

# **ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES**

CONTRACT NO: 201418968

April 2016

## **Ludvik Electric Co.**

**DEPARTMENT OF AVIATION**  
**City & County of Denver**  
Kim Day, Chief Executive Officer of Aviation



**AIRPORT INFRASTRUCTURE MANAGEMENT (AIM)**



Department of Aviation  
Airport Office Building  
8500 Peña Boulevard  
Denver, Colorado  
(303) 342-2200  
www.flydenver.com



July 17, 2015

## **ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES**

**REQUEST FOR PROPOSALS (RFP) CONTRACT NO. 201418968**

### **ADDENDUM NUMBER ONE**

This Addendum Number One supersedes and/or supplements all portions of the RFP Documents with which it conflicts. Proposers must acknowledge receipt of this addendum in the Proposal Acknowledgement Letter, Attachment 2, Part 1.

Mark Adams  
Acting Senior Director of Development  
Airport Infrastructure Management

DENVER INTERNATIONAL AIRPORT

ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES

REQUEST FOR PROPOSAL (RFP) CONTRACT NO. 201418698

ADDENDUM NUMBER ONE

Scope of this Addendum

Addendum Number One includes modifications to the following RFP Documents issued August 26, 2015. These modifications are deemed necessary by the City and County of Denver.

RFP LETTER

***CHANGE IN PROPOSAL DUE DATE:***

**SEALED PROPOSALS DUE:** Will be received no later than **2:00 P.M., Local Time, Wednesday, September 30, 2015**, and delivered to Christy McWilliams, Room 8810, Airport Office Building (AOB), Denver International Airport, 8500 Peña Blvd., Denver, CO 80249-6340 and accessed by the Concourse A Walking Bridge. Respondents should submit the Cost Proposal (sealed in a separate envelope), 1 paper copy, and twelve (12) proposals in Adobe format on separate media (i.e. USB Flash Drive, Compact Disc, etc.) indicating Contract number, Contract name and respondents organization.

ATTACHMENT 1, INSTRUCTIONS TO PROPOSERS

***REPLACE IN ITS ENTIRETY IP-17 WITH THE FOLLOWING LANGUAGE and INCLUDE THE ATTACHED COMPLIANCE FORM***

***Also***

***DISREGARD AND REMOVE THE DOCUMENTS RELATING TO THE LETTER OF INTENT (LOI):***

**IP-17 MINORITY/WOMEN BUSINESS ENTERPRISE (MBE/WBE) REQUIREMENTS**

This Contract is subject to all applicable provisions of Article III Divisions 1 and 3 of Chapter 28 of the DRMC (the "M/WBE Ordinance") and any Rules or Regulations promulgated pursuant thereto.

In accordance with the requirements of the M/WBE Ordinance, the Contractor is committed to, at a minimum, meet the participation goal of eight percent (8%) established for this Project, utilizing properly certified M/WBE subcontractors and suppliers. The Goal must be met with certified participants as set forth in Section 28-55, D.R.M.C. or through the demonstration of a sufficient good faith effort under Section 28-67, D.R.M.C. For compliance with good faith

effort requirements under Section 28-62(b)(2), the percentage solicitation level required for this project is 100%. The Contractor identified in its Proposal MBE and/or WBE firms with which it intends to subcontract for services under this Agreement.

In accordance with Section 28-60(b) and Rules and Regulations promulgated pursuant thereto, the Director has authorized the utilization of a compliance plan to address the Goal for this Project. Therefore, at the time of proposal submittal, the contractor must include in their proposal only the Commitment Page which is included within this RFP. The Contractor, when notified by DSBO, will prepare and present for review and approval of the Director a compliance plan for meeting the requirements of the M/WBE Ordinance. At a minimum, the proposed compliance plan shall comply with all requirements of the Rules and Regulations pertaining to such plans and shall be approved in writing by the Director. Upon such approval, the plan is hereby incorporated into this Contract by reference and may also be included as an Exhibit. Furthermore, the contractor will be required to submit letters of intent throughout the course of the project.

Without limiting the general applicability of the foregoing, the Contractor acknowledges its continuing duty, pursuant to Section 28-72 DRMC, to meet and maintain throughout the duration of this Contract its participation and compliance commitments and to ensure that all Subcontractors subject to the Ordinance also maintain such commitments and compliance. Failure to comply with these requirements may result, at the discretion of the Director of the Division of Small Business Opportunity (“DSBO”), in the imposition of sanctions against the Contractor in accordance with Section 28-77, DRMC. Nothing contained in this Paragraph or in the referenced City ordinance shall negate the City’s right to prior approval of Subcontractors, or substitutes therefore, under this Contract.

The proposer understands that if change orders or any other contract modifications are issued under the contract, the proposer shall have a continuing obligation to immediately inform DSBO in writing of any agreed upon increase or decrease in the scope of work of such contract, upon any of the bases discussed in Section 28-73 of the Ordinance, regardless of whether such increase or decrease in scope of work has been reduced to writing at the time of notification.

The proposer understands that if change orders or other contract modifications are issued under the contract, that include an increase in scope of work of a contract for construction, reconstruction, or remodeling, whether by amendment, change order, force account or otherwise which increases the dollar value of the contract, whether or not such change is within the scope of work designated for performance by an MBE/WBE at the time of contract award, such change orders or contract modification shall be immediately submitted to DSBO for notification purposes. Those amendments, change orders, force accounts or other contract modifications that involve a changed scope of work that cannot be performed by existing project subcontractors or by the contractor shall be subject to a goal for MBE/WBEs equal to the original goal on the contract which was included in the proposal. The contractor shall satisfy such goal with respect to such changed scope of work by soliciting new MBE/WBEs in accordance with Section 28-73 of the Ordinance as applicable, or the contractor must show each element of modified good faith set out in Section 28-75 (c) of the Ordinance. The contractor or consultant shall supply to the director the documentation described in Section 28-75 (c) of the Ordinance with respect to the increased dollar value of the contract.

All proposers are charged with knowledge of and are solely responsible for complying with each and every provision of the Ordinance in making a bid and, if awarded, in performing the work described in the Contract Documents. Failure to comply with these provisions could constitute cause for rejection of a bid or subject the selected contractor to sanctions set forth in the Ordinance. These instructions are intended only to generally assist the proposer in preparing and submitting a compliant bid. Should any questions arise regarding specific circumstances, proposers must consult the Ordinance or contact the Project's designated DSBO representative at (303) 342-2180.

## ATTACHMENT 2, PROPOSAL FORMS

### ***PREVAILING WAGE SCHEDULES:***

**REPLACE: The Prevailing Wage Schedules, Friday May 8, 2015 for Building Construction Projects.**

**WITH THE ATTACHED: Prevailing Wage Schedules, Friday, August 21, 2015 for Building Construction Projects AND the Latest Update to Prevailing Wage Schedules, September 4, 2015 for Modification No. 119.**

The total number of pages (including cover sheet) contained in this Addendum Number One is Four (4) and Three (3) attachments.

\* \* \* \* \*

*End of Addendum Number One*



**DENVER**  
OFFICE OF ECONOMIC  
DEVELOPMENT

## COMMITMENT TO MWBE PARTICIPATION

Office of Economic Development  
Division of Small Business Opportunity

Denver International Airport  
Airport Office Building, Suite 7810  
8500 Pena Blvd  
Denver, CO 80249  
Phone: 303-342-2180 Fax: 303-342-2190  
E-mail: [small.business@flydenver.com](mailto:small.business@flydenver.com)

*The undersigned has satisfied the MWBE participant requirements in the following manner (Please check the appropriate box):*

Contract #	Contract Name:
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The Bidder/Proposer is committed to the minimum advertised contract goal for MWBE utilization on the contract, and will submit Letters of Intent (LOI) for each subcontractor/subconsultant/supplier listed for participation in the Bid Forms as follows:  
 Hard Bids: Three (3) business days after the bid opening  
 Request for Proposals: With the proposal when due

The Bidder/Proposer is unable to meet the contract goal of \_\_\_\_\_ % MWBE, but is committed to a minimum of \_\_\_\_\_ % MWBE utilization on the contract. The Bidder/Proposer understands that they must submit a detailed statement of their Good Faith Effort (GFE) in accordance with DRMC Section 28-62 and 28-67 of Ordinance 85 Part 26 and must submit Letters of Intent for each MWBE listed for participation in the Bid Forms as follows:  
 Hard Bids: Three (3) business days after the bid opening  
 Request for Proposals: With the proposal when due

The Bidder/Proposer is a certified MWBE in good standing with the City and County of Denver and is committed to self-perform a minimum of \_\_\_\_\_ % of the work on the contract.

Bidder/Proposer (Name of Firm):			
Firm's Representative (Please Print):			
Signature (Firm's Representative):			Date:
Title:			
Address:			
City:	State:	Zip Code:	
Phone:	Fax:	E-mail:	



**DENVER**  
THE MILE HIGH CITY

**Office of Human Resources**  
Denver's Human Resource Agency

201 W. Colfax, Department 412  
Denver, CO 80202  
p: 720.913.5751  
f: 720.913.5720  
[www.denvergov.org/csa](http://www.denvergov.org/csa)

**TO:** All Users of the City of Denver Prevailing Wage Schedules  
**FROM:** Alena Duran, Associate Human Resources Professional  
**DATE:** Friday August 21, 2015  
**SUBJECT:** Latest Change to Prevailing Wage Schedules

Please be advised, prevailing wage rates for some building, heavy, and highway construction trades have not been updated by the United States Department of Labor (DOL) since March 1, 2002. The Career Service Board, in their meeting held on April 21, 2011, approved the use of the attached supplemental wage rates until prevailing wage rates for these classifications of work are again published by the United States Department of Labor.

The attached Prevailing Wage Schedule is effective as of **Friday August 21, 2015** and applies to the City and County of Denver for **BUILDING CONSTRUCTION PROJECTS** (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO150004  
Superseded General Decision No. CO20140004  
Modification No.04  
Publication Date: 08/14/2015  
(4 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor (DOL). The employer and the individual apprentice must be registered in a program, which has received prior approval, by the DOL. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

For questions call (720) 913-5018

Attachments as listed above.

General Decision Number: CO150004 08/14/2015 CO4

Superseded General Decision Number: CO20140004

State: Colorado

Construction Type: Building

County: Denver County in Colorado.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/02/2015
1	01/09/2015
2	03/20/2015
3	05/01/2015
4	08/14/2015

ASBE0028-001 10/01/2013

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems).....	\$ 28.83	13.18

BRCO0007-001 01/01/2014

	Rates	Fringes
BRICKLAYER.....	\$ 24.03	8.63

BRCO0007-005 05/01/2014

	Rates	Fringes
TILE SETTER.....	\$ 27.15	7.88



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CARP0001-004 05/01/2013

	Rates	Fringes
Carpenters:		
Acoustical, Drywall		
Hanging/Framing and Metal		
Stud, Form Building/Setting.	\$ 25.00	5.39

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CARP1607-002 06/01/2012

	Rates	Fringes
MILLWRIGHT.....	\$ 28.95	11.10

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ELEC0068-002 06/01/2014

	Rates	Fringes
ELECTRICIAN		
(Includes Low Voltage		
Wiring and Installation of		
Fire alarms, Security		
Systems, Telephones,		
Computers and Temperature		
Controls).....	\$ 32.65	12.70

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ELEV0025-002 01/01/2015

	Rates	Fringes
Elevator Constructor.....	\$ 40.68	28.385+a+b

FOOTNOTE:

a. Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.

b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

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ENGI0009-003 10/23/2013

	Rates	Fringes
Power equipment operator -		
crane		
141 tons and over.....	\$ 25.97	9.15
50 tons and under.....	\$ 24.88	9.15
51 to 90 tons.....	\$ 25.04	9.15
91 to 140 tons.....	\$ 25.19	9.15

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\* IRON0024-001 06/01/2015

	Rates	Fringes
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IRONWORKER, STRUCTURAL.....\$ 25.05 11.70

LABO0720-003 05/01/2014

Rates Fringes

LABORER

Concrete/Mason Tenders.....\$ 16.42 6.38

PAIN0079-002 03/01/2015

Rates Fringes

Drywall Finisher/Taper

Hand.....\$ 20.15 6.91

Tool.....\$ 20.50 6.91

Painters:.....\$ 19.45 6.91

PAPERHANGER.....\$ 20.15 6.91

\* PAIN0930-001 07/01/2015

Rates Fringes

GLAZIER.....\$ 30.52 8.12

PLAS0577-001 05/01/2014

Rates Fringes

CEMENT MASON/CONCRETE FINISHER...\$ 24.00 10.23

PLUM0003-001 07/01/2014

Rates Fringes

PLUMBER

(Excluding HVAC work).....\$ 31.93 12.34

PLUM0208-001 07/01/2013

Rates Fringes

PIPEFITTER

(Including HVAC pipe).....\$ 33.35 12.27

SFCO0669-001 04/01/2015

Rates Fringes

SPRINKLER FITTER.....\$ 34.43 19.09

SHEE0009-001 07/01/2014

Rates Fringes

Sheet metal worker

(Includes HVAC duct and  
 installation of HVAC  
 systems).....\$ 32.47 13.98

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SUCO2001-011 12/20/2001

	Rates	Fringes
Carpenters:		
All Other Work.....	\$ 16.12	2.84
Ironworkers:		
Reinforcing.....	\$ 18.49	3.87
Laborers:		
Brick Finisher/Tender.....	\$ 12.78	1.41
Common.....	\$ 10.62	2.09
Power equipment operators:		
Mechanic.....	\$ 18.48	

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WELDERS - Receive rate prescribed for craft performing  
 operation to which welding is incidental.

**Office of Human Resources**  
**Supplemental rates**  
**(Specific to the Denver projects)**  
**Supp #100, Date: 03-02-2012**

Classification		Base	Fringe
Boilermakers		\$30.97	\$21.45
Power Equipment Operators (Concrete Mixers):			
	Less than 1 yd	\$23.67	\$10.67
	1 yd and over	\$23.82	\$10.68
	Drillers	\$23.97	\$10.70
	Loaders over 6 cu yd	\$23.82	\$10.68
	Oilers	\$22.97	\$10.70
Soft Floor Layers		\$16.70	\$9.81
Ironworkers (Ornamental)		\$24.80	\$10.03
Plasters		\$24.60	\$12.11
Plaster Tenders		\$10.79	-
Laborers: Concrete Saw		\$13.89	-
Power Equipment Operators:			
	Backhoe	\$23.67	\$10.67
	Loader up to and incl 6 cu yd	\$23.67	\$10.67
	Motor Grader	\$23.97	\$10.70
	Roller	\$23.67	\$10.67
Truck Drivers (Dump Trucks):			
	6 to 14 cu yds	\$19.14	\$10.07
	15 to 29 cu yds	\$19.48	\$10.11
	Flatbed	\$19.14	\$10.07
	Semi	\$19.48	\$10.11

- To determine the Tile Setters-Marble Mason-Terrazzo mechanic rates—Use Davis Bacon-Building rates adopted by the Career Service Board.
- To determine the Tile Finisher-Floor Grinder-Base Grinder—Use current Career Service Prevailing Wage Schedules.
- Caulkers—Receive rate prescribed for craft performing operation to which caulking is incidental .i.e. glazier, painter, brick layer, cement mason.
- Use the “Carpenters—All Other Work” rates published by the federal Davis Bacon rates for batt insulation, pre-stress concrete and tilt up concrete walls, Roofers (including foundation waterproofing).
- Use the “Laborer—Common”, rates published by the federal Davis Bacon rates for General Housekeeping, Final Cleanup and Fence Installer.



**DENVER**  
THE MILE HIGH CITY

TO: All Users of the City of Denver Prevailing Wage Schedules  
FROM: Alena Duran, OHR Compensation and Classification  
DATE: September 4, 2015  
SUBJECT: Latest Update to Prevailing Wage Schedules

Please find an attachment to this memorandum all of the current Office of Human Resources Prevailing Wage Schedules issued in accordance with the City and County of Denver's Revised Municipal Code, Section 20-76(c). This schedule does not include the Davis-Bacon rates. The Davis-Bacon wage rates will continue to be published separately as they are announced.

Modification No. 119  
Publication Date: 9-4-15  
(14 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor. The employer and the individual apprentice must be registered in a program, which has received prior approval, by the U.S. Department of Labor. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

Questions call (720) 913-5664

Attachments as listed above.

## APPLIANCE MECHANIC

Last Revision: 02-19-2009  
Effective: 02-19-2009

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Appliance Mechanic</b>	\$22.34/hour	\$5.82/hour

Plus 10% shift differential for regularly scheduled hours worked between 6:00 p.m. and 6:00 a.m.

The Appliance Mechanic installs, services and repairs stoves, refrigerators, dishwashing machines, and other electrical household or commercial appliances, using hand tools, test equipment and following wiring diagrams and manufacturer's specifications. Responsibilities include: connects appliance to power source and test meters, such as wattmeter, ammeter, or voltmeter, observes readings on meters and graphic recorders, examines appliance during operating cycle to detect excess vibration, overheating, fluid leaks and loose parts, and disassembles appliances and examines mechanical and electrical parts. Additional duties include: traces electrical circuits, following diagram and locates shorts and grounds, using ohmmeter, calibrates timers, thermostats and adjusts contact points, and cleans and washes parts, using wire brush, buffer, and solvent to remove carbon, grease and dust. Replaces worn or defective parts, such as switches, pumps, bearings, transmissions, belts, gears, blowers and defective wiring, repairs and adjusts appliance motors, reassembles appliance, adjusts pulleys and lubricates moving parts, using hand tools and lubricating equipment.

Note: This position does not perform installations done at new construction.

## BAGGAGE HANDLING SYSTEM MAINTENANCE

Last Revision: 12-6-2013  
Effective: 10-09-2013

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Entry-Support Mechanic</b>	\$15.26/hour	\$5.78/hour
<b>Machinery Maintenance Mechanic</b>	\$19.33/hour	\$6.25/hour
<b>Controls System Technician</b>	\$24.90/hour	\$6.89/hour

Plus 10% shift differential for regularly scheduled hours worked between 6:00 p.m. and 6:00 a.m.

### **Entry Support Mechanic**

Under direct supervision, assists the Machinery Maintenance Mechanic in maintaining the operational status of the baggage handling system. Duties include but are not limited to; assisting with adjustments with belt tracking, belt tension, and gearbox.

### **Machinery Maintenance Mechanic**

Performs routine and basic adjustments of baggage handling system equipment including but not limited to, belt tracking, belt tension, and gearbox and bearing lubrication. Performs daily and periodic shift inspections, cleaning, and diagnostics of mechanical system components based on an established preventive maintenance program. Dismantles, repairs, and reassembles equipment or machines for stock replacement or to restore baggage handling system equipment to operational status. Preventive maintenance and overhauling machines includes, but is not limited to, motors, clutches, brakes, transporting telecars, bearings, drive belts, drive shafts, pulleys, gearboxes (speed reducers), and conveyor belting. Maintains daily turnover reports and hourly labor time sheets for warranty reimbursement and statistical tracking of repairs.

### **Controls System Technician**

Performs a variety of functions such as installation, maintenance, and repair of devices which control and are controlled by the baggage handling system and related equipment. Such devices include, but are not

limited to, personal computers, programmable logic controllers and peripherals, motor control panels, photoelectric sensors, sync-pulse tachometers, laser and RF readers, linear induction motors and servo-drives. Troubleshoots and repairs all control system and electrical failures by applying comprehensive technical knowledge to solve problems by interpreting manufacturer manuals or similar documents. Work requires familiarity with the interrelationships of electro-mechanical devices.

Removes and replaces plug-in type boards and components. Aligns, replaces, and cleans photocells. Makes minor repairs of connectors, wiring and fuses on-site, and cleans and performs diagnostic routines of electrical and control system components. Performs scheduled routine maintenance on all control system components and reporting devices (including personal computers), based on recommended manufacturer practices. Uses a personal computer to diagnose and correct PLC and operating system software problems. Diagnoses, repairs and aligns laser array (baggage tag reader) and RF reader hardware and software.

Note: Incumbents must possess an Electrician's license when work warrants.

### BUILDING ENGINEER

Last Revision: 09-05-2013

Effective: 07-17-2014

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Building Engineer</b>	\$29.14/hour	\$7.17/hour

This classification of work is responsible for operating, monitoring, maintaining/repairing the facilities mechanical systems to ensure peak performance of the systems. This includes performing P.M. and repair work of the building mechanical systems, inspecting, adjusting, and monitoring the building automation and life safety systems, contacting vendors and place order replacement parts, responding to customer service requests and performing maintenance/repairs in tenant or public spaces, performing routine P.M. i.e. light plumbing and electrical repairs, ballast lamp and tube replacement, operating mechanical systems both on site and via a remote laptop computer, maintaining inventory of spare parts and tools, painting and cleaning mechanical equipment and machine rooms, etc.

### FUEL HANDLER SERIES

Last Revision: 12-6-2013

Effective: 10-9-2014

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Fuel Distribution System Operator</b>	\$18.97/hour	\$6.21/hour
<b>Lead Fuel Distribution System Operator</b>	\$19.83/hour	\$6.31 /hour
<b>Fuel Distribution System Mechanic</b>	\$23.46/hour	\$6.73/hour
<b>Lead Fuel Distribution System Mechanic</b>	\$24.53/hour	\$6.85/hour

Plus 10% shift differential for hours worked between 6:00 p.m. and 6:00 a.m.

#### **Fuel Distribution System Operator:**

Receives, stores, transfers, and issues fuel. Performs various testing procedures and documentation on fuel samples. Gauges tanks for water, temperature and fuel levels. Performs temperature and gravity testing for correct weight of fuel. Checks pumping systems for correct operating pressure or unusual noises. Inspects fuel receiving, storage, and distribution facilities to detect leakage, corrosion, faulty fittings,

and malfunction of mechanical units, meters, and gauges such as distribution lines, float gauges, piping valves, pumps, and roof sumps. Operates a 24-hour control center; operates various computer equipments to determine potential equipment failure, leak and cathodic protection systems, pump failure, and emergency fuel shutoff systems. Monitors quality of fuel and drains excess condensation from fuel sumps and underground fuel pits. Inspects fuel tank farm for such items as leaks, low pressure, and unauthorized personnel. Performs general housekeeping and grounds maintenance for terminal, pipeline and dock areas, including fuel pits and valve vault cleaning and pump out activities. May connect lines, grounding wires, and loading and off loading arms of hoses to pipelines. May assist Fuel Distribution System Mechanics by preparing work areas. Maintains record of inspections, observations and test results.

**Lead Fuel Distribution System Operator:**

Performs lead duties such as making and approving work assignments and conducting on-the-job training as well as performing the various tasks performed by the Operator classification.

**Fuel Distribution System Mechanic:**

Maintains and repairs fuel storage and distribution systems, equipment and filtration systems, and differential pressure valves. Corrects leakage, corrosion, faulty fittings, and malfunction of mechanical units, meters, and gauges such as distribution lines, float gauges, piping valves, pumps, and roof sumps. Inspects electrical wiring, switches, and controls for safe-operating condition, grounding, and adjustment; may make minor repairs. Lubricates and repacks valves. Lubricates pumps, replaces gaskets, and corrects pumping equipment misalignment. May clean strainers and filters, service water separators, and check meters for correct delivery and calibration. Overhauls system components such as pressure regulating valves and excess valves. Disassembles, adjusts, aligns, and calibrates gauges and meters or replaces them. Removes and installs equipment such as filters and piping to modify system or repair and replace system component. Cleans fuel tanks and distribution lines. Removes corrosion and repaints surfaces. Overhauls vacuum and pressure vents, floating roof seals, hangers, and roof sumps. Some positions maintain fuel-servicing equipment such as hydrant and tanker trucks. Maintains record of inspections and repairs and other related paperwork as required.

**Lead Fuel Distribution System Mechanic:**

Performs lead duties such as making and approving work assignments and conducting on-the-job training as well as performing the various tasks performed by the Mechanic classification.

These classifications are recommended to be inclusive and to supersede any previously adopted classifications.



## CUSTODIANS

Last Revision: 12-06-2013  
Effective: 12-18-2014

<u>Classification</u>	<u>Base Wage</u>	<u>Fringes</u>
Custodian I	\$13.73/hour	\$4.98 SINGLE \$6.95 2-PARTY \$8.84 FAMILY
Custodian II	\$14.08/hour	\$5.03 SINGLE \$7.01 2-PARTY \$8.90 FAMILY

### Benefits and Overtime

Parking	With valid receipt from approved parking lot, employees are reimbursed the actual monthly cost of parking.
RTD Bus Pass	Employer will provide employees with the Bus Pass or pay (\$0.19) per hour for travel differential.
Shift Differential	2nd shift (2:30 p.m.-10:30 p.m.): \$.50/hr 3rd shift (10:31 p.m.-6:30 a.m.): \$1.00/hr.
Overtime	Time worked in excess of seven and one-half (7 ½) hours in one (1) day or in excess of thirty-seven and one-half (37 ½) hours in one week shall constitute overtime and shall be paid for at the rate of time and one-half (1 ½) at the employee's basic straight time hourly rate of pay.
Lunch	Any employee working seven and a half (7.5) hours in a day is entitled to a thirty (30) minute paid lunch.
Note	The Career Service Board in their public hearing on March 15, 2007 approved to amend prevailing wages paid to the Custodian as follows: "All contractors shall provide fringe benefits or cash equivalent at not less than the single rate amount. Contractors who offer health insurance shall provide an employer contribution to such insurance of not less than the 2-party or family rate for any employee who elects 2-party or family coverage. Contractors who offer such coverage will be reimbursed for their employer contributions at the above rates under any City contract incorporating this wage specification."

### Position Descriptions:

Custodian I	Any employee performing general clean-up duties using equipment that does not require special training: i.e., dust mopping, damp mopping, vacuuming, emptying trash, spray cleaning, washing toilets, sinks, walls, cleaning chairs, etc.
Custodian II	Any employee performing specialized cleaning duties requiring technical training and the use of heavy and technical equipment, i.e., heavy machine operators floor strippers and waxers, carpet shampooers, spray buffing, re-lamping, mopping behind machines, high ladder work, chemical stripping and finishing of stainless steel.

## DIA Oil and Gas Wages

Last Revision: 4-3-2014  
Effective: 3-19-2015

Classification:	Base Wages:	Fringes:
<b>Mechanic</b>	<b>\$22.05</b>	<b>\$6.56</b>
<b>Pipefitter</b>	<b>\$24.59</b>	<b>\$6.86</b>
<b>Rig/Drill Operator</b>	<b>\$20.88</b>	<b>\$6.43</b>
<b>Derrick Hand/Roustabout</b>	<b>\$13.87</b>	<b>\$5.62</b>
<b>Truck Driver</b>	<b>\$20.37</b>	<b>\$6.37</b>

Service Contract Act Wage Determination No. 2005-2081 Rev No. 15 was used to obtain the base wages and fringe benefits.

### **HEAVY EQUIPMENT MECHANIC**

The Heavy Equipment Mechanic analyzes malfunctions and repairs, rebuilds and maintains power equipment, such as cranes, power shovels, scrapers, paving machines, motor graders, trench-digging machines, conveyors, bulldozers, dredges, pumps, compressors and pneumatic tools. This worker operates and inspects machines or equipment to diagnose defects, dismantles and reassembles equipment, using hoists and hand tools, examines parts for damage or excessive wear, using micrometers and gauges, replaces defective engines and subassemblies, such as transmissions, and tests overhauled equipment to insure operating efficiency. The mechanic welds broken parts and structural members, may direct workers engaged in cleaning parts and assisting with assembly and disassembly of equipment, and may repair, adjust and maintain mining machinery, such as stripping and loading shovels, drilling and cutting machines, and continuous mining machines.

### **PIPEFITTER, MAINTENANCE**

The Pipefitter, Maintenance installs or repairs water, steam, gas or other types of pipe and pipefitting. Work involves most of the following: laying out work and measuring to locate position of pipe from drawings or other written specifications, cutting various sizes of pipe to correct lengths with chisel and hammer, oxyacetylene torch or pipe-cutting machines, threading pipe with stocks and dies. This person is responsible for bending pipe by hand-driven or power-driven machines, assembling pipe with couplings and fastening pipe to hangers, making standard shop computations relating to pressures, flow and size of pipe required; and making standard tests to determine whether finished pipes meet specifications. In general, the work of the Maintenance Pipefitter requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

### **WELL DRILLER**

This incumbent sets up and operates portable drilling rig (machine and related equipment) to drill wells, extends stabilizing jackscrews to support and level drilling rig, moves levers to control power-driven winch that raises and extends telescoping mast. This person bolts trusses and guy wires to raise mast and anchors them to machine frame and stakes, and assembles drilling tools, using hand tools or power tools. The Well Driller moves levers and pedals to raise tools into vertical drilling position and lowers well casing (pipe that shores up walls of well) into well bore, using winch, moves levers and pedals and turns hand wells to control reciprocating action of machine and to drive or extract well casing.

**LABORER**

The Laborer performs tasks that require mainly physical abilities and effort involving little or no specialized skill or prior work experience. The following tasks are typical of this occupation: The Laborer loads and unloads trucks, and other conveyances, moves supplies and materials to proper location by wheelbarrow or hand truck; stacks materials for storage or binning, collects refuse and salvageable materials, and digs, fills, and tamps earth excavations, The Laborer levels ground using pick, shovel, tamper and rake, shovels concrete and snow; cleans culverts and ditches, cuts tree and brush; operates power lawnmowers, moves and arranges heavy pieces of office and household furniture, equipment, and appliance, moves heavy pieces of automotive, medical engineering, and other types of machinery and equipment, spreads sand and salt on icy roads and walkways, and picks up leaves and trash.

**TRUCKDRIVER, HEAVY TRUCK**

Straight truck, over 4 tons, usually 10 wheels. The Truckdriver drives a truck to transport materials, merchandise, equipment, or workers between various types of establishments such as: manufacturing plants, freight depots, warehouses, wholesale and retail establishments, or between retail establishments and customers' houses or places of business. This driver may also load or unload truck with or without helpers, make minor mechanical repairs, and keep truck in good working order.

### Glycol Facility Wages

Effective: 7-2-2015

<b>Classification:</b>	<b>SCA Title</b>	<b>Base Wage</b>	<b>Fringes</b>	<b>Total</b>
Deicing Facility Operator	Water Treatment Plant Operator	\$22.79	\$6.65	\$29.44
Maintenance Mechanic	Machinery Maintenance Mechanic	\$23.43	\$6.72	\$30.15
Material Handling Laborer	Material Handling Laborer	\$17.36	\$6.02	\$23.38

Service Contract Act Wage Determination No. 2005-2081 Rev No. 15 was used to obtain the base wages and calculate fringe benefits.

**FIRE EXTINGUISHER REPAIRER**

Last Revision: 09/25/2014  
Effective Date: 09/03/2015

Classification:

Base Wages:

Fringes:

**Fire Extinguisher Repairer**

**\$18.97/hour**

**\$6.46/hour**

The Fire Extinguisher Repairer performs the following duties: repairs and tests fire extinguishers in repair shops and in establishments, such as factories, homes, garages, and office buildings. Using hand tools and hydrostatic test equipment, this repairer dismantles extinguisher and examines tubings, horns, head gaskets, cutter disks, and other parts for defects, and replaces worn or damaged parts. Using hand tools, this repairer cleans extinguishers and recharges them with materials, (such as soda water and sulfuric acid, carbon tetrachloride, nitrogen or patented solutions); tests extinguishers for conformity with legal specifications using hydrostatic test equipment, and may install cabinets and brackets to hold extinguishers.

**FURNITURE MOVERS**  
(Moving, Storage and Cartage Workers)

Last Revision: 12-6-2013  
Effective: 10-9-2014

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Laborer/Helper</b>	\$17.36/hour	\$6.02/hour
<b>Driver/Packer</b>	\$17.43/hour	\$6.03/hour
<b>Lead Worker</b>	\$18.22/hour	\$6.12/hour

**LANDSIDE PARKING ELECTRONICS TECHNICIAN**

Last Revision: 12-6-2013  
Effective: 10-9-2014

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Landside Parking Electronics Technician</b>	\$22.14/hour	\$6.57/hour

Plus 10% shift differential for regularly scheduled hours worked between 6:00 p.m. and 6:00 a.m.

This classification of work installs, modifies, troubleshoots, repairs and maintains revenue control equipment at manned and unmanned parking entrance and exit gates. Replaces consumable items such as tickets, printer ribbons, and light bulbs. Replaces modules and related equipment as needed to repair existing equipment, modify applications, or resolve unusual problems. Troubleshoots, tests, diagnoses, calibrates, and performs field repairs. Performs preventive maintenance such as inspection, testing, cleaning, lubricating, adjusting and replacing of serviceable parts to prevent equipment failure for electromechanical control in order to minimize repair problems and meet manufacturers' specifications.

**SIGN ERECTOR**

Last Revision: 10-15-2009  
Effective: 10-15-2010

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Sign Erector</b>	\$20.19/hour	\$3.80/hour

This classification of work erects, assembles, and/or maintains signs, sign structures and/or billboards using various tools. Erects pre-assembled illuminated signs on buildings or other structures according to sketches, drawings, or blueprints. Digs and fills holes, places poles. Bolts, screws, or nails sign panels to sign post or frame. Replaces or repairs damaged or worn signs. May use welding equipment when installing sign. This classification is not a licensed electrician and therefore cannot make connections to power sources (i.e., provide exit lighting).

TELEDATA TECHNICIAN

Effective 09/16/2014 the Teledata Technician classification will utilize the base pay and fringe benefits for the Electrician classification under the Davis Bacon Building wage determination.

TILE SETTER-MARBLE MASONS-TERRAZZO  
FINISHERS, FLOOR GRINDERS, AND BASE GRINDERS

Effective: 7-2-2015

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Finisher (Tile- Marble-Terrazzo)</b>	\$20.24/hr	\$8.14/hr

Effective May 1, 2008, Local Union 7 of Colorado combined three classes of Finishers, Floor Grinders, and Base Grinders into Finisher using one pay schedule.

Journeymen Rates for the Tile Setter classification of work (Tile Setter, Marble Mason, and Terrazzo Worker) are provided by the Davis-Bacon Act.

## TRANSIT TECHNICIANS

Last Revision: 1-1-2014

Transit Technician Series Effective: 12-18-2014

Elevator Repairer Effective: 12-18-2014

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Transit Technician - Entry</b>	\$22.21/hour	\$6.58/hour
<b>Transit Technician - Senior</b>	\$24.28/hour	\$6.82/hour
<b>Transit Technician - Lead</b>	\$25.38/hour	\$6.95/hour
<b>Elevator Mechanic/Repairer</b>	\$40.68/hour	\$32.38/hour (< 5 yrs service) \$33.19/hour (> 5 yrs service)

In addition, Shift differentials of eight percent (8%) of the employee's straight time pay rate for the second shift and ten percent (10%) for the third shift for straight time work regularly scheduled providing more than (50%) of the employee's work occurred on such shift.

**Transit Technician-Entry:** Associates in this position will be given instruction by on-the-job and/or classroom training to perform corrective and preventive maintenance, inspections, repairs, and adjustments to all systems, subsystems, and components of an electronic, mechanical, electro/mechanical, hydraulic, and pneumatic nature. This classification of workers may assist with routine preventive maintenance, inspection, and adjustment. Tasks and procedures are well established and require close supervision. Incumbents will follow the direction of higher level personnel in preventive or corrective maintenance phases of work. Most tasks will be of an apprentice nature and will require close supervision. Incumbents will progress to the journey level after one year as a Transit Technician-Entry.

**Transit Technician-Senior:** This is a full performance level class performing various corrective and preventive maintenance, inspections, repairs, and adjustments to all systems, subsystems, and components of an electronic, mechanical, electro-mechanical, hydraulic, and pneumatic nature; monitors the transit system via a central computer system to make automated adjustments in the operation and maintenance of the transit system.

**Transit Technician-Lead:** Performs lead technical duties such as making work assignments and conducting on-the-job informal training as well as performing various tasks involved with the operation and maintenance of the transit system. The Lead Transit Technician is the specialist in terms of hands-on diagnosis and troubleshooting various problems that may arise on the transit system.



TREE TRIMMERS

Last Revision: 10-15-2009  
Effective: 10-15-2010

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Tree Trimmer</b>	\$16.77/hour	\$2.48/hour

This classification of work trims, removes, and applies insecticides to trees and shrubbery including trimming dead, diseased, or broken limbs from trees utilizing rope and saddle, chain, handsaw and other related equipment common to the care of trees and shrubs. Removes limbs, branches and other litter from the work area, observes safety rules, inspects and identifies tree diseases and insects of the area distinguishing beneficial insects and environmental stress, takes samples from diseased or insect infested trees for lab analysis, operates a wide variety of heavy and power equipment in trimming and removing trees and shrubbery i.e. mobile aerial tower unit, tandem trucks, loaders, chipper, etc., maintains all equipments.

## WINDOW CLEANERS

Last Revision: 5-15-2014  
Effective: 12-18-2014

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Window Cleaner</b>	\$23.23/hour	\$8.13/hr (Single) \$10.11/hr (2-Party) \$11.99/hr (Family)

### Benefits/Overtime

Parking	With valid monthly parking receipt from approved parking lot, employees are reimbursed for the cost of parking. The employer shall reimburse employees for parking expenses from other parking lots up to the amount reimbursed for DIA Employee Parking Lot upon the submission of a monthly parking receipt. Only (1) one receipt per month.
Shift Differential	\$0.75 per hour for employees assigned to 3rd shift (11:00 p.m. to 7:00 a.m.)
Overtime	One and one-half (1½) times the basic rate of pay in excess of 7.5 hours worked per day or 37.5 hours worked per week.
Lunch	Any employee working seven and a half (7.5) hours in a day is entitled to a thirty (30) minute paid lunch.
Lead Work	\$1.25 per hour above highest paid employee under supervision
High Work	\$1.75 per hour (21 feet or more from ground (base) to top of surface/structure being cleaned)
Training	\$0.25 per hour
ECOPASS	The Company will provide an Eco-Pass to all bargaining unit employees or pay \$.19 per hour for travel differential.
Note:	The Career Service Board in their public hearing on April 3, 2008, approved to amend prevailing wages paid to the Window Cleaners as follows: "All contractors shall provide fringe benefits or cash equivalent at not less than the single rate amount. Contractors who offer health insurance shall provide an employer contribution to such insurance of not less than the 2-party or family rate for any employee who elects 2-party or family coverage. Contractors who offer such coverage will be reimbursed for their employer contributions at the above rates under any City contract incorporating this wage specification."

Pest Controller

Last Revision: 9-25-2014  
Effective Date: 9-3-2015

Classification:	<u>Base Wage</u>	<u>Fringes</u>
<b>Pest Controller</b>	\$20.41/hour	\$6.63 /hour

The Pest Controller sprays chemical solutions or toxic gases and sets mechanical traps to kill pests that infest buildings and surrounding areas, fumigates rooms and buildings using toxic gases, sprays chemical solutions or dusts powders in rooms and work areas, places poisonous paste or bait and mechanical traps where pests are present; may clean areas that harbor pests, using rakes, brooms, shovels, and mops preparatory to fumigating; and may be required to hold State license

September 28, 2015



**ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES  
REQUEST FOR PROPOSALS (RFP) CONTRACT NO. 201418968**

**ADDENDUM NUMBER TWO**

This Addendum Number Two supersedes and/or supplements all portions of the RFP Documents with which it conflicts. Proposers must acknowledge receipt of this addendum in the Proposal Acknowledgement Letter, Attachment 2, Part 1.

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Mark Adams  
Acting Senior Director of Development  
Airport Infrastructure Management





DENVER INTERNATIONAL AIRPORT

## ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES

REQUEST FOR PROPOSAL (RFP) CONTRACT NO. 201418698

### ADDENDUM NUMBER TWO

#### Scope of this Addendum

Addendum Number Two includes modifications to the following RFP Documents issued August 26, 2015. These modifications are deemed necessary by the City and County of Denver.

#### RFP LETTER

##### *CHANGE IN PROPOSAL DUE DATE:*

**SEALED PROPOSALS DUE:** Will be received no later than **2:00 P.M., Local Time, Wednesday, October 14, 2015**, and delivered to Christy McWilliams, Room 8810, Airport Office Building (AOB), Denver International Airport, 8500 Peña Blvd., Denver, CO 80249-6340 and accessed by the Concourse A Walking Bridge. Respondents should submit the Cost Proposal (sealed in a separate envelope), 1 paper copy, and twelve (12) proposals in Adobe format on separate media (i.e. USB Flash Drive, Compact Disc, etc.) indicating Contract number, Contract name and respondents organization.

#### INSTRUCTIONS TO PROPOSERS

The following is a change to the contractor Prequalification category requirement.

**PREQUALIFICATION:** Each proposer must be pre-qualified at the \$3,000,000 level in at least one of the following categories, in accordance with the City's Rules and Regulations governing prequalification of contractors.

2(A) Buildings: General, 2(C) Buildings: Mechanical, 2(D) Electrical, or 2(G) Buildings: Structural Rehabilitation.

The total number of pages (including cover sheet) contained in this Addendum Number Two are 2.

\* \* \* \* \*

*End of Addendum Number Two*



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**PART II TECHNICAL PROVISIONS**

**(The following documents are published separately; they ARE NOT included in this document)**

**VOLUME 2:**

**DIVISION 1: GENERAL REQUIREMENTS**



**CITY AND COUNTY OF DENVER  
DEPARTMENT OF AVIATION - DENVER INTERNATIONAL AIRPORT  
ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES  
CONTRACT NO. 201418968**

**NOTICE OF INVITATION FOR PROPOSALS**

Denver, Colorado

August 26, 2015

The Department of Aviation, City and county of Denver, has issued an Invitation for Proposals for the construction project named above. Complete contract documents, including specifications, are available on the DIA Contract Procurement website at <http://business.flydenver.com/bizops/bids.asp> beginning August 26, 2015.

