMOVAL AND DISPOSAL OF COMPONENTS CONTAINING NON ACM HAZARDOUS MATERIALS

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK:

This section includes all work necessary to remove, recycle, and/or dispose of any debris containing non-ACM hazardous materials. Such components may include, but are not necessarily limited to: mercury vapor lights and electrical switches found to contain mercury, any light ballasts, batteries, transformer oils or hydraulic oils found to contain polychlorinated biphenyls (PCB's), the PCB container, chlorofluorocarbons (CFCs) containing refrigerants, and incidental lead-based paint. Limited quantities of PCB's and mercury may exist within the project site. Neither has been specifically identified for removal in the project drawings. Should the contractor encounter non ACM hazardous materials, the contractor should stop work immediately and notify the project manager. The contractor shall refer to Materials Management Plan in Appendix A of these specifications and complete the Contamination Discovery Report in Appendix C of these specifications.

1.02 RELATED SECTIONS:

- A. General Conditions of the Contract referred to as the City and County of Denver's "Yellow Book."
- B. Section 01561 – Site Health and Safety Procedures
- C. Section 02061 – General Demolition

1.03 REFERENCES:

- A. CODE OF FEDERAL REGULATIONS (CFR):
 - 1. 29 CFR 1910, Occupational Safety and Health Act (OSHA)
 - 2. 29 CFR 1926, Occupational Safety and Health Act, Construction Industry.
 - 3. 40 CFR 262, U.S. Environmental Protection Agency Regulations for Generators of Hazardous Wastes.
 - 4. 40 CFR 761, U.S. Environmental Protection Agency Regulations for PCB.
 - 5. 29 CFR 1910.120, OSHA General Industry Hazardous Waste Operations Requirements.

6. 29CFR 1919.1025, OSHA Lead in Industry General Standard.
7. 29CFR1926.62, OSHA Lead in Construction.
8. 29CFR1910.134, General Standard.
9. 5CCR–1001–19, Regulation Number 15, Control of Emissions of Ozone Depleting Compounds.
10. 5CCR–1001–10, Regulation Number 8, Control of Hazardous Air Pollutants.

1.04 SUBMITTALS:

- A. Initial Submittals of Contractor or Subcontractor Qualification Information: Items 1.04.1.a. through c. and 2. listed below may be submitted after the bid receipt, but are required to be reviewed and accepted by the Project Manager prior to Notice to Proceed:

1. **Contractor Qualification Information:**

- a. Name and location of at least 2 similar projects performed by Contractor in the last 2 years, including name and telephone number of a contract representative.
 - b. Name of and experience record of the superintendent/foreman. Include evidence of knowledge of applicable regulations.
 - c. Name and experience record of workers who will be assigned to this project. Include for each person, evidence of any training or certification for construction and soils projects.
 - d. Items identified in Section 01300, 3.01, I.
2. **Laboratory Qualification Information:** Submit documentation demonstrating the analytical laboratory has performed analyses, regularly performs these analyses, and conducts analyses utilizing current U.S. Environmental Protection Agency (EPA) analytical methods.
3. **Chain of Custody:** A chain of custody of the physical sample and its corresponding documentation will be maintained throughout the handling of the sample. All samples will be identified, labeled, and logged onto a Chain-of-Custody Form, as a part of the procedure designed to assure the integrity of the resulting data. The record of the physical sample (location and time of sampling) will be joined with the analytical results through accurate accounting of the sample custody.

All laboratories completing chemical analyses will be required to maintain samples in a secure location with limited access from the time of sample receipt through sample disposal. For field operations, samples will be accompanied by a completed Chain-of-Custody form (COC). The sample numbers, locations and requested analyses must be listed. When transferring the possession of the samples, the individuals receiving and

relinquishing the samples will sign, date and note the time of transfer on the COC. Copies of all COCs shall be forwarded with all analytical data and any resulting disposal records.

B. Post-Award PCB/mercury/hazardous materials Submittals:

Items 1.04.B.1. through 4. listed below are to be submitted after the award, but are required to be reviewed and accepted by the Project Manager prior to starting work:

1. **Spill Prevention and Control Plan (SPCP):** Submit a SPCP for the procedures proposed for use in complying with the regulations included in this specification, the location and configuration of work areas where lights and ballasts will be removed, and the debris storage location which shall either be a designated restricted access area or an area isolated temporarily by use of plastic sheeting or other method so that any accidental contamination will not spread to unrestricted areas. The SPCP shall also include the number of debris-filled drums to be allowed on-site, the sequencing of PCB/mercury removal work including the sequence of this work with respect to other abatement and demolition work in this building, the interface of trades involved in the performance of work and methods to be used to assure the safety of building occupants and visitors to the site. The contractor's SPCP shall also include a fall protection plan, which complies with 29 CFR 1926.500 Subpart M, including information on means of access and fall protection.
2. **Contingency Plan:** A contingency plan for response to suspected release of PCBs, or mercury such as leaking ballasts, etc. shall be prepared. This shall include notification of the Project Manager, environmental testing, and clean-up of any contamination resulting from Contractor activities.
3. **Disposal Plan:** The disposal plan shall include the location of approved recycling or permitted incineration-sites and the location of approved contaminated material disposal sites contractor is intending to use. The plan shall also include the qualification of transporter, methods of transport, and a description of the methods to be employed to prevent release to the environment as well as the documentation of waste disposal.
4. **Laboratory Qualification Information:** Submit proof of qualifications of testing laboratory and personnel. Accreditation by the American Industrial Hygiene Association (AIHA) for organic material analysis, shall be minimum proof of compliance. This submittal must be approved by the Project Manager prior to beginning any testing.

C. During-Work PCB/mercury/hazardous materials Submittals:

Items 1.04.C.1. through 3. below are to be submitted to the Project Manager as work progresses at the time specified:

1. **Leaking Ballasts:** If leaking ballasts are accumulated, submit proof of notification of EPA and local jurisdiction if debris is to be stored for a period over 30 days.

2. **Hazardous Waste Transportation Manifest Forms:** Record keeping of all City generated PCB and mercury must be accurate, thorough and complete, since the City remains ultimately responsible for their generated PCB until its final EPA approved destruction. Signed and completed Hazardous Waste Manifest Forms shall be used for the transportation of PCB/mercury (in accordance with 40 CFR Part 761 and Part 262) as well as state and local transportation and disposal regulations. Each manifest is to be assigned a unique number. This form shall be signed by each party who has control over the PCB/mercury waste (initiator must have signature authority from generator), and a copy retained by each party as responsibility for the waste is transferred to the next party. To ensure compliance with EPA regulations and to take every precaution against improper/incomplete PCB incineration or disposal and mercury recycling, tracking records are required as follows:
 - a. Provide tracking documentation for each container of PCB and/or PCB-contaminated substance(s) and mercury, by forwarding copies of all manifests and continuation sheets (information of contents of each PCB and mercury container) to the Project Manager within one week of shipping.
 - b. Each drum/container shall be properly labeled prior to its leaving the PCB/mercury filling location. A properly labeled PCB/mercury drum shall have painted on it, or attached to it (in addition to other requirements) the following information:
3. A unique PCB or mercury container serial number as follows:
 - a. Each PCB or mercury drum/container, filled with PCB or mercury contaminated substances will have a serial number that is a combination of the Building number, and the container number painted on the drum/container.
 - b. The initial date the PCB or mercury container was filled.
 - c. Contents of the PCB or mercury container. Liquids shall not be mixed with solids.
 - d. The name of the company and person filling the container.
 - e. Description of container contents. (Example: contaminated rags, light fixtures, etc.). All communication relating to these containers must reference the container serial number(s).

D. Certificates of Destruction/Recycling:

The contractor shall provide Certificates of Destruction (CD) to the Project Manager, as well as a certification that the incineration facility destroys the PCB contaminated materials and/or recycles the PCB ballasts and mercury. The contractor shall provide the Project Manager with signed copies of the manifest within 10 days of receipt of material by the incineration facility

and a CD within 30 days of receipt of the material. Reference Section 02061 General Demolition, Paragraph 1.03 Submittals. Certificates of Recycling or destruction for all hazardous materials removed as part of this project shall be submitted to the Project Manager within 10 days of the removal of the materials from SIA.