**SEALED PROPOSALS** will be received no later than **2:00 P.M., Local Time, Wednesday September 23, 2015** and delivered to Christy McWilliams, Room 8810, Airport Office Building (AOB), Denver International Airport, 8500 Peña Blvd., Denver, CO 80249-6340 and accessed by the Concourse A Walking Bridge. Respondents should submit the Cost Proposal (separate) and twelve (12) proposals in Adobe format on separate media (i.e. USB Flash Drive, Compact Disc, etc.) indicating Contract number, Contract name and respondents organization.

**GENERAL STATEMENT OF WORK:** The scope of work for this contract will be for a task order based On-Call Miscellaneous BHS Millwright Services contract primarily related to work in and around DIA's baggage system, with the possible addition of other Millwright and Ironworker related projects. Tasks may include the removal, repair, replacement and installation of Baggage Handling related equipment and building infrastructure. This work may require the assistance of additional subcontractor trades, which are not limited to structural steel, electrical, mechanical, BHS controls, fire alarm and fire protection.

The contractors proposing for this contract must be licensed as a General Contractor within the City and County of Denver and will be required to perform the full services of a General Contractor for projects in and around the baggage systems and throughout the Airport.

The maximum contract time will not exceed a three (3) year period, or until the maximum authorized contract amount of \$8,000,000 is reached, whichever occurs first.

The Proposers understand DIA intends to issue contracts to more than one contractor. The Proposers also understand that as a Task Order based contract that there is no guarantee that they will be awarded tasks nor that CCD will award tasks equal to the maximum contract amount. At the sole discretion of CCD certain tasks may be competitively bid between the contractors.

**PREQUALIFICATION:** Each proposer must be pre-qualified in the category of 2(g) Buildings: Structural Rehabilitation General at the \$3,000,000.00 level, in accordance with the City's Rules and Regulations Governing Prequalification of Contractors. Each proposer must have submitted a prequalification application a minimum of ten (10) calendar days prior to the bid opening date.

Applications must be submitted to the Department of Public Works, Prequalification Section, 201 West Colfax Avenue, Department 506, Denver, Colorado 80202. To view the Rules and Regulations and to obtain a prequalification application, please visit our website at [www.denvergov.org/prequalification](http://www.denvergov.org/prequalification) or call 720-865-2539 for prequalification information ONLY.

**MINORITY/WOMEN BUSINESS ENTERPRISE PARTICIPATION:** Pursuant to Article III, Division 1 and 3 of Chapter 28 of the Denver Revised Municipal Code, the Project goal of 8% M/WBE must be met with certified participants, or through the demonstration of a sufficient good faith effort. For compliance with good faith requirements, the M/WBE percentage solicitation level required for this project is 100%.

**MISCELLANEOUS:** As its best interests may appear, the City and County of Denver reserves the right to reject any or all proposals and to waive informalities in proposals.

Published in the Daily Journal August 24, 25, 26, 2015

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DO NOT PUBLISH BELOW THIS LINE

## **INSTRUCTIONS TO PROPOSERS**

### **IP-1 INSTRUCTIONS TO PROPOSERS**

These Instructions to Proposers are a part of the Contract Documents and are intended to serve as a guide to Proposers. They are general in nature and may be amended or supplemented as needed to support any one specific invitation to Proposal. Each Proposer shall prepare its Proposal in strict compliance with all requirements of the Contract Documents and by careful application of these instructions.

### **IP-2 SUBMISSION OF PROPOSALS**

These Contract Documents contain Proposal Forms and Proposal Data Forms. The Proposer must complete these Proposal Forms and Proposal Data Forms and submit them as its Proposal.

Each Proposal must be enclosed in a sealed envelope, addressed to the Chief Executive Officer of Aviation, showing on the face of the envelope the name of the Proposer, the project number, and descriptive title of the work for which the offer is made. The Notice of Invitation for Proposals identifies where and when the Proposal must be delivered.

Addenda to the contract documents will be issued by publication in their entirety on the DIA Contract Procurement Website, <http://business.flydenver.com/bizops/rfp.asp>, from which each addendum document may be downloaded by plan holders. Such addenda may include replacements for or additions to some or all of the pages of the Proposal Forms, and all Proposal Form pages added by addendum shall be submitted with the Proposal Forms. Either a complete addendum or a notice of its issuance will be posted on the Contractor's Bulletin Board. Prior to submitting proposals, Proposers shall read the Contractor's Bulletin Board and/or DIA Contract Procurement website to confirm that they have received all addenda.

If Sensitive Security Information ("SSI") will be provided to potential proposers prior to award of the Contract, each proposer shall be required to comply with Department of Aviation, Standard Policies and Procedures No. 6003, "Contractor Protection of Sensitive Security Information," or its successor. A copy of this Policies and Procedures document will be provided with the Proposal Documents, or upon request by the Department of Aviation, Business Management Services Office. Each proposer shall submit one (1) original and one (1) copy of the following, completed and executed in accordance with the Contract Documents:

- (1) The separately bound Proposal Forms booklet;
- (2) All Proposal Form pages not bound in such booklet which are included in any addendum to the Contract Documents;

### **IP-3 COMPLETING AND SIGNING PROPOSAL FORMS**

The Proposer must complete the Proposal Forms by legibly writing or printing in ink, words or figures, or both if required, all the Proposer's offered prices for performing

the work. All blank spaces that require a response of the Proposer must be properly filled in. In filling out the Proposal Forms, the Proposer should not make any strikeouts, interlineations, white outs, or erasures.

For any contracts containing unit prices, the Proposer shall specify in the Proposal Forms a unit price for each item for which a quantity is given and shall write in figures the products of the respective unit prices and quantities in the "Amount" column provided for that purpose.

Each Proposer must sign the Proposal Forms and give the Proposer's current business address. If an individual, the signature must be of the individual offering the Proposal; if a partnership, the signature must be that of a general partner; and if a joint venture, by each joint venture participant in their individual capacity as a corporation, partnership, or individual; if a corporation, both the president or a vice president and the secretary must sign and the seal of the corporation must be affixed. Signatures of other persons may be acceptable if the Proposal contains evidence satisfactory to the Manager to prove that the other persons are authorized to bind the Proposer.

#### **IP-4 UNACCEPTABLE PROPOSALS**

The City will not accept Proposals from Proposers in arrears to the City upon debt or contract, or which are defaulters (as surety or otherwise) upon any obligation to the City, or that are deemed irresponsible or unreliable by the Chief Executive Officer of Aviation. A history or pattern of litigation against the City and County of Denver by any Proposer, proposed subcontractor, interested party, or any person, firm, or corporation affiliated with any Proposer, among other items, will be considered by the Manager in determining the responsibility and reliability of Proposers. Proposers may be required to submit satisfactory evidence that they have a practical knowledge of the particular work proposed upon and that they have the necessary financial resources to complete the proposed work.

#### **IP-5 ONLY ONE PROPOSAL ACCEPTED**

The City will accept only one Proposal for the same work (Contract) from any one Proposer. This includes Proposals that may be submitted under different names by one firm or corporation. Evidence of collusion among Proposers shall be grounds for exclusion of any Proposer who is a participant in any such collusion.

#### **IP-6 CONSIDERATION OF PROPOSALS**

After the Proposals are opened and read and any discrepancies have been reviewed, Proposals will be compared based on the evaluation factors stated herein.

If a discrepancy exists between a price or amount written in words and the price or amount written in figures, the price or amount written in words shall govern, except

that in the case where a price or amount shown in figures has been crossed out and replaced with a new, legible, initialed figure, the initialed figure shall govern.

Any Proposal discrepancies that the City corrects in accordance with the general rules described above shall be corrected with the understanding that the Selected Proposer waives any claims against the City because of the Proposer's mistakes in its Proposal.

The City reserves the right to waive informalities, to reject any and all Proposals, and to advertise for new Proposals where it is in the best interest of the City.

#### **IP-7 INFORMAL AND UNBALANCED PROPOSALS**

Proposals shall be considered informal and may be rejected for the following reasons:

- (a) If the Proposal is on a form other than the Proposal Forms furnished by the City, or if the form is altered or any part thereof is detached.
- (b) If there are unauthorized additions, conditional or alternate Proposals, or irregularities of any kind which may tend to make the Proposal incomplete, indefinite, or ambiguous.
- (c) If the Proposer fails to acknowledge in the Proposal receipt of any or all addenda current on the date of opening of Proposals.
- (d) If the Proposal does not contain a unit price or lump sum amount for each item listed except in the case of authorized alternative items.
- (e) If there are strikeouts, interlineations, white outs, or erasures in the Proposal Forms.
- (f) If the Proposal is unbalanced so that (1) each pay item does not reasonably carry its own proportion of cost, or (2) any pay item contains an inadequate or unreasonable price.

#### **IP-8 EVALUATION FACTORS FOR AWARD**

Those proposals which have been properly submitted will be evaluated to determine a competitive range. The requirements in the Invitation for Proposals are considered to be minimum requirements. More points may be awarded for exceeding the minimum requirements. The proposals will be evaluated and scored on the following factors.

##### **(1) Experience/Past Performance**

**100 points**

Proposals that demonstrate in-depth and long-term experience in the specialized work of this contract will receive more points than those with only occasional experience in this work. The proposer's experience with meeting projected schedules, with managing costs, with solving problems, with making repairs during the warranty period and with

the ability to satisfy previous customers will contribute to the final score. Points will also be awarded for up to three projects submitted as experience which were performed for federal, state or local governmental agencies, private companies or organizations which the proposers believes will demonstrate its ability to perform under the terms and conditions of this contract. Accuracy of information provided and conformance to the proposal requirements may also affect the final score.

**(2) Key Personnel Requirements**

**50 points**

The three key contractor personnel listed below will be evaluated based on the individual's construction experience and/or education. Length of experience, diversity of relevant experience, specific in-depth experience with the wide range of products and techniques used in the specialized work of this contract, a range of experience specifically with Airline baggage handling systems, plus steel construction, and general building construction will be some of the criteria used for evaluation of the personnel. Experience in government, industrial or related construction contract work is considered more valuable than other types of experience. The accuracy of the information provided and conformance to the requirements of this request for proposals may also affect the final score. The three key positions are as follows:

- Contractor's Project Manager
- Project Superintendent
- Project Engineer

**(3) Quality Control Plans**

**30 points**

The evaluation will consider whether or not each specified item of concern is addressed. Since the implementation of the quality management/control plans is a contract requirement, the evaluation will consider effectiveness of the plan. Unnecessarily elaborate and perceived inefficient and/or ineffective plans will receive lower scores in the evaluation. Conformance to the proposal requirements may also affect the final score. The Quality Control Plan must address the following:

- a. Describe how you will assure that only high quality work is provided.
- b. Describe what you will do to establish positive attitudes, cooperation and good working relationship between your firm, subcontractors and the City.
- c. Demonstrate that you have the ability and will respond quickly when there is a construction related issue identified by DIA that is negatively affecting DIA operations.
- d. Submit a Quality Control Management Plan on the form included in the Proposal Forms.

**(4) Schedule of Prices and Quantities**

**20 points**

The Proposer shall provide a complete response to all of the unit price work items presented. The lowest prices proposed will be awarded the maximum number of points assigned. Generally, points for other proposers will be awarded proportionately in comparison to the lowest price proposal. The unit prices provided will be reviewed to insure that a balanced proposal is provided.

**IP-9 NOTICE TO SELECTED PROPOSER - EXECUTION OF CONTRACT**

The Selected Proposer will be given written notice of such status on the form included in the Proposal Documents within sixty (60) days from the date of opening of Proposals.

The Selected Proposer shall execute the contract and return it to the City along with the required bonds and insurance forms within ten (10) consecutive calendar days from and including the date of the Notice to Selected Proposer. When the executed contract and the required bonds and insurance certificates are received, approval for the City to contract with the Selected Proposer shall be sought in accordance with the Charter of the City and County of Denver. Such notice shall not create any rights in the Selected Proposer to any contract with the City.

**IP-10 QUANTITIES**

Payment to the Contractor may be based on the actual quantities of work performed, measured, and accepted or materials furnished in accordance with the Contract Documents, or upon Lump Sum Proposals for each individual Task Order.

**IP-11 CONTRACTOR'S BULLETIN BOARD**

It shall be conclusively presumed that the Proposer did, before submitting a Proposal, read all addenda, posted decisions, and other information items relevant to the Proposal which appeared on the Contractor's Bulletin Board.

The Contractor's Bulletin Board is located at Denver International Airport, 8500 Peña Blvd., Denver, CO 80249-6340, on the wall south of the entrance to the Airport Office Building (AOB). The AOB entrance is reached by way of the corridor leading to Concourse A from the North end of the Terminal on Level 6, and is located west of the Concourse A security screening area. The AOB entrance and the Contractor's Bulletin Board are both located outside the security screening area.

**IP-12 INTERPRETATION OF PROPOSAL DOCUMENTS**

During the Proposal period, Proposers shall request, in writing, clarification or interpretation of any apparent errors or omissions in the contract documents, any apparent inconsistencies between different provisions of the contract documents, or any

other point in the contract documents which the Proposer believes requires clarification or interpretation by the City. Any such request must be submitted in writing by email to [contract.procurement@flydenver.com](mailto:contract.procurement@flydenver.com), must have the words "Request for Clarification" and "Contract No. 201418968" in the email subject line, and must be received not later than ten (10) calendar days before the date and time set for receipt of Proposals. For purposes of the contract, it shall be conclusively presumed that prior to proposing, the Proposer requested clarification or interpretation of any apparent errors, inconsistencies, or other point in the contract documents believed to require clarification or interpretation, and has waived the right to later claim extra payment or time extensions on account of any such error.

Information about any interpretation or clarification made by the City in response to such request will be posted on the DIA Contract Procurement website, <http://www.flydenver.com/contracts>. It shall be the Proposer's responsibility to ensure it has reviewed all such interpretations or clarifications. After Proposals are opened, all Proposers must abide by the decision of the Chief Executive Officer of Aviation or the CEO's authorized representative as to the interpretation or clarification. If the Chief Executive Officer of Aviation or the CEO's authorized representative determines that the decision or interpretation requires that an addendum to the Proposal documents be issued, such addendum will be posted on the DIA Contract Procurement website and either the complete addendum or a notice of its issuance will be posted on the Contractor's Bulletin Board. It shall be the Proposer's responsibility to ensure it has received all such addenda, and each Proposer must acknowledge receipt of all addenda on the Proposal Forms when it submits its Proposal.

The City shall not be bound by and the Proposer shall not rely on any oral interpretation or clarification of the Proposal Documents.

### **IP-13 WITHDRAWAL OF PROPOSAL**

A Proposer may withdraw its Proposal (s) prior to the due date of submittals.

### **IP-14 SUBCONTRACTOR LISTS IN PROPOSAL**

The Proposer shall, on the forms included in the Proposal Forms, identify each element of the work which the Proposer plans to subcontract and include the name and address of the proposed subcontractor.

### **IP-15 TAXES**

1. General. Proposers are referred to the General Conditions, G.C. 323, as to taxes to which they may be subject in performing the Work under this contract, including but not limited to sales and use taxes and the Denver Occupational Privilege Tax. The following instructions are to be considered along with the General Conditions and not in lieu of them.



2. Sales and Use Tax. Construction and building materials sold to contractors and subcontractors for use on structures, roads, streets, highways, and other public works owned by the City and County of Denver at Denver International Airport are exempt from state, RTD, and Cultural Facilities District sales and use taxes. However, such materials will be subject to sales and use taxes imposed by the City and County of Denver.
  
3. Exemption Certificates – Sales and Use Tax. It is responsibility of the Contractor and its subcontractors to apply to the Colorado Department of Revenue (“CDOR”) for a certificate, or certificates, of exemption indicating that their purchase of construction or building materials is for a public project, and to deliver to the City copies of such applications as soon as possible after approval by the CDOR. Proposers shall not include in their Proposal amounts the exempt State, RTD, and Cultural Facilities District Sales and Use Taxes.
  
4. Denver Occupational Privilege Tax. Any employee working for a contractor or a subcontractor who earns over \$500 working in Denver during a calendar month is subject to the payment of the Employee Occupational Privilege Tax. The Contractor and any subcontractor must pay the Business Occupational Privilege Tax for each of its employees who are subject to such tax.

**IP-16 NONDISCRIMINATION IN THE AWARD OF CITY CONTRACTS**

It is the policy of the City and County of Denver to prohibit discrimination in the award of construction contracts and subcontracts for public improvements. Further, the City and County of Denver encourages contractors to utilize minority and women owned businesses and to divide the construction work into economically feasible units or segments to allow the most opportunity for subcontracting.

**IP-17 MINORITY/WOMEN BUSINESS ENTERPRISE (MBE/WBE) REQUIREMENTS**

Divisions 1 and 3, Article III of Chapter 28 of the Denver Revised Municipal Code (Sections 28-31 to 28-36 and 28-52 to 28-90, D.R.M.C.) (the "Ordinance") apply to this Project and are incorporated into this Contract by reference. Generally, the Ordinance provides for the adoption of a good faith goals program, to be administered by the Division of Small Business Opportunity (DSBO), devised to provide increased bidding opportunities for Minority/Women Business Enterprises (MBE/WBEs). As such, each bidder must comply with the terms and conditions of the Ordinance in making its bid and, if awarded the Contract, in performing all Work there under. A bidder's failure to comply with the Ordinance, any Rules or Regulations promulgated pursuant thereto, or any additional requirement contained herein shall render the bid non-responsive and shall constitute cause for rejection. Failure by the contractor awarded the contract to comply with Ordinance requirements during the performance of the contract is a material breach of the contract, which may result in the termination of this contract, the imposition of sanctions or such other remedy, as deemed

appropriate by DSBO. Copies of the Ordinance and its accompanying Rules and Regulations are available for the use and review of bidders from DSBO.

In order to comply with the bid requirements of the Ordinance, a bidder shall either meet the established project goal or, in the alternative, demonstrate that the bidder has made sufficient good faith efforts to meet the goal in accordance with the Ordinance. In preparing a bid to meet the established Project goal, bidders should consider the following instructions relating to compliance with the Ordinance:

1. Under the Ordinance, the Director of DSBO ("Director") is directed to establish project goals for expenditures on construction, reconstruction and remodeling work performed for the City and County of Denver. The specific goal for this project is stated in the Notice of Invitation for Bids bound herein.
2. In preparing its bid, each bidder shall list on the Bid Form pages entitled "List of Proposed Minority/Women Business Enterprise Bidders, Subcontractors, Suppliers, Manufacturers, Manufacturers' Representatives or Brokers" the name, address, work description/supply, committed level of participation and other required information for each MBE/WBE of any tier which the bidder intends to use in performing the work on this Project. **Only the MBE/WBEs identified and the precise levels of participation listed for each on the Bid Form page, at the time of bid opening, will be considered in determining whether the bidder has met the designated participation goal. Additional, revised or corrected participation submitted after bid opening will not be considered. MBE/WBE bidders may count self-performance or joint venture activity in meeting the MBE/WBE project goal, but only for the scope of work performed as a commercially useful function and at a percentage level the MBE/WBE will be performing itself.**
3. All MBE/WBEs listed on the Bid Form must be properly certified by the City on or before the date bids are opened in order to count towards meeting the designated goal. DSBO maintains an MBE/WBE Construction Directory ("Directory"), which is a current listing of MBE/WBEs that have been certified by the City. A copy of the Directory is available from DSBO, located at 201 W. Colfax, Dept. 907, Denver, Colorado, or on the website located at [www.denvergov.org/DSBO](http://www.denvergov.org/DSBO) and will also be made available at the pre-bid meeting. Bidders are encouraged to use the Directory to assist in locating MBE/WBEs for the work and supplies required on the Project. Bidders are reminded that changes may be made to the Directory at any time in accordance with the City's MBE/WBE Ordinance and procedures established to administer this program, and that a current copy of the Directory must always be used in preparing a bid. MBE/WBE certification or listing in the Directory is not a representation or warranty by the City as to the qualifications of any listed MBE/WBE.

4. In accordance with the provisions of the Ordinance, DSBO will evaluate each bid to determine the responsiveness of the bid to the requirements of the Ordinance. In determining whether a bidder's committed level of participation meets or exceeds the stated MBE/WBE goal, DSBO shall base its calculation of applicable amounts and percentages on the total base bid amount, not including any listed alternates, of each bid as follows:
  - a. The bid information provided by the agency will be used to determine the total base bid amount of each bid. Each bidder's total base bid amount will be multiplied by the MBE/WBE percentage established for the project to determine the exact dollar amount of required MBE/WBE participation for the Project. This amount will then be compared against the exact dollar amounts for the MBE/WBEs committed for participation by the bidder. If the total dollar amount of participation listed meets or exceeds the established MBE/WBE dollar amount goal listed, then DSBO will determine that the goal has been met.
  - b. In addition, DSBO will determine the exact commitment percentage for each listed MBE/WBE by dividing the dollar amount listed for each MBE/WBE by the total base bid dollar amount submitted by the bidder. These individual percentages, when totaled for all listed MBE/WBEs, will establish the total committed percentage level of MBE/WBE participation that the bidder must comply with during the life of the contract. In all cases, the committed percentage level of MBE/WBE participation must equal or exceed the assigned MBE/WBE goal for the Project.
  - c. In providing the exact dollar amount of participation for each listed MBE/WBE, a bidder should take care never to round up in determining whether or not the total of these amounts meets or exceeds the established percentage goal. The goal must be met or exceeded by dollar amounts and percentages in order for DSBO to determine that the bidder has met or exceeded the applicable MBE/WBE goal.
  - d. As previously mentioned, compliance with the MBE/WBE goal will be determined on the base bid alone. If a bid contains alternates, participation contained in any alternate will not count towards satisfaction of the Project goal. However, should any designated alternate be selected by the City for inclusion in the contract ultimately awarded, the MBE/WBE goal percentage level submitted at bid time, on the base bid, will also apply to the selected alternates and must be maintained for the life of the contract on the total contract amount, including any alternate work. Thus, even though such participation will not be considered in evaluating bids, bidders are urged to consider participation in preparing bids for designated alternates.

- e. On projects where force account or allowance bid items have been included, bidders must meet the MBE/WBE goal percentage based upon the total base bid, including all such items that are submitted to the City. However, when a force account or allowance is designated by the City to be either performed or purchased from a specific company, the bidder may back out the dollar amount of the force account or allowance from the total base bid and meet the MBE/WBE goal on the remaining reduced amount.
  - f. On bids that, at the time of bid opening, are equal to or exceed Five Million Dollars (\$5,000,000.00), including any alternates that may be selected, only sixty percent (60%) of the value of the commercially useful function performed by MBE/WBE suppliers shall count toward satisfaction of the Project goal. On Projects under Five Million Dollars (\$5,000,000.00) the value of the commercially useful function of MBE/WBE supplier(s) will count at a one hundred percent (100%) level. Manufacturers' representatives and packagers shall be counted in the same manner as brokers.
  - g. **In utilizing the MBE/WBE participation of a Broker,** only the bona fide commissions earned by such Broker for its performance of a commercially useful function will count toward meeting the Project goals. The bidder must separate the bona fide brokerage commissions from the actual cost of the supplies or materials provided to determine the actual dollar amount of participation that can be counted towards meeting the goal.
5. At the time of submitting its proposal, each proposer must submit an executed "MBE/WBE Letter of Intent" for each MBE/WBE listed on the Bid Form as a joint venture member, subcontractor, supplier, manufacturer, manufacturers' representative or broker of any tier. An MBE/WBE Bidder needs to submit a Letter of Intent for any portion of self-performed work to count towards MBE/WBE utilization. Each Letter of Intent shall be submitted only for the MBE/WBEs listed at the time of bid opening, since this is the only participation that will be counted toward satisfaction of the project goal. A form for the MBE/WBE Letter of Intent is included with the Bid Form. The MBE/WBE Letter of Intent is a written communication from the Bidder to the City evidencing an understanding that the Bidder has or will enter into a contractual relationship with the MBE/WBE or that its subcontractor(s) and supplier(s), manufacturer(s), manufacturers' representative(s) and broker(s) will do so. Each MBE/WBE Letter of Intent shall be accompanied by a copy of the City and County of Denver's MBE/WBE certification letter for each proposed MBE/WBE identified at bid time. Bidders are urged to carefully review these Letters before submission to the City to ensure that they are properly completed and executed by the appropriate parties.

In preparing a bid to demonstrate a good faith effort, bidders should consider the following instructions relating to compliance with the Ordinance:

1. If any Bidder has not met the designated Project goal at the time the bids are opened or elects to present a good faith effort in lieu of or in addition to attempting to satisfy the designated Project goal, that Bidder shall submit with its proposal, a detailed statement, with supporting documentation, setting forth its good faith efforts, made prior to bid opening, attempting to meet the established goal in accordance with Section 28-62 of the Ordinance. This statement shall address each of the items in Subsection (b) of that Section and any additional criteria that the DSBO Director may establish by rule or regulation. A Bidder who fails to meet the Project goal and cannot show that it made a good faith effort to meet the goal shall be considered non-responsive.
2. The statement of good faith efforts shall include a specific response to each of the following as further defined by rule or regulation. A Bidder may include any additional information the Bidder believes may be relevant. Failure of a Bidder to show good faith efforts as to any one of the following items shall render its overall good faith showing insufficient and its bid non-responsive. Items (1) through (10) of Section 28-62, Subsection (b) of the Ordinance are set forth below:
  - (1) If prebid or preselection meetings are scheduled by the City at which MBEs and WBEs may be informed of subcontracting or joint venture opportunities under a proposed contract to be bid, or procured pursuant to the competitive selection process, attendance at such prebid or preselection meetings is not mandatory (unless required otherwise by the City); however, bidders and proposers are responsible for the information provided at these meetings.
  - (2) The bidder or proposer must solicit through all reasonable and available means, the interest of all MBEs and WBEs certified in the scopes of work of the contract. The bidder or proposer must solicit the interest of such MBEs and WBEs within sufficient time, prior to the bid opening or date of final project-specific proposal in the case of a competitive selection process, to allow such MBEs and WBEs to respond to the solicitation. The bidder or proposer must determine with certainty if the MBEs and WBEs are interested by demonstrating appropriate steps to follow up initial solicitations.
  - (3) The bidder or proposer must select portions of the work of the contract to be performed by MBEs and WBEs in order to increase the likelihood that the project goal will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MBE and WBE participation as subcontractors or joint venturers, and for bidder or proposer self-performed work, as suppliers,

manufacturers, manufacturer's representatives and brokers, all reasonably consistent with industry practice, even when the bidder or proposer would otherwise prefer to perform these work items with its own forces. The bidder or proposer must identify what portions of the contract will be self-performed and what portions of the contract will be opened to solicitation of bids, proposals and quotes from MBE and WBEs. All portions of the contract not self-performed must be solicited for MBE and WBE participation. The ability or desire of a bidder or proposer to perform the work of a contract with its own forces does not relieve the bidder or proposer of the responsibility to meet the project goal or demonstrate good faith efforts to do so.

- (4) The bidder or proposer, consistent with industry practice, must provide MBEs and WBEs at a clearly stated location with timely, adequate access to and information about the plans, specifications, and requirements of the contract, including bonding and insurance requirements, if any, to assist them in responding to a solicitation.
- (5) The bidder or proposer must negotiate in good faith with interested MBEs and WBEs and provide written documentation of such negotiation with each such MBE or WBE.
- (6) For each MBE or WBE which contacted the bidder or proposer or which the bidder or proposer contacted or attempted to subcontract or joint venture with, consistent with industry practice, the bidder or proposer must supply a statement giving the reasons why the bidder or proposer and the MBE or WBE did not succeed in negotiating a subcontracting, supplier, manufacturer, manufacturer's representative, broker or joint venture agreement, as applicable.
- (7) The bidder or proposer must provide verification that it rejected each non-utilized MBE and WBE because the MBE or WBE did not submit the lowest bid or it was not qualified. Such verification shall include a verified statement of the amounts of all bids received from potential or utilized subcontractors, suppliers, manufacturers, manufacturer's representatives, brokers or joint venturers on the contract, whether or not they are MBEs or WBEs. In making such a determination of not being qualified, the bidder or proposer shall be guided by the definition of qualified in section 28-54(42), but evidence of lack of qualification must be based on factors other than solely the amount of the MBE's or WBE's bid. For each MBE or WBE found not to be qualified by the bidder or proposer, the verification shall include a statement giving the bidder's or proposer's reasons for its conclusion. A bidder's or proposer's industry standing or group memberships may not be the cause of rejection of an MBE or WBE. A bidder or proposer may not reject an MBE or WBE as being unqualified without sound reasons

based on a reasonably thorough investigation and assessment of the MBE's or WBE's capabilities and expertise.

- (8) If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining bonding, lines of credit, or insurance as required by the City or by the bidder or proposer, provided that the bidder or proposer need not provide financial assistance toward this effort.
- (9) If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining necessary and competitively priced equipment, supplies, materials, or related assistance or services for performance under the contract, provided that the bidder or proposer need not provide financial assistance toward this effort.
- (10) The bidder or proposer must use the DSBO MBE/WBE directories to identify, recruit, and place MBEs and WBEs.

In accordance with the provisions of the Ordinance, the bidder agrees that it is committed to meeting either the MBE/WBE participation goal or the MBE/WBE participation set forth in its statement of good faith efforts. This commitment must be expressly indicated on the "Commitment to Minority/Women Business Enterprise Participation" form included with the Bid Form. This commitment includes the following understandings:

1. The bidder understands it must maintain MBE/WBE goals throughout the performance of the Contract pursuant to the requirements set out in D.R.M.C. 28-72.
2. The bidder understands that it must establish and maintain records and submit regular reports, as required, that will allow the City to assess progress in achieving the MBE/WBE participation goal.
3. The bidder understands that if change orders or any other contract modifications are issued under the contract, the bidder shall have a continuing obligation to immediately inform DSBO in writing of any agreed upon increase or decrease in the scope of work of such contract, upon any of the bases discussed in Section 28-73 of the Ordinance, regardless of whether such increase or decrease in scope of work has been reduced to writing at the time of notification.
4. The bidder understands that if change orders or other contract modifications are issued under the contract, that include an increase in scope of work of a contract for construction, reconstruction, or remodeling, whether by amendment, change order, force account or otherwise which increases the dollar value of the contract, whether or not such change is within the scope of work designated for

performance by an MBE/WBE at the time of contract award, such change orders or contract modification shall be immediately submitted to DSBO for notification purposes. Those amendments, change orders, force accounts or other contract modifications that involve a changed scope of work that cannot be performed by existing project subcontractors or by the contractor shall be subject to a goal for MBE/WBEs equal to the original goal on the contract which was included in the bid. The contractor shall satisfy such goal with respect to such changed scope of work by soliciting new MBE/WBEs in accordance with Section 28-73 of the Ordinance as applicable, or the contractor must show each element of modified good faith set out in Section 28-75 (c) of the Ordinance. The contractor or consultant shall supply to the director the documentation described in Section 28-75 (c) of the Ordinance with respect to the increased dollar value of the contract.

All bidders are charged with knowledge of and are solely responsible for complying with each and every provision of the Ordinance in making a bid and, if awarded, in performing the work described in the Contract Documents. Failure to comply with these provisions could constitute cause for rejection of a bid or subject the selected contractor to sanctions set forth in the Ordinance. These instructions are intended only to generally assist the bidder in preparing and submitting a compliant bid. Should any questions arise regarding specific circumstances, bidders must consult the Ordinance or contact the Project's designated DSBO representative at (303) 342-2180.

#### **IP-18 DIVERSITY AND INCLUSIVENESS IN CITY SOLICITATIONS**

The City and County of Denver encourages, but does not require, participation of independent partnerships with SBEs, MBEs, WBEs, and other business enterprises in supply chain activities, prime/subcontractor partnerships, and joint ventures for all contracts and purchase orders. Failure to participate or disclose this information will not impact the award of the contract or purchase order. Voluntary disclosure of such independent partnerships to the City, if any, will be forwarded the DSBO for recording purposes only.

Using the form contained in the Bid Forms, entitled "Diversity and Inclusiveness in City Solicitations Information Request Form", please state whether you have a diversity and inclusiveness program for employment and retention, procurement and supply chain activities, or customer service and provide the additional information requested on the form. The information provided on the Diversity and Inclusiveness in City Solicitations Information Request Form will provide an opportunity for City contractors/consultants to describe their own diversity and inclusiveness practices. Contractors/consultants are not expected to conduct intrusive examinations of its employees, managers, or business partners in order to describe diversity and inclusiveness measures. Rather, the City simply seeks a description of the contractor/consultant's current practices, if any. Diversity and Inclusiveness information provided by City contractors/consultants in response to City solicitations for services or goods will be collated, analyzed, and made available in reports consistent with City Executive Order No. 101. However, no



personally identifiable information provided by or obtained from contractors/consultants will be in such reports.

#### **IP-19 WAGE RATE REQUIREMENTS**

Pursuant to Section 20-76 of the Revised Municipal Code, the Proposer selected to perform this contract shall pay mechanics, laborers and workers employed directly upon the site of the work the full amounts accrued at the time of payment, computed wage rates not less than those shown on the current prevailing wage rate schedule included in the contract Proposal documents and any addenda thereto. If the City's Career Service Board issues a modification to those wage rates more than ten (10) days prior to the scheduled Proposal submission, those modifications will be published in an addendum issued by the City to all prospective Proposers. The City may, in its sole discretion, determine on a case-by-case basis whether wage rate modifications issued by the Career Service Board ten (10) days or less before the Proposal opening will be included in an addendum. If they are included in an addendum, the City may, in its sole discretion, elect to postpone the date of Proposal opening.

If the term of the contract extends for more than one year, the minimum City prevailing wage rates which contractors and subcontractors shall pay during any subsequent yearly period or portion thereof shall be the wage rates in effect on the yearly anniversary date of the contract which begins such subsequent period. In no event shall any increases in prevailing wages after the first anniversary of the contract result in any increased liability on the part of the City and the possibility and risk of any such increase is assumed by all contractors entering into such contract with the City.

#### **IP-20 CONSTRUCTION SCHEDULING**

The Proposer should refer to the General Conditions, Special Conditions, and Division I of the Technical Specifications for scheduling requirements for this contract.

#### **IP-21 EQUAL EMPLOYMENT OPPORTUNITY**

1. Article III, Division 2 of Chapter 28 applies to this contract. It is the policy of the City to provide equal opportunity in employment without regard to race, color, creed, sex, national origin, religion, marital status, or political opinion or affiliation. It is hereby deemed and declared to be for the public welfare and in the best interest of the City to require Proposers, contractors and subcontractors soliciting and receiving, directly or indirectly, compensation from or through the City, for the performance of such contracts, to meet certain affirmative action and equal employment opportunity requirements. Additionally, contractors and subcontractors that hold any contracts which are federally-assisted shall be required to adhere to the Department of Labor's Contract Compliance program under Executive Order 11246 as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60-4.
2. After the Notice to Selected Proposer has been issued, the Selected Proposer shall submit the following to the Small Business Opportunity Division:

- (a) A statement that the Proposer shall implement the affirmative action steps set forth in the Rules and Regulations and Proposal Conditions of the Manager of Public Works pertaining to Equal Employment Opportunity, attached hereto, or the Proposer's affirmative action plan which meets these requirements, and
  - (b) A projection of its anticipated workforce for this contract on the attached "EEO Questionnaire." Both of these submittals are required before the Small Business Opportunity Division will approve the Notice to Proceed.
3. The Proposer which is awarded this contract shall comply with the provisions and requirements, including the goals of minority and female participation and specific affirmative action steps, set forth in the Rules and Regulations and Proposal Conditions of the Manager of Public Works pertaining to Equal Employment Opportunity, as said rules and regulations may be amended or readopted from time to time by the Manager of Public Works or the Director of the Small Business Opportunity Division.

**IP-22 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

The Proposer certifies, by submission of its Proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or involuntarily excluded from participation in any government contract by any Federal, State, or local government department or agency. It further agrees by submitting its Proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the Proposer or any lower tier participant is unable to certify to this statement, it shall attach an explanation to its Proposal.

**IP-23 INSURANCE REQUIREMENTS**

In preparing its Bid, the Bidders shall assure that insurance requirements contained in the Contract Documents are met. In accordance with the provisions of General Contract Condition 1601, INSURANCE, the minimum insurance requirements for this Contract are set forth in the form **CITY AND COUNTY OF DENVER INSURANCE CERTIFICATE** contained in the Special Conditions Section of the Contract Documents. Bidders are urged to consider in preparing a bid hereunder that the Contractor and all subcontractors performing Work on the Project must comply with each condition, requirement or specification set forth in the form certificate, unless such requirements are specifically excepted in writing by the City's Risk Management Administrator. The Contractor must either include all subcontractors performing work hereunder as insureds under each required policy or obtain a separate certificate for each subcontractor. The City reserves the right to request copies of these certificates at any time.

All certificates required by this Contract shall be sent directly to Denver International Airport, Business Management Services, via the following email address: ContractDocs@flydenver.com. The City project/Contract number and project description shall be noted on the certificate of insurance. The City reserves the right to require complete, certified copies of all insurance policies required by this Contract at any time.

#### **IP-24 EVALUATION OF QUALIFICATIONS**

The City's Evaluation and Selection Committee will review and evaluate the written qualifications based upon the Proposer's demonstrated experience and qualifications in the scope of services required. The Proposer's ability to present its qualifications in writing, in a clear, concise and organized manner will be considered in the evaluation. The City shall then, taking into consideration the recommendations of the Evaluation and Selection Committee and select the most qualified Proposer(s) for contract negotiations. The following is the Qualifications Evaluation sheet used by the Selection Committee in evaluating the submissions.

#### **IP-25 INVOICING**

The Contractor recognizes and agrees that it shall be required to use the Textura® Construction Payment Management System (CPM System) for this Project. Bidders shall use the Textura fee pricing schedule included with the bid forms to calculate the Textura fee as a percentage of the sub-total of all other bid line items of each individual task order. The Textura fee shall be included as a bid line item with no markup, and will be incorporated into the approved Schedule of Values as a line item of its own on each individual task order.

All fees associated with the CPM System are to be paid by the Contractor prior to billings for any work performed. The Textura fee is reimbursable back to the Contractor as a direct expense billed to the City in an application for payment based on the approved Schedule of Values of each individual task order.

The City reserves the right to remove any markup to the fee, or reject from consideration any bids that invalidly calculates the fee to include a markup.

#### **IP-26 PROJECT CONTROLS REQUIREMENTS**

The Contractor will be required to use Primavera Unifier and Primavera P6 to comply with the requirements of DIA's Project Controls System. The Project Controls System is Airport Infrastructure Management's tool for project and information management, data analysis and document control. Denver International Airport will be responsible for providing the training for Primavera Unifier and Primavera P6. The Contractor will be responsible for providing Primavera P6. The Contractor will also be responsible for providing and maintaining the computer hardware, software and system environment capable of supporting Project Controls System requirements

including as the minimum: internet connection; Microsoft Internet Explorer 9 or better; Microsoft Office 2010; Oracle Java JRE 1.7.0 Update 5 and Adobe Acrobat X Pro. This is the only project management system that will be accepted.

**PROPOSAL SCORESHEET**

Agreement Title: \_\_\_\_\_

Agreement Number: \_\_\_\_\_

Proposer: \_\_\_\_\_

Review Date: \_\_\_\_\_

**RATING FACTORS**

5 - EXCELLENT    4 - ABOVE AVERAGE    3 - AVERAGE    2 - BELOW AVERAGE    1 - POOR    0 - NONRESPONSIVE

Signature: \_\_\_\_\_

Proposers were instructed to limit their proposal to 10 MB. Elements of the proposals which scorers should consider are as follows:	WEIGHT FACTOR	RATING FACTOR (0-5)	SCORE
1. EXPERIENCE/PAST PERFORMANCE	100		
2. KEY PERSONNEL REQUIREMENTS	50		
3. QUALITY CONTROL PLANS	30		
4. SCHEDULE OF PRICES AND QUANTITIES	20		
<b>TOTAL SCORE</b>			

**END OF THIS SECTION**

# PREVAILING WAGES

**The Prevailing Wage Schedule(s) which apply to this contract are contained in the pages immediately following this page. These pages are not included in the page numbering of this contract document.**



**DENVER**  
THE MILE HIGH CITY

**Office of Human Resources**  
Denver's Human Resource Agency

201 W. Colfax, Department 412  
Denver, CO 80202  
p: 720.913.5751  
f: 720.913.5720  
[www.denvergov.org/csa](http://www.denvergov.org/csa)

TO: All Users of the City of Denver Prevailing Wage Schedules  
FROM: Seth Duhon-Thornton, Associate Human Resources Professional  
DATE: Friday May 8, 2015  
SUBJECT: Latest Change to Prevailing Wage Schedules

Please be advised, prevailing wage rates for some building, heavy, and highway construction trades have not been updated by the United States Department of Labor (DOL) since March 1, 2002. The Career Service Board, in their meeting held on April 21, 2011, approved the use of the attached supplemental wage rates until prevailing wage rates for these classifications of work are again published by the United States Department of Labor.

The attached Prevailing Wage Schedule is effective as of **Friday May 8, 2015** and applies to the City and County of Denver for **BUILDING CONSTRUCTION PROJECTS** (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO150004  
Superseded General Decision No. CO20140004  
Modification No.03  
Publication Date: 05/01/2015  
(5 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor (DOL). The employer and the individual apprentice must be registered in a program, which has received prior approval, by the DOL. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

For questions call (720) 913-5018

Attachments as listed above.