E. Certificates of Disposal for Chlorofluorocarbons (CFCs)

The contractor shall provide CFC drawdown documentation and Certificates of Destruction (CD) to the Project Manager, as well as a certification that the disposal facility destroyed the CFC. Contractor shall provide the Project Manager with signed copies of the manifest within 10 days of receipt of material by the disposal facility and a CD within 30 days of receipt of the material. Reference Section 02061, General Demolition, Paragraph 1.03 Submittals.

F. Final Submittals: Item 1.04.F.1. are to be submitted to the Project Manager at the completion of the Work:

1. Summary Report: Copies of the confirmatory sampling results and all narrative reports performed as part of this Contract.

1.05 QUALITY ASSURANCE:

- A. Contractor Qualifications: The contractor shall be a firm of established reputation which is regularly engaged in, and which maintains a regular force of workers skilled in mercury, PCB, and lead-based paint handling and removal. Refer to Section 01010 for general QC requirements.

1.06 CONTRACTOR RESPONSIBILITY:

- A. The contractor shall assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to the protection of his workers, visitors to the site, and persons occupying areas adjacent to the site. The contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations, and shall hold the government harmless for failure to comply with any applicable safety or health regulation on the part of himself, his employees, or his subcontractors.

1.07 PROJECT/SITE CONDITIONS:

A. Means of Egress:

Establish and maintain emergency and fire exits from the work area.

B. Use of Existing Facilities:

Use of existing toilets, showers, and/or other similar facilities for decontamination areas is prohibited.

C. Access to Work Area:

The following personnel shall have unrestricted access to work area:

1. CDPHE
2. Project Manager and Designated Staff;
3. OSHA Inspectors;
4. EPA Inspectors; and
5. Local Building or Health Officials

- D. Maintain Environmental Conditions: The contractor shall be solely responsible for new release of mercury, PCB, or lead-based paint to the environment during work. The contractor shall not allow or cause additional materials except disposal containers to become mercury, PCB, or lead-based paint contaminated during the work.

1.08 SEQUENCING/SCHEDULING:

- A. The contractor shall include in its work plan and schedule all work activities, and a sequencing plan consistent with the plans and procedures that shows all hazardous material work to be completed prior to demolition activities.
- B. The contractor shall provide the name and telephone number of at least one responsible individual and an alternate, who will serve to respond to operational problems and/or emergencies on a 24-hour on-call basis. The contractor shall agree that notice to his designated representative shall constitute notice to the contractor and shall agree to be bound by any commitments or representations made by the representative. The designated individual shall be capable of responding to SIA within 4 hours of notification.

PART 2 – PRODUCTS

2.01 EQUIPMENT:

Equipment, including disposable protective clothing, used in the execution of this Contract and provided to visitors to the site, shall comply with the applicable federal, state, and local regulations.

PART 3 – EXECUTION

3.01 PREPARATION:

- A. Isolate the PCB/mercury/lead-based paint work area(s) for the duration of the Work so as to prevent unauthorized access by designating the area off limits to all but authorized personnel. Maintain a log of all persons visiting the PCB/mercury/lead-based paint work area(s).
- B. Post warning signs and labels as required by this Contract, 29 CFR 1910, 40 CFR 761, and as directed by the Project Manager.
- C. Submit all sampling and analytical data to the Project Manager.

3.02 WORK PROCEDURE:

A. General Procedures:

Perform all PCB/mercury/lead-based paint related work and comply with the general safety and health provisions in conformance with 29 CFR 1910, 29 CFR 1926, and 40 CFR, as well as state and local regulations, respectively. If a conflict arises, the more stringent application shall apply until a determination is made by the Project Manager.

B. Coordination of Work of all Trades:

Coordinate the work of all trades to assure that their work is performed in accordance with the applicable regulations and that the PCB, mercury and/or lead-based paint control area(s) remains separated from the remaining work areas.

3.03 PCB/MERCURY ITEM REMOVAL:

A. The following is a basic outline of the minimum steps that will be taken during the removal of PCB/mercury containing items:

1. The plan of action submitted for review and acceptance by the contractor for the removal of PCB, removal and disposal of PCB containers and mercury containing items should address, at a minimum these points and shall fully detail the manner in which the contractor will comply with all applicable federal, state, and local requirements for the identification, removal, and disposal of PCB's and mercury.
 - a. Place a minimum of two layers of 6 mil (0.152 mm) plastic sheeting on the floor beneath the disposal drums, the actual work area for ballast removal, and beneath stored disposal drums.
 - b. Pour a significant (minimum three-inch (7.62-cm) layer) amount of oil absorbent in drums labeled as containing PCB or mercury, as appropriate.
 - c. Remove the item and place in the drum. If it says "NO PCBs", dispose of it in the normal demolition debris. Do not include non-PCB items in the disposal drums.
 - d. If an item or PCB labeled ballast shows any sign of leaking, PCB/mercury resistant gloves shall be worn when handling the fixture.
 - e. Dispose of any light fixture which held an unlabeled leaking ballast as PCB-contaminated material.
 - f. Layer the ballasts until the drum is full. The drum shall be tightly packed with the minimum possible void space. A minimum of 180 ballasts shall be placed in each drum.
 - g. Place all used disposable protective clothing and plastic in the drum.

2. PCB containers shall be rinsed per regulations. All PCB contaminated materials including but not limited to rinsed water, PCB containers, ballasts, switches, oils, personal protective equipment, and plastic sheeting are to be placed in drums and shipped for incineration at an EPA approved facility. Disposal of the above materials to a landfill is not permitted under this contract. Non-leaking ballasts can be recycled. The mercury-containing lamps and switches are to be recycled at a regulated facility.
 - a. The drums shall be labeled with a DOT-ORME label with the following minimum information:
 1. A label identifying the contents as containing PCBs as required in 40 CFR 761.45 or mercury as required in 40 CFR 262.31.
 2. Date materials were placed in the drum.
 3. Materials in the drum, i.e. "75 two-tube light ballasts."
 4. Name, address, and phone number of the generator, or owner of the light ballasts.
 5. Container identification number.
 - b. The weight of each container is to be recorded and entered on the manifest.
3. Make arrangements, i.e. obtain EPA Generator Identification Number, make EPA notifications, fill out hazardous waste manifests, and incinerate material in the drums as PCB contaminated waste or recycle material in drums containing mercury.
4. Transport the drum(s) and any other PCB materials to an EPA approved incineration facility or ballast recycling facility and mercury-containing material to an EPA approved recycling facility.
5. Any equipment that has contained PCB containing oils at concentrations above 50 ppm shall be removed, packaged, transported, and destroyed in conformance with the regulations governing PCB destruction. All equipment, ancillary equipment, hoses, pipes, gages, shells, cores, etc. shall be for all equipment and fitting that are associated with the main oil storage reservoir. The equipment shall be manifested and transported directly to the destruction site. Destruction by incineration shall be the only acceptable means of destroying the PCBs on the equipment. Provide copies of the chain of custody and transport manifest when the equipment leaves the site. Provide the completed chain of custody, transport manifest, and certificate of destruction within 30 days of the equipment leaving the site.

3.04 FIELD QUALITY CONTROL:

A. Site Inspection and Stop Work Orders:

While performing this work, the contractor shall be subject to on-site inspection by

federal, state, or local agencies. Work shall also be subject to inspection by OSHA and EPA inspectors and/or local building or health officials. If found to be in violation by any of these officials, the contractor shall cease all work immediately. Until the violation is resolved, standby time required to resolve the violation shall be at the contractor's expense. One complete set of equipment (such as respirators and disposable clothing) required for entry to the work area shall be made available within 2 hours of request by the Project Manager for inspection of the work area. Such requests will only be made during the contractor's working hours.

3.05 CLEANUP AND DISPOSAL:

A. **Permits and Notifications:**

Secure necessary permits in conjunction with PCB/mercury removal, hauling and disposal and provide timely notification of such actions, as may be required by federal, state, regional, and local authorities. Notify the regional office of the United States Environmental Protection Agency and provide copies of the notification to the Project Manager 10 days prior to the commencement of the Work.