General Decision Number: CO150004 05/01/2015 CO4

Superseded General Decision Number: CO20140004

State: Colorado

Construction Type: Building

County: Denver County in Colorado.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/02/2015
1	01/09/2015
2	03/20/2015
3	05/01/2015

ASBE0028-001 10/01/2013

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems).....	\$ 28.83	13.18

BRCO0007-001 01/01/2014

	Rates	Fringes
BRICKLAYER.....	\$ 24.03	8.63

BRCO0007-005 05/01/2014

	Rates	Fringes
TILE SETTER.....	\$ 27.15	7.88



CARP0001-004 05/01/2013

	Rates	Fringes
Carpenters:		
Acoustical, Drywall		
Hanging/Framing and Metal		
Stud, Form Building/Setting.	\$ 25.00	5.39

-----  
CARP1607-002 06/01/2012

	Rates	Fringes
MILLWRIGHT.....	\$ 28.95	11.10

-----  
ELEC0068-002 06/01/2014

	Rates	Fringes
ELECTRICIAN		
(Includes Low Voltage		
Wiring and Installation of		
Fire alarms, Security		
Systems, Telephones,		
Computers and Temperature		
Controls).....	\$ 32.65	12.70

-----  
ELEV0025-002 01/01/2015

	Rates	Fringes
Elevator Constructor.....	\$ 40.68	28.385+a+b

FOOTNOTE:

- a. Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.
- b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

-----  
ENGI0009-003 10/23/2013

	Rates	Fringes
Power equipment operator -		
crane		
141 tons and over.....	\$ 25.97	9.15
50 tons and under.....	\$ 24.88	9.15
51 to 90 tons.....	\$ 25.04	9.15
91 to 140 tons.....	\$ 25.19	9.15

-----  
IRON0024-001 11/01/2013

Rates	Fringes
-------	---------

IRONWORKER, STRUCTURAL.....\$ 24.80 10.14

LABO0720-003 05/01/2014

Rates Fringes

LABORER

Concrete/Mason Tenders.....\$ 16.42 6.38

PAIN0079-002 03/01/2015

Rates Fringes

Drywall Finisher/Taper

Hand.....\$ 20.15 6.91

Tool.....\$ 20.50 6.91

Painters:.....\$ 19.45 6.91

PAPERHANGER.....\$ 20.15 6.91

PAIN0930-001 07/01/2014

Rates Fringes

GLAZIER.....\$ 29.67 7.52

PLAS0577-001 05/01/2014

Rates Fringes

CEMENT MASON/CONCRETE FINISHER...\$ 24.00 10.23

PLUM0003-001 07/01/2014

Rates Fringes

PLUMBER

(Excluding HVAC work).....\$ 31.93 12.34

PLUM0208-001 07/01/2013

Rates Fringes

PIPEFITTER

(Including HVAC pipe).....\$ 33.35 12.27

\* SF00669-001 04/01/2015

Rates Fringes

SPRINKLER FITTER.....\$ 34.43 19.09

SHEE0009-001 07/01/2014

Rates Fringes

Sheet metal worker

(Includes HVAC duct and

installation of HVAC  
systems).....\$ 32.47                   13.98

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SUCO2001-011 12/20/2001

	Rates	Fringes
Carpenters:		
All Other Work.....	\$ 16.12	2.84
Ironworkers:		
Reinforcing.....	\$ 18.49	3.87
Laborers:		
Brick Finisher/Tender.....	\$ 12.78	1.41
Common.....	\$ 10.62	2.09
Power equipment operators:		
Mechanic.....	\$ 18.48	

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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

**Office of Human Resources**  
**Supplemental rates**  
**(Specific to the Denver projects)**  
**Supp #100, Date: 03-02-2012**

<b><u>Classification</u></b>		<b><u>Base</u></b>	<b><u>Fringe</u></b>
Boilermakers		\$30.97	\$21.45
Power Equipment Operators (Concrete Mixers):			
	Less than 1 yd	\$23.67	\$10.67
	1 yd and over	\$23.82	\$10.68
	Drillers	\$23.97	\$10.70
	Loaders over 6 cu yd	\$23.82	\$10.68
	Oilers	\$22.97	\$10.70
Soft Floor Layers		\$16.70	\$9.81
Ironworkers (Ornamental)		\$24.80	\$10.03
Plasters		\$24.60	\$12.11
Plaster Tenders		\$10.79	-
Laborers: Concrete Saw		\$13.89	-
Power Equipment Operators:			
	Backhoe	\$23.67	\$10.67
	Loader up to and incl 6 cu yd	\$23.67	\$10.67
	Motor Grader	\$23.97	\$10.70
	Roller	\$23.67	\$10.67
Truck Drivers (Dump Trucks):			
	6 to 14 cu yds	\$19.14	\$10.07
	15 to 29 cu yds	\$19.48	\$10.11
	Flatbed	\$19.14	\$10.07
	Semi	\$19.48	\$10.11

- To determine the Tile Setters-Marble Mason-Terrazzo mechanic rates—Use Davis Bacon-Building rates adopted by the Career Service Board.
- To determine the Tile Finisher-Floor Grinder-Base Grinder—Use current Career Service Prevailing Wage Schedules.
- Caulkers—Receive rate prescribed for craft performing operation to which caulking is incidental .i.e. glazier, painter, brick layer, cement mason.
- Use the “Carpenters—All Other Work” rates published by the federal Davis Bacon rates for batt insulation, pre-stress concrete and tilt up concrete walls, Roofers (including foundation waterproofing).
- Use the “Laborer—Common”, rates published by the federal Davis Bacon rates for General Housekeeping, Final Cleanup and Fence Installer.

October 14, 2015

City and County of Denver  
Department of Public Works  
201 West Colfax Avenue  
Denver, Colorado 80202

Reference: On-Call Miscellaneous BHS Millwright Services  
Contract No: 201418968

To Whom It May Concern,

Ludvik Electric Co. is pleased to submit this proposal for the On-Call Miscellaneous BHS Millwright Services contract as prime contractor. We feel that the company is in a unique position to provide superior contractor services for the successful performance of this contract. Ludvik has successfully performed on several other operating baggage handling systems throughout the United States including systems at Denver International Airport, Los Angeles International Airport, Orlando International Airport, Washington Dulles International Airport, San Diego International Airport, San Juan Luis Muñoz Marin International Airport in San Juan, Puerto Rico, and is currently performing another major renovation at Los Angeles International Airport. Several of these projects included the conveyor installation, electrical work, control device installation, and commissioning. In addition to performing as prime contractor for this contract, it is Ludvik's intent to self-perform the electrical and control device installations. This will be advantageous since the electrical work and controls device installations are key components to integrate with other critical path elements in the schedule.

As part of this contract approach, Ludvik has engaged February Enterprises as our strategic alliance subcontractor to perform the millwright installation for the baggage equipment. February Enterprises is very familiar with and knowledgeable of the systems at Denver International Airport and is an important member of our team. February has performed work at DIA since the airport was originally constructed and has performed major mechanical installations of BHS conveyors in over 20 airports nationally. Other portions of the work may be subcontracted as well in our efforts to meet M/WBE goals. Ludvik will meet or exceed project M/WBE goals.

In addition, Ludvik has performed as prime contractor for many national and municipal clients including; Denver Water, Denver Metro Waste Water, the City of Phoenix, Comcast, MoneyGram, Great West Life Insurance, the City of Denver, AT&T, Anheuser Busch and General Motors.

Further, Ludvik will implement a project management approach and methodology for project controls that will strictly adhere to best practices for Time, Cost, QA/QC, & Safety controls as adopted by the Construction Management Association of America (CMAA). The scheduling services that the Ludvik Team provides, ensures client awareness of project status, enabling timely and accurate decision making with corresponding actions. Our standard Critical Path Method (CPM) scheduling software of choice is Oracle's Primavera P6, version 8.2. We have extensive experience in the detailed preparation and management of cost-loaded CPM schedules on major electrical, power, and aviation projects for diverse public and private sector clients domestically and abroad.



In summary, we feel our knowledge and proven track record of construction planning and scheduling, and our experience with the installation of other operating baggage handling systems would be beneficial to the City and County of Denver, and Denver International Airport.

Ludvik Electric Co. will commit the key personnel listed in the proposal with included resumes to complete construction activities on any task orders awarded.

Of course, if you should any questions or concerns with respect to any of the enclosed material, please do not hesitate to contact our office.

Sincerely,

**LUDVIK ELECTRIC CO.**



Robert Cheney  
Executive Vice President

RAH:dma

**CONTRACTOR'S PROPOSAL  
FORMS**

**ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES  
CONTRACT NO: 201418698**

**August 26, 2015**

**CONTRACTOR**

**Ludvik Electric Co.**

---

NAME

**3900 S. Teller Street**

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ADDRESS

**Lakewood, CO 80235**

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**(303) 781-9601**

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## PROPOSAL LETTER

PROPOSER Ludvik Electric Co.

Chief Executive Officer  
City and County of Denver  
Business Management Services (Procurement) Office  
Airport Office Building, Room 8810  
Denver International Airport  
8500 Peña Boulevard  
Denver, Colorado 80249

This letter is in response to the Notice of Invitation for Proposals first published on August 24, 2015, for Contract No. 201418968, ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES, Denver International Airport.

The project consists of an ON-CALL MISCELLANEOUS BHS MILLWRIGHT SERVICES contract. The scope of work for this contract will be primarily related to work in and around DIA's baggage system, with the possible addition of other Millwright and Ironworker related projects. Tasks may include the removal, repair, replacement and installation of Baggage Handling related equipment and building infrastructure. This work may require the assistance of additional subcontractor trades, which are not limited to structural steel, electrical, mechanical, BHS controls, fire alarm and fire protection. Projects will be incorporated into the Contract through Task Orders.

The undersigned Proposer declares that it has carefully read and examined all of the contract documents which include, but are not limited to, the Technical Specifications, Construction Contract General Conditions, Special Conditions, Instructions to Proposers, and EEO provisions. Proposer hereby proposes to furnish all labor, materials, equipment, tools, transportation and services, and to discharge all duties and obligations necessary and required to perform and complete the Work as required in the Contract Documents and the Task Order Documents as provided.

The undersigned acknowledges receipt, understanding and full consideration of the following addenda to the Contract Documents:

Addenda Nos.: 1 and 2

The undersigned agrees that this Proposal is a firm offer to the City to perform and complete the Contract described above, which cannot be withdrawn for one hundred twenty (120) calendar days after the Proposals are opened or until after a contract for the work described in these Proposal documents is fully executed by the City, whichever date is earlier.

The undersigned Proposer hereby agrees to appear at Denver International Airport, Business Management Services Office, Room 8810, Airport Office Building, at any time within five (5) working days from the date of a written notice from the CEO to do so, mailed and/or faxed to the business address of Proposer and at that time the Proposer shall: (1) deliver an executed Contract



which conforms with this Proposal; (2) furnish the required performance and payment bonds in the sum of \$100,000.00, executed by a surety company acceptable to the CEO; and (3) furnish the required insurance documents.

Enclosed herewith is a Proposal guarantee, as defined in the Instructions to Proposers, in the amount of which Proposal guarantee the undersigned Proposer agrees is to be paid to and become the property of the City as liquidated damages should the Proposal be considered to be the best by the City and the undersigned Proposer notified that it is the apparent low Proposer and it fails to enter into contract in the form prescribed and to furnish the required performance and payment bonds and evidences of insurance within five (5) working days as stipulated above.

Attached and incorporated herein are the following proposal forms: Experience and Past Performance Information Form; Key Personnel Information Form; Quality Control Plans Form, Schedule of Prices and Quantities, and Proposal Data Forms. All of the forms must be completed. Proposer acknowledges that the City may incorporate, at its option, any or all of the data submitted by the Proposer into a contract arising out of this Proposal.

The undersigned Proposer acknowledges the right of the City to waive informalities in the Proposals, to reject any or all Proposals submitted, and to re-advertise for Proposals.

The undersigned certifies that it has examined and is fully familiar with all of the provisions of the Contract Documents and is satisfied that they are accurate; that it has carefully checked all words and figures and all statements made in these Proposal forms; and that it has satisfied itself with respect to the actual site conditions and the nature and location of the Work, the general and local conditions which may be encountered in the performance of the Work, and other matters which in any way affect the Work or the cost thereof.

[CERTIFICATION AND SIGNATURE ON FOLLOWING PAGES]

This Proposal is submitted upon the declaration that neither, I (we), nor, to the best of my (our) knowledge, none of the members of my (our) firm or company have either directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive proposing in connection with this Proposal.

Dated this 14th day of October, 2015.

**BUSINESS ADDRESS OF PROPOSER:**

Ludvik Electric Co.

3900 S. Teller Street

City, State, Zip Code:

Lakewood, CO 80235

Telephone Number of Proposer:

(303) 781-9601

Fax Number of Proposer:

(303) 783-6330

Social Security or Employer Id. No. of Proposer:

84-0811586

**SIGNATURE OF PROPOSER:**

*If a Corporation:*

PRINT NAME OF CORPORATION:

Ludvik Electric Co.

Attest:  
(Corporate Seal)

a Colorado Corporation

  
Secretary

By: James A. Ludvik  
President



*If a Limited Liability Company:*

PRINT NAME OF LIMITED LIABILITY COMPANY:

Organized in the State of \_\_\_\_\_

By: \_\_\_\_\_  
Manager

[Signature blocks for partnerships, limited partnerships and joint ventures are on following page(s)]

***If a Partnership:***

PRINT NAME OF PARTNERSHIP:

\_\_\_\_\_

By: \_\_\_\_\_

General Partner

***If an Individual:***

\_\_\_\_\_, doing

business as \_\_\_\_\_

Signature:

\_\_\_\_\_

(Signature blocks for joint ventures are on the next page)

*If a Joint Venture, signature of all Joint Venture partners is required:*

PRINT NAME OF JOINT VENTURE:

Joint Venture Partner --  
Name of Firm:

\_\_\_\_\_  
Corporation ( ) or Partnership ( )

By: \_\_\_\_\_  
Signature

Title: \_\_\_\_\_

Required for a corporation:

ATTEST:  
(Corporate Seal)

\_\_\_\_\_  
Secretary

Joint Venture Partner --  
Name of Firm:

\_\_\_\_\_  
Corporation ( ) or Partnership ( )

By: \_\_\_\_\_  
Signature

Title: \_\_\_\_\_

Required for a corporation:

ATTEST:  
(Corporate Seal)

\_\_\_\_\_  
Secretary

Joint Venture Partner --  
Name of Firm:

\_\_\_\_\_  
Corporation ( ) or Partnership ( )

By: \_\_\_\_\_  
Signature

Title: \_\_\_\_\_

Required for a corporation:

ATTEST:  
(Corporate Seal)

\_\_\_\_\_  
Secretary

Joint Venture Partner --  
Name of Firm:

\_\_\_\_\_  
Corporation ( ) or Partnership ( )

By: \_\_\_\_\_  
Signature

Title: \_\_\_\_\_

Required for a corporation:

ATTEST:  
(Corporate Seal)

\_\_\_\_\_  
Secretary

## **Ludvik Electric Co.'s Performance and Past Projects**

Ludvik Electric has over 20 years of experience in installing conveyer system in airports through the United States. Our baggage handling controls group specializes in the layout, planning and implementation of turnkey electrical installations. We begin with establishing production metrics for a given project which is incorporated into our scheduling and finance software in order to provide real time data on performance on a project. This data is analyzed on a regular basis in conjunction with onsite field reporting to assist in determining manpower requirements, potential scheduling conflicts, and to assist the customer in understanding how existing facilities will be impacted as part of the work and to plan mitigation efforts to enable the owners operations to continue unimpacted throughout the course of the project. During this process, constructability challenges are identified and the process of generating solutions to these challenges with other team members begins. Our success in meeting the unique demands of a project are exemplified most recently in our approach to providing an automated recirculation line for testing and commissioning of the CBRA/CBIS at the SJPR terminal B&C recapitalization project. We utilized the existing conveyor layout with minor bed section, control and programming modifications to permit 4 weeks of unencumbered system testing by the manufacturer. The construction was performed during owner defined timeframes as not to impact the ongoing operations of the airport. Throughout the years, we have partnered with vendors and contractors in multiple markets which has enabled Ludvik Electric to perform its work in a manner consistent with our philosophy. Our partners have been selected because of their proven track record for on time delivery of equipment and services, quality, and dedication to a given project.

See projects listed.



3900 S Teller Street, Lakewood CO 80235  
Telephone: (303) 781-9601 [www.ludvik.com](http://www.ludvik.com)

**COVER LETTER**

The Proposer shall prepare a cover letter, not exceeding two pages in length, which summarizes the key points in the proposal. It should include the full name of the firm or joint venture members and key proposed subcontractors. If the Proposer is made up of more than one firm, the legal relationship between those firms must be described. The cover letter must include a statement committing the availability of the key personnel identified below to perform the work. The letter must be signed by a person who is authorized to sign an Agreement with the City. This person shall be the same person identified in the Instruction to Proposers as the authorized representative.

**(1) EXPERIENCE AND PAST PERFORMANCE INFORMATION FORM**

Please refer to IP-8 for a statement of the criteria to be considered in evaluating this portion of the proposal.

Provide a statement of the Proposer’s experience with meeting schedules, experience in the specialized work of this contract, with managing costs, with solving problems, with making repairs during the warranty period and with the ability to satisfy previous customers. Identify any special circumstances where the project presented difficult technical, customer or coordination issues and describe how you resolved the issue.

In addition, provide the following information for up to three construction projects which the Proposer has performed for governmental agencies within the past five years:

**PROJECT NO. 1:**

Name of governmental agency: Puerto Rico Ports Authority

Name of Project: San Juan Luis Munoz Marin Int. Airport Location: Carolina, Puerto Rico

Completion date: July 18, 2015 Contract amount: \$4,808,335

Description of project: \_\_\_\_\_

**Ludvik Electric in conjunction with our strategic alliance mechanical subcontractor February Enterprises**

**completed mechanical and electrical installation of baggage handling equipment in support of the**

**terminal B & C recapitalization project at the San Juan Airport. This TSA baggage handling project**

**consisted of complete demolition of the existing CBIS and CBRA areas, major renovations to the**

**baggage make up units along with installation of new Ticket Counters at the terminal. The major**

**components of the project consisted of mechanical and electrical installation of:**

**Construction activities were performed during owner defined time frames so that impacts to ongoing**

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Name, address and telephone number of project manager for contracting agency:

**Vanderlande Industries, Inc.**

**1975 West Oak Circle**

**Marietta, GA 30062**

**(770) 250-2852**

**Mr. Guy Scialdone**

**PROJECT NO. 2:**

Name of governmental agency: **San Diego County Regional Airport Authority**

Name of Project: **San Diego International Airport/2W Bldg. & Airside Expansion** Location: **San Diego, California**

Completion date: **May 2013** Contract amount: **\$7,350,000**

Description of project: **Ludvik Electric Co. in conjunction with our strategic alliance Mechanical**

**Contractor February Enterprises completed mechanical and electrical installation of over (8,000' of conveyor)**

**including new in-line CBIS/CBRA with four (4) explosive scanners, ticket counter conveyors, make-ups**

**and claim units. Contract activities also included over 4,000 feet of demolition of existing conveyors**

**in a phased approach in order to support airline BHS operational needs. Construction activities were**

**completed on a 3 shift 6 days a week schedule in order to meet airport project completion deadlines.**

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Name, address and telephone number of project manager for contracting agency:

**Siemens Energy & Automation, Inc. / Infrastructure Logistics**

**2700 Esters Blvd.**

**DFW Airport, TX 75261**

**(972) 947-7075**

**Mr. Gus Medina**

**PROJECT NO. 3:**

Name of governmental agency: **Greater Orlando Aviation Authority**

Name of Project: **BP-414 Sort Piers** Location: **Orlando, Florida**

Completion date: **October 2010** Contract amount: **\$841,250**

Description of project: **Ludvik Electric Co. in conjunction with our strategic alliance Mechanical**

**Contractor February Enterprises completed and installed BHS equipment (mechanical and**

**electrical) for 5 sort piers, 2 run-out piers, 2 recode stations. Project installation activities were**

**completed on both the day and night shift in order to reduce impacts on airline BHS operations.**

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Name, address and telephone number of project manager for contracting agency:

**Vanderlande Industries, inc.**

**1975 West Oak Circle**

**Marietta, GA 30062**

**(770) 250-2800**

**Mr. David Guthrie**

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## (2) KEY PERSONNEL INFORMATION FORM

Refer to IP-8 for a statement of the criteria to be evaluated with respect to key personnel requirements.

Identify and provide a resume and statement of qualifications for each of the following key personnel to be assigned to work for the Proposer under this Contract:

- Contractor's Project Manager: The Contractor shall employ and designate to the Senior Vice President, in writing, an overall coordinator, manager, and leader of project team. **Adam Cressman**
- Project Superintendent: The Contractor shall employ and designate to the Senior Vice President, in writing, a competent Superintendent whose qualifications shall be acceptable to the Senior Vice President. The Superintendent shall be authorized to act on behalf of the Contractor in all matters related to the Work. **Robert Calkum/Chet Morris**
- Project Engineer: If the level of work requires, the Contractor shall employ and designate to the Senior Vice President, in writing, a competent project engineer whose qualifications shall be acceptable to the Senior Vice President. **Chuck Dahn/Kevin Hanifin**



## **Adam Cressman** **Construction Manager**

### **EXPERIENCE**

#### **LUDVIK ELECTRIC CO.**

#### **CONSTRUCTION MANAGER**

**2002 to Present**

- Mr. Cressman has managed the design and installation of electrical distribution; life safety systems, structured cabling and security systems, in various types of facilities ranging from Multi-use high rise, Clean Rooms, and Data Centers; instrumentation and controls; and baggage handling systems in Airports. One of Mr. Cressman's most recent projects was in excess of a \$100 million dollar design assist industrial facility which was comprised of four (4) 60,000 square foot generator plants which served as the main electrical distribution for a government campus. Each plant contained redundant 13.8K electrical services and double ended switchgear which is backed up with fifteen (15) 2.5 MW generators and included the integration of the paralleling switchgear and the campus SCADA system. In addition, the facility included paralleled/redundant UPS system and the balance of electrical and monitoring/control systems typical of a Tier III Data Center. His role in any given project includes; design development with the engineering team and assisting in the layout of the installations, scheduling and contract administration, major equipment procurement, implementation and monitoring of site wide safety practices and labor management.

#### **Representative Projects:**

- Construction Manager: Orlando International Airport – Recap of Pods A-B
- Construction Manager: Los Angeles International Airport, Terminal 4 Baggage Handling & Screening System
- Project Manager: Luis Munoz Marin Intl Airport - Baggage Handling System
- Project Manager: Strata Vail – Residential Resort
- Project Manager: Utah Data Center - Power Generation & Distribution
- Project Manager: Four Seasons Resort, Vail
- Project Manager: IM Flash Technologies - Semiconductor Fabrication
- Project Coordinator: Southlands Town Center - Retail
- Project Coordinator: Denver Newspaper Agency - Multiuse Office
- Project Coordinator: The Shops at Centerra - Retail
- Project Coordinator: Colorado Convention Center - Commercial/Public Works
- Project Coordinator: Boulder Community Hospital

#### **Previous Experience:**

- Quest Communications, Project Manager 06/2001 to 10/2002
  - Managed installation of vendor's equipment and utility infrastructure upgrades for Qwest Central Offices throughout the southeast.
- Precision Fluorescent, Project Manager 04/1996 to 06/2001
  - Specified and engineered spec lighting and lighting control packages for various utilities, ESCo, and end users.
- Advance Energy Management, Apprentice/Wireman Electrician 06/1992 to 04/1996
  - Assisted Journeyman electricians with electrical installations in both commercial and industrial applications.

#### **Education and Certifications:**

- Red Rocks Community College, Electrical Construction & Construction Technology Courses
- Mt. San Antonio Community College, General Education Courses
- First Aid & Adult CPR Class
- **NICET** Fire Alarm Signaling Level II Certification
- OSHA 30-Hour
- NFPA 70E

#### **References:**

- Rhett Barnard (Project Manager, DPR Construction) 520.429.3734
- David Alger (Project Manager, Hunt Electric) 801.358.7643
- Dennis Salzmann (Project Manager, Emerson Process Management) 801.975.6461

# Chuck Dahn

## Mechanical Engineer/Project Manager

Mr. Dahn has over 20 years industry experience covering engineering, construction, airport baggage and materials handling, pharmaceutical, and manufacturing markets. Most recent experience has been in the aviation sector, but strong expertise in overall MEP work. Strong technical background based in mechanical engineering and resulting ability to manage a vast array of projects. Demonstrated ability to build accounts and provide leadership and direction for engineering, construction, and project management staffs. Career budgetary responsibilities have exceeded \$1.1 Billion.

### FIRM

- Ludvik Electric Co.

### EDUCATION

- Purdue University – West Lafayette, IN Bachelor of Science Mechanical Engineering - May 1997  
Career Development Courses including: leadership, management principles, teambuilding, project management

### REGISTRATIONS / CERTIFICATIONS/ASSOCIATIONS

- American Society of Mechanical Engineers, member since 1993
- Purdue University Engineering Advisory Board
- Make a Wish Foundation
- Habitat for Humanity

### RELEVANT EXPERIENCE

#### Ludvik Electric, Lakewood, CO

Mechanical Engineer/Project Manager/Estimator on the following projects:

- Orlando International Airport (Sort Piers and Claim Unit Upgrades)
- Washington Dulles (East Bag Basement Renovations)
- San Diego Airport (Terminal 2 West Building and Airside Expansion)
- LAX (Delta Ticket Counter Consolidation)
- Houston George Bush Intercontinental
- Nashville International
- St. Louis Lambert International

#### Amata, Inc. – Englewood, CO

Business Unit Manager, March 2006 to May 2008

- Responsible for startup of new Airport Services Division and secured \$3.3M worth of contracts in the first year with profits of \$900K.
- Coordinated division sales and marketing efforts.
- Developed project estimates and generated project proposals.
- Negotiated contracts, developed project budgets, and managed installation of airport baggage handling systems.
- Negotiated project change orders and completed project closeout activities including project invoicing.
- Airport baggage handling projects included Houston George Bush Intercontinental Airport, Chicago Midway International Airport, San Jose Norman Y. Mineta International Airport Baltimore/Washington International Airport and Cancun International Airport.

#### Universal Plant Services - Conveyor Services – Deer Park, TX

Senior Project Manager, June 2004 to April 2006

- Responsible for sales, project estimating, and proposal generation for the Conveyor Services Division and secured \$7.6M worth of contracts with profits of \$1.7M in the first year.
- Managed installation of baggage handling systems totaling \$20.6M in value over two years.
- Negotiated contracts, developed project budgets, and managed installation of airport baggage handling systems. Negotiated project change orders and completed project closeout activities including tracking of conformance to budget.
- Airport projects included Houston George Bush Intercontinental Airport, Atlanta Hartsfield Jackson International Airport, Sacramento International Airport, San Diego International Airport, and Austin International Airport among others.

#### Western Industrial Contractors, Inc. - Denver, CO

Senior Project Manager – Special Projects, October 2002 to August 2004

- Contracted to Siemens and served as Southwest Region Area Manager on the Homeland Security - Transportation Security Administration (TSA) 100% Baggage Screening Program. Directly responsible for customer interface, project sales, hiring and management of WIC assigned program staff, as well as managing all baggage Explosive Detection System screening equipment and baggage handling system installations in Texas, Louisiana, Oklahoma, New Mexico, Arizona, New Mexico, Mississippi and Arkansas. Staff included over 170 installation personnel covering more than 60 airports in total. Total region program revenue for WIC exceeded \$100M with total project value in excess of \$440M.

- Managed \$5.6M baggage handling system installation for Boeing and United Airlines at Chicago O'Hare International Airport and \$1.1M installation for American Airlines at the St. Louis International Airport. Responsibilities included supervision of project superintendents, sales, development of cost estimates and bids, drafting proposals, negotiating contracts, coordinating implementation including subcontract management, and preparing invoices.

**Integrated Project Management Company, Inc. - Burr Ridge, IL**

Senior Project Manager, December 2001 to October 2002

- Managed a \$215M annual capital improvement program at Pharmacia's Chicago Region R&D facility. Developed the program, prepared program cost estimates and schedules, developed resource utilization plans, and identified conflicts and synergies amongst program projects.
- Coordinated definition and clarification of project scopes with clients, including identification of client requirements and preparation of the "business justification" for the projects.
- Developed and maintained project budgets, including budget assembly and tracking of costs versus budgets.
- Direct responsibility for the implementation of facility HVAC improvements including specification, installation, and validation of new air handling units with a value of approximately \$8M.
- Coordinated the design and engineering of an 110,000 sf expansion to Johnson Outdoors' personal watercraft manufacturing facility in Grand Rapids, MI.
- Assisted in Integrated Project Management company Business Development Activities.

## Kevin Hanifin – General Construction Project Manager

Mr. Hanifin has over 12 years construction management and general contracting experience in the NY/NJ Metro Area and Denver Metro Area. Skillset includes general construction and project management, critical path method (CPM) scheduling/schedule analysis, cost estimating, budgeting & project buyout. He played a major role in the Sandy Recovery Program for Ocean County, NJ. Mr. Hanifin has been instrumental in providing “needs” analysis and operational reports on County departments that are essential to the successful completion of the Facilities Capital Improvement Plan.

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**FIRM** Ludvik Electric Co.

### EDUCATION

- University of Illinois at Chicago - Bachelor of Science in Engineering Management
- Regularly attended Institute of Industrial Engineers meetings

### RELEVANT PROJECT EXPERIENCE

**December 2013 - Current**  
**Ludvik Electric Co.**  
**Lakewood, Colorado**

#### Representative Projects:

- LAX T4 American Airlines In-Line Screening, Los Angeles, CA (\$5,400,000). Currently serving as Project Manager for power and controls field wiring installation of the new in-line screening BHS system at the Terminal 4 expansion at LAX. Responsibilities include overall project schedule and budget oversight and management.
- Facilities Capital Improvement Program Master Plan, Ocean County, NJ. Served as team member developing a 20-year Master Plan for Ocean County, NJ to address operational needs of the County administration. Completed plan will include detailed facility needs assessment of each County-owned facility and department, identify major construction projects, identify minor capital improvement projects, and provide CPM schedules and construction cost estimates.
- Construction Management On-call Services, Ocean County, NJ. Currently serving as lead Project Manager providing Construction Management consulting services to Ocean County on projects including the OC Correctional Facility Upgrades.

**February 2007 to December 2013**  
**Stone Creek Construction**  
**Lodi, New Jersey**

Employed as a Project Manager for a General Construction firm completing millions of educational facility construction work on an annual basis.

Project Management responsibilities include: CPM project scheduling and monitoring, project estimating, project buyout, representing firm at project meetings with Architect and Owner  
Field Superintendent responsibilities include: daily site visits, quality control and direct oversight of Stone Creek tradesmen, site safety, material procurement, determining workforce requirements, subcontractor coordination.

#### Representative Projects:

- Additions/ Renovations to Livingston Park Elementary School, North Brunswick, NJ (\$4,500,000). Served as project manager/ on-site superintendent on this project which included two multi-classroom additions, a 2-story elevator addition, and renovations to the existing teachers' lounge.
- Additions/ Renovations to the Ketler Elementary School, Westwood, NJ (\$3,500,000).

Served as project manager/ on-site superintendent on this project that involved construction a new 4-classroom addition and new addition/ alterations to the existing cafeteria.

- Classroom Addition and Parking Lot Expansion at Chatham High School, Chatham, NJ (\$2,250,000). Served as project manager/ on-site superintendent on this project which included a 4,200 SF classroom addition and 50,000 SF parking lot expansion with two underground storm water detention systems.
- Westwood Jr/Sr High School Team Room Alterations, Washington Township, NJ (\$1,800,000). Served as project estimator, project manager and on-site superintendent for conversion of existing boys' and girls' locker room facilities to new HS team rooms including new trainer's office and treatment suite.

**May 2003 to February 2007**

**Hanifin Associates, Inc.**

**Toms River, New Jersey**

Employed as a Project Engineer serving in a Construction Management role.

- Daily site responsibilities included: workforce documentation, quality control, safety monitoring.
- Project Management Oversight responsibilities included: contract administration, submittal and correspondence coordination, Change Order review, CPM schedule review, directing Project Coordination Meetings, generating monthly status reports for presentation to the Owner.

**Representative Projects:**

- Five School New Construction/Additions Program Egg Harbor Township, NJ (\$55,000,000). Served as Project Manager on this project that involved the new construction of a grade 3-4 elementary school; alterations at two existing elementary schools; additions and alterations at one existing elementary school; and one high school.
- Seven School Additions/ Alterations Program, Fair Lawn, NJ (\$35,000,000). Served as lead Project Manager on this project which included classroom and Media Center additions at two elementary schools; classroom and gymnasium addition at one elementary school; classroom, Media Center, and cafeteria addition and alterations at one high school; electrical service upgrades/ roof replacement at three elementary schools.
- Nathan Hale Elementary School and Carteret High School, Carteret, NJ (\$13,000,000). As Project Manager, provided CM oversight for work that included exterior alterations and renovations, roof replacement, kitchen renovations, electrical upgrades and historical restoration.
- Toms River Library, Ocean County, Toms River, NJ (\$17,000,000). Served as a Project Manager on this project that included renovations to an existing 55,000 SF library and a new 58,000 SF addition. The project also involved the integration and renovation of a 150 year old church as a focal point of the streetscape and library complex.

**June 2001 to August 2002**

**Hanifin Associates, Inc.**

**Toms River, New Jersey**

**Project Engineer (Summer Intern)**

- Responsibilities included daily site visits, workforce documentation, quality control, safety monitoring.
- Maintained/ updated electronic project databases.



**CHET MORRIS**  
**Superintendent**

Chet has been in the electrical trade for 17 years. He has profitably directed electrical projects, and successfully held leadership positions in several US states, as well as San Juan Puerto Rico, Istanbul Turkey, and Abu Dhabi United Arab Emirates.

He recently completed the installation of an integrated baggage handling and screening system at Luis Munoz Marin International Airport. It included over 400 motors using local variable frequency drives and 4000 feet of conveyor which connected 5 ticket counters, six baggage scanners, and seven make-up units. The new system was also integrated into the existing baggage handling system with no significant impact to airport operations.

On another recent project Mr. Morris acted as a system detailer, and special projects foreman. It was in excess of a \$100 million dollar design assist industrial facility which was comprised of four (4) 60,000 square foot generator plants which served as the main electrical distribution for a government campus. Each plant contained redundant 13.8K electrical services and double ended switchgear which is backed up with fifteen (15) 2.5 MW generators and included the integration of the paralleling switchgear. In addition, the facility included paralleled/redundant UPS system and the balance of electrical and monitoring/control systems typical of a Tier III Data Center.

Chet's experience includes: airport baggage handling systems, elementary and high schools, data centers, hospitals, motion picture studios, prisons and jails. His specialties include: control wiring, fire alarm and security systems, and seismic bracing.

**Projects:**

Superintendent	Orlando International Airport Baggage Handling System
Asst. Superintendent	Los Angeles International Airport Baggage Handling System
Superintendent	Luis Munoz Marin Airport Baggage Handling System
Detailer/Foreman	Utah Data Center Generator Plants, Camp Williams, Utah
Superintendent	Granger High School, West Valley City, Utah
Superintendent	Traverse Mountain Elementary School, Lehi, Utah
Superintendent	Utah Valley Specialty Hospital, Orem, Utah
Superintendent	Central Utah Correctional Facility Power Generation Upgrade
Superintendent	Brigham Young University Office of Information Technology
Superintendent	Emery County Jail, Castle Dale, Utah
Foreman	Brigham Young University Motion Picture studio
Apprentice	Central Utah Correctional Facility North Addition
Apprentice	Children's Special Health Care Needs Clinic, Salt Lake City, Utah

**EXPERIENCE:**

2012 – Present	Ludvik Electric
1998 – 2012	Wilkinson Electric
1986 – 1993	US Army

**TRAINING AND LICENSING:**

- 2015 - Present California Certified General Electrician - License #160502
- 2002 - Present Utah Journeyman Electrician - License # 364624-5504
- 2011 OSHA 10 Hour Training
- 1998 - 2002 Utah Valley University, Orem, Utah
- 1988 - 1989 Big Bend Community College, Moses Lake, WA

**REFERENCES:**

- LAX Project: Jervis B. Webb Company, Harvey Henning, Superintendent, Phone: 989-390-2982
- SJU Project: Vanderlande Industries, Guy Scialdone, Senior Project Manager, Phone: 404-797-3388
- Wilkinson Electric Projects: Jeron Wilkinson, Owner, Phone: 801-360-7947



## **ROBERT CALKUM** **Superintendent**

### **QUALIFICATIONS:**

Mr. Calkum has been in the electrical industry for 16 years with the last 5 as a field supervisor. Throughout the years, he has had the opportunity to work both in the field and in the office performing such tasks as field productivity supervision, project management, estimating, purchasing, material management, cost management and layout.

### **EXPERIENCE:**

#### **LUDVIK ELECTRIC CO.**

#### **SUPERINTENDENT**

2005 – Present

#### **Projects:**

- San Juan Airport BHS, PR
- Long Beach Airport BHS, CA
- Orlando Florida BHS, FL
- San Diego Airport BHS, CA
- Washington Dulles Airport BHS, VA
- LAX BHS, CA
- CU Boulder Athletic Complex and Indoor Practice Field, CO
- Douglas County Justice Center, CO
- Metro Waste Water, CO
- Englewood Waste Water, CO
- Denver Justice Center, CO
- Denver News Agency, CO
- IM Flash Technologies, Lehi Utah
- NERL PDIL , CO
- Ameristar Casino, CO

### **PREVIOUS EXPERIENCE:**

- Colorado Concept Lighting, Denver, CO – 303-234-0460
- Duro Electric, Denver, CO – 303-934-3303
- Ram Electric- Out of Business
- AAA Electrical-Out of Business

### **EDUCATION:**

- Platte Canyon High, Bailey, CO
- Red Rocks Community Collage, Denver, CO
- Mesa State Collage, Grand Junction, CO
- OSHA 30-Hour
- Ludvik Train the Trainer
- First Aid & CPR

### **LICENSES:**

- Colorado State Electrical Journeyman License #0107846
- California Certified General Electrician #153787
- Utah State Electrical Journeyman License #6245144-5504

### **REFERENCES:**

- Larry Williams, University of Colorado Electrical Inspector, 303-265-1257
- Drake Daigle VP at Electrical Control and Design, Dallas/ Fort Worth, TX, 703-930-3611
- Frank Benavidez, Owner February Enterprises Inc. Denver, CO, 303-429-5457



**(3) QUALITY CONTROL PLANS FORM**  
**(Use only this form)**

Refer to IP-8 for a statement of the criteria to be evaluated with respect to key personnel requirements.

This contract is unique in the fact that continued use of the contract is dependent upon the contractor's ability to provide high quality construction at a reasonable cost while providing compliance with the specifications and with requirements to maintain customer access and use areas airline baggage handling systems. It is expected that high quality construction will be accomplished with minimal field oversight on the part of the City and County of Denver. Success for both the City and County of Denver and the contractor will be defined by the contractor's ability to manage the quality of the work, the schedule of the work, and the interface with all of our customers and users of the facility and compliance with adjustments in work arrangements as needed by DIA. Given the above parameters, address in detail the following subjects.

Describe how you will assure that only high quality work is provided under this contract:

**Ludvik Electric Co.'s jobsite Superintendent will have Quality Control responsibility to make sure subcontractors follow parameters of task orders; coordinate demolition and removal of equipment, and coordinate installation activities of new conveyors. Since we will be doing task orders that include demolition, the Quality Management will be to continually monitor safe practices so as not to impact any airline or CCD operations. Additionally, installation activities will be completed through coordination with CCD operations and with Airline/Stakeholder operational needs in mind.**

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Describe what you will do to establish positive attitudes, a spirit of cooperation, and good working relationships between your firm, subcontractors, and the City and County of Denver:

**In the company's 35 year history, cooperation and communication is the most important ingredients to a collaborative relationship. Our first task will be to introduce our team to the City and County of Denver. We will facilitate a partnering session that will provide the City with information about our team, including any subcontractors we will engage, what their roles will be, what our procedures will be, and how each team member can be contacted. We will also ask what the City is expecting and ask that the City bring any other stakeholders that might be affected such as airlines or their vendors. We will maintain frequent and planned meetings to build a closer relationship. We will work closely with all stake holders to make sure each one is educated as to what we are going to do, when it will be completed, and if there will be any disruptions and how we will mitigate them. It is our objective to want the City and their clients to want us to maintain the airport baggage handling systems into the future.**

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Demonstrate that you have the ability to respond quickly when a customer issue or a new task is presented:

**Ludvik Electric has in place a 7/24 emergency system that will be accessible to the City. It is our policy to return a phone call within 30 minutes and respond to any emergency call within 2 hours**

**of notification. The team will be the first line of contact. The City will have phone numbers for prime team members. The company also has an afterhours line (the main telephone number) that contacts our special projects group and has a rolling list of personnel on call at all times.**

**For non- emergency tasks, Ludvik will respond within 48 hours of any request and will provide a schedule as to when the task can be performed after the approval of the City to proceed.**

**Ludvik Electric Co. maintains a staff of electricians in our service group with the capacity to respond easily to an emergency call. These electricians, will be badged so that we can minimize impacts to operations. Our strategic alliance with February Enterprises will allow very quick turn around for**

**Millwright labor. February maintains agreement with Millwright Local #1607 and has been performing work on the luggage system at DIA since the airport was first constructed.**

Describe how you will assure that the price proposal for each task order is reasonable before it is submitted to the City and County of Denver for consideration:

**- Onsite verification of all quantities as outlined on drawings.**

**- Using similar scope historical data to determine manhours.**

**- RFI process to ask questions to have a complete scope of work.**

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Demonstrate that you have the experience and capability to obtain outside resources, to successfully manage subcontractors, and to know what constitutes high quality work:

**During our 35 year history, we have performed on hundreds of projects as a subcontractor, prime contractor, and construction manager. Most of our projects are well over \$1MM dollars and require multiple trade elements. We have a standard subcontract that holds our subcontractors to the same level of safety, quality, and performance that our company requires of ourselves.**

**The company instills a sense of pride in our workmanship. Our training is focused on performing a task once through proper installation methods. Our policy requires that we perform our own pre-punch lists to catch any deficiencies and correct them timely. Our work quality is reflected in our repeat customers and our low call back rates and warranty expense. It is far more costly to install poor quality than to install good quality.**

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Demonstrate that you have the capability to manage multiple sub-contractors working at various locations and on multiple shifts, schedules or tasks. Describe the actions you will take to ensure that subcontracted work is completed in a timely fashion and with a high quality of work.