B. **Housekeeping:**

Essential parts of PCB/mercury control are housekeeping and cleanup procedures. Maintain all surfaces on the work area free of accumulations of debris to prevent further dispersion. Give meticulous attention to restricting the spread of debris, keep waste from being distributed over the general area or to other areas in the buildings. The blowing down of the work area with compressed air is forbidden. Post appropriate hazard warning signs. In all possible instances workers shall cleanup their own areas.

The contractor shall equip personnel engaged in cleaning up scrap and waste with necessary personal protective clothing.

C. **Disposal of PCB/mercury Containing Materials:**

Collect and dispose or recycle all PCB ballast and oils. Collect and dispose of all contaminated waste, rags, scrap, debris, bags, containers, equipment, metal, and PCB contaminated clothing in properly labeled PCB disposal drums. Mercury containing wastes shall be placed in properly labeled mercury recycling drums or boxes separate from the PCB drums. The contractor will provide the Project Manager with a copy of all manifests and continuation sheets resulting from the incineration (Certificate of Destruction) and disposal/recycling of the PCB containing waste and mercury recycling. In some instances, a temporary holding area can be established upon approval by the Project Manager for properly packaged PCB/mercury waste. All PCB materials shall be destroyed by incineration or recycled. Disposal by landfilling or other means shall not be permitted.

D. **Approval of Final Cleanup:**

The Project Manager will inspect the work area for acceptance of the PCB/mercury removal. Contamination, dust or debris is not permitted on any surface in or around the work area as

determined by visual observation. All specified materials must be removed from the work area prior to receiving approval of final cleanup. The Project Manager will review and accept final cleaning and restoration of the work area.

3.06 REFRIGERANTS:

- A. The contractor shall inspect and remove any regulated refrigerants from mechanical equipment, drinking fountains, compressors, and coolers. The contractor shall comply with federal, state, and local regulations for handling, recycling, storing, and disposal of the refrigerant. The contractor shall provide disposal/reuse certificates for refrigerants. A contractor licensed to remove and dispose of CFCs shall remove refrigerants.

3.07 BATTERIES:

- A. The contractor shall inspect, remove and properly dispose of all batteries in and around the demolition project area. These batteries are located inside equipment that are used for emergency lighting, equipment needing emergency backup power, exit signs, HVAC controls, and other various pieces of equipment. The contractor shall comply with federal, state, and local regulations for handling, recycling, storing, and disposal of the batteries. The contractor shall provide chains of custody for the handling, transport and disposal (recycling) of all batteries within 10 working days of transporting the batteries from the site. The contractor shall submit the disposal (recycling) facility that will be used for disposing of the batteries in the Work Plan for review and acceptance by the Project Manager prior to beginning the battery removal work. The final disposal of the batteries shall be by recycling, reclaiming, reusing, or destruction. Landfilling or land disposal of the batteries shall not be acceptable.

3.08 CHEMICAL SWEEP

- A. The contractor shall inspect all areas in and around the project work area for containerized hazardous materials that are not specifically identified in other specification sections. These may include paints, lubricants, cleaners, HVAC chemicals, maintenance materials, radioactive sources, and all other materials which may not be legally disposed of at the DADS facility. The contractor shall collect all discovered materials into a central staging area and prepare these materials for transportation and disposal at appropriate facilities. The contractor shall legally transport and dispose of all materials discovered during the sweep or that may be discovered during demolition operations. All personnel handling these materials shall be appropriately trained. Incompatible materials shall be segregated and handled separately. The contractor shall obtain all necessary laboratory analysis to allow for proper disposal and shall submit analysis data, chains of custody, manifests, Certificates of Destruction, and facility credentials prior to applying for payment of this item. All radioactive sources discovered in equipment, exit signs, or other fixtures shall be packaged and transported to the originating source. The contractor shall coordinate all packaging, shipping, licensing, permitting, shipping, and shall pay all fees and permits associated with the removal of the radiological sources from the site.

END OF SECTION

APPENDIX–A

Materials Management Plan

Remediation Activities

Stapleton International Airport
Denver, Colorado

MATERIALS MANAGEMENT PLAN
RESTORATION ACTIVITIES
STAPLETON INTERNATIONAL AIRPORT
DENVER, COLORADO

1.0 INTRODUCTION

This Materials Management Plan (MMP) has been prepared to define how subsurface conditions will be monitored and assessed during demolition/restoration activities currently underway at Stapleton International Airport (SIA).