**We have performed on several projects that our contract was in the tens of millions of dollars.**

**Some projects had as many as 1000 craft under our control or on our own payroll. All of these projects had several areas being constructed at one time and required large crews working multiple shifts**

**to complete on schedule. Planning is key to being successful on this type of project. First the management has to be in place to plan and phase the work. Next we assign crews with proper**

**supervision based on the size and schedule of the work to maintain schedules. If a second or third shift is required, we plan an overlap to provide continuity from one shift to the next.**

**If the work requires off hours work to maintain operations, we prepare pre-task plans or methods of procedures to ensure that we don't interfere with operations. If a subcontractor is performing the work, we integrate them into our planning a phasing and make sure that they plan and**

**schedule their crews to compliment the task. The work is checked for compliance to specifications and operations before we turn the work over to the City.**

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#### (4) SCHEDULE OF PRICES AND QUANTITIES – PAY ITEMS

Refer to IP-8 for a statement of the criteria to be evaluated with respect to schedule of prices and quantities. All pricing is subject to the requirements of the Contract General Conditions and subject to evaluation by the DIA Project Manager.

Should DIA require work that is not covered by a unit price format, the contractor shall provide and use the following established rates to help determine a proposed cost. All pricing is subject to the requirements of the Contract General Conditions and subject to evaluation by the DIA Project Manager.

##### A. Supervisory & Office Personnel

The positions and numbers of staff personnel for each Task of this On Call project will be established through negotiations with the DIA Project Manager. The contractor shall provide agreed-to staff positions to manage the work on a level-of-effort basis. The core staff rates in this section shall include the base hourly cost (salary divided by 2,080 hours) plus the calculated hourly cost of any vehicle and/or cell phone allowances for those individual employees with those benefits. Allowances must be evidenced on the redacted payroll register and cannot exceed the CDOT Equipment rates. Contractor rates for the positions indicated below are applicable to the General Contractor only.

An Exhibit and Submittal 1 must be prepared for the Prime and each Subcontractor that will have salaried core staff assigned to DIA under this Agreement. Subcontractors may not be identified yet for On Call Agreements. Subcontractors selected subsequent to the execution of this Agreement with core staff must also prepare the Exhibits K & L and have both their Multiplier Factor and hourly billing rates approved prior to commencing work at DIA.

Use the Submittal 1 to provide the detail of the employee fringe benefit expenses, the profit percentage on salaried wages, and calculate the Fringe Benefit Multiplier Factor. The Fringe Benefit Multiplier Factor also incorporates burden, overhead, home office overhead, profit, safety and other training, staff operated equipment (including cell phones, radios and field transportation), office furniture, office supplies, and office maintenance. See the Submittal 1 *Instructions* tab for more information.

The Exhibit D *Core Staff Labor Rate* exhibit is specific to the individual employee assigned to the project, not their job title. **All salaried Core Staff personnel for both the Prime and Subcontractors assigned to this contract must have their individual hourly billing rate approved prior to commencing work at DIA. Any subsequent change(s) in personnel from those identified in the original Agreement must also have their hourly billing rate approved prior to commencing work at DIA.**

For the positions listed below, use the Exhibit D to identify the employees who will be assigned to DIA and provide the individual wages and any other positions anticipated to be used in the contract. See the Exhibit D *Instructions* tab for more information.

Exhibit D <http://business.flydenver.com/bizops/documents/exhibitD.xlsx>

Submittal 1 <http://business.flydenver.com/bizops/documents/submittal1.xlsx>

**Position**

Project Manager  
Project Superintendent  
Project Engineer  
Office Engineer  
Administrative Assistant / Timekeeper

**B. Labor Markup**

Labor Markup Percentage: 20%

Markup to be multiplied by estimated labor cost as negotiated. Estimated labor cost will be the estimated actual labor costs submitted by contractor and verified by CCD. Estimated labor cost will include all craft wages, fringe benefits and burdens. Markup will include overhead, home office overhead safety and other training, profit, small tools, and consumables. Small tools are defined as any tool with a replacement value of \$500 or less. Consumables are defined as any materials that may be consumed by the work and are not part of the permanent installation (e.g. rags, drill bits, hard hats, safety glasses, gloves, saw blades, reciprocating saw blades, tape, welding rod, etc.).

**C. Material Markup**

Material Markup Percentage: 10%

Markup to be multiplied by actual material quotes if available or estimated cost if not available. Markup will include overhead, home office overhead and profit. Markup will not be applied to sales taxes.

**D. Equipment Markup**

Equipment Markup Percentage: 12%

Markup to be multiplied by estimated equipment costs as negotiated. Estimated equipment utilization rates will be derived from the Primedia Rental Rate Bluebook as modified by CDOT Standard Specifications for Road and Bridge Construction, Section 109.04 (c). Markup to include overhead, home office overhead and profit.

**E. Subcontractor Markup**

Subcontractor Markup Percentage: 10%

Markup to be multiplied by agreed-to subcontractor proposals submitted to the prime contractor. Markups to include all prime contractor overhead, home office overhead, and profit.

**F. Permits**

Permits will be obtained by the contractor. Permit costs will be the agreed to or actual cost of the permit without markup. Costs to acquire the permit will be included in the other markups.

**G. Sales Tax, Bond and Insurance**

Sales tax, bonding and insurance costs will be the agreed to or actual cost without markup.

**H. Additional or Extra Work Performed within a Task Order**

Extra work will be performed utilizing the same markups as the original Task Order.

**I. Retention**

Final settlement and release of retention will be made upon completion of each Task Order rather than contract completion.

**J. Subcontractors**

Subcontractors will be required to use the same markups as the prime contractor. Reimbursement and mark-up percentage for subcontractor staff, when required, will be as described in Part B Labor Mark-up.



**SUBMITTAL 1**  
**FRINGE BENEFIT MULTIPLIER CALCULATION**  
**CONSTRUCTION AGREEMENTS**

**Proprietary and Confidential Information - Do Not Release**

Contractor's Name: Ludvik Electric Co.  
Project Name: On-Call Miscellaneous BHS Millwright Services  
Project Number: 201418968  
Financial Information for the Year Ended: 12/31/2015

Salary and Wage Expenses	Income Statement Amount Incurred	Adjustments +/- Explanation Required	Adjusted Income Statement Amount	% of Labor
Labor - Direct and Indirect	\$ 5,923,008		\$ 5,923,008	
Employers FICA	453,110		453,110	7.6%
FUI/SUI	130,306		130,306	2.2%
Holiday/Vacation	398,749		398,749	6.7%
Sick Leave	118,460		118,460	2.0%
Personal Time Off			-	0.0%
Health Insurance	727,075		727,075	12.3%
Workers Compensation	29,461		29,461	0.5%
Denver Occupational Tax			-	0.0%
Retirement Plan	224,002		224,002	3.8%
Other - provide explanation	35,397		35,397	0.6%
<b>Total Fringe/Benefits</b>	<b>2,116,561</b>	<b>-</b>	<b>2,116,561</b>	<b>35.7%</b>
Subtotal Fringe/Benefits as a percent of Labor	35.73%		35.73%	
Office Overhead, Field Overhead, and Profit	23.00%		23.00%	
<b>Total Fringe, OH, &amp; Profit as a percent of labor</b>	<b>58.73%</b>		<b>58.73%</b>	

**Office & Field Overhead as defined by DIA includes but is not limited to:**

Automobiles & Field Vehicles  
Business Meals  
Computer Expense - Home and Field Office  
Continuing Professional Education  
Conventions/Seminars  
Depreciation & Amortization  
Dues & Subscriptions  
Equipment Rental & Maintenance  
Furniture - Home and Field Office  
Insurance  
Licenses  
Miscellaneous  
Office Supplies - Home and Field Office  
Photocopier - Home and Field Office  
Postage - Home and Field Office  
Professional Services - Accounting  
Professional Services - Consulting  
Professional Services - Legal  
Recruiting  
Relocation Costs  
Rent - Office only (Field Rent (if any) will be captured in Mobilization)  
Repairs & Maintenance - Home and Field Office  
Reproduction - In House  
Taxes (excludes Federal Income Taxes)  
Telephone, Staff Cell Phones, & Fax - Home and Field Office  
Temporary Help  
Training  
Travel  
Utilities

**EXHIBIT D**  
**Company & Contract Information**

Contractor Name		Contract Number	
Ludvik Electric Co.		201418968	
Contract name			
On-Call Miscellaneous BHS Millwright Services			
	<u>Company Name</u>	<u>Enter the Fringe Benefit Multiplier Factor from Submittal 1</u>	<u>MBE WBE SBE or DBE</u>
1	Ludvik Electric Co.	58.7300%	
2			
3			
4			
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7			
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# EXHIBIT D

## Ludvik Electric Co.

### Core Staff Labor Rate

	Select the Contractor Company	Enter the Employee Name	Select the appropriate Job Title	If "Other" is selected in column 'D', enter actual Job Title	Select the appropriate Experience Level	Enter the Employee Hourly Wage (Salary / 2,080)	Hourly rate for Allowances on the Payroll Register	Total Base Hourly Rate	Multiplier Factor	Hourly Rate Charged to the City
1	Ludvik Electric Co.	Adam Cressman	Construction Manager		Level V, Managerial	\$54.32	\$0.15	\$54.47	58.73%	\$86.46
2	Ludvik Electric Co.	Kevin Hanifin	Project Manager		Level IV, Supervisory	\$52.88	\$1.50	\$54.38	58.73%	\$86.32
3	Ludvik Electric Co.	Jack Nevin	Project Superintendent		Level IV, Supervisory	\$57.69	\$3.00	\$60.69	58.73%	\$96.33
4	Ludvik Electric Co.	David Douglas	Project Superintendent		Level IV, Supervisory	\$49.00	\$3.00	\$52.00	58.73%	\$82.54
5	Ludvik Electric Co.	Chester Morris	Project Superintendent		Level IV, Supervisory	\$49.00	\$3.00	\$52.00	58.73%	\$82.54
6	Ludvik Electric Co.	Charles Dahn	Cost / Estimating Engineer		Level III, Full Experience	\$44.57	\$0.30	\$44.87	58.73%	\$71.22
7	Ludvik Electric Co.	Rick Filson	CAD Drafter 3		Level III, Full Experience	\$32.81	\$0.30	\$33.11	58.73%	\$52.56
8	Ludvik Electric Co.	Aaron James	Drafting Supervisor		Level IV, Supervisory	\$33.66	\$0.15	\$33.81	58.73%	\$53.67
9	Ludvik Electric Co.	Miki Summers	Planner/Scheduler		Level III, Full Experience	\$38.47	\$0.15	\$38.62	58.73%	\$61.30
10	Ludvik Electric Co.	Debbie Avalos	Administrative Assistant		Level III, Full Experience	\$24.38	\$0.00	\$24.38	58.73%	\$38.70
11										
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**Proposal Data Forms**

**INFORMATION ABOUT CONTRACTOR**

1. Name of Proposer/Contractor: Ludvik Electric Co.

2. Type of business entity: Corporation

NOTE: If Proposer is a **partnership** or **joint venture**, give full names of all partners or joint ventures. Proposal must be signed by all joint ventures. If Proposer is a **limited liability company**, Proposal must be signed by authorized manager (may be signed by member-manager if LLC is organized to allow management by members).

3. Prequalified by City and County of Denver as Construction Contractor : Categories: 2d

Monetary Limit: \$25MM

4. Address of Contractor: 3900 S. Teller Street

Lakewood, CO 80235

Telephone: (303) 781-9601 Fax: (303) 783-6330

5. Established where and when: Colorado April 1, 1980

6. Contractor's Banks: Colorado Business Bank

821 17th Street, Denver, CO 80202 (303) 312-3401

7. Principal Officers of Contractor (managers and members if LLC):

Name: James A. Ludvik

Name: Richard B. Giles

Title: President & CEO

Title: Treasurer & CFO

Name: Robert L. Cheney

Name: \_\_\_\_\_

Title: Executive Vice President

Title: \_\_\_\_\_

8. Proposer's/Contractor's City and County of Denver Contractor License if it has obtained one: License No.: 7797  
Class: Electrical

A contractor license is required prior to start of construction but not prior to Proposal submittal.

9. Proposer's/Contractor's state of incorporation (state of organization if an LLC or partnership): Colorado

10. Proposer's Surety: Hartford Fire Insurance Company

11. Surety's State of Incorporation: Connecticut

12. Address of Contractor in other areas (if different from No. 4): One Hartford Place

Hartford, Connecticut 06155

13. Name and address of person to receive payments: Richard B. Giles

3900 S. Teller Street

Lakewood, CO 80235

14. If the Proposer/Contractor is a joint venture, it shall attach a certified copy of the joint venture agreement. The joint venture agreement will not be included as a Contract Document.

15. The Proposer/Contractor shall identify all applicable labor agreements (if any) to be used in the performance of the Work: **None**

**City and County of Denver  
Community Planning and Development**

[www.denvergov.org/Contractor\\_Licensing](http://www.denvergov.org/Contractor_Licensing)

**License/Registration Number: 7797**

**Expiration Date: 10/31/2017**

**License Type: ELECTRICAL**

**Issued To:**

LUDVIK ELECTRIC CO  
3900 S TELLER ST  
LAKEWOOD, CO 80235



MANAGER, CPD

Amount	Fund/Org/Revenue Code	Payment Date	Trans #	Void
\$0.00	01010-0141200-352900	10/03/2014	80362411	
\$25.00	01010-0141200-420600	10/03/2014	80362407	
\$25.00	01010-0141200-420600	10/03/2014	80362409	
\$25.00	01010-0141200-420600	10/03/2014	80362403	
\$25.00	01010-0141200-420600	10/03/2014	80362405	

**RENEWAL INFORMATION**

Renewal notices will not be mailed for licenses expiring after 2009. The expiration date appears on each license.

Renewal information is available at [www.denvergov.org/Contractor\\_Licensing](http://www.denvergov.org/Contractor_Licensing).

**INSPECTION INFORMATION**

Inspection requests called in by 12:00 A.M. will usually be scheduled for the following working day.

Please provide the following information when you call for an inspection:

- ✓ Permit number
- ✓ Type of Inspection

Automated Inspection Request System: 720-865-2501

Inspections are performed Monday through Friday.

RECEIVED



OCT - 8 2014

LUDVIK ELECTRIC CO.

**Wallet Contractor ID Card: MUST BE KEPT IN YOUR POSSESSION AT ALL TIMES.**

Cut on outside of line, then fold in half.



<p><b>City and County of Denver</b></p> <p><b>IDENTIFICATION CARD</b></p> <p>License/Registration No.: 7797</p> <p>This is to certify that LUDVIK ELECTRIC CO has been issued a ELECTRICAL license in the City and County of Denver, beginning on 03 Oct 2014 and ending on 31 Oct 2017, unless license is revoked.</p> <p style="text-align: center;"> Peter Park</p>	<p><b>City and County of Denver</b></p> <p><b>Community Planning and Development</b></p> <p>201 W Colfax Ave. Dept 205 Denver, CO 80202</p> <p></p> <p>Licenses and Certificates: 720-865-2770 Permit Counter: 720-865-2705 Inspection Administration: 720-865-2505 Automated Inspection Request: 720-865-2501</p>
---	---

**City and County of Denver**  
**Community Planning and Development**  
[www.denvergov.org/contractor\\_licensing](http://www.denvergov.org/contractor_licensing)

**License/Registration Number:** LIC00245698  
**Expiration Date:** 10/08/2018  
**License Type:** General Contractor - Class A

**Issued To:**

LUDVIK ELECTRIC CO  
3900 S TELLER ST  
LAKEWOOD, CO 80235

**By Authority of the Executive Director of  
Community Planning and Development**

Amount	Fund/Org/Revenue Code	Payment Date	Trans #	Status
\$250.00	351800-01010-0141200-Z0000-Z0000	10/08/2015	1531741	Paid

**RENEWAL INFORMATION**

Renewal notices will be e-mailed to e-mail address on file.  
Renewal information is available at [www.denvergov.org/Contractor\\_Licensing](http://www.denvergov.org/Contractor_Licensing).

**INSPECTION INFORMATION**

Inspection requests called in by 12:00 a.m. will usually be scheduled for the following working day.

Please provide the following information when you call for an inspection:

- √ Permit number
- √ Type of inspection and inspection code

Automated Inspection Request System: 720-865-2501

Inspections are performed Monday through Friday.

**Wallet Contractor ID Card: MUST BE KEPT IN YOUR POSSESSION AT ALL TIMES.**

Cut on outside of line, then fold in half.

**City and County of Denver**  
**IDENTIFICATION CARD**

License/Registration No.: LIC00245698

This is to certify that LUDVIK ELECTRIC CO has been issued a General Contractor - Class A license in the City and County of Denver, beginning on 08 October 2015 and ending on 08 Oct 2018, unless license is revoked.

**By Authority of the Executive Director of  
Community Planning and Development**

**City and County of Denver**  
**Community Planning and Development**  
**201 W COLFAX AVE DEPT 205**  
**DENVER, COLORADO 80202**



**DENVER**  
THE MILE HIGH CITY

Licenses & Certificates:	720.865.2770
Permit Counter:	720.869.2705
Inspection Administration:	720.865.2505
Automated Inspection Request:	720.865.2501



Proposer Ludvik Electric Co.

**Proposal Data Forms**

**EQUAL OPPORTUNITY REPORT STATEMENT**

Each Proposer shall complete and sign the Equal Opportunity Report Statement. A Proposal may be considered unresponsive and may be rejected, in the Owner's sole discretion, if the Proposer fails to provide the fully executed Statement or fails to furnish required data. The Proposer shall also, prior to award, furnish such other pertinent information regarding its own employment policies and practices as well as those of its proposed subcontractors as the FAA, the Owner, or the Executive Vice Chairman of the President's Committee may require.

The Proposer shall furnish similar Statements executed by each of its first-tier and second-tier subcontractors and shall obtain similar compliance by such subcontractors, before awarding subcontracts. No subcontract shall be awarded to any non-complying subcontractor.

Equal Opportunity Report Statement as Required in 41 CFR 60-1.7(b)

The Proposer shall complete the following statements by checking the appropriate blanks. Failure to complete these blanks may be grounds for rejection of Proposal:

1. The Proposer has X has not \_\_\_ developed and has on file at each establishment affirmative action programs pursuant to 41 CFR 60-1.40 and 41 CFR 60-2.
2. The Proposer has X has not \_\_\_ participated in any previous contract or subcontract subject to the equal opportunity clause prescribed by Executive Order 11246, as amended.
3. The Proposer has X has not \_\_\_ filed with the Joint Reporting Committee the annual compliance report on Standard Form 100 (EEO-1 Report).
4. The Proposer does X does not \_\_\_ employ fifty or more employees.

Dated: 10-14-15

**Ludvik Electric Co.**

(Name of Proposer)

By: Robert L. Cheney



Title: Executive Vice President

Proposer Ludvik Electric Co.

**Proposal Data Forms**

**CERTIFICATION OF NON-SEGREGATED FACILITIES  
(Must be completed and submitted with the Proposal)**

The Proposer certifies that it does not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Proposer certifies further that it will not maintain or provide for its employees segregated facilities at any of its establishments, and that it will not permit its employees to perform their services at any location under its control, where segregated facilities are maintained. The Proposer agrees that a breach of this certification is a violation of the equal opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or any other reason. The Proposer agrees that (except where it has obtained identical certification from proposed subcontractors for specific time period) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause, and that it will retain such certification in its files.

DATED: 10-14-15

**Ludvik Electric Co.**

(Name of Proposer)

By: Robert L. Cheney



Title: Executive Vice President

**LIST OF PROPOSED MINORITY AND WOMEN BUSINESS ENTERPRISE PROPOSERS, SUBCONTRACTORS, SUPPLIERS (MANUFACTURERS) OR BROKERS**

The undersigned Proposer proposes to utilize the following Minority and Women Business Enterprises (MBE/WBEs) for the project. All listed firms are **CURRENTLY** certified by the City and County of Denver. MBE/WBE prime Proposers must detail their Proposal information below. List at least one MBE/WBE subcontractor, supplier, manufacturer or broker for each specification section division starting with Division 2. If the Prime Contractor does not propose to utilize or there are no certified MBE/WBE's for a particular division please indicate with NA in space.

CHECK BOX IF APPLICABLE:

	MBE/WBE Prime Proposer
--	------------------------

**TBD after RFP for task order**

**MASTER FORMAT SPECIFICATION DIVISION 2 – Existing Conditions**

Business Name: \_\_\_\_\_  
 Type of Service: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
 Type of Service: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 5 - Metals**

Business Name: \_\_\_\_\_  
 Type of Service: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
 Type of Service: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 9 - Finishes**

Business Name: \_\_\_\_\_  
 Type of Service: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
 Type of Service: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 21 – Fire Suppression**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 22 - Plumbing**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 23- HVAC**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 26 - Electrical**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 27 - Communications**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 28 – Electronic Safety and Security**

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION 34 - Transportation**

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION Other**

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION Other**

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION \_\_\_\_**

Business Name: \_\_\_\_\_

Type of Service: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION \_\_\_\_**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**MASTER FORMAT SPECIFICATION DIVISION \_\_\_\_**

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Business Name: \_\_\_\_\_  
Type of Service: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

The undersigned certifies that it has carefully checked all words and statements made in these Proposal Forms.

This proposal is submitted upon the declaration that neither, I (we), nor, to the best of my (our) knowledge, none of the members of my (our) firm or company have either directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive proposing in connection with this proposal.

Business Address of Proposer: **3900 S. Teller Street, Lakewood, CO 80235**

Telephone Number of Proposer: **(303) 781-9601** Fax No. **(303) - 783-6330**

Social Security or Federal Employer ID Number of Proposer: **84-0811586**

Name and location of the last work of this kind herein contemplated upon which the proposer was engaged: \_\_\_\_\_



**DENVER**  
OFFICE OF ECONOMIC  
DEVELOPMENT

## COMMITMENT TO MWBE PARTICIPATION

Office of Economic Development  
Division of Small Business Opportunity

Denver International Airport  
Airport Office Building, Suite 7810  
8500 Pena Blvd  
Denver, CO 80249  
Phone: 303-342-2180 Fax: 303-342-2190  
E-mail: small.business@fydenver.com

The undersigned has satisfied the MWBE participant requirements in the following manner (Please check the appropriate box):

Contract # | 201418986 | Contract Name: | On-Call Miscellaneous BHS Millwright Service.



The Bidder/Proposer is committed to the minimum advertised contract goal for MWBE utilization on the contract, and will submit Letters of Intent (LOI) for each subcontractor/subconsultant/supplier listed for participation in the Bid Forms as follows:

Hard Bids: Three (3) business days after the bid opening  
Request for Proposals: With the proposal when due



The Bidder/Proposer is unable to meet the contract goal of \_\_\_\_\_ % MWBE, but is committed to a minimum of \_\_\_\_\_ % MWBE utilization on the contract. The Bidder/Proposer understands that they must submit a detailed statement of their Good Faith Effort (GFE) in accordance with DRMC Section 28-62 and 28-67 of Ordinance 85 Part 26 and must submit Letters of Intent for each MWBE listed for participation in the Bid Forms as follows:

Hard Bids: Three (3) business days after the bid opening  
Request for Proposals: With the proposal when due



The Bidder/Proposer is a certified MWBE in good standing with the City and County of Denver and is committed to self-perform a minimum of \_\_\_\_\_ % of the work on the contract.

Bidder/Proposer (Name of Firm):		Ludvik Electric Co.	
Firm's Representative (Please Print):		Robert J. Cheney, EVP	
Signature (Firm's Representative):		[Signature]	Date: 10/14/15
Title:	Executive Vice President		
Address:	3900 S. Teller St		
City:	Lakewood	State:	CO
Phone:	303-781-9601	Fax:	303-783-6330
E-mail:		rcheney@ludvik.com	
Zip Code:		80235	



Office of Economic Development  
 Division of Small Business Opportunity  
 Compliance Unit – DIA  
 EMAIL: small.business@flydenver.com  
 8500 Peña Blvd, AOB, Suite 7810  
 Denver, CO 80249  
 Phone: 303-342-2189  
 Fax: 303-342-2190

**LETTER OF INTENT (LOI)**

*All lines must be completed or marked N/A for Not Applicable.*

*Submit the attached completed checklist with this letter.*

<b>Project No.:</b> 201418968	<b>Project Name:</b> On-Call Miscellaneous BHS Millwright Services
-------------------------------	--

**A. THE FOLLOWING SECTION IS TO BE COMPLETED BY THE PROPOSER/CONTRACTOR**

This Letter of Intent Must be Signed by the Proposer/Contractor and M/WBE, SBE or DBE

Name of Proposer/Contractor: <b>TBD after RFP for Task Order</b>		Phone:	
Contact Person:	Email:	Fax:	
Address:	City:	State:	Zip:

**B. The Following Section is To Be Completed by the M/WBE, SBE or DBE, at any Tier  
 THIS LETTER OF INTENT MUST BE SIGNED BY THE M/WBE, SBE OR DBE AND PROPOSER/CONTRACTOR**

Name of Certified Firm:		Phone:	
Contact Person:	Email:	Fax:	
Address:	City:	State:	Zip:

Please check the designation which applies to the certified firm.	<input type="checkbox"/>	MBE/WBE (√)	<input type="checkbox"/>	SBE (√)	<input type="checkbox"/>	DBE (√)
---	--------------------------	-------------	--------------------------	---------	--------------------------	---------

**Indirect Utilization:** If this M/WBE, SBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/ Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm:  
 \_\_\_\_\_

**A Copy of the M/WBE, SBE or DBE Letter of Certification must be Attached**

Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. On unit price bids only, identify which bid line items the M/WBE/SBE/DBEs scope of work or supply corresponds to.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<input type="checkbox"/> Subcontractor/Subconsultant (√)	<input type="checkbox"/> Supplier (√)	<input type="checkbox"/> Broker (√)
--	---------------------------------------	-------------------------------------



<b>Proposer</b> intends to utilize the aforementioned M/WBE, SBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE or DBE bid amount is:	
\$	%
Contractor intends to utilize the aforementioned M/WBE, SBE or DBE for the Work/Supply described above. The percentage of the work of the total subcontractor M/WBE, SBE or DBE will perform is:	%
If the fee amount of the work to be performed is requested, the fee amount, is:	\$
Proposer/Contractor's Signature:	Date:
Title:	
M/WBE, SBE or DBE Firm's Signature:	Date:
Title:	
If the above named Proposer/Contractor is not determined to be the successful Proposer/Contractor, this Letter of Intent shall be null and void.	

### Letter of Intent (LOI) Checklist

*All lines must be completed or marked N/A for Not Applicable*

*Submit the attached completed checklist with this letter*

Completed	
<input type="checkbox"/>	Project Number & Project Name
<input type="checkbox"/>	<b>Section A:</b> Name of Proposer/Contractor, Contact Person, Address, City, State, Zip, Phone, Email
<input type="checkbox"/>	<b>Section B:</b> Name of Certified Firm, Contact Person, Address, City, State, Zip, Phone, Email
<input type="checkbox"/>	Designation checked for MBE/WBE, SBE or DBE
<input type="checkbox"/>	<b>Indirect Utilization:</b> Name of subcontractor/subconsultant, supplier or broker is indicated if using the participation of a 2 <sup>nd</sup> tier subcontractor/subconsultant, supplier or broker.
<input type="checkbox"/>	Scope of work performed or item supplied by M/WBE, SBE or DBE
<input type="checkbox"/>	Line items performed, if line-item bid.
<input type="checkbox"/>	Copy of M/WBE, SBE or DBE Letter of Certification Attached
<input type="checkbox"/>	Designation checked for Subcontractor/Subconsultant, Supplier or Broker
	<b>If project is a hard bid...</b>
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Proposer has indicated dollar amount for value of work going to Subcontractor/ Subconsultant, Supplier or Broker
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Proposer has indicated percentage for value of work going to Subcontractor/ Subconsultant, Supplier or Broker
	<b>If project is an RFP/RFQ...</b>
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Contractor has indicated percentage for value of work going to Subcontractor/ Subconsultant, Supplier or Broker Name & contact name for MWBE.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fee amount if fee amount of work to be performed is requested.
<input type="checkbox"/>	Proposer/Contractor's Signature, Title & Date
<input type="checkbox"/>	M/WBE, SBE or DBE Firm's Signature, Title and Date

**The complete and accurate information that is required for the Letter of Intent is based on the following sections of the Ordinance: Section 28-63 and Section 28-68. Failure to complete this information on the Letter of Intent (LOI) may automatically deem a bid or proposal non-responsive.**

# DIVERSITY AND INCLUSIVENESS IN CITY SOLICITATIONS

Using the attached form, entitled "Diversity and Inclusiveness in City Solicitations Information Request Form", please state whether you have a diversity and inclusiveness program for employment and retention, procurement and supply chain activities, or customer service and provide the additional information requested on the form. The information provided on the Diversity and Inclusiveness in City Solicitations Information Request Form will provide an opportunity for City contractors/consultants to describe their own diversity and inclusiveness practices. Contractors/consultants are not expected to conduct intrusive examinations of its employees, managers, or business partners in order to describe diversity and inclusiveness measures. Rather, the City simply seeks a description of the contractor/consultant's current practices, if any. Diversity and Inclusiveness information provided by City contractors/consultants in response to City solicitations for services or goods will be collated, analyzed, and made available in reports consistent with City Executive Order No. 101. However, no personally identifiable information provided by or obtained from contractors/consultants will be in such reports.

**The Diversity And Inclusiveness In City Solicitations Form pages immediately following this page are not included in the page numbering of this contract document.**



## Diversity and Inclusiveness\* in City Solicitations Information Request Form

Type in your response, print out, sign and date; or print out and complete manually. Please print legibly.

Denver Executive Order No. 101 establishes strategies between the City and private industry to use diversity and inclusiveness to promote economic development in the City and County of Denver and to encourage more businesses to compete for City contracts and procurements. The Executive Order requires, among other things, the collection of certain information regarding the practices of the City's contractors and consultants toward diversity and inclusiveness and encourages/requires City agencies to include diversity and inclusiveness policies in selection criteria where legally permitted in solicitations for City services or goods.

Answer each item below. Missing or incomplete responses will be recorded as "no" or "none". **A proposal or response to a solicitation by a contractor/consultant that does not include this completed form shall be deemed non-responsive and rejected.**

Project Name:  
**DIA - On-Call Miscellaneous BHS Millwright Services**

BID / RFP No.: **201418968**

Name of Contractor/Consultant: **Ludvik Electric Co.**

Address:  
**3900 S. Teller Street**  
**Lakewood, CO 80235**

Email: **bobh@ludvik.com**

Business Phone No.: **303-781-9601 Ext. 1200**

Business Facsimile No.: **303-783-6330**

1. Do you have a Diversity and Inclusiveness Program?  Yes  No

If **No**, and your company size is less than 10 employees continue to question 11. Complete and sign the form.

If **Yes**, does it address:

- |  |                              |                             |
|--|------------------------------|-----------------------------|
| 1a. Employment and retention?                | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 1b. Procurement and supply chain activities? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 1c. Customer service?                        | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

2. Provide a detailed narrative of your company's diversity and inclusiveness principles and programs. Attach any written material for your program. (This may include, for example, (i) diversity and inclusiveness employee training programs, equal opportunity policies, and the budget amount spent on an annual basis for workplace diversity; or (ii) diversity and inclusiveness training and information to improve customer service.)

3. How many employees does your company employ?

- 11-50                       over 100
- 51-100

3a. How many of your company's employees are:

Full-time \_\_\_\_\_ Part-Time \_\_\_\_\_

4. How does your company regularly communicate its diversity and inclusiveness policies to employees?

- Employee Training
- Pamphlets
- Public EEO postings
- Other
- Not Applicable

5. If you responded that you do not have a diversity and inclusiveness program, describe any plans your company may have to adopt such a program.

**Ludvik Electric Co. believes in including SBE, MBE, and WBE enterprises in their business programs. As such Ludvik Electric Co. has solicited and included these business enterprises in contracts and purchases even when no goals are established. It has been the intent and will continue to be in the intent of Ludvik to provide opportunities for the Disadvantaged Business Enterprises in the future. Ludvik Electric Co. will consider in the future a formal diversity and inclusiveness program.**

6. How often do you provide training in diversity and inclusiveness principles?

- Monthly                                       Annually  
 Quarterly                                       Not Applicable                                       Other \_\_\_\_\_

6a. What percentage of the total number of employees generally participate?

- 0 - 25%                                       50 - 75%  
 23 - 50%                                       76 - 100%                                       Not Applicable

7. State how you achieve diversity and inclusiveness in supply and procurement activities.

(This may include, for example, narratives of training programs, equal opportunity policies, diversity or inclusiveness partnership programs, mentoring and outreach programs, and the amount and description of budget spent on an annual basis for procurement and supplier diversity and inclusiveness.)

**EEO Policies**

**Diversity Training**

**Ludvik Electric Co. believes in including SBE, MBE, and WBE enterprises in their business programs. As such Ludvik Electric Co. has solicited and included these business enterprises in contractors and purchases even to be in the intent and will continue to be in the intent of Ludvik to provide opportunities for the Disadvantaged Business Enterprises in the future. Ludvik Electric Co. will consider in the future a formal diversity and inclusiveness program.**

8. Do you have a diversity and inclusiveness committee?  Yes  No

8a. If so, how often does it meet?

- Monthly                                       Annually                                       No Committee  
 Quarterly                                       Other \_\_\_\_\_

8b. If you responded that you do not have a diversity and inclusiveness committee, describe any plans your company may have to establish such a committee.

**At this time, there are no plans to establish a diversity and inclusiveness committee. However, it is a policy of Ludvik Electric Co. to maintain a diverse work place that strictly complies with not only the law, but the spirit of a fair and friendly atmosphere for all ethnicity, gender age, national origin, disability, sexual orientation, education, and religion. Additionally, Ludvik Electric Co. solicits and encourages disadvantaged companies to participate in projects where Ludvik has the ability to subcontract and/or obtain supplies from disadvantaged companies.**

9. Do you have a budget for diversity and inclusiveness efforts?  Yes  No

10. Does your company integrate diversity and inclusion competencies into executive/manager performance evaluation plans?  Yes  No

11. Would you like information detailing how to implement a Diversity and Inclusiveness program?

If yes, send an email to [X0101@denvergov.org](mailto:X0101@denvergov.org) with your contact information.

Yes

No

I attest that the information represented herein is true, correct and complete, to the best of my knowledge.



Signature of Person Completing Form

10-14-15

Date

**Robert L. Cheney**

Printed Name of Person Completing Form

**NOTE: Attach additional sheets or documentation as necessary for a complete response.**

\*"Diversity and inclusiveness program" means a program that invites values, perspectives and contributions of people from diverse backgrounds, and integrates diversity into its hiring and retention policies, training opportunities, and business development methods to provide an equal opportunity for each person to participate, contribute, and succeed within the organization's workplace. "Diversity" encompasses a wide variety of human differences, including differences such as race, age, gender, gender identity, sexual orientation, ethnicity, physical disabilities, appearance, historically underutilized and disadvantaged persons, as well as social identities such as religion, marital status, socio-economic status, lifestyle, education, parental status, geographic background, language ability, and veteran status."

**SMALL BUSINESS OPPORTUNITY DIVISION**

**JOINT VENTURE AFFIDAVIT**

"The Undersigned swear that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operation of our joint venture and the intended participation by each joint venturer in the undertaking. Further, the Undersigned covenant and agree to provide the City current, complete, and accurate information regarding actual joint venture work and the payment thereof and any proposed changes in any of the joint venture arrangements and to permit the audit and examination of the books, records, and files of the joint venture, by authorized representatives of the City or Federal funding agency, if applicable. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under Federal or State laws concerning false statements."

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

(Name) \_\_\_\_\_ appeared to me personally known, who, being first duly sworn, did execute the foregoing affidavit, and subscribe and swear to such affidavit before me, and did state that he or she was properly authorized by (Name of Firm) \_\_\_\_\_ to execute the affidavit and did so as his or her free act and deed.

Date: \_\_\_\_\_ Notary Public \_\_\_\_\_

State of \_\_\_\_\_ Commission Expires \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ before me

(Seal)



\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

(Name) \_\_\_\_\_ appeared to me personally known, who, being  
duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized  
by (Name of Firm)

\_\_\_\_\_ to execute the affidavit and did so at his or her free act and deed.

Date: \_\_\_\_\_ Notary Public \_\_\_\_\_

State of \_\_\_\_\_ Commission Expires \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ before me.

(Seal)

Rev 8/2000

**Small Business Opportunity Division**

**JOINT VENTURE ELIGIBILITY FORM**

*Joint Venture* means an association of two (2) or more business enterprises to constitute a single business enterprise to perform a City professional design or construction services contract or City construction contract for which purpose they combine their property, capital, efforts, skills and knowledge, and in which each joint venturer is responsible for a clearly defined portion of the work, performs a commercially useful function, and shares in the ownership, control, management responsibilities, risks and profits of the joint venture. *D.R.M.C.28-203. (p)*

1. Name of Joint Venture \_\_\_\_\_

2. Address of Joint Venture: \_\_\_\_\_

Address

\_\_\_\_\_ City

\_\_\_\_\_ State

\_\_\_\_\_ Zip Code

3. Telephone number of joint venture:(\_\_\_\_\_)\_\_\_\_\_

4. Identify the firms which comprise the joint venture

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

1) Describe the role of the MBE/WBE in the Joint Venture:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Attach additional information if necessary)

2) Briefly describe the experience and business qualifications of each non-MBE/WBE Joint Venturer.

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(Attach additional information if necessary)

5. Name of the Joint Venture's Business: \_\_\_\_\_

6. Provide a copy of the signed Joint Venture Agreement

7. What is the claimed percentage of MBE/WBE ownership? \_\_\_\_\_%

8. Ownership of Joint Venture: (This need not be filled in if described in the joint venture agreement provided in question 6.)

(a) Profit and loss sharing: \_\_\_\_\_

(b) Capital contributions, including equipment: \_\_\_\_\_

Other applicable ownership interests: \_\_\_\_\_

Duration of the joint venture:

From: \_\_\_\_\_ To: \_\_\_\_\_

9. Control of and participation in this contract. Identify which firm and those individuals (and their titles) who are responsible for the day-to-day management and policy decision making, including but not limited to those with prime responsibility for:

(a) Financial Decisions:

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(b) Management Decisions:

(1) Estimating

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(2) Marketing and Sales

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(3) Hiring and firing of management personnel

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(4) Purchasing of major items or supplies

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Note:** (1) An MBE/WBE performs a commercially useful function when it is responsible for execution of a distinct element of the work of the contract and carrying out its responsibilities by actually performing, managing, and supervising the work involved. To determine whether an MBE/WBE is performing a commercially useful function, the amount of work subcontracted, industry practices, and other relevant factors shall be evaluated.

(2) An MBE/WBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of MBE/WBE participation or the MBE/WBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved.

(3) A joint venture which includes one (1) or more MBE/WBEs is subject to the review and approval by the Director of the Small Business Opportunity Division and the participation will count toward satisfaction of the MBE/WBE goal upon confirmation of the utilization in the joint venture of joint management and full integration of work forces by the joint venture partners.

If there are any significant changes in this submittal, the joint venture members must immediately notify the Mayor's office of Small Business Opportunity Division.

**CITY AND COUNTY OF DENVER**

**DEPARTMENT OF AVIATION**

**NOTICE TO APPARENT BEST PROPOSER**

DATE

COMPANY NAME AND ADDRESS

RE: CONTRACT NAME  
REQUEST FOR PROPOSAL (RFP) NO. (CONTRACT NUMBER)

Dear

As a result of the City's review of the proposals submitted for the CONTRACT NAME, your company has been selected for contract negotiation.

A representative of the City will contact you in the near future to schedule a meeting to begin the process of negotiating and finalizing an agreement.

CITY AND COUNTY OF DENVER

---

Chief Executive Officer of Aviation

---

Senior Vice President

cc: List

**NOTICE TO PROCEED**

TO:

Date:

Ladies and Gentlemen:

You are hereby authorized and directed to proceed on this date with the work of constructing the work Contract No. 201418968, **On-Call Miscellaneous BHS Millwright Services**, Denver International Airport, Denver, CO, as set forth in detail in the Contract Documents for the City and County of Denver.

CITY AND COUNTY OF DENVER

By \_\_\_\_\_  
Senior Vice President,  
Airport Infrastructure Management

By \_\_\_\_\_  
Chief Executive Officer of Aviation

cc: List

**CITY AND COUNTY OF DENVER**  
**DEPARTMENT OF AVIATION**

**FINAL RECEIPT**

**Denver, Colorado**

\_\_\_\_\_, 201\_

Received this date from the City and County of Denver, as full and final payment of the cost of construction pursuant to Task Order \_\_\_\_\_ under Contract No. 201418968, **On-Call Miscellaneous BHS Millwright Services**, Denver International Airport, Denver, Colorado, provided for in the foregoing Contract, \_\_\_\_\_

\_\_\_\_\_ Dollars and \_\_\_\_\_

\_\_\_\_\_ Cents (\$ \_\_\_\_\_), in cash, being the remainder of the full amount accruing to the undersigned by virtue of said Contract; said cash also covering and including full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, and the undersigned hereby releases said City and County from all claims whatsoever growing out of said Work Order under said Contract.

And these presents are to certify that all persons doing work upon or furnishing materials for said improvements under the forgoing Work Order under said Contract have been paid in full.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **CONTRACT**

**THIS CONTRACT**, made and entered into as of the date indicated on the City signature page below, by and between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado, hereinafter referred to as the "CITY", and **LUDVIK ELECTRIC CO.**, a corporation organized and existing under and by virtue of the laws of the State of COLORADO, hereinafter referred to as the "CONTRACTOR",;

### **WITNESSETH**

**WHEREAS**, the City, for at least three (3) consecutive days, advertised that sealed proposals would be received for furnishing all labor, tools, supplies, equipment, materials and everything necessary and required for the construction and installation of task orders issued under Contract No. 201418968, **On-Call Miscellaneous BHS Millwright Services**, Denver International Airport; and

**WHEREAS**, proposals to said advertisement have been received by the Chief Executive Officer of Aviation, who has recommended that a contract for said work be made and entered into with the above named Contractor who was the best, responsive, qualified proposer therefore; and

**WHEREAS**, said Contractor is now willing and able to perform all of said work in accordance with the Contract Documents and its proposal;

**NOW, THEREFORE**, for and in consideration of the compensation to be paid the Contractor, the mutual agreements hereinafter contained, and subject to the terms hereinafter stated, it is mutually agreed as follows:

**ARTICLE I - CONTRACT DOCUMENTS**: It is agreed by the parties hereto that the following list of instruments, drawings and documents which are attached hereto and bound herewith or incorporated herein by reference constitute and shall be referred to either as the Contract Documents or the Contract, and all of said instruments, drawings and documents taken together as a whole constitute the Contract between the parties hereto, and they are as fully a part of this agreement as if they were set out verbatim and in full herein:

- Advertisement of Notice of Invitation for Proposals
- Instructions to Proposers
- Addenda (if any)
- Proposal Forms
  - Proposal letter
  - Schedule of Prices and Quantities
  - Proposal Data Forms
  - MBE/WBE Letters of Intent
- Notice to Apparent Best Proposer
- Contract
- Payment & Performance Bond
- Notice to Proceed



Form of Final Receipt  
Construction Contract General Conditions  
Special Conditions  
Prevailing wage schedules  
Insurance certificate(s)  
Equal Employment Opportunity Provisions  
Technical Specifications  
Contract Drawings  
Approved Shop Drawings  
Task Orders  
Task Order Directives  
Change Orders  
Change Order Directives  
Task Notice for Proposal

**ARTICLE II - SCOPE OF WORK:** The Contractor agrees to and shall furnish all labor and tools, supplies, equipment, superintendence, materials and everything necessary for and required to do, perform and complete all of the work described, drawn, set forth, shown and included in said Contract Documents.

**ARTICLE III - TERMS OF PERFORMANCE:** The Contractor agrees to begin the performance of the work required under this Contract within ten (10) days after being notified to commence work by the Senior Vice President – Airport Infrastructure Management and agrees to fully complete the Work in its entirety within the time frame established for each Task. The entire contract shall be complete no later three years from the date of said Notice to Proceed. The City shall have the option to extend this contract for up to two one year periods. This period of performance is also referred to as Contract Time. The Contractor is not authorized to commence work prior to its receipt of the contract Notice to Proceed.

**ARTICLE IV - LIQUIDATED DAMAGES:** Specific Liquidated Damages will be applied, if necessary, based on the requirements of each individual Task Order and will be enumerated within the scope of work for that Task. General Liquidated Damages for the disruption of airport activities will be applies as stated below. Contractor is directed to Special Condition SC -9 for additional information on Airport disruptions.

**ARTICLE V - TERMS OF PAYMENT:** The City agrees to pay the Contractor for the performance and completion of all of the Work required under each authorized Task Order, in accordance with the Contract Documents. In no event, however, shall the total amount of compensation paid to the Contractor by the City exceed the maximum contract amount specified herein.

The maximum amount to be paid by the City to the Contractor for satisfactory completion of all Task Orders authorized by the City and performed by the Contractor under this Contract shall in no event exceed  EIGHT MILLION  Dollars and  no  Cents (\$8,000,000.00) unless the

Contract is modified to increase said amount by a duly authorized, written contract amendment mutually agreeable to and executed by the parties hereto.

Payments will be made to the Contractor in accordance with the City's Prompt Payment Ordinance, D.R.M.C., Section 20-107, et. seq., subject to the maximum contract amount stated above. Contractor agrees that interest and late fees shall be payable by the City hereunder only to the extent authorized and provided for in the City's Prompt Payment Ordinance.

Payment hereunder will be in accordance with the provisions of the Contract Documents, including Title 9 of the General Conditions, and will be made solely and exclusively from funds appropriated and otherwise lawfully made available for the purposes of this Contract from the City and County of Denver Airport System, Operations and Maintenance and Capital Improvement funds. The City has no obligation to make payments from any other fund or source or to make additional appropriations or allocations to such fund to satisfy such costs or other obligations.

**ARTICLE VI - DISPUTES:** It is agreed and understood by the parties hereto that disputes regarding this contract shall be resolved by administrative hearing under procedures described in Revised Municipal Code Section 5-17.

**ARTICLE VII - CONTRACT BINDING:** It is agreed that this Contract shall be binding on and inure to the benefit of the parties hereto, their heirs, executors, administrators, assigns and successors.

**ARTICLE VIII - SEVERABILITY:** If any part, portion or provision of this Contract shall be found or declared null, void, or unenforceable for any reason whatsoever by any court of competent jurisdiction or any governmental agency having authority thereover, only such part, portion, or provision shall be affected thereby and all other parts, portions and provisions of this Contract shall remain in full force and effect.

**ARTICLE IX - ASSIGNMENT:** The Contractor shall not assign the whole or any part of its duties, rights, and interests in this Contract without first obtaining the written consent of the Manager.

**ARTICLE X - APPROVALS:** In the event this Contract calls for the payment by the City of Five Million Dollars (\$5,000,000.00) or more, approval by the Board of Councilmen of the City and County of Denver, acting by Ordinance in accordance with Section 3.2.6 of the Charter of the City and County of Denver, is and shall be an express condition precedent to the lawful and binding execution and performance of this Contract.

**ARTICLE XI - JOINT VENTURE:** If the Contractor is a Joint Venture, the partners to the Joint Venture shall be jointly and severally liable to the City for the performance of all duties and obligations of the Contractor which are set forth in the Contract.

**ARTICLE XII - NO DISCRIMINATION IN EMPLOYMENT:** In connection with the performance of work under this Contract, the Contractor agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise

qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, gender variance, marital status, or physical or mental disability; and the Contractor further agrees to insert the foregoing provision in all subcontracts hereunder.

**ARTICLE XIII - WAIVER OF CRS 13-20-801, et seq.:** Notwithstanding any other provision of this Contract, the Contractor specifically waives all of the provisions of Colorado Revised Statutes §§ 13-20-801 – 80 as they may relate to the Contractor’s performance under this Contract.

**ARTICLE XIV - COORDINATION OF SERVICES:** The Contractor agrees to perform its work under this Contract in accordance with the operational requirements of DIA, and all work and movement of personnel or equipment on areas included within the DIA site shall be subject to the regulations and restrictions established by the City or its authorized agents.

**ARTICLE XV - COMPLIANCE WITH ALL LAWS AND REGULATIONS:** All of the work performed under this Contract by the Consultant shall comply with all applicable laws, rules, regulations and codes of the United States and the State of Colorado, and with the charter, ordinances and rules and regulations of the City and County of Denver.

**ARTICLE XVI – PROMPT PAY:** The Contractor is subject to D.R.M.C. Section 20-112 wherein the Contractor is to pay its subcontractors in a timely fashion. A payment is timely if it is mailed to the subcontractor no later than seven days after receipt of any payment from City. Any late payments are subject to a late payment penalty as provided for in the prompt pay ordinance (Section 20-107 through 20-118).

**ARTICLE XVII – COLORADO OPEN RECORDS ACT:** The Contractor acknowledges that the City is subject to the provisions of the Colorado Open Records Act, Colorado Revised Statutes §24-72-201 et seq., and the Contractor agrees that it will fully cooperate with the City in the event of a request or lawsuit arising under such act for the disclosure of any materials or information which the Contractor asserts is confidential and exempt from disclosure. Any other provision of this Contract notwithstanding, including exhibits, attachments and other documents incorporated into this Contract by reference, all materials, records and information provided by the Contractor to the City shall be considered confidential by the City only to the extent provided in the Open Records Act, and the Contractor agrees that any disclosure of information by the City consistent with the provisions of the Open Records Act shall result in no liability of the City.


**ARTICLE XVIII – ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS:** Contractor consents to the use of electronic signatures by the City. The Contract, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Contract solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Contract in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

[END OF PAGE]

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed at Denver, Colorado as of the date indicated on the City signature page.

**Contract Control Number:** 201418968

**Vendor Name:** Ludvik Electric Co.

**By:**   
(signature)

**Name:** Robert L. Cheney  
(please print)

**Title:** Executive Vice President  
(please print)

**ATTEST: (if required)**

**By:** \_\_\_\_\_  
(signature)

**Name:** \_\_\_\_\_  
(please print)

**Title:** \_\_\_\_\_  
(please print)



**Contract Control Number:**

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

SEAL

**CITY AND COUNTY OF DENVER**

ATTEST:

By \_\_\_\_\_

\_\_\_\_\_

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By \_\_\_\_\_

By \_\_\_\_\_

By \_\_\_\_\_



**PERFORMANCE AND PAYMENT BOND**

**KNOW ALL MEN BY THESE PRESENTS**, that we, the undersigned Ludvik Electric Co., a corporation organized under the laws of the State of CO, hereinafter referred to as the "Contractor" and Hartford Fire Insurance Company, a corporation organized under the laws of the State of CT, and authorized to transact business in the State of Colorado, as Surety, are held and firmly bound unto the CITY AND COUNTY OF DENVER, a municipal corporation of the State of Colorado, hereinafter referred to as the "CITY", in the penal sum of ONE HUNDRED THOUSAND AND NO/100 Dollars (\$100,000.00), lawful money of the United States of America, for the payment of which sum the Contractor and Surety bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally by these presents.

**WHEREAS**, the above Contractor has on the 10 day of June, 2016 entered into a written contract with the City for furnishing all labor, materials, equipment, tools, superintendence, and everything necessary for and required to do, perform and complete the construction of Contract No. Contract No. 201418968, On-Call **Miscellaneous BHS Millwright Services**, Denver International Airport, in accordance with the Technical Specifications, Contract Drawings, Task Orders, and all other Contract Documents therefore, which are incorporated herein by reference and made a part hereof, and are herein referred to as the Contract;

**NOW, THEREFORE**, the condition of this Performance and Payment Bond is such that if the Contractor:

1. Promptly and faithfully observes, abides by and performs each and every covenant, condition and part of said Contract, including, but not limited to, its warranty provisions, in the time and manner prescribed in the Contract, and
2. At all times promptly makes payments of all amounts lawfully due to all persons supplying or furnishing it or its subcontractors with labor and materials, rental machinery, tools, or equipment, used or performed in the prosecution of work provided for in said Contract and shall indemnify and save harmless the City to the extent of any and all payments in connection with the carrying out of such Contract which the City may be required to make under law; and
3. Pays the City all losses, damages (liquidated or actual, including, but not limited to, damages caused by delays in the performance of the Contract), expenses, costs and attorneys' fees, that the City sustains resulting from any breach or default by the Contractor under the Contract, then this bond is void; otherwise, it shall remain in full force and effect.

**IN ADDITION**, if said Contractor fails to duly pay for any labor, materials, team hire, sustenance, provisions, provender, or any other supplies used or consumed by said Contractor or its subcontractors in its performance of the work contracted to be done or fails to pay any person who

supplies rental machinery, tools, or equipment, all amounts due as the result of the use of such machinery, tools, or equipment in the prosecution of the work, the Surety shall pay the same in an amount not exceeding the amount of this obligation, together with interest at the rate of eight percent per annum.

**PROVIDED FURTHER**, that the said Surety, for value received, hereby stipulates and agrees that any and all changes in the Contract or compliance or noncompliance with the formalities in the Contract for making such changes shall not affect the Surety's obligations under this bond and the Surety hereby waives notice of any such changes.

(End of Page)



IN WITNESS WHEREOF, said Contractor and said Surety have executed these presents as of this 6 day of June, 2016.

**Ludvik Electric Co.**

CONTRACTOR

By: James A. Ludvik  
President

**Hartford Fire Insurance Company**

SURETY

By: Karen A. Feggstad  
Attorney-in-Fact  
Karen A. Feggstad

(Accompany this bond with Attorney-in-Fact's authority from the Surety to execute bond, certified to include the date of the bond.)

**CITY AND COUNTY OF DENVER**

By: [Signature]  
MAYOR

By: [Signature]  
Chief Executive Officer of Aviation

**APPROVED AS TO FORM:**

D. SCOTT MARTINEZ, Attorney for the  
City and County of Denver

By: [Signature]  
Assistant City Attorney



**MOODY INSURANCE AGENCY, INC.**

8055 East Tufts Avenue, Suite 1000  
DENVER, COLORADO 80237  
PHONE: (303) 824-6600

# POWER OF ATTORNEY

Direct Inquiries/Claims to:

**THE HARTFORD**

Bond T-4

One Hartford Plaza

Hartford, Connecticut 06155

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Code: 34-341006

- Hartford Fire Insurance Company**, a corporation duly organized under the laws of the State of Connecticut
- Hartford Casualty Insurance Company**, a corporation duly organized under the laws of the State of Indiana
- Hartford Accident and Indemnity Company**, a corporation duly organized under the laws of the State of Connecticut
- Hartford Underwriters Insurance Company**, a corporation duly organized under the laws of the State of Connecticut
- Twin City Fire Insurance Company**, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of Illinois**, a corporation duly organized under the laws of the State of Illinois
- Hartford Insurance Company of the Midwest**, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of the Southeast**, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of Unlimited** :

Leon B. Dartois, Kaylee Dawson, Karen A. Feggestad, Evan E. Moody, Brad Moody, Justin Tomlin of DENVER, Colorado

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by , and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**In Witness Whereof**, and as authorized by a Resolution of the Board of Directors of the Companies on August 1, 2009, the Companies have caused these presents to be signed by its Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



*John Gray*

John Gray, Assistant Secretary

*M. Ross Fisher*

M. Ross Fisher, Vice President

STATE OF CONNECTICUT }  
 COUNTY OF HARTFORD } ss. Hartford

On this 12th day of July, 2012, before me personally came M. Ross Fisher, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

*Kathleen T. Maynard*

Kathleen T. Maynard  
 Notary Public

My Commission Expires July 31, 2016

I, the undersigned, Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of  
 Signed and sealed at the City of Hartford.



*Kevin Heckman*

Kevin Heckman, Assistant Vice President

# City and County of Denver



**DENVER**  
THE MILE HIGH CITY

DEPARTMENT OF AVIATION  
DEPARTMENT OF PUBLIC WORKS

## **STANDARD SPECIFICATIONS FOR CONSTRUCTION GENERAL CONTRACT CONDITIONS**

2011 Edition

**Statement**

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**CONSTRUCTION CONTRACT GENERAL CONDITIONS  
2011 Edition**

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## **SPECIAL CONDITIONS**

### **SC-1 CONSTRUCTION CONTRACT GENERAL CONDITIONS**

The Construction Contract General Conditions which constitute a part of the Contract Documents are set forth in a separately published document, entitled “City and County of Denver, Department of Aviation and Department of Public Works, Standard Specifications for Construction, General Contract Conditions,” 2011 Edition, the Table of Contents to which is bound herein (which may be informally referred to as the Yellow Book). The General Conditions book is available for purchase for \$12.00 per copy at the following location during the business hours stated, Monday through Friday, excluding holidays:

Office of the Cashier  
Wellington E. Webb Municipal Office Bldg.  
201 West Colfax Avenue  
Denver, CO 80202  
7:30 A.M. to 4:30 P.M.

The City will not supply any copies of the General Contract Conditions to the Contractor at City expense; however, the Contractor may access the General Conditions on the Internet at:

<https://www.denvergov.org/dpw/DepartmentofPublicWorks/Newsroom/tabid/438508/newsid500663/6124/City-and-County-of-Denver-update-to-General-Contract-Conditions/Default.aspx>

### **SC-2 CONSTRUCTION DOCUMENTS**

The City will provide the following Contract Documents to the Contractor in electronic format at no expense to the Contractor:

Document  
Volumes 1 – 2 (See the “Master Table of Contents,” page TOC-ii, for the content of these volumes)  
Contract Drawings  
Change Orders and Change Order Directives  
Task Orders

Additional copies of the foregoing documents will be furnished to the Contractor at the Contractor’s expense. The Contractor will be responsible for supplying all subcontractors with copies of the Contract Documents at its expense.

In addition, any proposal requests (Task Order) submitted hereunder, including any plans, specifications, drawings or other documents attached thereto and any Contractor

Pricing Proposals submitted in response to a Task Order and any Final Task Order issued hereunder shall be included as Contract documents and incorporated herein by reference as they may be hereinafter generated.

If Sensitive Security Information (“SSI”) is provided to the Contractor, the Contractor shall be required to comply with Department of Aviation, Standard Policies and Procedures No. 6003, “Contractor Protection of Sensitive Security Information,” or its successor, and 49 C.F.R. § 1520, or its successor.

**SC-3 REVISIONS TO G.C. 201**

The second sentence of GC 201 is amended to read: “The unit responsible for this management and control is the Airport Infrastructure Management Offices under the supervision of the Senior Vice President for Airport Infrastructure Management.”

**SC-4 CITY LINE OF AUTHORITY AND CONTACTS**

In accordance with General Condition 214, the City’s line of authority for administration of this Contract is:

Chief Executive Officer (CEO). Executive Office, 9th Floor, Airport Office Building, 8500 Peña Boulevard, Denver, CO 80249. Any reference to the Manager of Aviation shall also mean Chief Executive Officer, Department of Aviation (CEO).

Executive Vice President – Chief Operating Officer (EVP-COO) who reports to the CEO. Airport Infrastructure Management office, 7th Floor, Airport Office Building, 8500 Peña Boulevard, Denver, CO 80249.

Senior Vice President - Airport Infrastructure Management (SVP-AIM) who reports to the COO. Airport Infrastructure Management office, 7th Floor, Airport Office Building, 8500 Peña Boulevard, Denver, CO 80249.

Director of Facility Services reports to the SVP-AIM. The Project Manager reports to the Director of Facility Services. Airport Infrastructure Management Division, 7th Floor, Airport Office Building, 8500 Peña Boulevard, Denver, CO 80249.

Project Manager, the City representative who has day to day administrative responsibility of this Contract, and who reports to the SVP-AIM. All notices, requests, pay applications (pursuant to G.C. 902), and other correspondence from the Contractor shall be sent to the assigned Project Manager unless otherwise provided in this Contract.

The CEO may from time to time substitute a different City official as the designated “SVP-AIM” hereunder, and any such change will be effective upon the issuance of written notice to the Contractor which identifies the successor SVP-AIM. The SVP-AIM may from time to time change the assigned Project Manager, and any such change will be effective upon

the issuance of written notice to the Contractor which identifies the successor Project Manager.

**SC-5 CONTRACTOR PERFORMANCE; SUBCONTRACTING**

With respect to General Condition 501, no more than 75% of the Work may be subcontracted.

**SC-6 COOPERATION WITH OTHERS**

The Contractor understand the constraints on the physical work site areas and the Contractor is required to coordinate its activities and work as may be required to meet FAA or City requirements while performing work on DIA.

Without limiting the foregoing, additional contracts administered by the City involve or may involve work overlapping or adjoining the Work under this Contract, and may be prosecuted concurrently with the Work performed under this Contract.

**SC-7 PROSECUTION AND COMPLETION OF THE WORK:**

Work will be issued to the Contractor as Task Orders upon reaching a negotiated agreement between the Contractor and the City as to the cost of the work. Markups on labor, materials, equipment, and subcontractors will be applied to the negotiated costs, in accordance with the contract terms. All contractor proposals for Task Order work or Task Order Change Orders will be in a format as outlined in the Task Order Notice. Proposal line items will include quantities and units of work as well as man-hours and material cost per unit. Work for which a negotiated cost agreement cannot be reached between the City and the Contractor may be, at the direction of the Senior Director, performed and compensated on a time and materials basis, with the associated markups applied.

Since this is a contract for on-call services, the Contractor is not guaranteed nor entitled to the issuance of any Task Orders. Task Orders may be negotiated with this or another existing On Call Contractor, or bid between existing On Call Contractors and/or other active airport contractors. Bids for such Task Orders should be submitted per the requirements provided by the City, and may not necessarily require utilization of the rates and markups submitted in the initial On Call Construction contract. Changed work in competitively bid Task Orders will utilize the rates and markups submitted in the initial On Call Construction contract.

The Contractor shall (a) commence work under any issued Task Order within ten (10) calendar days after the date of the Notice to Proceed, (b) prosecute said work diligently, and (c) complete the entire work ready for use no later than the number of calendar days required in the Task Order.

With respect to any work that is authorized by a Task Order issued prior to the contract completion date, but not completed by that date, the City shall have the option to terminate the work in progress and pay only for that portion of the work satisfactorily completed within the period of performance specified herein or to provide for, in

writing, a limited extension of the contract completion date to complete the remaining work. In the event the completion date for a particular Task Order is extended as provided for herein, it shall only allow for consideration of costs that were already agreed upon in a previously issued Task Order(s), and shall not include any modifications to the proposal unit prices or Task Order estimates except those required by Prevailing Wage law, or any additional compensation for extended overhead or impact costs.

For each Task Order submitted to the Contractor for pricing, the Contractor agrees to review and price the Task Order within fourteen (14) consecutive calendar days of the date of such Task Order.

**SC-8 TASK ORDER NOTICE TO PROCEED**

Following the issuance of any fully executed Task Order hereunder, the Contractor shall commence work in accordance with the Notice to Proceed date established in the Task Order. In the event the Task Order does not include a Notice to Proceed date, the City will issue a separate Notice to Proceed, and Contractor shall commence work within ten (10) consecutive calendar days of the date of the Task Order Notice to Proceed; however, no work will commence on any project until such time as the Contractor has complied with all administrative requirements for that particular project and the Contractor has satisfied all bonding requirements for the particular Task Order (**SC-25 PERFORMANCE AND PAYMENT BOND**). Thereafter the Contractor shall prosecute the work to be accomplished under the Task Order at such time and place as the Task Order directs and shall fully complete in every detail all specified work in accordance with the terms and conditions of the Task Order and the provisions of these General Contract Conditions and Special Contract Conditions.

**SC-9 LIQUIDATED DAMAGES**

Specific Liquidated damages will be applied, if necessary, based on the requirements of each individual Task Order. General Liquidated Damages for the disruption of airport activities will be applies as stated below.

**A. For Disruption of Airport Activities for Any and All Task Orders.**

If DIA determines that the Contractor has disrupted the Airport Operations as described below and in the Technical Specifications, Section 011400, the Contractor shall be liable to the City for liquidated damages at the rates noted below per incident per day or per hour for each incident until the issue is corrected.

Contractor caused disruptions of Airport Operations and the required Liquidated Damages are as follows:

<u>Amount per incident</u>	
1. Disruption of Fire Alarm – First Incident	\$3,000.00
2. Disruption of Fire Alarm – All other incidents	\$5,000.00

3. Disruption of Airline Baggage Operations resulting in delayed Aircraft and/or baggage missing flights - – First Incident - \$5,000.00 per hour
4. Disruption of Airline Baggage Operations resulting in delayed Aircraft and/or baggage missing flights -All other incidents - \$10,000.00 per hour.
5. Disruption of Airport Operations by introduction of dust, smoke, noise, water, chemicals or any offensive odors or fumes or any other disruption from the construction activity into the Terminal, any outdoor public area or baggage area that causes complaints from the building occupants, operations or the customers – First Incident \$1,000.00/ incident.
6. Disruption of Airport Operations by introduction of dust; smoke, noise, water, chemicals or any offensive odors or fumes or any other disruption from the construction activity into the Terminal or any outdoor public area or baggage area that causes complaints from the building occupants, operations or the customers – Any incident after the first. \$5,000.00/ incident.
7. Should any of the disruptions described in items 5 or 6 above result in the evacuation or unplanned closure of a portion of the building or outdoor public space or baggage handling area, this would result in a First Incident Liquidated Damage of \$5,000 per hour.

At any time after the occurrence of the first incident, DIA may determine that by causing any of these disruptions, the Contractor is not properly managing the work and DIA may, in its sole discretion, terminate the entire Contract for Cause under General Contract Condition section 2201. In the event of such termination, the Contractor shall not be entitled to any cancellation penalty or additional compensation, and the Contractor shall be liable to DIA for all costs and expenses of taking over and completing the work as provided in General Contract Condition section 2201.

Article IV of the Contract and General Contract Condition 602 provide additional terms and conditions regarding payment and withholding of liquidated damages.

#### **SC-10 PRECONSTRUCTION MEETING**

Prior to the issuance of the first Task Order and the start of such work, the Contractor, and the City shall meet and resolve any and all issues that may pertain to the understanding of the terms and conditions of the contract. Individual pre-construction meetings will be held at the City’s discretion on each issued Task Order prior to issuance of a Notice to Proceed for that Task Order.

#### **SC-11 SECURITY AND PERSONNEL ACCESS**

The Contractor shall conduct all its activities at the Airport in compliance with the Airport security system rules and regulations, which are administered by the Airport Operations Division. The Contractor shall obtain the proper access authorizations for its employees, subcontractors and suppliers (i.e., Badges and Permits), and shall be responsible for such persons' compliance with all the Airport rules and regulations. A

copy of the Contractors' section of the Airport Security rules and regulations are available for Contractor review at the Airport Access Services Office, Concourse A East Subcore, 4th Level. Persons regularly entering the construction areas must obtain personnel access badges from the Airport Access Services Office and must display badges, at all times, upon entering the construction, restricted and sterile areas of the airport.. Any employee, subcontractor or supplier who violates such rules may be subject to revocation of his access authorization, including authorization for access to the construction site and all other restricted and sterile areas.

The security status of the Airport is subject to change without notice. These contract Special Conditions are applicable to the current security status of the Airport. Should the security status of the Airport change at any time during the term of this Contract, a written notice shall be issued to the Contractor detailing all applicable security modifications from the airport's current security status. The Contractor shall take **immediate steps** to comply with those security modifications as directed in the written notice.

If these security modifications involve any additional project cost, the Contractor shall submit a Contractor Change Request in accordance with the General Conditions for the additional cost. The Contractor Change Request shall outline in specific detail the effects of the security modifications on the Contractor's performance of the Contract, and shall provide a detailed cost breakdown for each item for which the Contractor is requesting reimbursement.

The Contractor shall return to the City, at contract completion or termination, or upon demand by the City, all access keys issued to it by the City to all areas of the Airport. If the Contractor fails to return any such key or keys at contract completion or termination or upon demand by the City, the Contractor shall be liable to the City for all the City's costs, including the City's labor costs for employees, incurred in re-coring doors and any other work which is required to prevent compromise of the Airport security system. In order to collect such costs hereunder, the City may withhold funds in such amount from any amounts due and payable to the Contractor under this Contract.

The construction of all the Project / Task Items that involve the breaching of any airport perimeter security boundary or continued access to restricted access rooms or areas will require the posting of authorized contract security personnel to maintain required security controls. The Contractor's **Task Order Proposal** shall include the cost of providing security services to maintain control and supervision of any and all airport perimeter security boundary breaches and for the duration of work activities where access to restricted areas is required and until the airport perimeter security boundaries are reestablished.

When security boundaries are opened for any reason, the Contractor must maintain one hundred percent (100%) control and supervision for the entire time that the openings are present to prevent unauthorized access to the secure / restricted access areas.

**The importance of this special condition cannot be over-emphasized. Severe financial penalties as well as contract termination could result if airport perimeter security requirements are not strictly followed. The requirement to provide one hundred percent (100%) control and SUPERVISION of breaches in the airport's perimeter security boundary is absolute. At no time, during work and non-work hours shall any breaches in the airport's security PERIMETER be UNSUPERVISED and / or UNSECURED.**

For off-hours of construction, the Contractor may choose to erect a temporary wall to close all perimeter openings. The wall construction shall be of sufficient materials and strength to prevent access to the airport's Sterile/Restricted Areas. The Contractor shall submit for review and approval, the details and materials for the temporary closure of security perimeter breaches for review and approval.

The Contractor will provide contract security guard services to maintain supervision of these openings. The security services must provide coverage to allow for lunch breaks, comfort breaks and etc. The security services **must** be obtained from the following contract security guard company:

HSS  
900 S. Broadway, Suite 100  
Denver, Colorado 80209

DIA Contact: Glenn Spies  
(303) 342-4323

All security guards provided for this project must have a Denver Airport SIDA Badge.

The DIA Security Guard Contractor may change between the bidding or proposal phase of this contract from Notice to Proceed to closure of all security perimeter breaches. The Contractor shall maintain a contractual relationship with the Security Guard Contractor holding the most current contract with Denver International Airport.

The Contractor shall continue to provide security of these areas until such time that the breaches in the airport's security perimeter have been permanently secured.

The Contractor shall submit a written security plan for approval to the Director of Airport Security prior to the start of construction on any work where a breach of the perimeter security boundaries is required.

## **SC-12 CONSTRUCTION ACCESS**

The work site is located at the Jeppesen Terminal Building. The Contractor shall have access to the work site via the north Tunnel access on the east side of the AGTS system. This access will be for all equipment and materials.



The City will not provide parking spaces for the Contractor's employees or subcontractor employees at the Airport. Arrangements for transportation and parking for all of its and its subcontractors employees will be the responsibility of the Contractor. The Task Order amount shall include any and all costs associated with the Contractor's and subcontractors' employee parking.

Unless specifically required by the Contract Documents, the Contractor shall install no fences or other physical obstructions on or around any project work area without the approval of the City.

**SC-13 VEHICLE PERMITTING**

Vehicle access on the Airport Operation Area (“AOA”) is controlled by and requires permission from the Airport Access Services Office. It is anticipated that the Contractor will need to operate vehicles on the AOA to perform the Work. It is anticipated that access will be required to the secure baggage handling area of the Terminal. Only direct construction support vehicles and/or equipment will be allowed in the contractor's work areas or sites.

**SC-14 VENDORS AND SUPPLIERS**

The Contractor shall provide the Project Manager's office with a list of its equipment/material vendors and suppliers for each Task Order. Vendors or suppliers shall access the construction work areas via the Contractor’s access route, described in SC-12 above. All delivery vehicles are subject to search.

**SC-15 COMMUNICATION DEVICES**

Any site communications devices, mobile communication devices or internet data devices used at DIA must be approved by DIA Technologies.

**SC-16 USE, POSSESSION OR SALE OF ALCOHOL OR DRUGS**

The Contractor and its officers, agents, and employees shall cooperate and comply with the provisions of Executive Order No. 94 and Attachment A thereto concerning the use, possession, or sale of alcohol or drugs. Violation of these provisions or refusal to cooperate with implementation of the policy can result in the City’s barring the Contractor from City facilities or participating in City operations.

**SC-17 ATTORNEY’S FEES**

Colorado Revised Statute 38-26-107 requires that in the event any person or company files a verified statement of amounts due and unpaid in connection with a claim for labor and materials supplied on this project, the City shall withhold from payments to the Contractor sufficient funds to insure the payment of any such claims. Should the City and County of Denver be made a party to any lawsuit to enforce such unpaid claims or any lawsuit arising out of or relating to such withheld funds, Contractor agrees to pay to the City its costs and a reasonable attorney’s fee. Because the City Attorney Staff does not bill the City for legal services on an hourly basis, Contractor

agrees a reasonable fee shall be computed at the rate of one hundred dollars per hour of City Attorney time.

**SC-18 INSURANCE TO BE PROVIDED BY THE CONTRACTOR**

In accordance with the provisions of Title 16 of the General Conditions, the minimum insurance requirements for this contract are set forth in the Sample Insurance Certificate attached to these Special Conditions. The Contractor specifically agrees to comply with each condition, requirement or specification set forth in the attachment for each required coverage during all periods when the required coverage's are in effect.

Contractor and sub-contractors shall procure and maintain until all of their obligations have been discharged, including any warranty periods under this Contract are satisfied, insurance against claims for injury to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or sub-contractors.

The insurance requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract.

The City and County of Denver in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that might arise out of the performance of the work under this Contract by the Contractor, his agents, representatives, employees or sub- contractors. The Contractor shall assess its own risks as it deems appropriate and/or prudent, maintain higher limits and/or broader coverages. The Contractor is not relieved of any liability or other obligations assumed or pursuant to the Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration or types.

Contractor shall furnish the City and County of Denver with certificates of insurance (ACORD form or equivalent approved by CCD) as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf.

All certificates and any required endorsements are to be received and approved by the City before work commences. Each insurance policy required by this Contract must be in effect at or prior to commencement of work under this Contract and remain in effect for the duration of the project. Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of the Contract. All insurance coverages for sub-contractors shall be subject to the minimum requirements identified in the Exhibit. All sub-contractors certificates and endorsements shall be received and approved by the Contractor before work commences. The City reserves the right to request copies of these certificates at any time.

All certificates required by this Contract shall be sent directly to Denver International Airport, Business & Technologies, Airport Office Building, Room 8810, 8500 Pena Boulevard, Denver, Colorado 80249. The City project/Contract number and project description shall be noted on the certificate of insurance. The City reserves the right to require complete, certified copies of all insurance policies required by this Contract at any time.

The parties hereto understand and agree that the City and County of Denver, its officers, officials and employees, are relying on, and do not waive or intend to waive by any provisions of this Contract, the monetary limitations or any other rights, immunities and protections provided by the Colorado Governmental Immunity Act, §§ 24-10-101 - 120, C.R.S., or otherwise available to the City and County of Denver, its officers, officials and employees.

**SC-19 SUBCONTRACTOR RELEASES**

The release form referred to in General Condition 907 is attached to these Special Conditions. It is entitled "Denver International Airport Partial Lien Release."

**SC-20 ADDITIONAL AFFIRMATIVE ACTION REQUIREMENTS, FEDERAL PROVISIONS**

This contract is subject and subordinate to the terms, reservations, restrictions, and conditions of any existing or future agreements between the City and the United States, the execution of which has been or may be required as a condition precedent to the transfer of federal rights or property to the City for airport purposes, and the expenditure of federal funds for airport purposes. Any "Federal Requirements" section attached hereto or to any individual Task Order is made a part of this Contract.

**SC-21 APPLICATIONS FOR AND PROGRESS PAYMENTS TO CONTRACTORS**

The Contractor recognizes and agrees that applications for payment shall be submitted using the Textura® Construction Payment Management System (CPM System), which will also be the payment mechanism to disburse payments to sub-contractors used on this Project.

The Contractor further agrees that, to the fullest possible within the CPM System, the City shall be entitled to all non-Confidential records, reports, data and other information related to the project that are available to Contractor through the CPM System, including, but not limited to, information related to Contractor and subcontractor billings. To that end, Contractor agrees that it will activate any available settings within the CPM System that are necessary to grant the City access to such non-Confidential information related to the contract and the project. Applications for payment shall be based on the Contract Unit Prices or the approved Schedule of Values described in GC 903.1

In accordance with General Contract Condition 902, PAYMENT PROCEDURE, The party(ies) responsible for review of all Pay Applications shall be:

**Agency/Firm**  
DEN Division CA  
DEN Division PM  
DEN Division Director  
DEN Contract Svcs CA  
CCD Denver Prevailing Wage

In accordance with General Contract Condition 906, APPLICATIONS FOR PAYMENT, each Application submitted shall include the following:

1. The estimate of Work completed shall be based on the approved schedule of values or unit prices, as applicable, and the percent of the Work complete.
2. Each Application for Payment shall include each and every independent subcontractor's payroll information including pay dates and pay amounts.
3. The Contractor shall also submit to the Auditor and other appropriate officials of the City in a timely fashion, information required by General Contract Condition 1004, REPORTING WAGES PAID.

In accordance with General Contract condition 907, RELEASES AND CONTRACTORS CERTIFICATION OF PAYMENT, applications for Payment must be accompanied by completed Partial or Final Claim Release Form, as appropriate, from EACH subcontractor and supplier, **AND** the Contractor's Certification of Payment Form.

**SC-22 REVISIONS TO G.C. 1102**

G.C. 1102.2 is amended by replacing the phrase "Change Request" in all its occurrences in such G.C. with the phrase "Change Notice."

G.C. 1102.3 is amended by replacing the phrase "Field Order/Change Directive" in all its occurrences in such G.C. with the phrase "Change Order Directive."

**SC-23 DESCRIPTION OF TASK ORDER**

The Project Manager will provide the Contractor with a Task Notice for Proposal (TNP) describing the services/work to be provided for any Task Order. The Contractor shall respond to the City's request for TNP within 2 working days by (1) visiting the proposed work site in the company of the Project Manager or the Project Manager's authorized representative, or (2) establishing verbal contact with the Project Manager or the Project Manager's authorized representative to further define the scope of the work. The Contractor shall then furnish a work plan and price proposal to the Project Manager for all work described in the TNP. Time for the submittal of the work plan and proposal shall be identified on the TNP. The Contractor shall submit to the Project Manager requests for site inspections and other investigations as necessary for its preparation of a work plan and proposal.

The work plan and proposal shall indicate, but not be limited to:

- a statement of the work to be accomplished

- discussion of the implementation process to include the method of operation, type of equipment, key personnel and subcontractors
- how quality of materials and workmanship will be established and maintained
- any additional design requirements
- special considerations
- schedule and keep milestones

The work shall be broken down according Subcontractor Work scopes. Proposal line items will include quantities and units of work as well as man-hours and material cost per unit. It shall be subject to negotiation with the Project Manager. Mark-ups on labor, material, equipment, and subcontractors will be applied to agreed to amounts. Costs for performance and payment bonds will be included as a separate item. The City will review the work plan proposal for completeness and negotiate conditions of performance with the Contractor. If suitable conditions of performance including price and time cannot be negotiated, a Task Order and Notice to Proceed will not be executed or if critical, may be performed on a time and material basis with the mark-ups included with this proposal applied. The City may utilize other means to procure the required work at any time.

Prior to submitting a work plan and price proposal, the Contractor shall inspect the work site and its surroundings. Requests for site visits shall be submitted to the Project Manager. For purposes of the contract, it shall be conclusively presumed that the Contractor has made a thorough inspection of the site and has waived the right to claim extra payment or time extensions for conditions which would have been evident during that inspection. Because the Proposal information cannot be guaranteed, the Contractor shall have assumed the risks attendant to successful performance of the work except for the risk of encountering differing site conditions which are defined in the General Conditions, and shall never make claim for additional payments or time extensions on the grounds that the nature or amount of work to be done was not understood by the Contractor at the time of submittal of the work plan and price proposal.

**SC-24 FUND AVAILABILITY**

Task Order approval and acceptance is contingent upon the availability of funding. Approved Task Orders issued under this contract will obligate funds.

**SC-25 PERFORMANCE AND PAYMENT BOND**

Delete the requirements of General Contract Conditions 1501, 1502 and 1503 for separate bonds. Combined Performance and Payment Bonds in the total amount of all issued Task Orders, provided in the precise form contained in these documents, shall be furnished before any work is undertaken in connection with any Task Order. All other terms and conditions of General Contract Conditions 1501, 1502 and 1503 shall remain in effect.

Additionally, General Contract Condition 1501 shall be amended as follows:

“Before this Contract is executed, the Contractor shall have paid for and furnished to the City a properly completed and executed Combined Performance and Payment Surety Bond, in an amount not less than One Hundred Thousand Dollars and No Cents (\$100,000.00). The Combined Surety Bond shall guarantee the faithful performance of the Contract and shall also guarantee the payment of bills for labor and materials under the Contract.

In the event that the cumulative dollar value of all Task Order(s) issued under the Contract exceeds the amount of the Combined Surety Bond furnished prior to the execution of the Contract, the Contractor shall procure, pay for and furnish to the City a Combined Surety Bond Change Rider, in the proper form, for an amount which is One Hundred percent (100%) of the dollar value of the specified Task Order, that exceeds \$100,000.00. All subsequent Task Orders contemplated under the Contract shall require separate Combined Surety Bond Change Riders for One Hundred percent (100%) of the dollar value of each Task Order before a Task Order is issued and any work under the Task Order commences.