2.0 ENTITIES INVOLVED IN THE DEMOLITION ACTIVITIES AT SIA

CCoD Department of Aviation: The point of contact for the CCoD Department of Aviation is Mr. Greg Holt (303-342-2976).

Stapleton Development Corporation: Ms. Tammy Holloway is the point of contact for SDC (303-393-7700).

Brown and Caldwell: Mr. Joe Seracuse is the point of contact for Brown and Caldwell. Mr. Seracuse can be reached at one of the following numbers: 303-239-5492 (office) or 303-239-5454 (fax).

AECOM: Ms. Vasanta Kallori is the point of contact for AECOM and can be reached at 720-891-9769.

SJR Environmental Consulting (SJRE): Mr. Don Milner is the point of contact for SJRE. Mr. Milner can be reached at 303-205-8831.

3.0 MONITORING AND NOTIFICATION PROCEDURES

CCoD, through its environmental consultant, Brown and Caldwell, will conduct inspections during subsurface demolition activities conducted at the site, if required. These inspections will be conducted in areas believed to have the greatest potential of having contamination. The inspections will include a physical evaluation of the subsurface conditions and documentation of observations in a logbook. If necessary, these inspections may be supplemented with field instrumentation (i.e. Photoionization detector, organic vapor meter, field infrared analysis, etc. If potentially impacted soil is observed during these inspections, Brown and Caldwell will notify the CCoD SIA Project Manager immediately.

It is a contract requirement that the remediation contractor immediately cease all intrusive activities in an area if potentially impacted soil is observed. It is the responsibility of the Demolition Contractor to ensure that the site personnel and equipment operators are aware of this requirement. The requirement and notification procedures are reviewed and discussed during safety meetings for the various projects.

If the remediation contractor encounters any potential impacted subsurface media during remediation activities, the remediation contractor will notify the CCoD on-site representative (i.e. City employee or designee, currently AECOM). The City representative will then notify Mr. Holt or Brown and Caldwell as quickly as possible. The remediation contractor has been instructed to immediately cease all intrusive activities in the impacted area, pending determination from CCoD prior to continuation of subsurface activities.

If free phase product is encountered in the subsurface, OPS and/or CDPHE will be notified by the CCoD Project Manager or designated personnel.

4.0 INITIAL RESPONSE ACTIONS

Brown and Caldwell will mobilize personnel to the site with monitoring equipment (i.e. photo ionization detector [PID]) and sampling equipment. Brown and Caldwell's duties may include any of the following:

- Document the location of the suspected release.
- Collect environmental samples for chemical analysis to determine if soil contamination above the Stapleton Numeric Criteria is present.
- Arrange for chemical analysis of samples.
- Describe the subsurface conditions (i.e., soil type, odors, etc.).
- Take photographs of the area, if appropriate.
- Document all site activities underway at the time of site visit.
- Ensure that any excavated soil is stockpiled on polyethylene liner and is covered and bermed.
- Notify OPS and/or CDPHE if appropriate.

5.0 SOIL EXCAVATION AND MANAGEMENT DURING REMEDIAITON

If impacted soil is excavated, the soil will be segregated based on field observations (i.e. PID readings, odor, staining, etc.). Dependent upon the potential quantities, the impacted soils will either be excavated and placed directly atop the ground surface, or left in place. The generated stockpile may be bermed and/or managed to prevent contaminated storm water runoff and blowing dust. Soil that is assumed not impacted based on field observations will be stockpiled separately from potentially impacted soil. The remediation contractor may not backfill the excavation until notified by CCoD that backfilling may be conducted.

Composite samples of impacted soils will be collected in accordance with the VCUP Supplement to determine the options for management of the material. If the analytical results indicate that the contaminant concentrations are below the Stapleton Numeric Criteria, the material may be utilized onsite as backfill. If the results reveal the presence of contamination above the Stapleton Numeric Criteria, the soil will be characterized and profiled for off-site disposal.

The analytical suite for the stockpile samples will be determined based on the location of the suspected release area relative to historic industrial operations, potential sources for the contamination such as former storage tanks, fanner deicing areas, and underground utility lines, and field observations (e.g. staining odor, PID readings, etc.). Since the majority of contamination at SIA is the result of fueling operations, samples will most likely be collected for benzene, toluene, ethylbenzene, and xylene (BTEX) analysis, as well as analysis for total extractable and/or total volatile hydrocarbons. The analytical suite may be expanded to include volatile organic compounds (EPA method 8260), glycols, polyaromatic hydrocarbons (PAHs), and/or metals.

Additional excavation and material management activities may be implemented in the event that demolition and remediation program responsibilities overlap or where multiple program objectives may be achieved. These additional activities shall be addressed as part of the remediation program MMP.

6.0 ASSESSMENT OF REMAINING IMPACTED SOIL

The restoration contractor will not conduct restoration activities such as excavation of potentially impacted soils unless specifically requested by the Project Manager for the CCoD Department of Aviation. In general, excavation of potentially impacted soil will only be conducted by the restoration contractor if removal of the material is required to proceed with the planned restoration activities. Otherwise, the site will be turned over to the CCoD Department of Aviation for assessment and remediation, if required.

Based on the results of the initial assessment activities, a program will be designed and implemented to determine the nature and extent of contamination associated with the release. Conventional methods such as geoprobing, trenching, and/or drilling may be employed to determine the vertical and horizontal extent of contamination. Screening tools such as soil gas may also be used to guide the investigation. The methodology will be dependent on the specific characteristics of the impacted area.

In the event that areas of potentially impacted soils are identified within the boundary of the remediation program, additional assessment and disposal activities may be required. These additional activities shall be addressed as part of the remediation program.

It will be the responsibility of CCoD Department of Aviation to engage a contractor to characterize the site, design and implement a remediation strategy if necessary, and to obtain a no further action determination from the appropriate regulatory agency based on the suspected source of the contamination.

APPENDIX– B

Stapleton Earthwork Specifications

Remediation Activities

Stapleton International Airport
Denver, Colorado

EARTHWORK SPECIFICATION
STAPLETON FILING 18

MATERIALS

- A. Suitability. All fill materials shall be free of vegetation, brush, sod, and other deleterious substances and shall not contain rocks or lumps larger than 6 inches in greatest dimension. Organic content of all fill materials shall be less than 3%.
- B. Select Granular Fill. Select granular fill shall consist of suitable Stapleton area granular soil or similar material containing 100% minus 6-inch material, no more than 10% plus 2-inch material, containing less than 50% passing the No. 200 sieve, and having a maximum plasticity index of 10.
- C. Overlot Fill. Overlot fill shall consist of suitable Stapleton area soil or similar material containing 100% minus 6-inch material, no more than 10% plus 2-inch material, containing less than 80% passing the No. 200 sieve, and having a maximum liquid limit of 40 and a maximum plasticity index of 20.

PLACEMENT AND COMPACTION

- A. Preparation of Embankment Areas. In areas of proposed embankment, remove all pre-existing fill material, disturbed material, and any unsuitable material down to suitable undisturbed natural soil as determined by a representative of the third party geotechnical engineer. Also flatten any existing excavation slopes to no steeper than 2:1 (horizontal:vertical). Prepare the base of the excavation by scarifying to a minimum depth of 8 inches, moisture conditioning to within 2 percentage points of optimum, and compacting to provide a stable, uniform base for fill placement. Rework any excessively moist or unstable areas as necessary to allow for proper compaction of embankment fill. Where fill is to be placed on slopes steeper than 4:1, excavate 2-foot to 4-foot high horizontal benches to allow fill placement in horizontal lifts. A representative of the third party geotechnical engineer shall be given the opportunity to observe all prepared embankment areas prior to fill placement.
- B. Material Zones and Compaction Requirements. Fill placed more than 8 feet below final grade shall consist of Select Granular Fill compacted to at least 100% of the ASTM D 698 (Standard Proctor) maximum dry density. Fill placed within 8 feet of final grade shall consist of Overlot Fill compacted to at least 95% of the ASTM D 698 maximum dry density. All fill placed to within 3 feet of final grade shall be placed at moisture contents between 1 percent below and 3 percentage points above the ASTM D 698 optimum

moisture content. The moisture content shall be reduced to between plus/minus 2 percentage points of optimum in the upper 3 feet.