Any combined Surety Bond Change Riders furnished by the Contractor after the execution of the Contract must be reviewed and approved by the City Attorney prior to issuance of a Task Order and before any work commences.

## **SC-26 TASK ORDER PROCESS**

### **TASK ORDERS**

Upon review of any Contractor pricing submittal made pursuant to a Task Notice for Proposal, the City may, at its sole discretion, direct that the work described in the Task Notice for Proposal and priced by the Contractor be completed by issuance of a Task Order to the Contractor or reject the pricing submittal.

The City reserves the right to issue such a Task Order, at the price (either lump sum or time and material) and under the terms of the Contractor’s pricing submittal, at any time before the expiration 120 consecutive calendar days from the date the pricing submittal was received by the City. If no Task Order is issued and the pricing submittal is not rejected within this period, the Contractor’s pricing Proposal shall be deemed rejected by the City.

A Task Order shall not be issued and no work shall commence until such time as the Task Order is signed by the Contractor and all designated City officials and the Contractor has submitted a Payment and Performance Bond or Bond Change Rider for the work satisfactory to the City Attorney and the Chief Executive Officer of Aviation.

Upon issuance of a Task Order, the Contractor agrees to satisfactorily perform and complete all work or effort described in each issued Task Order or any subsequently issued Task Order Changes within the period of performance specified in the Task

Order and Notice to Proceed plus such extensions of time as may be granted by the Chief Executive Officer of Aviation in accordance with the provisions of this contract.

### **TASK ORDER CHANGES**

In accordance with all terms and conditions provided for standard change orders under General Contract Conditions 1101 et seq. CHANGE ORDERS and ADJUSTMENT TO CONTRACT AMOUNT, the City may issue Change Orders providing for deletions, additions and modifications to the work under a duly issued Task Order. Change Orders must be issued on the Change Order or Change Order Directive Form, samples of which are included herein in the Contract Forms Section. In the event of a conflict between GC 1104.2 and the markups submitted by the Contractor identified in the Schedule of Prices and Quantities, regarding any pay item identified in GC 1104.2, the markups and rates submitted by the Contractor in the Schedule of Prices and Quantities shall prevail.

### **TASK ORDER CLOSEOUT**

After all work performed under each Task Order has been accepted hereunder, final payment and Task Order closeout shall be made in accordance with the terms and conditions of General Contract Condition 910 FINAL ESTIMATE AND PAYMENT. Except that, with the consent of the contractor, legal advertisement, pursuant to Article 26, Colorado Revised Statutes as amended may be held for Task Orders which do not exceed Fifteen Thousand Dollars (\$15,000.00) until such time as several such projects are completed and eligible for legal advertisement.

### **CONTRACT CLOSE-OUT**

Following final closeout of all Task Orders performed hereunder, the Contract shall proceed to final contract closeout. Final contract closeout shall be completed in accordance with all procedures, terms and conditions set forth in the General Conditions except that final settlement and release or retention will be made upon completion of each Task Order rather than contract completion. In addition, Contractor shall execute a Final Receipt and provide a final contract closeout.

## **SC-27 TASK ORDER DIRECTIVE**

A Task Order Directive is a written order, signed by the CEO or the CEO's designated representative, which directs the Contractor to commence a Task Order prior to complete agreement on or execution of a Task Order.

Upon receipt of a Task Order Directive, the Contractor shall immediately sign the Task Order Directive and return it to the Project Manager, and shall immediately proceed with performing the work. The Contractor, within fifteen (15) days after receiving the Task Order Directive, shall provide the Project Manager with a complete and itemized proposal which includes the estimated increase or decrease in the Contract Amount and/or Contract Time attributable to the planned work.

### **Time and Materials**

- a. The City will identify a cost estimate or a Not to Exceed lump sum for the work described in the Task Order Directive. If the maximum cost of the work to be performed under the Task Order Directive has not been agreed upon and reduced to writing in the actual Task Order Directive, the Contractor shall proceed with such Work on a Time and Material basis through completion of the Task Order Directive or until the cost of the work has been agreed upon for the Task Order Directive.
- b. Whenever Work is performed on a Time and Material basis, the Contractor shall fully document all costs associated with such work. Beginning with the first Day such Work is performed, and on a daily basis thereafter, the Contractor shall submit to the Project Manager a daily itemization of all such costs in such form as the Project Manger may require.
- c. The final Task Order Directive amount performed on a Time and Material basis shall be calculated in accordance with the Schedule of Prices and Quantities indicated in this contract.

**SC-28 TASK ORDER DIRECTIVES AND CHANGE ORDER DIRECTIVES**

“Work”, as defined in the General Conditions, shall include all work under any Task Order or Task Order Directive. Any reference in the General Conditions to “Change Directive” shall mean “Change Order Directive”.

**SC-29 SUBCONTRACTOR**

The term “subcontractor” includes a labor pool.

**SC-30 NOTICE TO PROCEED AND COMPLETION OF THE WORK**

GC 302 is hereby deleted and replaced with the following:

- .1 A written Initial Notice to Proceed will be issued by the Senior Vice President to initiate the Contract only, and such Initial Notice to Proceed is not authorization for the Contractor to proceed with the Work or to proceed with mobilization. Thereafter, the Senior Vice President may issue a Task Order and subsequent NTP authorizing Work and/or mobilization.
- .2 The Contractor is allowed and authorized to incur reimbursable costs related to insurance, payment and performance bonds, and such other essential activities such as security access (vehicular access and personnel badging) only in relation to task orders. Home office overhead, core staff and other allowable general conditions costs are not authorized under the initial Notice to Proceed.
- .3 Core staff and agreed upon general conditions’ costs are authorized and allowed only for the time Work is authorized pursuant to a Second or subsequent Notice to Proceed and Task Order issued by the Project Manager. These costs, in part, are identified on Schedule of Prices and Quantities attached hereto, related to the rates and charges mutually agreed upon by City and Contractor. Requests for Task Order pricing proposals will not authorize the contractor to accumulate



reimbursable costs. Costs for Task Order proposal preparation and Task Order negotiation will not be reimbursable. Upon the substantial completion of Work under any subsequent Notice to Proceed, including a Second Notice to Proceed and/or Work Order, whichever is applicable, reimbursement for these costs expires unless otherwise agreed to in writing and authorized by the Project Manager, limited to the sole and only purpose of facilitating Final Completion of the authorized Work. Any costs the Contractor incurs, except for those costs allowed under the Initial Notice to Proceed, after substantial completion without written authorization by the Project Manager shall be absorbed by the Contractor and shall be at the Contractor's own risk.

- .4 If any milestones are described in the Contract Documents, the Work described by each milestone shall be accomplished in accordance with the Contract Documents within the specified Contract Time, or in the alternative, if a Task Order is issued for Work, then the Work shall be accomplished in accordance with the Task Order and completed within the time set forth by said Task Order.

### **SC-31 MOBILIZATION**

The Contractor, upon issuance of a Task Order, shall submit a detailed mobilization plan as dictated by Task Order scope to the Senior Vice President, or the Senior Vice President's designee, setting forth the proposed location for mobilization, mobilization costs and equipment to be rented or purchased for the specific Work authorized. All such costs are subject to the approval of the Senior Vice President, or the Senior Vice President's designee, and any equipment purchase or rental costs wherein the value of such equipment is paid for in excess of 90% of such value, then such equipment may, at the end of the Contract Time or Final Completion, whichever occurs earlier, become subject to ownership by the City (Airport) at City's option. Further, such equipment shall be used solely by the Contractor for Work under this Contract unless otherwise authorized by the Senior Vice President. Such equipment shall not be used for personal uses or activities.

### **SC-32 BONDS, SALES TAX AND INSURANCE**

Bonds, sales and use tax and insurance shall be paid at cost without mark up.

### **SC-33 SUBCONTRACTOR PAYMENTS AND SUBCONTRACTOR RELEASES – REQUIRED USE OF THE B2G CONTRACT MANAGEMENT SYSTEM**

The Contractor is required to use the City B2G Contract Management System to report all subcontractor payments and shall adhere to the City's Procedure for Reporting Subcontractor Payments. It is the Contractor's obligation to ensure that complete subcontractor information is entered into the B2G System prior to submission of the first application for payment in order to avoid any delays in payment. The Contractor shall, prior to the submission of each subsequent invoice, ensure payments to subcontractors have been entered into the B2G System, including subcontractor

confirmation of amount of payment received, for services performed during the prior billing period.

**SC-34 CHANGE ORDER DIRECTIVE**

Any reference in the General Conditions to “Change Order” shall mean “Change Order Directive”.

**SC-35 PROJECT CONTROLS REQUIREMENTS**

The Contractor will be required to use the designated Project Management Information System (PMIS) and Primavera P6 compatible to comply with the requirements of DIA’s Project Controls System. The PMIS is Airport Infrastructure Management’s tool for project and information management, data analysis and document control. Denver International Airport will be responsible for providing the licensing and training for PMIS. The Contractor will be responsible for providing a compatible Primavera P6 and training. The Contractor will also be responsible for providing and maintaining the computer hardware, software and system environment capable of supporting Project Controls System requirements including as the minimum: internet connection; Microsoft Internet Explorer 8 or better; Microsoft Office 2010; Oracle Java JRE 1, 8.0 Update 5 and Adobe Acrobat X Pro. This is the only project management system that will be accepted.

# INSURANCE CERTIFICATE

**The Insurance Certificate which applies to this contract is  
contained in the pages immediately following this page.  
These pages are not included in the page numbering of this contract document.**

Do not submit the insurance form with the Proposal. This form outlines the insurance coverages and minimum limits of liability for the contract which must be in place and maintained for the duration of this contract.

**CITY AND COUNTY OF DENVER  
INSURANCE REQUIREMENTS FOR THE DEPARTMENT OF AVIATION**

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Certificate Holder Information:

CITY AND COUNTY OF DENVER  
Attn: Risk Management, Suite 8810  
Manager of Aviation  
Denver International Airport  
8500 Peña Boulevard, Room 8810  
Denver CO 80249

**CONTRACT NAME & NUMBER TO WHICH THIS INSURANCE APPLIES: 201418968 – On Call Miscellaneous BHS Millwright Services**

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**I. MANDATORY COVERAGE**

**Colorado Workers' Compensation and Employer Liability Coverage**

**Coverage:** COLORADO Workers' Compensation

**Minimum Limits of Liability (In Thousands)**

WC Limits: \$100, \$500, \$100

And Employer's Liability Limits:

**Any Policy issued under this section must contain, include or provide for the following:**

1. All States Coverage or Colorado listed as a covered state for the Workers' Compensation
2. Waiver of Subrogation and Rights of Recovery against the City and County of Denver (the "City"), its officers, officials and employees.
3. State Of Colorado law states that if a contractor is a sole proprietor, they are not required to have Workers Compensation coverage.

**Commercial General Liability Coverage**

**Coverage:** Commercial General Liability (coverage at least as broad as that provided by ISO form CG0001 or equivalent)

**Minimum Limits of Liability (In Thousands):**

Each Occurrence:	\$1,000
General Aggregate Limit:	\$2,000
Products-Completed Operations Aggregate Limit:	\$2,000
Personal & Advertising Injury:	\$1,000
Fire Damage Legal - Any one fire:	\$1,000

**Any Policy issued under this section must contain, include or provide for the following:**

1. City, its officers, officials and employees as additional insureds, per ISO form CG2010 and CG 2037 or equivalents.
2. Coverage for defense costs of additional insureds outside the limits of insurance, per CG0001.
3. Liability assumed under an Insured Contract (Contractual Liability).
4. The full limits of coverage must be dedicated to apply to this project/location, per ISO form CG2503 or equivalent.
5. Waiver of Subrogation and Rights of Recovery, per ISO form CG2404 or equivalent.
6. Separation of Insureds Provision required
7. General Aggregate Limit Applies Per: Policy \_\_\_Project \_\_\_Location\_\_\_, if applicable

**Business Automobile Liability Coverage**

**Coverage:** Business Automobile Liability (coverage at least as broad as ISO form CA0001)

Minimum Limits of Liability (In Thousands): Combined Single Limit

\$1,000

**Any Policy issued under this section must contain, include or provide for the following:**

1. Symbol 1, coverage for any auto. If no autos are owned, Symbols 8 & 9, (Hired and Non-owned) auto liability.
2. If this contract involves the transport of hazardous cargo such as fuel, solvents or other hazardous materials may occur, then Broadened Pollution Endorsement, per ISO form CA 9948 or equivalent and MCS 90 are required.

**II. ADDITIONAL COVERAGE**

**Umbrella Liability**

**Coverage:**

<b>Umbrella Liability, Non Restricted Area</b>		
<b>Minimum Limits of Liability (In Thousands)</b>	Each Occurrence and aggregate	\$1,000
Umbrella Liability Restricted Area	Each Occurrence and aggregate	\$9,000

**Any Policy issued under this section must contain, include or provide for the following:**

1. City, its officers, officials and employees as additional insureds.
2. Coverage in excess of, and at least as broad as, the primary policies in sections WC-1, CGL-1, and BAL-1.
3. **If operations include unescorted airside access at DIA, then a \$9 million Umbrella Limit is required.**

**Builders' Risk Insurance or Installation Floater**

**Minimum Limits of Liability (In Thousands)**

**Completed Value Basis**

Unless otherwise provided, the Insured shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, Builders' Risk Insurance in the amount of the initial Contract Sum, plus value of subsequent modifications, change orders, and cost of material supplied or installed by others, comprising total value of the entire Project at the site on a replacement cost basis.

- a. Policy must provide coverage from the time any covered property becomes the responsibility of the Insured, and continue without interruption during construction, renovation, or installation, including any time during which the covered property is being transported to the construction installation site, or awaiting installation, whether on or off site.
- b. Such Builders' Risk Insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until formal acceptance of the project by the owner (DIA) or the placement of permanent property insurance coverage, whichever is later.
- c. The Builders' Risk insurance shall include interests of the Denver International Airport and if applicable, affiliated or associate entities, the General Contractor, subcontractors and sub-tier contractors in the Project.
- d. The Builders Risk insurance shall be written on a **Special Completed Value** Covered Cause of Loss form and shall include theft, vandalism, malicious mischief, collapse, false-work, temporary buildings, transit, debris removal, demolition, increased cost of construction, flood (including water damage), earthquake, and if applicable, all below and above ground structures, piping, foundations including underground water and sewer mains, pilings including the ground on which the structure rests and excavation, backfilling, filling and grading.
- e. The Builders' Risk shall include a Beneficial Occupancy Clause. The policy shall specifically permit occupancy of the building during construction. City and County of Denver Contractor shall take reasonable steps to obtain consent of the insurance company and delete any provisions with regard to restrictions within any Occupancy Clauses within the Builder's Risk Policy. The Builder's Risk Policy shall remain in force until acceptance of the project by the City.
- f. Equipment Breakdown Coverage (a.k.a. Boiler & Machinery) shall be included as required by the Contract Documents or by law, which shall specifically covers insured equipment during installation and testing (including cold and hot testing).

**The deductible shall not exceed \$25,000 and shall be the responsibility of the Contractor except for**

**losses that involve all Acts of God such as flood, earthquake, windstorm, tsunami, or volcano.**

### **III. ADDITIONAL CONDITIONS**

It is understood and agreed, for the benefit of the City, that the following additional conditions shall apply to all coverage specified herein

- All coverage provided herein shall be primary and any insurance maintained by the City shall be considered excess.
- With the exception of professional liability and auto liability, a Waiver of Subrogation and Rights of Recovery against the City, its officers, officials and employees is required for each coverage period.
- The City shall have the right to verify or confirm, at any time, all coverage, information or representations contained herein, and the insured and its undersigned agent shall promptly and fully cooperate in any such audit the City may elect to undertake.
- Advice of renewal is required.
- All insurance companies issuing policies hereunder must carry at least an A -VI rating from A.M. Best Company or obtain a written waiver of this requirement from the City's Risk Administrator.
- Compliance with coverage requirement by equivalent herein must be approved in writing by the City's Risk Administrator prior to contract execution.
- No changes, modifications or interlineations on this document shall be allowed without the review and approval of the Risk Administrator prior to contract execution.

### **NOTICE OF CANCELLATION**

It is understood and agreed that should any Policy issued hereunder be cancelled or non-renewed before the expiration date thereof, or sustain a material change in coverage adverse to the City, the issuing company or its authorized Agent shall give notice to the Department of Aviation in accordance with policy provisions.



DENVER INTERNATIONAL AIRPORT
PARTIAL LIEN RELEASE – CONSTRUCTION
(Subcontractor)

Project: \_\_\_\_\_

Date: \_\_\_\_\_

City Contract No. \_\_\_\_\_

Current Subcontract
Amount: \$ \_\_\_\_\_

FROM:
billing

(1) Last Progress Payment for

Subcontractor \_\_\_\_\_

period ending \_\_\_\_\_ 20\_\_\_\_
\$ \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

(2) Progress invoiced for previous billing
period (if unpaid) \_\_\_\_\_ 20\_\_\_\_
\$ \_\_\_\_\_

Telephone: \_\_\_\_\_

TO:
Contractor \_\_\_\_\_

(3) Progress invoiced for current billing
period ending \_\_\_\_\_ 20\_\_\_\_

Address: \_\_\_\_\_

\$ \_\_\_\_\_

City/State: \_\_\_\_\_

(4) Total Paid to Date:
\$ \_\_\_\_\_

[ ] MBE/WBE [ ] SBE [ ] DBE [ ] Non

The undersigned Subcontractor hereby (1) acknowledges receipt of the progress payment referred to above as the Last Progress Payment which, when added to the total of all previous progress payments, constitutes full payment, less retainage, for all labor, services, material and supplies which the undersigned has provided for use in and upon the project described above through \_\_\_\_\_, 20\_\_\_\_ and, (2) hereby releases the Contractor, surety, the City and County of Denver, and any intermediate subcontractor or supplier of any tier from any and all claims prior to the above mentioned date, except for the withheld retainage.

The Subcontractor also hereby agrees that the Contractor, Surety, the City and County of Denver, and any intermediate subcontractor or supplier of any tier shall be released from any and all claims arising out of its performance or non-performance of any contract associated with the above project through \_\_\_\_\_, 20\_\_\_\_, except for withheld retainage after it has received full payment, less retainage, of the amount invoiced for the current billing period.

Subcontractor: \_\_\_\_\_

Certified by: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

(Form: CM-26 Revised: Feb 2007)





DENVER INTERNATIONAL AIRPORT
FINAL LIEN RELEASE – CONSTRUCTION
(Subcontractor)

Project: \_\_\_\_\_

Date: \_\_\_\_\_

City Contract No. \_\_\_\_\_

Subcontractor Contract No. \_\_\_\_\_

Dated: \_\_\_\_\_, 20\_\_

FROM:
Subcontractor: \_\_\_\_\_
billing

(1) Last Progress Payment for
period ending \_\_\_\_\_, 20\_\_

Address: \_\_\_\_\_

\$ \_\_\_\_\_

City/State: \_\_\_\_\_

(2) Does not apply

Telephone: \_\_\_\_\_

TO:
Contractor: \_\_\_\_\_

(3) Does not apply

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

(4) Total Paid to Date:

\$

SBE  DBE  MBE  WBE  Non

The undersigned Subcontractor hereby (1) acknowledges receipt of the progress payment referred to above as the Last Progress Payment which, when added to the total of all previous progress payments, constitutes full payment for all labor, services, materials and supplies which the undersigned has provided for use in and upon the project described above through \_\_\_\_\_, 20\_\_ and, (2) hereby releases the Contractor, Surety, the City and County of Denver, and any intermediate subcontractor or supplier of any tier from any and all claims prior to the above mentioned date.

The Subcontractor also hereby agrees that the Contractor, Surety, the City and County of Denver, and any intermediate subcontractor or supplier of any tier shall be released from any and all claims arising out of its performance or non-performance of any contract associated with the above project.

Subcontractor: \_\_\_\_\_

Certified by: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

(Form: CM-70 Revised: Aug 2008)

**CITY AND COUNTY OF DENVER  
RULES AND REGULATIONS AND PROPOSAL CONDITIONS  
OF THE  
MANAGER OF PUBLIC WORKS**

**PERTAINING TO EQUAL EMPLOYMENT OPPORTUNITY  
IN THE CITY AND COUNTY OF DENVER**

APPROVED FOR LEGALITY

APPROVED AND ADOPTED:

/s/

/s/

\_\_\_\_\_  
Attorney for the City and County of Denver

\_\_\_\_\_  
Manager of Public Works

Adopted and Published Pursuant to Article III, Division 2 of Chapter 28  
of the  
*Revised Municipal Code*  
of the  
City and County of Denver

These Rules and Regulations cancel  
and supersede any and all previously  
issued Rules and Regulations on the Subject.

Revised November 1, 1990

**RULES AND REGULATIONS  
REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

Promulgated and adopted by the Manager of Public Works pursuant to and by authority of Article III, Division 2, Chapter 28 of the Revised Municipal Code of the City and County of Denver, and for the purpose of insuring that contractors, subcontractors and suppliers soliciting and receiving compensation for contract work from or through the City and County of Denver provide equal opportunity in employment without regard to race, color, creed, sex, national origin, age religion, material status, political opinion or affiliation or mental or physical handicap and meet certain requirements for the hiring, training, promotion, and treatment during employment of members of ethnic groups subject to differential treatment, including persons of African descent (Black), Spanish-surnamed (Hispanic), Asian-American and American Indian Groups. The Chief Executive Officer of Aviation is not mentioned in this specific section of the code. I don't know if we can or want to change the title to Manger of Aviation.

**RULE I – DEFINITIONS**

- A. "City" means the City and County of Denver.
- B. "Manager means the Manager of Public Works for the City and County of Denver.
- C. "Contract" means a contract entered into with the City and County of Denver, financed in whole or in part by local resources or funds of the City and County of Denver, for the construction of any of any public building or prosecution or completion of any public work.
- D. "Contractor" means the original party to a contract with the City and County of Denver, also referred to as the "general" or "prime" contractor.
- E. "Director" means the Director of Contract Compliance.
- F. "Subcontractor" means any person, company, association, partnership, corporation, or other entity which assumes by subordinate agreement some or all of the obligations of the general or prime contractor.
- G. "Bidding Specifications" as used in Article III, Division 2 of Chapter 28 of the Revised Municipal Code shall include BID CONDITIONS, INVITATION TO BID, and NOTICE OF PROPOSAL.
- H. "Affirmative Action Program" means a set of specific and result-oriented procedures or steps to which a contractor commits himself to apply every good faith effort to employ members of ethnic minority groups, to include persons of African descent (Black), Spanish surnamed (Hispanic), Asian-American, American Indians, and persons with mental or physical handicap.

- I. "Office of Contract Compliance" means the City agency established pursuant to Article III, Division 1 of Chapter 28 of the Denver Revised Municipal Code.

## **RULE II – NOTICE OF HEARING**

When results of conciliation efforts are unsatisfactory to the Manager and he is informed in accordance with Article III, Division 2 of Chapter 28 of the Denver Revised Municipal code that a contractor or subcontractor has apparently failed to meet affirmative action and equal employment opportunity requirements after a reasonable period of notice to correct deficiencies, the Manager will, prior to imposition of any sanctions, afford the general contractor a hearing in order to determine whether the contractor or his subcontractors have failed to comply with the affirmative action and equal employment opportunity requirements of Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code or of the contract. Written notice of such hearing shall be delivered personally or sent by certified mail, return receipt requested, to the contractor and to any subcontractor involved, at least ten (10) days prior to the date scheduled for the hearing.

## **RULE III – HEARING**

- A. Contractors will appear at hearings and may be represented by counsel, and may present testimony orally and other evidence.
- B. Hearings shall be conducted by one or more hearing examiners designated as such by the Manager.
- C. The Director of Contract Compliance may participate in hearings as a witness.
- D. Hearings shall be held at the place specified in the notice of hearing.
- E. All oral testimony shall be given under oath or affirmation and a record of such proceedings shall be made.
- F. All hearings shall be open to the public.
- G. The hearing officer shall make recommendations to the Manager, who shall make a final decision.

## **REGULATIONS**

### **REGULATION NO. 1 - ORDINANCE**

The Rules and Regulations of the Manager shall be inserted in the bidding specifications for every contract for which bidding is required.

### **REGULATION NO. 2 - EXEMPTIONS**

Each contract and subcontract, regardless of the dollar amount, shall be subject to affirmative action requirements unless specifically exempted in writing individually by the Manager. Exemptions apply only to "affirmative action" in equal employment opportunity, and are not to be construed as condonation in any manner of "discrimination" or "discriminatory practices" in employment because of race, color, creed, sex, age, national origin, religion, marital status, political opinion or mental or physical handicap.

### **REGULATION NO. 3 - DIRECTOR OF CONTRACT COMPLIANCE**

The Director of Contract Compliance shall perform the duties assigned to such official by Article III, Division 2 Chapter 28 of the Denver Revised Municipal Code and by the Manager. The Director of Contract Compliance or designated representatives shall inform bidders and contractors of affirmative action procedures, programs, and goals in accordance with the Ordinance at pre-bid and pre-construction conference; (2) make regular on-site inspections; (3) supply contractors and subcontractors with report forms to be completed by them when requested, and furnished to the Director of Contract Compliance; and (4) review payroll records, employment records and practices of general contractors and their subcontractors and suppliers during the performance of any contract. The Director of Contract Compliance shall promptly report apparent affirmative action deficiencies to the Manager.

### **REGULATION NO. 4 - GOALS AND TIMETABLES**

In general, goals and timetables should take into account anticipated vacancies and the availability of skills in the market place from which employees should be drawn. In addition, where discrimination in employment by a general contractor or any of his subcontractors is indicated, a corrective action program will take into account the need by the general contractor and his subcontractors to correct past discriminatory practices and reach goals of minority manpower utilization on a timely basis through such recruiting and advertising efforts as are necessary and appropriate.

### **REGULATION NO. 5 - AWARD OF CONTRACTS.**

It shall be the responsibility of the Director of Contract Compliance to determine the affirmative action capability of proposers, contractors and subcontractors and to recommend to the Manager the award of contracts to those proposers, contractors and subcontractors and suppliers who demonstrate the ability and willingness to comply with the terms of their contract.

### **REGULATION NO. 6 - PUBLICATION AND DUPLICATION.**

Copies of these Rules and Regulations as amended by the Manager from time to time, shall as soon as practicable and after Notice being published will be made a part of all City Contracts.

### **REGULATION NO. 7 - NOTICE TO PROCEED.**

Prior to issuance of the Notice to Proceed, a sign-off will be required of the Director of Contract Compliance or his designee.

## **REGULATION NO. 8 - CONTRACTS WITH SUBCONTRACTORS.**

To the greatest extent possible, the contractor shall make a good faith effort to contract with minority contractors, subcontractors and suppliers for services and supplies by taking affirmative actions which include but are not limited to the following:

1. Advertise invitations for subcontractor proposals in minority community news media.
2. Contact minority contractor organizations for referral of prospective subcontractors.
3. Purchase materials and supplies from minority material suppliers.

## **REGULATION NO. 9 - AGENCY REFERRALS.**

It shall be no excuse that the union with which the contractor or subcontractor has an agreement providing for referral, exclusive or otherwise, failed to refer minority employees.

## **REGULATION NO. 10 - CLAUSES.**

The Manager shall include the appropriate clauses in every contract, and the contractor shall cause to be inserted in every subcontract the appropriate clauses:

1. APPENDIX A: City and County of Denver Equal Opportunity Clause - ALL CONTRACTS funded only with City and County of Denver monies.
2. APPENDIX B: Equal Opportunity Clause (11246) - ALL FEDERAL ASSISTED.
3. APPENDIX C: Section 3 - Assurance of Compliance - HUD ASSISTED PROJECTS.
4. APPENDIX D: Section 3 - Clause - HUD ASSISTED PROJECTS.

## **REGULATION NO. 11 - SHOW CAUSE NOTICES.**

When the Manager has reasonable cause to believe that a contractor has violated Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, he may issue a notice requiring the contractor to show cause within 15 days why enforcement procedures, or other appropriate action to insure compliance, should not be instituted.

## **REGULATION NO. 12 - PROPOSAL CONDITIONS - AFFIRMATIVE ACTION REQUIREMENTS - EQUAL EMPLOYMENT OPPORTUNITY.**

1. APPENDIX E: The Proposal Conditions - Affirmative Action Requirements - Equal Employment Opportunity as amended and published by the U.S.

Department of Labor Employment Standards Administration, Office of Federal Contract Compliance, shall be inserted verbatim for bidding specification in every non-exempt contract involving the use of federal funds.

2. APPENDIX F: The Proposal Conditions - Affirmative Action Requirements - Equal Employment Opportunity as published by the Department of Public Works, City and County of Denver, shall be inserted verbatim as bidding specifications for every non-exempt contract using City funds.



**CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS  
DESIGN AND CONSTRUCTION MANAGEMENT DIVISION**

**APPENDIX A  
CITY AND COUNTY OF DENVER EQUAL OPPORTUNITY CLAUSE  
ALL CONTRACTS**

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided, advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. Each Contractor will comply with all provisions of Article ,Division 2 of Chapter 28 of the Denver Revised Municipal Code, and the rules, regulations, and relevant orders of the Manager of Public Works and the Director of the Mayor's Office of Contract Compliance.
5. The Contractor will furnish all information and reports required by Article m, Division 2 of Chapter 28 of the Denver Revised Municipal Code, and by rules, regulations and orders of the Manager and Director or pursuant thereto, and will permit access to the Contractors books, records, and accounts by the Manager, Director, or their designee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for

further City contracts in accordance with procedures authorized in Article m, Division 2 of Chapter 28 of the Denver Revised Municipal Code, or by rules, regulations, or order of the Manager of Public Works.

7. The Contractor will include Regulation 12, Paragraph 2 and the provisions of paragraphs (1) through (6) in every subcontract of purchase order unless exempted by rules, regulations, or orders of the Manager issued pursuant to Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, so that such provisions will take such action with respect to any subcontractor or supplies. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

The applicant further agrees to be bound by the above equal opportunity clauses with respect to its own employment practices when it participates in City contracts. The Contractor agrees to assist and cooperate actively with the Manager of Public Works and the Director of Contract Compliance in obtaining compliance of subcontractors and suppliers with the equal opportunity clause and the rules, regulations and relevant orders of the Manager of Public Works, and will furnish the Manager of Public Works and the Director of Contract Compliance such information as they may require for the supervision of compliance, and will otherwise assist the Manager and Director in the discharge of the City's primary responsibility for securing compliance. The Contractor further agrees to refrain from entering into any contract or contract modification subject to Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code with a contractor debarred from, or who has not demonstrated eligibility for, City contracts.

The Contractor will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the Manager of Public Works and Director of Contract Compliance. In addition, the Contractor agrees that failure or refusal to comply with these undertakings the Manager of Public Works may take any or all of the following actions:

- A. Cancellation, termination, or suspension in whole or in part of this contract.
- B. Refrain from extending any further assistance to the applicant under the program with respect to which the failure occurred until satisfactory assurance of future compliance has been received from such applicant.
- C. Refer the case to the City Attorney for appropriate legal proceedings.

**SUBCONTRACTS** - Each prime Contractor or Subcontractor shall include the equal opportunity clause in each of its subcontracts.

**APPENDIX F**  
**AFFIRMATIVE ACTION REQUIREMENTS**  
**EQUAL EMPLOYMENT OPPORTUNITY**

For all Non-Exempt Construction Contracts to be awarded  
by the City and County of Denver, Department of Public Works

NOTICE

EACH PROPOSER, CONTRACTOR OR SUBCONTRACTOR (HEREINAFTER THE CONTRACTOR) MUST FULLY COMPLY WITH THE REQUIREMENTS OF THESE PROPOSAL CONDITIONS AS TO EACH CONSTRUCTION TRADE IT INTENDS TO USE ON THIS CONSTRUCTION CONTRACT, AND ALL OTHER CONSTRUCTION WORK (BOTH CITY AND NON-CITY) IN THE DENVER AREA DURING THE PERFORMANCE OF THIS CONTRACT OR SUBCONTRACT. THE CONTRACTOR COMMITS ITSELF TO THE GOALS FOR MINORITY MANPOWER UTILIZATION, AS APPLICABLE, AND ALL OTHER REQUIREMENTS, TERMS AND CONDITION OF THESE PROPOSAL CONDITIONS BY SUBMITTING A PROPERLY SIGNED BID. THE CONTRACTOR SHALL APPOINT A COMPANY EXECUTIVE TO ASSUME THE RESPONSIBILITY FOR THE IMPLEMENTATION OF THE REQUIREMENTS, TERMS AND CONDITIONS OF THESE PROPOSAL CONDITIONS.

Manager of Public Works  
City and County of Denver

**A. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:**

Contractors shall be subject to the provisions and requirements of these bid conditions including the goals and timetables for minority\* and female utilization, and specific affirmative action steps set forth by the Mayor's Office of Contract Compliance. The contractor's commitment to the goals for minority, and female utilization as required constitutes a commitment that it will make every good faith effort to meet such goals.

**1. GOALS AND TIMETABLES:**

The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade are as follows:

GOALS FOR MINORITY PARTICIPATION FOR EACH TRADE	GOALS FOR FEMALE PARTICIPATION FOR EACH TRADE
From January 1, 1982 to Until Further Notice	From January 1, 1982 to Until Further Notice
21.7% - 23.5%	6.9%

The goals for minority and female utilization above are expressed in terms of hours of training and employment as a proportion of the total number of hours to be worked by the contractor's aggregate workforce, which includes all supervisory personnel, in each trade, on all projects for the City and County of Denver during the performance of its contract (i.e., The period beginning with the first day of work on the City and County of Denver funded construction contract and ending with the last day of work).

The hours of minority and female employment and training must be substantially uniform throughout the length of the contract in each trade and minorities and females must be employed evenly on each of a contractor's projects. Therefore, the transfer of minority or female employees from contractor to contractor or from project to project for the purpose of meeting the contractor's goals shall be a violation of these Bid Conditions.

If the Contractor counts the nonworking hours of apprentices they must be employed by the Contractor during the training period; the Contractor must have made a commitment to employ apprentices at the completion of their training subject to the availability of employment opportunities; and the apprentices must be trained pursuant to training programs approved by the Bureau of Apprenticeship and Training.

\* "Minority" is defined as including, Blacks, Spanish Surname Americans, Asian Americans, and American Indians, and includes both minority men and women.

## **2. SPECIFIC AFFIRMATIVE ACTION STEPS:**

If contractor shall be found to be in noncompliance solely on account of its failure to meet its goals, but will be given an opportunity to demonstrate that the contractor has instituted all the specific affirmative action steps specified and has made every good faith effort to make these steps work toward the attainment of its goals within the timetables, all to the purpose of expanding minority and female utilization in its aggregate workforce. A contractor, who fails to comply with its obligation under the Equal Opportunity Clause of its contract and fails to achieve its commitments to the goals for minority and female utilization has the burden of proving that it has engaged in an Affirmative Action Program directed at increasing minority and female utilization and that such efforts were at least as extensive and as specific as the following:

- a. The Contractor should have notified minority and female organizations when employment opportunities were available and should have maintained records of the organization's response.
- b. The Contractor should have maintained a file of the names and addresses of each minority and female referred to it by any individual or organization and what action was taken with respect to each such referred individual, and if the individual was not employed by the Contractor, the reasons. If such individual was sent to the union hiring hall for referral and not referred back by the union or if referred, not employed by the Contractor, the file should have documented this and their reasons.
- c. The Contractor should have promptly notified the Department of Public Works, and the Mayor's Office of Contract Compliance when the union or unions with which the Contractor has collective bargaining agreements did not refer to the contractor a minority or female sent by the contractor, or when the Contractor has other information that the union referral process has impeded efforts to meet its goals.
- d. The Contractor should have disseminated its EEO policy within its organization by including it in any employee handbook or policy manual; by publicizing it in company newspapers and annual reports and by advertising such policy as reasonable intervals in union publications. The EEO policy should be further disseminated by conducting staff meetings to explain and discuss the policy; by posting of the policy; and by review of the policy with minority and female employees.
- e. The Contractor should have disseminated its EEO policy externally by informing and discussing it with all recruitment sources; by advertising in news media, specifically including minority and female news media; and by notifying and discussing it with all subcontractors.

- f. The Contractor should have made both specific and reasonably recurrent written and oral recruitment efforts. Such efforts should have been directed at minority and female organizations, schools with substantial minority and female enrollment, and minority and female recruitment and training organizations within the Contractor's recruitment area.
- g. The Contractor should have evidence available for inspection that all tests and other selection techniques used to select from among candidates for hire, transfer, promotion, training, or retention are being used in a manner that does not violate the OFCCP Testing Guidelines in 41 CFR Part 60-3.
- h. The Contractor should have made sure that seniority practices and job classifications do not have a discriminatory effect.
- i. The Contractor should have made certain that all facilities are not segregated by race.
- j. The Contractor should have continually monitored all personnel activities to ensure that its EEO policy was being carried out including the evaluation of minority and female employees for promotional opportunities on a quarterly basis and the encouragement of such employees to seek those opportunities.
- k. The Contractor should have solicited bids for subcontracts from available minority and female subcontractors engaged in the trades covered by these Bid Conditions, including circulation of minority and female contractor associations. NOTE: The Director and the Mayor's Office of Contract Compliance will provide technical assistance on questions pertaining to minority and female recruitment sources, minority and female community organizations, and minority and female news media upon receipt of a request for assistance from a contractor.

### **3. NONDISCRIMINATION:**

In no event may a contractor utilize the goals and affirmative action steps required in such a manner as to cause or result in discrimination against any person on account of race, color, religion, sex, marital status, national origin, age, mental or physical handicap, political opinion or affiliation.

### **4. COMPLIANCE AND ENFORCEMENT:**

In all cases, the compliance of a contractor will be determined in accordance with its obligations under the terms of these Bid Conditions. All contractors performing or to perform work on projects subject to these Bid Conditions hereby agree to inform their subcontractors in writing of their respective obligations under the terms and requirements of these Bid Conditions, including the provisions relating to goals of minority and female employment and training.

## **B. CONTRACTORS SUBJECT TO THESE BID CONDITIONS:**

In regard to these Bid Conditions, if the Contractor meets the goals set forth therein or can demonstrate that it has made every good faith effort to meet these goals, the Contractor shall be presumed to be in compliance with Article m, Division 2 of Chapter 28 of the Denver Revised Municipal Code, the implementing regulations and its obligations under these Bid Conditions. In the event, no formal sanctions or proceedings leading toward sanctions shall be instituted unless the contracting or administering agency otherwise determines that the contractor is violating the Equal Opportunity Clause.

1. Where the Mayor's Office of Contract Compliance finds that a contractor failed to comply with the requirements of Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code or the implementing regulations and the obligations under these Bid Conditions, and so informs the Manager, the Manager shall take such action and impose such sanctions, which include suspension, termination, cancellation, and debarment, as may be appropriate under the Ordinance and its regulations. When the Manager proceeds with such formal action it has the burden of proving that the Contractor has not met the goals contained in these Bid Conditions. The Contractor's failure to meet its goals shall shift to it the requirement to come forward with evidence to show that it has met the good faith requirements of these Bid Conditions.

2. The pendency of such proceedings shall be taken into consideration by the Department of Public Works in determining whether such contractor can comply with the requirements of Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, and is therefore a "responsible prospective contractor".

3. The Mayor's Office of Contract Compliance shall review the Contractor's employment practices during the performance of the contract, If the Mayor's Office of Contract Compliance determines that the Contractor's Affirmative Action Plan is no longer an acceptable program, the Director shall notify the Manager.

## **C. OBLIGATIONS APPLICABLE TO CONTRACTORS:**

It shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority or female employees, Discrimination in referral for employment, even if pursuant to provisions of a collective bargaining agreement, is prohibited by the National Labor Relations Act, as amended, Title VI of the Civil Rights Act of 1964, as amended, and Article Division 2 of Chapter 28 of the Denver Revised Municipal Code. It is the policy of the Department of Public Works that contractors have a responsibility to provide equal employment opportunity, if they wish to participate in City and County of Denver contracts. To the extent they have delegated the responsibility for some of their employment practices to a labor organization and, as a result, are prevented from meeting their obligations pursuant to Article m, Division 2 of Chapter 28 of the Denver Revised Municipal Code, such Contractors cannot be considered to be in compliance with Article m, Division 2 of Chapter 28 of the Denver Revised Municipal Code, or its implementing rules and regulations.

#### **D. GENERAL REQUIREMENTS:**

Contractors are responsible for informing their subcontractors in writing regardless of tier, as to their respective obligations. Whenever a Contractor subcontracts a portion of work in any trade covered by these Bid Conditions, it shall include these Bid Conditions in such subcontractors and each subcontractor shall be bound by these Bid Conditions to the full extent as if it were the prime contractor. The Contractor shall not, however, be held accountable for the failure of its subcontractors to fulfill their obligations under these Proposal Conditions. However, the prime contractor shall give notice to the Director of any refusal or failure of any subcontractor to fulfill the obligations under these Bid Conditions. A subcontractor's failure to comply will be treated in the same manner as such failure by a prime contractor.

1. Contractors hereby agree to refrain from entering into any contractor contract modification subject to Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code with a contractor debarred from, or who is determined not to be a "responsive" bidder for the City and County of Denver contracts pursuant to the Ordinance.
2. The Contractor shall carry out such sanctions and penalties for violation of these Bid Conditions and the Equal Opportunity Clause including suspension, termination and cancellation of existing subcontracts and debarment from future contracts as may be ordered by the Manager pursuant to Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code and its implementing regulations.
3. Nothing herein is intended to relieve any contractor during the term of its contract from compliance with Article m, Division 2 of Chapter 28 of the Denver Revised Municipal Code, and the Equal Opportunity Clause of its contract with respect to matters not covered in these Bid Conditions.
4. Contractors must keep such records and file such reports relating to provisions of these Bid Conditions as shall be required by the Mayor's Office of Contract Compliance.
5. Requests for exemptions from these Proposal Conditions must be made in writing, with justification, to the Manager of Public Works, City and County Building, Room 379, Denver, Colorado 80202, and shall be forwarded through and with the endorsement of the Director of the Mayor's Office of Contract Compliance.



**STANDARD FEDERAL ASSURANCES  
ATTACHMENT 1**

NOTE: As used below the term "contractor" shall mean and include the Contractor, and the term "sponsor" shall mean the "City".

During the term of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations.** The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination.** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, creed, color, sex, national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
3. **Solicitations for Subcontractors, Including Procurements of Materials and Equipment.** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
4. **Information and Reports.** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the sponsor of the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance.** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:
  - a. Withholding of payments to the contractor under the contract until the contractor complies, and/or
  - b. Cancellation, termination, or suspension of the contract, in whole or in part.

6. Incorporation of Provisions. The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

7. The Contractor for itself, representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree as a covenant running with the land that in the event facilities are constructed, maintained, or otherwise operated on the said property described in this agreement for a purpose for which a DOT program or activity is extended or for another purpose involving the provision of similar services or benefits, the Contractor shall maintain and operate such facilities and services in compliance with all other requirements imposed pursuant to 49 CFR Part 21, Nondiscrimination in Federally Assisted Programs of the Department of Transportation, and as said Regulations may be amended.

8. The Contractor for itself, representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree as a covenant running with the land: (1) that no person on the grounds of race, color, sex, creed or national origin shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land and the furnishing of services thereon, no person on the grounds of race, color, sex, creed or national origin shall be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the Contractor shall use the premises in compliance with all other requirements imposed by or pursuant to 49 CFR Part 21, Nondiscrimination in Federally Assisted Programs of the Department of Transportation, and as said Regulations may be amended.

9. **NONDISCRIMINATION IN AIRPORT EMPLOYMENT OPPORTUNITIES** The Contractor assures that it will comply with pertinent statutes, Executive Orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance.

It is unlawful for airport operators and their lessees, tenants, concessionaires and contractors to discriminate against any person because of race, color, national origin, sex, creed, or handicap in public services and employment opportunities.



# PROJECT MANUAL

## On-Call Miscellaneous BHS Millwright Services

Contract Number: 201418968

### VOLUME 2

Issued for Construction  
April, 2016

City and County of Denver  
Department of Aviation

Kim Day, Manager of Aviation

### Contractor

Ludvik Electric Co.

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SECTION 017840	CONTRACT RECORD DOCUMENTS
SECTION 017900	DEMONSTRATION AND TRAINING
SECTION 019113	GENERAL COMMISSIONING REQUIREMENTS
SECTION 019990	STANDARD FORMS

**Other Division Sections to be issued as needed, by Task.**

## SECTION 011100 - SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY AND DESCRIPTION

- A. The Work specified in this contract consists of furnishing all management, supervision, labor, materials, tools, equipment, services, testing and incidentals for the construction of the Work indicated in the contract documents including lump sum items and unit price items.
- B. The Work in this Contract may impact operations of Denver International Airport. The Contractor shall bid, plan and execute the Work so as to minimize disruption of operations and inconvenience to the public.
- C. Task Notice Proposals, Change Notice:
  - 1. The Contractor will be required to submit a proposal for each TNP for on call Contract or Change Notice for regular hard bid Contracts. The Contractor shall facilitate competitive bid process on all or parts of the Work as required by the on-call Contract based on a selection criteria approved by DIA Project Manager.
  - 2. The Contractor must submit a proposal for the complete scope of the Work within the specified duration identified by the Notice. Where there is no time requirement identified by the notice documents the Contractor must submit a proposal within 20 days of receiving the notice or as allowed in Title 11 of the General Conditions.
  - 3. The proposal could contain both competitive bid and estimated costs and shall adhere to the requirements of title 11 of the General Conditions.
  - 4. The Contractor shall not proceed on any task or change notice work until a task or change order is issued.
- D. Change Order Directives, Task Order Directives:
  - 1. The DIA Project Manager May issue Change or Task Order Directive(s) for a scope of Work. The Contractor must keep all Time and Material record for any Change or Task Order Directive(s) issued until a final settlement for the task is settled and finalized in a Change or Task Change Order.

2. All negotiated Task Notices, Directives or Orders must adhere to the General Conditions requirements of Title 11 of the General Conditions (Yellow Book). The Contractor must keep record and approvals for all Time and Material impacts of a Change or Task Order Directive until a final settlement is reached and fully executed by the DIA Project Manager.
  3. The Contractor may invoice the DIA Project Manager for Change or Task Order Directive based on the City estimated value until a final Change Order or Task Order is issued for the specific task.
- E. Guaranteed Maximum Price GMP: For Contracts assigned as GMP the Contractor must follow the Special Conditions issued for the Contract.
- F. Task Orders will be administered using the current versions of PMIS software.
- G. The Contractor must participate in a preconstruction coordination meeting and prepare a BIM Project Execution Plan based upon the DIA BIM Project Implementation Plan (BPXP) template included in and the coordination meeting instructions.
- H. DIA utilizes several programs as part of the Asset Management System. Keeping accurate as-built record and operation and maintenance data are essential in the integrity and the validity of the airport operation. The Contractor is required to make every effort to keep the airport data updated and provide accurate record of its Work and all the impacts to DIA in the format required by DIA Project Manager:
1. The Contractor must provide and implement BIM Project Execution Plan based on the DIA BIM Project Execution Plan included in The Contractor shall employ or contract a consultant to provide all the requirements to produce the Project model in the latest edition of the Design Standards Manual.
  2. The Contractor shall comply with all the requirements of DIA BIM Project Execution Plan and provide the data to DIA to produce the complete record of the BIM model of the Project per.
  3. BIM model is not required for this project, however all the data for this project shall be submitted electronically in addition to any other format required by the Contract Documents.
- I. Inspection Requirements:
1. Special Inspection and Testing required by the building official or the Engineer of Record in the Contract Documents or in the Statement of Special Inspections will be performed by DIA contracted Agencies.
  2. Contractor must subcontract Qualified Material Testing Agency(s) to perform all necessary Quality Control, processing control and any additional Testing required by the Contract Documents.
  3. DIA contracted Testing Agency may audit all tests performed by the Contractor Material Testing and perform partial testing of the QC test frequencies at the discretionary of DIA Project Manager. Testing and Inspections for structural elements [**reinforced concrete, steel, masonry caissons, fire protection, precast and post tension concrete**] not identified as special inspection will be performed by the Contractor Quality Control Program and Contractor Material

Testing Agency and audited and confirmed by DIA Quality Assurance and Testing Agency(s). DIA will perform visual inspection on all weldments. DIA will perform at least 10% of the QC test and inspection frequencies. The testing frequencies by the Owner may escalate to higher percentages and the Contractor will be responsible for all costs associated with failing tests of the same pay item elements. The Contractor may not hire the Owner contracted or testing agency in any capacity on this Project.

4. DIA will perform all pull and adhesion tests on all airfield joint sealants. Contractor must perform its own process and quality control.

J. For all FAA Projects: The Contractor must contract qualified Material Testing Agency for all Quality Control and process control in addition to all acceptance testing on all soil related material tests including but not limited to soil fill and backfill, trench backfill, cement treated soil and lime treated soil. The Owner will utilize Owner-employed testing and inspection agencies to perform all other acceptance testing not identified above.

K. DIA Quality Assurance is required to submit a letter indicating that all Work performed under Special Inspection on the project is in compliance with all applicable codes. The Contractor shall make sure that all required test frequencies and all deficiencies has been corrected to be in compliance with all applicable codes standards and the requirements of the Contract Documents.

### 1.3 WORK BY OTHERS

A. The Contractor is hereby notified that there may be other construction activities now and in the future within the Project areas and adjacent to the work sites throughout the duration of this Contract. The Contractor is responsible for keeping apprised of other projects and worksites and how they may affect the Work.

B. The Contractor shall maintain contact with the DIA Project Manager and with other contractors to schedule Work to minimize the effect of such construction activities on other site activities. The Contractor shall also maintain, at the direction of the DIA Project Manager, contact with tenants to ensure minimal disruption to tenant operations.

### 1.4 FUTURE WORK

A. The Contractor is hereby notified that there may be other future construction activities within the Project and adjacent to the worksites that are scheduled after completion of this contract. It is the Contractor's responsibility to keep apprised of such projects and how they may affect the Work.

### 1.5 SITE CONDITIONS

A. The Contractor acknowledges satisfaction as to the nature and location of the Work, all of the general and local conditions, particularly those bearing upon availability of



transportation, access to the site, disposal, handling and storage of materials, availability of labor, water, power, roads, and uncertainties of weather, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during work, and all other matters that can in any way affect the Work or the cost thereof under this contract.

- B. The Contractor further acknowledges, by submission of a bid and on each Work Request bid, satisfaction as to the character, quality and quantity of all surface and subsurface materials and all features on top of the surface or at worksites that would be encountered from the Contractor's inspection of the site and from reviewing available records of exploratory work furnished by the City. Failure by the Contractor to become acquainted with the physical conditions of the sites and all the available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of performing the Work.
- C. The Contractor warrants that as a result of examination and investigation of all the aforesaid data and the site, that the Contractor can perform the Work in a good and workmanlike manner and to the satisfaction of the City. The City assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this contract unless such representation is expressly stated in the contract.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 CONTRACTOR'S DUTIES**

- A. Except as otherwise specified, furnish the following to the full extent required by the Contract:
  - 1. Labor, superintendence, supervision and products.
  - 2. Construction equipment, tools, machinery and materials.
  - 3. Utilities required for construction and related activities.
  - 4. Other facilities and services necessary to properly execute and complete the Work, including security for work site, testing and storage and protection of all materials awaiting incorporation into the Work, providing a safe working environment for workers, City and County of Denver representatives, and the public in accordance with all local, state and federal requirements.
- B. Execute the Work as specified and in a timely manner. Submit a schedule of Work that will be performed at times other than during the eight-hour working day of Monday through Friday, daylight hours. Submit this schedule five (5) working days prior to the beginning of Work to the DIA Project Manager for review and acceptance. Approval to work at night may be obtained after Contractor presents a written program outlining special precautions to be taken to control the extraordinary hazards presented by night

work. That program shall include, but not limited to, supplementary lighting of work areas, availability of medical facilities, security precautions and noise limitations.

### 3.2 COORDINATION

- A. Coordinate execution of the Work with those public utilities, governmental bodies, private utilities and other contractors performing work on and adjacent to the worksites. Eliminate or minimize delays in the Work and conflicts with those utilities, bodies and contractors. Schedule governmental, private utility and public utility work that relies upon survey points, lines and grades established by the Contractor to occur immediately after those points, lines and grades have been established. Confirm coordination measures for each individual case with the DIA Project Manager in writing.
- B. In the coordination effort of work by others, the Contractor shall obtain and refer to equipment locations and other layouts, as available, to avoid interface problems.
- C. The City reserves the right to permit access to the site of the Work for the performance of work by other contractors and persons at such times that the City deems proper. The exercise of such reserved right shall in no way or to any extent relieve the Contractor from liability for loss and damage to the Work due to or resulting from its operations or from responsibility for complete execution of the Contract. The Contractor shall cooperate with other contractors and persons in all matters requiring common effort.

### 3.3 CONTRACTOR USE OF WORK SITE

- A. Confine work site operations to areas permitted by law, ordinances, permits and the Contract.
- B. Consider the safety of the Work and that of the people and property on and adjacent to the work site when determining amount, location, movement and use of materials and equipment on work site.
- C. Do not load work site with equipment and products that would interfere with the Work. Only equipment, tools or materials required for this Work may be stored at the work site.
- D. Protect products, equipment and materials stored on work site.
- E. Relocate stored products, equipment and materials which interfere with operations of City, government bodies, public and private utilities, and other contractors.

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this section including any and all necessary relocations requested by the City. The cost of the work described in this section shall be included in the applicable multiplier or bid items contract price.

**END OF SECTION 011100**

## SECTION 011400 - WORK SEQUENCE AND CONSTRAINTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 OTHER WORK

- A. Other concurrent construction contracts with which the Contractor must interface are described elsewhere in the Contract Documents. Refer to Section 013210 "Schedule" and the Special Conditions for specific work constraints and milestones.

#### 1.3 WORK SEQUENCE

- A. The work sequence shall be in compliance with Phasing, Sequencing and Milestones as indicated in the Contract Documents and in accordance with the approved Construction Schedule developed by the Contractor. The schedule shall be in compliance with requirements indicated in the Special Conditions and Section 011400 "Work Sequence and Constraints". The Construction Schedule is described in Section 013210 "Schedule".

#### 1.4 WORK CONSTRAINTS

- A. Site Constraints:
  1. Access to the Project shall be generally as indicated in the Contract Documents. Access shall be organized and planned by the Contractor to ensure no disruption of airline or DIA operations.
  2. Access to work sites will be strictly monitored and must comply with DIA Airport Operations and FAA Regulations. The Contractor shall provide monitoring and escorts as required by DIA Operations in the area of the Work.
  3. The Contractor's staging area will be as indicated in the Construction Documents.
  4. Contractor employee parking will not be allowed within the existing revenue control system. To access the Terminal building, Contractor employees may use the DIA Landside Employee Parking Lot located on 78th Avenue at a cost of **\$30.00** per month per employee. A free DIA shuttle to the Terminal is available from this Lot. Loading for material for work in the Terminal will be coordinated with the DIA Project Manager..
  5. The Contractor shall use the haul routes specified in the Construction Documents.

6. If required, the Contractor shall provide a bus and driver to transport the Contractor's employees between the designated employee parking area and the work sites. No separate payment will be made for this bus and driver. The cost shall be included in the bid item "Mobilization". The bus driver shall be provided at all times when Contractor employees are working on the Project.

B. System Interruptions:

1. The Contractor shall submit on approved forms through the DIA Project Manager and copy to DIA Maintenance Control any written requests for system interruptions such as fire alarm, HVAC, electrical, water systems or other systems. System interruptions shall not be considered if the interruptions interfere with airport operations or tenant operations. Interruptions or system shut down shall be limited to between the hours of 11:00 p.m. and 5:30 a.m. Baggage system shutdown shall be coordinated with the City Project Manager and shall be limited to times that do not interfere with Airline Operations. Unless otherwise agreed, the maximum shutdown will be between the hours of 12:00 midnight and 4:00 a.m. and in accordance with technical Specifications Section 011400 paragraph 1.4.F. Roadway shutdown times are to be coordinated with Airport Operations, DIA Project Manager prior to submitting a request for approval to shutdown a roadway.
2. The request forms shall be submitted only during the normal work week (Monday through Friday) between 8:00 a.m. and 4:00 p.m.
3. Upon approval of a system shutdown, the Contractor representatives and the individuals performing the Work shall remain at the worksite and shall remain in contact with DIA Maintenance Control until such time as the system is restored to working condition. The requesting party shall assume liability for the system until the system is restored to proper working order.
4. Fire Systems, HVAC, and Plumbing: Submit requests five (5) working days prior to the time of requested interruption.
5. Electrical System Interruptions: Submit requests five (5) working days prior to the time of requested interruption.

C. Airfield Operations at Denver International Airport:

1. Full airport and aircraft operations are underway adjacent to this Project. Contractors are required to obtain a Contractor Participant Manual from the Security Manager and must follow the guidelines in the manual. Copies of the Contractor section of the manual are available for review at the Denver International Airport Access Services Office.
  - a. If any Work contains requirements for Work activities or access through or in the restricted area, reference Section 011420 "Security Requirements & Sensitive Security Information (SSI)" for requirements.
  - b. If not in a restricted area, the Contractor personnel still must be badged; reference Section 011420 "Security Requirements & Sensitive Security Information (SSI)".

D. Conduct of persons using the Denver Municipal Airport system:

1. Contractor activities shall comply with Airport Operations and Regulation 130 "TRAFFIC" and Regulation 20 "CONDUCT OF PERSONS USING THE DENVER MUNICIPAL AIRPORT SYSTEM" shall be followed at all times. These regulations are available from Airport Operations at Denver International Airport.
- E. Operational safety on airports during construction:
1. All Work shall be accomplished in accordance with FAA Advisory Circular AC150/5370-2C, "Operational Safety on Airports During Construction", FAR Part 139 and FAR Part 107 except as herein modified.
- F. Baggage system shutdown and lockout: Prior to and during work in any area that requires access adjacent to, under, or above baggage systems, the Contractor shall coordinate with the City's Project manager and with DIA's baggage system representatives O&M Contractor:
1. Work in these areas shall be limited to between the hours of 12:00 midnight and 4:00 a.m. The Contractor shall schedule and plan activities within these areas during the shutdown to ensure removal of personnel and equipment within the time frame as indicated in this Specifications Section. The Contractor shall not have access to the work areas requiring shutdown and lockout during a limited number of selected blackout days. The Contractor shall coordinate with the DIA Project Manager and DIA representatives to develop detail scheduling on a day-to-day basis.
  2. Scheduling for Shutdown and Lockout: The Contractor shall maintain an on-going one week look-ahead schedule of shutdown/lockout requests including areas identified on plan diagrams. This look-ahead schedule shall be provided daily to the DIA Project Manager and DIA representatives.
  3. Sequence of Shutdown and Lockout:
    - a. Prior to Shutdown and Lockout: Prior to 12:00 midnight, the Contractor's Superintendent and the Contractor's Safety Representative shall meet with baggage system O&M representatives and DIA representatives to review the areas or zones to be inactivated to allow the Contractor to proceed with Work.
      - 1) Baggage Mechanical Systems Lockout. DIA baggage system O&M representatives in conjunction with the Contractor representatives shall install barriers provided by the Contractor on baggage system conveyor or tracks to isolate the zone of the Contractor's work. The barriers are to ensure no baggage system cart intrusion into the area. Protection of equipment and other barriers are to be provided by the Contractor.
      - 2) Baggage Electrical Systems Lockout. A representative from DIA baggage system O&M representative, in conjunction with Contractor representatives, shall place locks on power cabinets supporting baggage equipment for the identified contractor work zone. Each party shall provide a lock.
      - 3) The Contractor may begin work in baggage system zones after the Contractor's Safety Representative has confirmed lockdown and

lockout have been completed. The Contractor shall begin work by first providing covers and protection of baggage system and building systems to preclude damage during the Contractor activities. DIA and/or baggage system O&M representatives prior to the Contractor beginning work shall review all protection systems for acceptance.

- b. System Activation: The system shall be activated at 4:00 a.m. Before 4:00 a.m. the Contractor shall begin clearance and removal of equipment, materials, barriers, and personnel in areas and envelopes of the baggage system. The Contractor shall take all steps to ensure that all baggage systems envelopes are clear of personnel, protective coverings, and equipment prior to 4:00 a.m. The Contractor's safety representative shall contact the baggage system O&M representative and shall inspect areas of work to ensure removal by the Contractor of all personnel, materials and equipment between 3:30 a.m. and 4:00 a.m. At 4:00 a.m. the baggage system will be activated. After this time until the next shift (12:00 midnight), Contractor personnel or equipment shall not be mobilized in the area of the baggage system..

G. Welding Equipment, Procedures and Constraints:

1. Natural gas-powered portable welders or "Powcon Inverter" welders are the only acceptable welding equipment to be used inside of building basement or tunnel areas. Acceptability of equipment other than the equipment noted above shall be at the sole discretion of the DIA Project Manager. If the Contractor proposes other types of inverter welding equipment, testing of equipment for harmonics by the Contractor must be completed prior to the request by the Contractor for use of the equipment.
2. Welding activities inside buildings require submittal of a System Interruption Request (See paragraph 1.03.B of this Specifications Section). Prior to welding in any area, the Contractor shall locate smoke detectors and shall request interruption of the fire alarm system. Subsequent to the interruption of the fire alarm system and prior to welding activities, the Contractor shall cover and protect smoke detectors until work is complete. Prior to expiration of each interruption of the system, the Contractor shall uncover the smoke detectors.
3. Electrical Service: The Contractor shall be responsible for verifying with the DIA Project Manager or representatives locations acceptable for accessing electrical power for welders and other electrical equipment feeders. The Contractor shall be responsible for all work and equipment required to install temporary or permanent electrical modifications for construction power and lighting.
  - a. Temporary Hook-up: Pigtails wired into electrical panels - temporary only: Permanent installation shall require conduit, labeling, and all requirements of all Division 26 Specification Sections. Comply with the following:
    - 1) Provide 20 amp, 3 pole plugs.
    - 2) Wire shall be (4) #10 copper.
    - 3) 480V, 3 phase, 3 pole, 4 wire twist lock ground line.
    - 4) NEMA L16-20 or ANSI C73.87.

- b. The Contractor may not begin operation of the equipment prior to request for inspection by DIA representatives and acceptance of the installation.
  4. Welding Practices: All standard safe welding practices must be followed, including but not limited to the following:
    - a. Flash protection for surrounding areas.
    - b. Contractor fire extinguisher in area.
    - c. One person in each welding area solely designated as fire watch for each welder.
    - d. Protect all equipment, cable trays and contents, etc., in area.
    - e. Use fire blankets and other appropriate materials to confine sparks and molten metal from the welding, cutting, and/or grinding activities.
    - f. All welders shall have been qualified through welding tests in accordance with applicable welding code, such as but not limited to AWS, ASME, API, within one year prior to welding taking place. Evidence of qualification shall be through Welding Performance Qualification Records (WPQR).
    - g. All welder qualifications test shall be or shall have been administered and witnessed by an Independent Testing Agency (ITA), AWS Certified Welding Inspector (CWI).
    - h. If re-certification of welders is required, delay costs and retesting costs shall be borne by the Contractor.
  5. Grounding: Review with DIA representative's area of work prior to beginning work to ensure ground procedures do not induce undesirable charges in steel building system or other systems. This review should take place subsequent to the pre-work meeting. Do not ground to adjacent building systems, baggage system, hangers, or devices that support mechanical or electrical equipment.
- H. Cleaning Equipment and Spoils:
1. Discharge of water, liquids, or chemicals into the building waste, drain systems or storm drainage systems is prohibited. The Contractor shall comply with all Federal, State, and Local requirements for disposal of chemicals. The Contractor shall maintain and service in work areas containers for discharge of water from cleaning of any construction equipment or removal of water from excavations.
- I. Vehicle Permitting for Tunnel and Basement Use:
1. Electric carts require permitting. The Contractor shall provide at least one (1) electric cart for Contractor use during the work in the tunnel and basements of the buildings. Only CNG powered trucks are allowed in the tunnel and basements of the buildings. CNG/gasoline trucks may be used and shall not be parked overnight or for long terms within the tunnel or basements. All vehicles require permitting. Permits may be acquired at the DIA Airport Security Office.
- J. Radio and Cell Phone Use:
1. The Contractor shall have in place prior to initiation of work in the tunnel or



basements communications equipment either by use of cell phone and or radio. Cell phone use is limited to "line of sight" communication. Radio equipment shall be submitted to DIA for approval of use at least 14 days prior to intended use. Radio equipment frequencies shall be submitted. Frequencies shall be subject to DIA approval.

K. Keys:

1. The Contractor shall be required to contact DIA Maintenance Control to procure keys for access to all rooms having locks in order to gain access. Keys may be checked out at the beginning of each work shift by the Contractor and shall be returned to DIA Maintenance Control at the end of each work shift.

1.5 COORDINATION

- A. The Contractor will designate a contact person for coordination with the DIA Project Manager and airline tenants. The contact person shall have the authority to make decisions for the Contractor firm and shall have binding signatory power for changes in work. The contact person shall be on site at all times during work activity.
- B. No additional costs shall be considered for coordination activities throughout this project. The Contractor shall include in the Contractor's bid costs for coordination of all activities.

1.6 LATE COMPLETION

- A. The Contractor will notify the DIA Project Manager as soon as possible, but in no case not less than four (4) weeks in advance, of the inability to meet any of the constraints or milestones. Notification shall be consistent with the requirements of Article 5, General Conditions.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

3.1 DUST/PROTECTION BARRIERS

- A. Prior to any demolition, the Contractor shall construct area containment doors and dust barriers at five (5) feet outside the limits of demolition of the wall and as directed by the DIA Project Manager. Dust barrier at wall demolition shall be constructed of metal studs with 1/2" painted gypsum board from floor to ceiling. At a minimum, any space containing electrical or telecommunications equipment will require dust barriers for the entire space during demolition and construction. Contractor shall install all required modifications to exit/egress signage until temporary barriers are removed. Contractor shall coordinate location of partition with Fire Sprinkler Contractor to ensure adequate sprinkler coverage during construction. Temporary barriers shall be removed only

after completion of the work scope within the areas including final punch list activities. Areas between ceilings and structure above shall be contained to prevent migration of any dust into adjacent areas.

- B. HVAC system containment. The Contractor shall submit to DIA Maintenance HVAC and Fire Alarm shut down requests prior to modifications to the area of work for dust containment. The HVAC system shall be interrupted, re-routed, or blocked off to prevent dust from entering return or supply ducts.
- C. Debris and Protection Barriers: The Contractor shall construct code-approved and DIA-approved dust and debris barriers on both sides of walls and doors that are to be modified. Barriers shall be constructed to allow emergency ingress and egress to and from equipment and spaces. Barriers shall be constructed to allow continual uninterrupted function of building equipment and spaces.
  - 1. Return all removed door hardware to DIA. Label each hardware set correlating the door number of the original hardware set. Coordinate with the DIA Project Manager for storage and return of hardware.

### 3.2 EQUIPMENT

- A. Equipment: CNG-powered equipment is allowed within the buildings. No other fossil fuel equipment may be used within the buildings unless the equipment is directly vented to the building exterior.
- B. Electric: Electric powered equipment is acceptable in the Work area.

## PART 4 - MEASUREMENT

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## PART 5 - PAYMENT

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

## END OF SECTION 011400

## **SECTION 011420 - SECURITY REQUIREMENTS & SENSITIVE SECURITY INFORMATION (SSI)**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 DESCRIPTION**

- A. Each Contractor is required to become a "Participant" in the DEN Airport Security Program (ASP), and must remain in good standing in order to retain Airport Security privileges.
- B. All Contractor employees and all vehicles requiring access to the Secured Area, Sterile Area, and/or any other Controlled Areas shall be required to obtain the proper access authorizations for airport ID badges and vehicle permits.

#### **1.3 PARTICIPANT OF AIRPORT SECURITY PROGRAM**

- A. Contractors are required to become a "Participant" of the ASP. In order to become a "Participant", your company must attend a Participant meeting within the Airport Security Office.
- B. The Contractor shall comply with all Denver Municipal Airport System Rules and Regulations and all Transportation Security Administration (TSA) regulations. Special emphasis should be paid to Denver Municipal Airport System Rules and Regulations Part 20 "AIRPORT SECURITY" and Part 130 "OPERATING VEHICLES IN THE SECURED AREA" and Part 35 "Infraction Accountability Program". The Denver Municipal Airport System Rules and Regulations can be found on the flydenver.com website
- C. The TSA has the authority to issue civil penalties for failure to adhere to their regulations.
- D. It is the responsibility of the Airport Security Office to ensure all fences and gates are secure. If a Contractor's operations necessitate the frequent use of a particular gate, the Contractor shall place two (2) contract security guards at the gate that shall have been trained and certified by the Airport Operations Division to facilitate access to its Work. The Contractor assumes full responsibility for maintaining security once this is done. If the perimeter gate will be used as a haul route, the contractor must also place Haul Route Monitors as dictated by the TSA approved Temporary Amendment

or Changed Condition. Any fines levied against the Airport as a result of the failure by the Contractor to provide adequate security shall be passed on to the Contractor.

- E. Contractors will be required at all times to have a supervisor or foreman at each work location in both Secured and Non-Secured Areas.
- F. All Work shall be accomplished in accordance with FAA Advisory Circular AC150/5370-2E, "Operational Safety on Airports During Construction", 49 CFR Part 1542 and 14 CFR Part 139 except as modified herein.
- G. This Section intends to supplement, modify, change, delete from or add to FAA AC150/5370-2E. Where any paragraph, subparagraph or clause of the Advisory Circular is modified or deleted by these supplements, the unaltered provisions of that paragraph, subparagraph or clause shall remain in effect.

#### 1.4 SENSITIVE SECURITY INFORMATION (SSI)

- A. If the Contract involves SSI information or procedures, the Contractor must contact the Assistant Director of Airport Security or designee, for disclosure information, as well as protocols that must be followed with SSI distribution.
- B. This Section governs the maintenance, safeguarding and disclosure of records and information that the Transportation Security Administration (TSA) has determined to be Sensitive Security Information (SSI) as defined by 49 CFR Part 1520, "Protection of Sensitive Security Information". SSI is information that the TSA has determined to be detrimental to the security of Denver International Airport if disclosed to unauthorized persons. This is a process for the documentation, use and recovery of Sensitive Security Information (SSI) of a specific origin.
- C. Applicability:
  - 1. For all management staff, all authorized departments, all contractors and subcontractors handling documents or materials containing SSI information.
  - 2. Each person employed by, contracted to, or acting on behalf of the Department of Aviation at Denver International Airport is subject to the requirements of this Section.
  - 3. SSI disclosure is limited to persons or entities under criteria identified in federal regulations, subject to strict "need-to-know" standard, and as otherwise determined by TSA or the Department of Homeland Security (DHS).
- D. Except as otherwise provided in this Section, records containing SSI are not available for public inspection or copying. Denver International Airport will not release such records to persons without a need to know. Prime contractors will not release SSI records to any subcontractor without a need to know. An employee or contractor has a "need to know" SSI if access to the information is necessary for performance of his or her official duties.
- E. Unauthorized disclosure of SSI is a Federal violation of 49 CFR Part 1520 and violation is grounds for a civil penalty and other enforcement action by the Department

of Homeland Security. In addition to the civil penalties, corrective action may include issuance of an order requiring retrieval of SSI to remedy unauthorized disclosure, an order to cease future unauthorized disclosure, and dismissal from the work site.

- F. Except as otherwise provided in writing by the TSA in the interest of public safety or airport security, the following information and records containing such information constitute SSI:
1. Information that would be detrimental to the security of Denver International Airport and aviation transportation.
  2. Any performance specification, including a description of devices and procedures used by Denver International Airport, for the detection of any weapon, explosive, incendiary, or destructive substance.
  3. Any performance specification, including a description of devices and procedures, for any communications equipment used by Denver International Airport in carrying out any aviation transportation security requirements.
  4. Details of any security inspection or investigation of an alleged violation of aviation transportation security requirements of Federal law that could reveal security vulnerability.
  5. Specific details of aviation transportation security measures including those recommended by the Federal government.
  6. The following information regarding security screening under aviation transportation security requirements of Federal law:
    - a. Procedures for screening of persons, property, checked baggage, U.S. mail and cargo.
    - b. Information used by a passenger or property screening program or system, including an automated screening system.
    - c. Detailed information, if determined by the TSA to be SSI, about the locations at which particular screening methods or equipment are used.
    - d. Performance or test data from security equipment or screening systems.
  7. Identifying information of certain aviation transportation security personnel including lists of the names or other identifying information that identify persons as having unescorted access to a secure area of the airport.
  8. Critical aviation asset information identifying systems so vital to the airport that the incapacity or destruction of such assets would have a debilitating impact on aviation security.
  9. Any information involving the security of operational or administrative data systems identified by the Department of Transportation or Department of Homeland Security as critical to the safety or security of Denver International Airport.
  10. Solicited or unsolicited proposals, pursuant to a grant or contract, to perform work that relates to security measures.
- G. Restrictions on the Disclosure of SSI:
1. Employees and contractors working onsite have a duty to protect sensitive security information and must take reasonable steps to safeguard SSI in that

- person's possession from unauthorized disclosure. When a person is not in physical possession of SSI, the person must store it in a secure container such as a locked desk, a locked file cabinet, or in a locked room. SSI is to be disclosed only to persons having a need to know as stated in CFR 1520. Requests for SSI are to be referred to City Project Manager.
2. Prior to receiving SSI records, contractors must sign the "Confidentiality and Non-Disclosure Agreement", Form PS-17, stating that SSI will be guarded from unauthorized persons, that records will be controlled while in use and secured when not in use, and that all SSI plans and records will be returned to the airport or destroyed following the completion of the Project.
  3. Return or destruction of SSI documents must be done in a timely manner and documented on the SSI Return or Destruction Compliance Form, Form PS-20. Companies under contract to the City must return or destroy all SSI material following the completion of the Work. Companies not selected during the bidding process must return or destroy all SSI material immediately following the announcement of bid results.
- H. If a record containing SSI is received that is not marked as specified in this Section below, the following steps must be taken:
1. Mark the record as specified in paragraph Part 1 of this Section.
  2. Inform the sender of the record that the record must be marked as specified in Part 1 of this Section.
- I. If a person becomes aware that SSI has been released to unauthorized persons, promptly inform the Airport Security Coordinator available 24/7 through the Communication Center Supervisor at 303-342-4020 and request to speak to the on-call Airport Security Coordinator.
- J. Marking SSI:
1. Paper records containing SSI must have the protective marking conspicuously placed on the top of the document, and the distribution limitation statement on the bottom of the document.
    - a. Protective Marking: The protective marking is:

**SENSITIVE SECURITY INFORMATION**

- b. Distribution Limitation Statement. The distribution limitation statement is:

**WARNING:** This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action.

For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR

parts 15 and 1520.

2. Non-paper records that contain SSI must have the protective marking and the distribution limitation statement clearly and conspicuously marked such that the viewer or listener is reasonably likely to see them when obtaining access to the contents of the record. Non-paper records may include motion picture files, videotape recordings, audio recordings, and electronic and magnetic records.

K. Destruction of SSI:

1. When the employee or contractor no longer needs the SSI to carry out their work requirements, the SSI must be returned to the issuing entity or completely destroyed by burning or cross-shredding to preclude recognition or reconstruction of the information.
2. The Contractor shall comply with all the requirements of the Department of Aviation Standards and Procedures No. 6003 Issued 03/30/05 and revised 04/04/2011 regarding Contractor Protection of Sensitive Security Information (SSI), Submitted By: Airport Operations Division.

1.5 MISCELLANEOUS

A. Dumpster Security Requirements:

1. The following procedures must be followed to provide maximum security with all construction projects in public areas unless an exception has been made by the Airport Security Coordinator (ASC) or designee:
  - a. Roll-off dumpsters must have the ability to be covered (hard side) and locked when not in use.
  - b. When unlocked and in use, the Contractor shall provide an employee, or a subcontractor's employee, to stand by the dumpster to prevent unauthorized placement of prohibited items
2. If the Contractor is not able to have a roll-off dumpster with the ability to be locked, the dumpster shall be removed from the public area when the construction site is inactive.

B. Contractor Fences (Not Perimeter Fence):

1. If required, the Contractor shall establish and maintain a secure (fenced) perimeter at its primary operations area to include its field offices, staging and storage areas, and maintenance facilities. The responsibility for security within its operations area shall rest solely with the Contractor. Entrance gates to operations areas shall be equipped with a combination of locks to include a lock provided by the City for its use in accessing emergency equipment, should that need arise. The location, size and other physical characteristics of the Contractor's operations area must be approved by the DIA Project Manager prior to its installation.
2. Unless specifically required by the Contract Documents and with the exception of

the fenced operations area described above, the Contractor shall install no fences or other physical obstructions on or around the Project work area without the written approval of the DIA Project Manager.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 SUBMITTAL FOR BADGES**

- A. By submitting information for the individual requesting or requiring an Airport ID badge that would permit unescorted access to the Sterile and/or Secured Areas must be fingerprinted and pass a Criminal History Records Check (CHRC) and Security Threat Assessment (STA). Passing a CHRC means the employee shall not have been convicted, given a deferred sentence, found not guilty by reason of insanity or have been arrested and are awaiting judicial proceedings of any felony charge during the ten (10) years before the date of the individual's application for unescorted access authority. For an individual to obtain driver authorization to drive within the Secured Area, the individual must have a valid driver license that allows them to drive their contractor vehicle.
- B. An employee requesting an Airport ID Badge must resolve all pending or valid violations before being allowed to proceed in the airport ID badging process. If the employee no longer works for the company and is attempting to be employed by a different company, a management representative from the "new" company must attend the Violation Notice Hearing along with the employee.
- C. Airport ID Badges are obtained as follows:
  - 1. The Contractor shall meet with the City Project Manager to review the procedures and required access points at DIA. The Contractor and the DIA Project Manager shall visit the site to verify the access points. Access points shall be listed and submitted by the Contractor to the DIA Project Manager for review and comment prior to Contractor's application for badging.
  - 2. The Contractor shall designate an Authorized Signatory who must attend an annual class with Airport Security. The Authorized Signatory must be an employee of the Contractor, have a valid Denver International Airport ID badge. The Authorized Signatory will be authorized to sign for the Contractor on the Fingerprinting and Badge Application Form and will be the primary designation contact for Airport Security related business.
  - 3. The Contractor's Authorized Signatory shall schedule a Participant Meeting with the DIA Airport Security Office to review DEN security procedures. A second meeting will be scheduled for the Authorized Signatory to learn how to successfully complete the required forms for employee badges and vehicle permits.
  - 4. A CHRC and STA are required for each employee requesting unescorted access to the Secure and/or Sterile Area. The employee will complete the



- Fingerprinting and Badge Application (two-sided form) and schedule an appointment with the Airport Security Office to have the form reviewed and to be fingerprinted. The Federal Bureau of Investigation will conduct the CHRC and will return the results to the Airport Security Office. For the fee for the Fingerprinting please see the flydenver.com website. The Transportation Security Administration will process the STA and will return the results to the Airport Security Office.
5. When the Authorized Signatory is notified by Airport Security that the CHRC and STA has cleared, the applicants must come to the Airport Security Office, to schedule an appointment to come to the Airport Security Office to receive regulated security and driver training. The training will take approximately one (1) hour for security training and approximately two (2) hours for security and driver training.
  6. All applicants must watch and pass all concepts of a computer based security training module for a SIDA Airport ID badge. All individuals requesting driver authorization in the non-movement area must also view an interactive computer based driver training module and complete a test by passing all concepts. In addition the individual must receive non movement driver orientation training by the Contractor's driver representative before being allowed to drive on the airfield. Non Movement Orientation training should be conducted annually.
  7. The Airport ID badges must be returned to the Airport Security Office prior to final payment. All Airport ID badges are issued with an annual expiration date. The expiration date is determined by the birthday of the airport ID badge holder. Contractors shall notify the DIA Project Manager as soon as possible but in no case less than four (4) weeks in advance of any requirement to extend the Sponsorship status.

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

## **END OF SECTION 011420**

## SECTION 011430 - VEHICLE AND EQUIPMENT PERMITTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The Contractor shall comply with the Airport Security Plan. Vehicle permits are required for all vehicles operating in the Secured Area. The DIA vehicle permit is required for vehicles operating in the Secured Area but limited to above grade, outdoor activity. Vehicles or machinery operating within buildings shall be required to acquire a DIA emissions permit as well as a DIA vehicle permit.
- B. Contractors performing work in or through Secured Areas are required to obtain a Contractor Participant Manual from the Security Manager and must follow the guidelines in the manual. Copies of the Contractor section of the Manual are available for review at the Denver International Airport Operations Office. Contractors shall comply with the DIA Rules and Regulations.
  - 1. Airport Operations Regulations Part 20 "Security" and Part 130 "Operating Vehicles in the Secured Area" shall be followed. These regulations are available on the flydenver.com website.
  - 2. All work shall be accomplished in accordance with FAA Advisory Circular AC150/5370-2C, "Operational Safety on Airports During Construction", 49 CFR Part 1542 and 14 CFR Part 139, except as herein modified.
  - 3. The following paragraphs of this Section supplement, modify, change, delete from or add to FAA AC150/5370-2C. Where any paragraph, subparagraph or clause of the FAA AC is modified or deleted by these supplements, the unaltered provisions of that paragraph, subparagraph or clause shall remain in effect.
  - 4. Special care shall be exercised by the Contractor when operating within clear zones, under approach and departure zones of runways and in the apron area. The clearance zones shall be considered as extending to a distance of 750 feet laterally from the centerline of runways and to a distance of 193 feet laterally from the centerline of taxiways. Where these zones overlap, the greater distance shall apply. Vertical clearance in the approach and departure zones shall be considered as starting at grade 200 feet beyond the ends of runways and rising at the rate of 50 feet horizontal to one foot vertical.
  - 5. When Work under this Contract will take place in the areas listed above, the Contractor must have a radio for communications with Airport Operations. The radio will be assigned after receipt of a **\$2,000** deposit. The radio must be with personnel performing work in the airfield operations areas.
  - 6. Access to the runways, taxiways and aprons shall be gained by the Contractor

- after establishing radio communications with Airport Operations. No personnel or equipment will be allowed on the runways until radio contact has been made with Airport Operations and permission given.
7. Access to the Air Operations Area (AOA) will be limited in order to allow the maximum efficient movement of aircraft. As part of this limitation, the Contractor may be required to only use these areas late at night when there is less aircraft traffic.
  8. Once admitted into the Secured Area, the Contractor shall proceed directly to the work location by way of a route assigned by Airport Security. At no time shall a Contractor or any of its personnel enter onto a taxiway, runway or ramp without proper clearance from the Airport Operations Manager or Assistant Airport Operations Manager. Contractors or individuals violating these requirements for driving in the Secured Area may be subject to fines, suspension or permanent revocation of their driver authorization and/or Airport ID badge privileges.
  9. The Transportation Security Administration (TSA) requires that all operating airports be secured from the general public and has the authority to issue citations for violations of these requirements. It is the responsibility of the Airport to ensure all fences and gates are secure. If a Contractor's operations necessitate the frequent use of a particular gate, the Contractor shall place a guard at the gate, which shall be trained and certified by the Airport Operations, to facilitate access to its work. The Contractor assumes full responsibility for maintaining security once this is done. Any fines levied against the Airport as a result of the failure by the Contractor to provide adequate security shall be passed on to the Contractor. A more detailed explanation of security requirements is in the Contractor Participant Manual which is available from Airport Operations.
  10. Cranes and Construction Equipment: The Contractor shall provide the necessary drawings and specifications to indicate all information needed by the FAA and the City including but not limited to the location of construction activities and height of objects including cranes, construction equipment and vehicles. Drawings shall be scaleable site plans indicating northing and easting of proposed equipment locations, air space northing and easting of activity and elevations of equipment based on DIA datum. Specifications shall include standard sheets on equipment specifications and any non-standard modifications to the equipment.
  11. The above information shall be submitted to the DIA Project Manager for approval five (5) days prior to mobilization. Changes to information submitted shall be re-submitted for approval at least five (5) days prior to mobilization of any change.
  12. If required by DIA, standard DIA-approved warning lights and flagging will be required on any temporary equipment or structures.
  13. Lighting of the work area is subject to approval by DIA Operations and DIA Planning and Development. The Contractor shall include in paragraph 10 above all information on any site lighting proposed by the Contractor. The locations, heights and types of luminaries shall be submitted. The Contractor shall conduct the Contractor's activities, especially lighting, so as not to interfere with Airport and FAA operations.