COMPACTION CONTROL AND QUALITY ACCEPTANCE

- A. **Material Conformance.** Suitability and material conformance of all fill materials will be checked by the third party geotechnical engineer prior to fill placement. The Contractor shall submit samples of all proposed fill materials to the third party geotechnical engineer for approval at least 48 hours prior to placement. Once material sources are initially approved, the third party geotechnical engineer's on-site representative will obtain a sample for conformance testing for at least every 25,000 cubic yards of fill placed, or when a change in material type occurs.

- B. **Compaction Testing.** In compacted fills, the representative of the third party geotechnical engineer will perform in-place nuclear moisture-density tests at a frequency of at least one test for each 2,000 cubic yards of fill placed, with at least one test performed at elevation increments of 1 to 1.5 feet for each day's work in each general work area. No layer of fill shall be covered by another layer until the proper moisture and compaction have been achieved and the area approved by the third party geotechnical engineer's repre

Compaction Table:

	Deep Zone {Fill > 8-ft BFG*}	Middle Zone (8-ft < Fill < 3-ft BFG*)	Upper Zone (Fill < 3-ft BPG*)
Preparation	Scarify bottom of excavation to 8" minimum depth, moisture condition to optimum moisture content +/- 2% and re-compact to provide uniform stable base for fill placement. Verify by a 3'd party geotechnical engineer.		
Soil Type	Select Granular (100% minus 6- inch, 10% plus 2- inch, <50% passing #200, Plasticity Index 10	Overlot Fill (100% minus 6- inch, 10% plus 2- inch, <80% passing #200, Liquid Limit 0. Plasticity Index 20	Overlot Fill (100% minus 6- inch, 10% plus 2- inch, <80% passing #200, Liquid Limit 0. Plasticity Index 20
Compaction Standard	100% Std Proctor in 8" Lifts	95% Std Proctor in 8" Lifts	95% Std Proctor in 8" Lifts
Moisture Content	-1% < MC < 3%	-1% < MC < 3%	-2% < MC < 2%

Notes:

- BFG denotes below finished grade

3'party testing required for moisture and compaction at a rate of **one** test per 2000 cubic yards with at least one test performed at elevation increments of 1-1.5 ft for each day's work in each general work area.

APPENDIX– C

Contamination Discovery Report

Restoration Activities

Stapleton International Airport
Denver, Colorado

DISCOVERY

DATE DISCOVERY: _____ TIME: _____ REPORT NO.: _____
 REPORTING: _____ COMPANY: _____
 REPORTED TO: _____ COMPANY: _____ DATE R: _____

Description: Staining _____ Odor _____ Asbestos _____ Drums _____ Containers _____ Other _____ Location of Discovery: _____	Activity: Pavement Removal Building Demolition Utility Removal Drilling Soil Excavation Building Inspection Foundation Removal Approximate size of Discovery: _____	Description of how contamination was discovered: _____
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INVESTIGATION

Description: _____

Area: _____ Depth: _____ No. of Containers _____

Sampling Required? Yes No MEDIA: Soil Water Asbestos Sludge

Number of samples collected: ___Water ___Soil ___Other

Probable contaminant: Jet Fuel Diesel Gasoline Solvent Asbestos Unknown

Possible sources: AST UST Pipeline Unknown Other: _____

Results: _____

Date Sampled: _____ Date Results Reported: _____

Recommended Action: _____

ACTION

Description of Implemented Action: _____

Date Started: _____ Date Completed: _____

Charge of Action: _____ Con _____

Phone: _____ Agency Contacted: _____

Contacted: _____ Date Contacted: _____ Time C _____

Date CAP Submitted: _____ Date CAP Approved: _____

COST OF ACTION: _____

APPENDIX–D

Stapleton Aurora Seeding

Specifications Activities

Stapleton International Airport
Denver, Colorado

APPENDIX–E

HLC2 VCUP SUPPLEMENT

Stapleton International

Airport

Denver, Colorado