C. General Safety Regulations When in Aircraft Operations Areas May Include the Following:

1. At all times, the Contractor shall coordinate its Work with the requirements of the Airport site and operations. All Work, movement of personnel, materials, supplies and equipment in areas used by aircraft shall be subject to regulations and restrictions established by the City. The Contractor shall take special precautions and be fully responsible for the prevention of damage to materials and equipment in the areas affected by the jet blast of taxiing aircraft. No work shall proceed until necessary protective devices are placed as required to protect the public, airport operations, property and personnel from the hazards of the Work. The Contractor shall proceed with the Contractor's Work, including temporary work and storage of tools, machinery and materials, to cause no interference with or hazards to the operation of the Airport.
2. Landings, takeoffs and taxiing shall take precedence over all Contractors' operations. In the event that the Contractor is notified that an emergency landing or a takeoff is imminent, the Contractor shall stop all operations immediately, regardless of the sequence of events in progress and shall immediately evacuate the Contractor's personnel and equipment from the runway and taxiway areas as directed.
3. The Contractor shall remove its personnel and equipment to the distance specified below for the prevailing conditions:
  - a. For emergencies the Contractor shall move all personnel and equipment as directed by Airport Operations or the DIA Project Manager.
  - b. At the end of a work day in areas where aircraft are operating, all equipment shall be moved to a location that is not less than 750 lineal feet measured from the near edge of the runway, taxiway or ramp area or to the location designated by the City.
4. If the Contractor is asked to leave part of its work site to allow aircraft operation, the Contractor shall clean the area to allow safe aircraft movement. Cleaning may include sweeping the area to prevent damage to aircraft.

D. Vehicle Permitting:

1. The Contractor shall obtain access to the secured area only when the vehicle plays a Contractor permit and the driver has an Airport ID badge with a driver authorization. Vehicle permits may be obtained as follows:
  - a. A Vehicle Permit Application must be filled out by an Authorized Signatory. All vehicle permit applications must be submitted to Airport Security to obtain the vehicle permit.
  - b. All vehicles that are not permitted to drive in the Secured Area are required to be escorted. All vehicles driving unescorted within the Secured Area, on the airfield, must have \$10,000,000 combined single limited coverage insurance. All vehicles that drive in the Secured Area service tunnels must operate on either electric or Compressed Natural Gas (CNG), and must have \$1,000,000 combined single limited coverage insurance.
  - c. Contractor permits are issued with the expiration date that corresponds with the Company badge expiration date.
  - d. The Contractor must have a four-inch letter company logo on each side of the vehicle, or the Contractor shall obtain an orange and white checkered

flag. The cost of the flag is \$25.00, and may be obtained at the Airport Security Badging Office. All vehicles operating in the Secured Area must display the logo or the flag at all times.

E. Equipment Permitting

1. Fossil fuel powered equipment to be used in the interior of buildings and/or in basement/tunnel areas shall require inspection by DIA Maintenance and the Denver Fire Department.
  - a. Only CNG fossil fuel powered equipment may be used; gasoline powered, propane powered, or diesel powered equipment will not be acceptable unless identified and operated per Section 011400 "Work Sequence and Constraints".

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

3.1 PERMITS

- A. Vehicle permits shall not be issued prior to Notice to Proceed. The Contractor may, at the Contractor's own risk, submit required information prior to Notice to Proceed to the following:
1. Vehicle permit: DIA Engineering Group or DIA Airport Security.
  2. Equipment and vehicle emissions permit: DIA Engineering or DIA Maintenance Group.

3.2 SCHEDULE

- A. The Contractor shall allow in the Contractor's schedule five (5) days for DIA review of submittals for permits. Testing of equipment and review by the Denver Fire Department shall be scheduled by the Contractor. By submitting information for permits, the Contractor certifies that equipment and vehicles comply with Contract documents and with all City, state and federal regulations including but not limited to emissions, licensing and safety requirements.

**PART 4 - MEASUREMENT**

4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order, or lump sum bid item. All permits shall be returned to the City prior to the Contractor submittal for Final Settlement, Termination, and/or upon written request from the DIA Project Manager.

**END OF SECTION 011430**

## SECTION 011810 - UTILITIES INTERFACE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Various utilities are located within the limits of work in the Project area. The owners of these utilities hereinafter noted may require that the Contractor is to work around their existing facilities until such alterations, relocation or abandonment have been completed. All known existing utilities are shown; however, the Contractor shall verify and satisfy himself that there are no other existing utilities that may not be shown.

- B. The owners of known utilities within the project area and corresponding representatives are:

Century Link Telephone	Susan Jensen	303-391-8373
DIA Telephone	Pat McFadden	303-342-2200
Xcel Energy Natural Gas	Joanna Gomez	303-375-3516
Xcel Energy Elec. Services	Joanna Gomez	303-375-3509
DIA Storm Water	Glen Frieler	303-342-3057
DIA Sanitary Sewer	Glen Frieler	303-342-3057
Denver Water Department	John Bambei	303-628-6669
Inland Technologies	Brian Stierman	303-342-6811
Fuel System (ASI)	Gil Patron	303-342-3552
Premise Wiring System-	Kelan Pape	303-342-2200
DIA IT Section		
FAA Duct Bank	Rick Silva	303-342-1405
Oil/Gas Wells	Julie Brant	303-513-6169
DIA Electrical Department	Pat Kelly/Tai Lai	303-342-2800
Fire Alarm System	Pat Kelly/Tai Lai	303-342-2800
Paging System	Pat Kelly/Tai Lai	303-342-2800

- C. The location and establishment of each construction vehicle crossing shall be at sites mutually agreed upon in writing by the Contractor and the owner of the utility.
- D. At the locations where the Contractor needs to establish a construction vehicle crossing over any of the operating pipelines, the furnishing and placing of a crossing shall be by the Contractor. The crossing shall allow the normal operation of the pipeline at all times. Each crossing shall be adequately marked and signed for safe

passage of vehicles over the crossing. Construction vehicles shall not be allowed to cross over operating pipelines at any place other than an established crossing. The maximum size of any vehicle crossing operating pipelines at any location in the project area shall be limited to no larger than a Caterpillar D6 bulldozer unless noted otherwise.

- E. Coordinates for known utilities located within the project area may be available at the Denver International Airport Office. These utilities locations are based upon information provided by the utility companies or previous construction contractors that were the basis for determining utility coordinates. The City does not warrant their accuracy.
- F. The Contractor shall control the Contractor's operations in order to avoid creating any obstacles for the utility owner's access for maintaining or operating their equipment.

### 1.3 REGULATORY REQUIREMENTS

- A. The Contractor shall obtain and pay for all utility company permits, fees, and licenses necessary for the execution of this work. The Contractor shall give all notices and shall comply with all laws, ordinances, rules and regulations of all authorities having jurisdiction.

### 1.4 QUALITY CONTROL

- A. When the Contractor performs any operations that will impact a utility owner, the Contractor will give timely notice to the utility owner the DIA Project Manager so that the Contractor's operations may be observed by the utility owner's representative at the discretion of the utility owner's representative and the DIA Project Manager's representative.

### 1.5 WORK INCLUDED

- A. The Work of this Section includes furnishing all materials, equipment and labor necessary to provide utility crossings as required and as specified herein and subject to approval by the associated utility owner.
- B. North American Resources requires a minimum of twelve (12) feet of total cover over their pipelines at each crossing. This required cover is to extend a minimum distance of five (5) feet perpendicular on both sides of the pipeline, then slope away from the pipeline at a slope determined by the Contractor as sufficient for the Contractor's vehicles. The top 12 inches of the cover overall shall be Colorado Department of Highways Class 6 road base.
- C. FAA Underground Duct lines: The FAA has duct lines passing under the site. The Contractor shall contact the FAA prior to beginning earthwork operations to ascertain any special requirements or conditions required to maintain this service during construction activities.



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## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Suitable cover material shall be in accordance with Colorado Department of Highways Standard Specifications. Wet, soft or frozen material, asphalt chunks, or other deleterious substances shall not be used for cover.
- B. Aggregate for road base material shall consist of clean, sound and durable particles of crushed stone, crushed gravel or crushed slag, shall be free from coatings of clay, silt and organic matter, and shall contain no clay balls. Material shall conform to the State of Colorado Standard Specifications for Road and Bridge Construction Class 6 aggregate base.
- C. The materials for the load distribution system on top of the cover shall conform to the specification of the American Institute of Steel Construction, the American Institute of Timber Construction, or the American Concrete Institute, as applicable, depending upon the system agreed upon between the Contractor and utility owner.
- D. Materials for the sleeving of the pipelines shall be purchased by the utility owner at the Contractor's expense.
- E. Comply with utility backfill requirements for the use of flowable backfill in Section 312323.33 "Flowable Backfill (Controlled Low-Strength Material)" and Division 26 and Division 33 requirements.

## **PART 3 - EXECUTION**

### **3.1 NOTIFICATION OF UTILITIES FOR LOCATING AND POTHOLING**

- A. The Contractor shall verify the location of all utilities prior to any operations including physically uncovering the utility to verify location as required by the utility owner or the DIA Project Manager and shall be solely responsible for protection of the utilities during construction. Only manual labor shall be used within five (5) feet of the suspected location of a utility to uncover it. The Contractor shall obtain written permission from each utility owner before constructing crossings or crossing pipelines in service, and provide the DIA Project Manager with a copy of the permission 48 hours prior to commencement of crossing work.
- B. A minimum of three (3) days notice by the Contractor shall be given to the utilities for locating and potholing their lines as needed.
- C. The Contractor shall notify the Utility Notification Center of Colorado at (303) 534-6700, as a minimum for location of utilities.
- D. In the event that the Contractor needs to conduct Contractor's operations which will affect an operating utility, the Contractor shall be required to sign a "hold-harmless" agreement with the owner of the utility prior to the Contractor conducting any

operations affecting the utility.

### 3.2 TRENCHING AND SLEEVING

- A. All trenching, excavation, sleeving and shoring needed to cross over or under a utility shall be performed in the manner required by the party owning the utility and in such a manner as to ensure no dislocation of the existing utility. The method used to cross under the utility shall ensure it is fully supported at all times. The Contractor shall accurately locate and record the position of a utility being crossed as soon as it is uncovered and again prior to covering it and report to the DIA Project Manager any change in location greater than 0.5 inch. The crossing shall be protected so that water or construction equipment will not dislocate or undermine unsupported sections of the utilities.

### 3.3 COVER AND COMPACTION

- A. Backfilling of trenches or adding additional cover shall be conducted at all times in a manner that will prevent damage to the pipe. If the excavated material is not suitable for backfill and cover, as determined by the DIA Project Manager, unsuitable material shall be hauled away and disposed of properly. The owner of the utility will observe at all times the installation of the backfill and cover. Backfill and cover shall be the placement of suitable materials in horizontal, uniform layers and brought up uniformly on the sides and over the pipelines.
- B. The thickness of each layer of backfill shall not exceed eight inches before being compacted to 95 percent relative compaction per ASTM D-698 or to the density required by the utility owner and tested for density by the Contractor.
- C. Comply with utility backfill requirements for the use of flowable backfill in Section 312323.33 "Flowable Backfill (Controlled Low-Strength Material)" and Division 26 and Division 33 requirements.

### 3.4 ROAD BASE COMPACTION

- A. If the required compacted depth of the road base exceeds eight inches, it shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any layer shall not exceed eight (8) inches before being compacted to 95 percent relative compaction per ASTM D-698 or to the density required by the utility owner.

### 3.5 REMOVAL

- A. All temporary crossings shall be removed after completion of the Work.

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable multiplier work request bid item.

**END OF SECTION 011810**

## SECTION 012025 - MEASUREMENT FOR PAYMENT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section covers the requirements for measurement of quantities for payment as they apply to this Contract.
- B. Measurement methods specified in the individual Sections of these specifications shall govern if they differ from methods specified in this Section.
- C. The Contractor will compute all final quantities subject to review and acceptance by the DIA Project Manager. Where necessary, such computations will be based upon surveys performed by the Contractor as specified in Section 013223 "Construction Layout, As-Built and Quantity Surveys.

#### 1.3 MEASUREMENT OF QUANTITIES

- A. Measurement Standards:
  - 1. All Work to be paid for at a Contract price per unit of measurement will be measured by the Contractor in accordance with United States Standard Measures.
  - 2. Measurements are subject to check and review by the DIA Project Manager. If errors are found the Contractor shall correct them. If, in the opinion of the DIA Project Manager, the errors are significant or frequent enough, the DIA Project Manager may make the measurements with the DIA Project Manager's own forces at the Contractor's expense. No payment will be made on that portion of an item containing measurement or calculation errors until the errors are corrected to the satisfaction of the DIA Project Manager.
- B. Measurement by Weight:
  - 1. Items to be paid for by weight shall be measured by scale or by handbook weights for the type and quantity of material actually furnished and used. One ton shall consist of 2,000 pounds. Handbook weights will only be allowed if there is one-half of one percent or less difference between the handbook weight and the allowable deviation per manufacturer's specification of a material's finish weight.

2. Material to be measured and paid for by weight shall be weighed on accurate, approved scales, furnished by and at the expense of the Contractor. Platform scales of sufficient size and capacity shall be used to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed. All scales shall be inspected and certified as often as the DIA Project Manager may deem necessary to ascertain accuracy. Costs incurred as a result of regulating, adjusting, testing, inspecting and certifying scales shall be borne by the Contractor.
  - a. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected and maintained by the Contractor or be certified, permanently installed commercial scales.
  - b. Scales shall be accurate to within one-half of one percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the DIA Project Manager before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of one percent of the nominal rated capacity of the scale, but not less than one pound. The use of spring balances will not be permitted.
  - c. Beams, dials, platforms and other scale equipment shall be so arranged that the operator and the City's inspector can safely and conveniently view them.
  - d. Scale installations shall have suitable weights or devices available for testing the weighing equipment.
  - e. Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level.
  - f. Scales "overweighing" (indicating more than correct weight) will not be permitted to operate and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of one percent.
  - g. In the event inspection reveals the scales have been "underweighing" (indicating less than correct weight), they shall be adjusted and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.
3. The DIA Project Manager may be present to witness the weighing and to check and compile the daily record of such scale weights. However, in any case, the DIA Project Manager will require that the Contractor furnish weigh slips and daily summary weigh sheets. In such cases, a duplicate weigh slip or load slip for each vehicle weighed shall be furnished to the DIA Project Manager at the point of delivery of the material.
  - a. As a minimum, the weigh slips shall contain the following information:
    - 1) Contractor's name and contract number.
    - 2) Supplier's name and location of material source.
    - 3) Type of material.

- 4) Haul unit's unique identification number.
  - 5) Empty weight (this should be checked three (3) times per day).
  - 6) Full weight.
  - 7) Weight of material hauled.
  - 8) Scale operator's signature stating the weights are correct to within one percent of standard weights.
- b. The loads shall be weighed prior to water being added.
4. If the material is shipped by rail, the certified car weights will be accepted provided that only actual weight of material will be paid for and not minimum car weight used for assessing freight tariff. Car weights will not be acceptable for material to be passed through mixing plants or material off loaded from rail cars and hauled to the jobsite by trucks from rail cars located off the work site.
  5. Trucks used to haul material being paid for by weight shall be weighed empty daily and at such additional times as the DIA Project Manager may require. Each truck shall bear a plainly legible identification mark. The DIA Project Manager may require the weight of the material verified by weighing empty and loaded trucks on such other scales as the DIA Project Manager may designate.
  6. When requested by the Contractor and approved by the DIA Project Manager in writing, material specified to be measured by the cubic yard may be weighed and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the DIA Project Manager and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.
  7. The Contractor shall comply with all legal load restrictions in the hauling of equipment or materials on public roads beyond the limits of the project. A special permit will not relieve the Contractor of liability for damage resulting from the moving of equipment or material.
    - a. The operation of equipment or hauling loads that cause damage to structures, the roadway or any other construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited by the Contractor to methods and equipment that will prevent damage to the pavement structure before the expiration of the curing periods. The Contractor shall be responsible for the repair of all damage and related expenses resulting from hauling equipment and construction operations.
    - b. If a vehicle's gross weight exceeds the legal limit, and the material transported by the vehicle is delivered to the project, the material and the scale ticket (certificate of correct weight) will not be accepted, except a 500 pounds tolerance will be allowed for overweight loads.
    - c. If a scale ticket from an overweight vehicle is inadvertently accepted and the material incorporated into the project, the DIA Project Manager will adjust the price for the overweight load as follows:
      - 1) The pay item quantity represented by the amount of material in excess of the legal weight plus 500 pounds tolerance will not be paid for.
      - 2) A price reduction will be assessed for the overweight portion of the

load based on the following schedule:

Overweight (pounds):	Price Reduction (\$ dollars):
0 - 500	0
501 - 3,000	20
3,001 - 4,000	40
4,001 - 5,000	82
5,001 - 6,000	130
6,001 - 7,000	226
7,001 - 8,000	376
8,001 - 9,000	582
9,001 - 10,000	842
Over 10,000	870 plus \$164 for each 1,000 lbs., or fraction thereof, or 10,000 lbs.

8. Bituminous materials will be measured by the gallon or ton. Unless noted otherwise volume will be measured at 60 degrees Fahrenheit or will be corrected to the volume at 60 degrees Fahrenheit using ASTM D 1250 for asphalt or ASTM D 633 for tars. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the Work. When bituminous materials are shipped by truck or transport, net certified weights or volume subject to correction for loss or foaming will be used for computing quantities.

C. Measurement by Volumes

1. Measurement by in-place volume will be by the cubic dimension listed or indicated in the Schedule of Prices and Quantities. Volume measurements will be neat line as shown on Contract Documents, or if actual field measurements show that the volume is less than neat line, the actual volume will be used. Method of volume measurement shall be by average end area method, with end areas taken at no greater than 100 feet apart or every major change in the cross section area, which ever occurs first, unless noted otherwise. The Contractor may request alternate methods subject to the approval of the DIA Project Manager.
2. Material indicated to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the DIA Project Manager provided that the body is of such shape that the actual contents may be readily and accurately determined and is water tight so that the volume can be measured by filling with water. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

D. Measurement of Areas

1. Measurement of areas will be by the square dimension listed or indicated in the Schedule of Prices and Quantities and or Unit Price Items. Area measurements

will be neat line as shown on Contract Documents or, if actual field measurements show that the area is less than neat line, the actual area will be used. All longitudinal measurements shall be horizontal unless noted otherwise. Method of square measurement will be as determined by the DIA Project Manager.

E. Measurement of Linear Items

1. Linear measurement will be by the linear dimension listed or indicated in the Schedule of Prices and Quantities and/or Unit Price Items. Linear measurements will be neat line as shown on Contract Documents, or if actual field measurements show that the linear measurement is less than neat line, the actual linear measurement will be used. Method of linear measurement will be as determined by the DIA Project Manager. Generally, items, components or work to be measured will be measured at the centerline of the item in place.

1.4 FIELD MEASUREMENT FOR PAYMENT

- A. The Contractor will compute all quantities of Work performed by the Contractor, including quantities of materials and equipment delivered to the site, for final payment purposes. Computed quantities are subject to check and review by the DIA Project Manager. If errors are found, the Contractor shall correct them. If, in the opinion of the DIA Project Manager, the errors are significant or frequent enough, the DIA Project Manager may make the calculations with DIA Project Manager own forces at the Contractor's expense. No payment will be made on that portion of an item containing calculation errors until the errors are corrected to the satisfaction of the DIA Project Manager.
  1. The Contractor will show the actual measurements that are used to compute the quantities along with the formulas used. As requested by the DIA Project Manager, the Contractor shall supply the DIA Project Manager with computations and sketches indicating where measurements were taken and their relationship to the finished product.
- B. The Contractor will supply the DIA Project Manager with an electronic copy and instruction manual of any computer programs used to calculate quantities.. The Contractor shall also provide an electronic copy of the data files used to determine quantities.
- C. The Contractor shall take all measurements for payment purpose in the presence of the DIA Project Manager in accordance with the provisions for measurement specified herein and in Section 014510 "Contractor Quality Control".

1.5 REJECTED MATERIALS

- A. Quantities of material wasted or disposed of in a manner not called for under the Contract, rejected loads of material including material rejected after it has been placed by reasons of the failure of the Contractor to conform to the provisions of the Contract,



material not unloaded from the transporting vehicles, material placed outside the lines indicated on the Contract Drawings or established by the DIA Project Manager, or material remaining on hand after completion of the Work will not be paid for and such quantities shall not be included in the final total quantities. No compensation will be permitted for loading, hauling and disposing of rejected material.

#### 1.6 PAYMENT CONSIDERATIONS

- A. Payment will be full compensation for furnishing all labor, materials, tools, equipment, transportation, services and incidentals as specified in the General Conditions, technical specifications, and Contract Drawings, and for performing all work necessary for completing the item or work classification including all incidental work.
- B. Full compensation for all expenses involved in conforming to the requirements for measuring materials shall be considered as included in the unit or lump sum prices paid for the materials being measured and no additional compensation will be permitted.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION (Not Used)**

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

#### **END OF SECTION 012025**

## SECTION 012300 - ALTERNATES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

#### 1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
  - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

#### 1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other Work of the Contract.

- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the Work described under each alternate.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 SCHEDULE OF ALTERNATES**

- A. Alternates, if required, will be defined in each specific Task Order

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

## **END OF SECTION 012300**

## SECTION 012510 - SUBSTITUTIONS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The Work specified in this Section consists of submitting for the approval of a different material, equipment or process then is described in the Contract Documents. The Contractor is to use the Request for "Or Equal" Approval form found in the Instructions to Bidders before submitting the Contractor's bid. The Request for Substitution form, found in Section 019990 "Standard Forms", is used after the Contractor receives the Notice to Proceed.
- B. If the substitution changes the scope of work, Contract cost or Contract time, a change order is required.
- C. As-built drawings and specifications must include all substitutions even if a change order is not issued.

#### 1.3 QUALITY CONTROL

- A. The substitution must provide the same quality as what it is replacing. The level of quality is defined by:
  - 1. Maintenance and operating cost.
  - 2. Reliability.
  - 3. Durability.
  - 4. Life expectancy.
  - 5. Ease of cleaning.
  - 6. Ability to be upgraded as needed.
  - 7. Ease of interacting with other systems or components.
  - 8. Ability to be repaired.
  - 9. Availability of replacement parts.
  - 10. Established history of use in similar environments.
  - 11. Performance equal or superior to that which it is replacing.

#### 1.4 SUBMITTALS

- A. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and

Working Drawings, Product Data and Samples" for submittal procedures.

- B. A complete Request for Substitution using the form in Section 019990 "Standard Forms" must be made at least 60 days prior to when an order needs to be placed or a method needs to be changed.
- C. The submittal shall contain, as appropriate, detailed product data sheets for the specified items and the substitution. Samples and shop drawings shall also be submitted of the substitution as applicable. The submittal shall contain all the data required to be submitted for acceptance of the originally specified item or process.
- D. The submittal shall contain all the applicable information as required in Part 3 below.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 INFORMATION**

- A. Provide the following information as applicable with the Request for Substitution on the item or process that is being requested to be substituted:
  - 1. A complete description of the item or process.
  - 2. Utility connections including electrical, plumbing, HVAC, fire protection and controls
  - 3. The physical dimensions and clearances.
  - 4. A parts list with prices.
  - 5. Samples of color and texture.
  - 6. Detailed cost comparisons of the substitution and the Contract specified item or process.
  - 7. Manufacturer warranties.
  - 8. Energy consumption over a one-year period of the substitution and the Contract specified item or process.
  - 9. What local organization is certified to maintain the item.
  - 10. Performance characteristics and production rates.
  - 11. A list of any license fees or royalties that must be paid.
  - 12. A list of all variations for the item or method specified.
  - 13. A list of at least three (3) other projects of similar nature to this Contract where the products or methods have been in use for at least one (1) year including telephone number and name of the person to contact at these other projects
  - 14. An analysis of the effect of the substitution on the schedule and Contract cost and on the overall project as it relates to adjoining work.
  - 15. Other additional information if required and requested by the DIA Project Manager in order to properly evaluate the substitution.

### **3.2 SUBSTITUTION REQUEST**

- A. The formal Request for Substitution will be evaluated by the DIA Project Manager and

the Designer of Record based on the following criteria:

1. Compatibility with the rest of the project.
2. Reliability, ease of use and maintenance.
3. Both initial and long term cost.
4. Schedule impact.
5. The willingness of the Contractor to share equally in any cost savings.
6. The ability of the item or process to meet all applicable governing regulations, rules and laws along with funding agency requirements.
7. The cost of evaluating the substitution.

- B. Based upon the above evaluation the Deputy Manager of Aviation will make a final determination of what is in the best interest of the City and either approve, disapprove or approve as noted the requested substitution.

### 3.3 CONDITIONS

- A. As a condition for submitting a Request for Substitution the Contractor waives all rights to claim for extra cost or change in Contract time other than those outlined in the request and approved by the Deputy Manager of Aviation. The Contractor, by submitting a Request for Substitution, also accepts all liability for cost and scheduling impact on other contractors or the City due to the substitution.

- B. Included with the Request for Substitution shall be the following statement:

1. "The substitution being submitted is equal to or superior in all respects to the Contract-required item or process. All differences between the substitution and the Contract-required item or process are described in this request along with all required information, cost and scheduling data."

- C. The statement shall be signed and dated by the Contractor's Superintendent.

- D. Replacement of Substitution Found to be Not Equal: The Contractor shall be responsible for all aspects and conditions of the substitution that are not clearly identified in the substitution submittal, and shall be liable for the appearance, function, performance or other aspects of the substitution that are found not to be equal to the originally specified item.

1. The Contractor shall incur all labor and costs associated with replacement of any substitution that is found to be not equal to the originally specified item or process and rejected by the DIA Project Manager.
2. The replacement of any rejected substitution shall either be with the originally specified item or process, or a substitution approved by the DIA Project Manager

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or the lump bid item.

**END OF SECTION 012510**

## SECTION 012910 - SCHEDULE OF VALUES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY AND DESCRIPTION

- A. The Work specified in this Section consists of preparing and submitting the Schedule of Values ("Schedule") as referenced in the General Conditions. The Schedule will be built upon a breakdown of the Work using specification sections and milestones. The Work also includes the preparing and submitting of updated copies of the Schedule if the Schedule is affected by change orders.
- B. A Schedule of Stored Material is a detailed cost breakdown for permanent materials that will be temporarily stored prior to their being installed and for which the Contractor seeks partial payments. The Schedule of Stored Material will be incorporated as a part of the Schedule of Values.
- C. Within 14 calendar days of issuance of the Notice to Proceed, the Contractor shall submit the Schedule of Values including the Schedule of Stored Material if applicable. The Schedule of Values and Schedule of Stored Material used to prepare the work/cost breakdown for the Schedule will be used for the Contractor's billings.
- D. Any Contract allowances shall be included in the Schedule. Expenditure of allowances shall be done through the use of the Allowance Authorization form. Use of this form does not increase or decrease the Contract value.

#### 1.3 RELATED DOCUMENTS

- A. General Contract Conditions, Title 9 Compensation.
- B. Technical Specifications Section 013300 "Submittal Procedures"
- C. Technical Specifications Section 013325 "Shop and Working Drawings, Product Data and Samples".
- D. Technical Specifications Section 019990 "Standard Forms", CM 89, CM 90 and CM 91 as applicable for the project.



#### 1.4 SUBMITTALS

- A. The Schedule shall be submitted in a format approved by the DIA Project Manager.
- B. The Schedule shall identify each item of work. Work items in the Schedule shall represent all Work and shall be referenced with the Technical Specifications section numbers, specification subparagraph, specification section title and the bid item number used for the Schedule of Prices and Quantities when applicable. The Schedule shall address the subcontractor, fabricator or supplier furnishing the materials and or labor for each work item.
- C. Upon request by the City, the Contractor shall support values given with the data which will substantiate the correctness of the values.
- D. The Schedule will be utilized only as a basis for review of the Contractor's application for progress payment.

#### 1.5 REVIEW AND RESUBMITTAL

- A. If review by the DIA Project Manager indicates that changes to the Schedule are required, the Contractor shall revise and resubmit the Schedule.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### 3.1 PREPARING SCHEDULE OF VALUES

- A. Breakdown of the items used in the Schedule shall include costs as follows:
  - 1. Delivered cost of product with applicable taxes paid.
  - 2. Total installation cost with overhead and profit.
  - 3. Breakdown costs of each lump sum item with a list of products and major operations for which the Contractor seeks to receive progress payments to recover the Contractor's costs for that bid item.
  - 4. Each unit price item as listed in the bid Schedule of Prices and Quantities shall list products and major operations for which the Contractor seeks to receive progress payments for that bid item.

#### 3.2 PREPARING SCHEDULE OF STORED MATERIAL

- A. The Contractor shall submit with the Schedule an indication of whether products will be stored on or off the work site. The Schedule of Stored Material shall show all quantities and types of products that will be stored.
- B. Material allowances consist of only the net cost of the product, the cost of delivery and

unloading at the storage site, the cost of applicable sales taxes and all discounts.

- C. In no case will the cost paid for a permanent material be greater than 90 percent of the Contract price for the Work in which they are included.

### 3.3 PAYMENT FOR STORED MATERIALS

- A. Only materials that are described in the specifications and on the drawings will be considered permanent materials. Permanent materials are materials that will be left in the Work after the Contract is completed.
- B. Nothing in these specifications shall be interpreted as requiring the City to pay for stored materials. The DIA Project Manager shall decide on a case-by-case basis whether stored materials shall be paid for. No payment will be made for stored materials which have not been submitted and accepted.
- C. The Contractor must, at all times, store permanent materials in accordance with manufacturer's recommendations. Any material not properly stored will not be paid for. Amounts will be deducted from payments for any stored permanent material previously paid for and subsequently found to be improperly stored or not present, based upon a physical inventory of stored permanent material.
- D. Only the neat line quantity of material needed for the finished product may be paid for.
- E. All requests for stored permanent material payment must be accompanied by paid invoices clearly showing the quantity of permanent material, the type of permanent material and discounts or rebates and the net amount paid to the supplier along with a certificate stating that the permanent material is free of any liens or judgments preventing its use by the City.
- F. If the permanent material is stored outside the Denver area the Contractor must pay for the City representative's transportation and lodging to see the stored material as needed. Acceptable lodgings must, as a minimum, have a Mobil Travel Guide Rating Criteria® rating of Two-Star or the American Automobile Association Lodging Listing Requirements & Diamond Rating Guidelines® rating of Two Diamonds. The minimum transportation shall be by regularly scheduled commercial air carrier at coach rates. The DIA Project Manager will determine if an overnight stay is required.
- G. All permanent material stored off site, for which payment is being requested, must be insured and stored in bonded, insured warehouses. The Contractor shall provide proof of insurance for all material stored off site, and specific address and storage conditions of storage location.
- H. Any permanent material on which payment is requested must be in such a form that it cannot be used on work other than this Contract, or stored in a manner acceptable to the DIA Project Manager to ensure that the permanent material cannot be used on work other than this Contract.

3.4 ALLOWANCE AUTHORIZATION AND PAYMENT

- A. Contractor shall request written approval for expenditure of any Contract allowances PRIOR TO performing the Work involved. List work to be performed and estimated cost in the requesting correspondence.
- B. Original copies of all invoices and receipts must be submitted with the Allowance Authorization as part of the request for payment.
- C. Using the format provided by the City, the Contractor's request for payment of all Contract allowances shall be included in the Schedule of Values.

**PART 4 - MEASUREMENT**

4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

**PART 5 - PAYMENT**

5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 012910**

## **SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative provisions for coordinating construction operations and coordination with other stake holders and adjacent Contractors on the Project including,

1. Subcontractor's Acceptance Certification and Subcontractors List.
2. General coordination procedures.
3. Contract Administration Procedures.
4. Project Management and Control Software (Primavera Construction Manager, Unifier Enterprise Project Portfolio Manager, PCM).
5. Coordination drawings.
6. DIA Asset Management System.
7. Requests for Information (RFIs).

- B. Related Requirements:

1. Section 011100, " Summary of Work" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
2. Section 011400 "Work Sequence and Constraints" for shutdown requests and coordinating with airport operational activities.
3. Section 011420 "Security Requirements and Sensitive Security Information (SSI)".
4. Section 013210 "Schedule " for preparing and submitting Contractor's Construction Schedule.
5. Section 013223 "Construction Layout, Asbuilt and Quantity Surveys" for coordinating, survey activities and survey related record documents.
6. Section 013300 "Submittal Procedures ".
7. Section 013325 "Shop and Working Drawings, Product Data and Samples".
8. Section 017720 "Contract Closeout" for coordinating closeout of the Contract.
9. Section 017419 "Construction Waste Management and Recycling".
10. DIA Design Standards Manual (DSM) 12.

### 1.3 DEFINITIONS

- A. RFI: Request from DIA Project Manager or Contractor seeking information required by or clarifications of the Contract Documents.

### 1.4 SUBMITTALS - SUBCONTRACTORS ACCEPTANCE CERTIFICATION AND SUBCONTRACTORS LIST

- A. Subcontractor Acceptance Certification and Subcontractors' List: Submit form CM-02 "Subcontractor Acceptance Certification" for each subcontractor performing work in compliance with the requirement of the General Conditions section 502.2, and prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CM form 02. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Provide emergency contacts list to the DIA Project Manager prior to any site activities. List must contain project name, number, location, company name and address, name and title of emergency contacts in order and time and assigned responsibilities. Keep list current and accurate at all times. Include any specific security arrangements or special projects requirements.
- C. Key Personnel Names: Within two (2) days of Notice to Proceed, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
  - 1. Post copies of list in project meeting room, in temporary field office, on Project Web site, and by each temporary telephone. Keep list current at all times.

### 1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination with other Contractors:
  - 1. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
  - 2. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

3. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
4. Make adequate provisions to accommodate items scheduled for later installation.

B. Minimum cooperation requirements with other contractors include the following:

1. Regular meetings, minimum weekly. .
2. Construction schedule coordination.
3. Staging area and access planning (to include employee shuttle routes).
4. Deliveries.
5. Traffic control.
6. When and where required or specified, the Contractor shall develop appropriate coordination drawings for use by interfacing adjacent parties using the Denver International Airport site.

C. The following is a list that includes, but is not limited to, all of the contractors that will be working in the area of the project limits:

1. Coordinate with DIA baggage System O&M Contractor
2. Owner Contracted Communication Contractor.
3. Coordinate with Utility Companies for utilities that are single sole source.
4. Coordinate with Airport Security and DIA Maintenance for all security related services.
5. Coordinate with DIA Life Safety Team for all issues related to fire alarm, fire protection systems in addition to compliance with all regulatory agencies.
6. Coordinate all shutdowns and system interruptions in accordance with section 011400 "Work Sequence and Constraints"..

1.6 Contract Administration Procedures:

- A. This Project will be administered in part using Unifier Enterprise Project Portfolio Manager (EPPM) software, and Primavera Construction Manager (PCM) for schedules. Any processes necessary to properly administer the Contract and not included in the list below shall be addressed as acceptable to the DIA Project Manager. DIA Project Manager may modify the list below in serialized correspondence without constituting a change to the Contract. Administrative tools and processes shall not in any form waive any contractual or legal requirements of the law or the Contract. The Contractor shall attend all coordination meetings with the DIA Project Manager and the DIA Project Control Administrators to arrange for staff training, and technical support to facilitate the execution of electronic data management and control.
- B. Project Management and Control Software: Unifier Enterprise Project Portfolio Manager (EPPM) or the Primavera Construction Manager (PCM).
- C. All submittals, RFI's, Pay Applications, Correspondence, change requests, and pricing proposals and settlement agreements shall be recorded and submitted using EPPM

program.

1. For EPPM software:

- a. The Contractor must follow unifier EPPM Access Request Procedure and adhere to all software license conditions.
- b. The Contractor will sign ITA agreements necessary to comply with the DIA computer system security requirements and any contractual obligation to the software and service providers for the UNIFIER software.
- c. DIA will train the Contractor's staff on the use of the program.
- d. The Contractor will provide the sufficient computer hardware and software system required by the software provider to perform the listed programs below as applicable to the Project, including the following at a minimum:
  - 1) Internet connection and all necessary high speed connection to perform all activities indicated in this Contract.
  - 2) Adobe Acrobat Professional v. X or higher.
  - 3) Internet Explorer v.8 or higher.
  - 4) Microsoft Office 2010 or newer. All files shall be fully compatible with Microsoft Office 2010.
  - 5) Specific Java JRE application may be required, (to be downloaded from the internet). The revision and update number will be provided at NTP.
  - 6) Other files pre-approved by the DIA Project Manager or as required by the DIA BIM Execution Plan in Manual 12 Chapter 4.3.2.
  - 7) Most current version of Revit, as per DIA requirements..

2. For PCM software:

- a. The Contractor must fill an application form to receive PCM program access at the time of Contract award.
- b. DIA will connect the software to DIA intranet project site and train the Contractor's staff on the use of the program.
- c. The Contractor will provide the sufficient computer hardware and software system required by the software provider to perform the listed programs below as applicable to the Project, including the following at a minimum:
  - 1) Internet connection and all necessary high speed connection to perform all activities indicated in this Contract.
  - 2) Professional Adobe Acrobat X,
  - 3) Internet Explorer 8 or better.
  - 4) Microsoft Office 2010 or newer. All files shall be fully compatible with Microsoft Office 2010.
  - 5) Specific Java JRE application will be required, (to be downloaded from the internet). The revision and update number will be provided at NTP.
  - 6) Other files pre-approved by the DIA Project Manager or as required by the DIA- BIM Execution Plan in Manual 12 Chapter 4.3.2.
  - 7) Most current version of Revit, as per DIA requirements.
  - 8) Unifier.

## 1.7 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity. Coordination drawings will be the result of a Contractor driven Spatial Coordination effort as spelled out in the Project BIM Execution Plan (BPXP).
1. Field verify all existing dimensions and any as-built dimensions, whether built by the Contractor or others, necessary to produce accurate coordination and working drawings.
  2. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Models/Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    - f. Indicate required installation sequences.
    - g. Indicate dimensions shown on the Models/Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to DIA Project Manager indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: With Navisworks, the Contractor shall coordinate these systems per floor or zone per BPXP, and as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
  2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on



- Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
  4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
  5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
  6. Mechanical and Plumbing Work: Show the following:
    - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    - c. Fire-rated enclosures around ductwork.
  7. Electrical Work: Show the following:
    - a. Runs of vertical and horizontal conduit.
    - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
    - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
    - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
  8. Fire-Protection System: Show the following:
    - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
  9. Review: DIA Project Manager will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If DIA Project Manager determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, DIA Project Manager will so inform Contractor, who shall make changes as directed and resubmit.
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings, unless approved otherwise by DIA Project Manager.
  2. File Preparation Format: Provided in the Project BIM Execution Plan operating in Microsoft Windows operating system.
  3. File Submittal Format: Submit or post coordination drawing files As required in

- the Project BIM Execution Plan.
4. The submittal must be logged in accordance with the Unifier EPPM submittal Procedure when Unifier EPPM is the contract manager software.
  5. For Fire Protection system; provide shop drawing and design calculations as approved by the building department. Submit as-built drawings in PDF file format.
  6. For all projects, receiving official variance from the BIM requirements not utilizing BIM; Coordination drawings must be submitted in acceptable digital format shall be in an industry recognized 3D AutoCAD model.
  7. BIM File Incorporation: DIA Project Manager will incorporate Contractor's coordination drawing files into Building Information Model for Revit as established for Project.
    - a. Perform three-dimensional component conflict analysis as part of preparation of coordination drawings. Resolve component conflicts prior to submittal. Indicate where conflict resolution requires modification of design requirements by Architect or other sub-consultants.
  8. DIA Project Manager will furnish Contractor one (1) set of digital data files of Models and/or Drawings for use in preparing coordination digital data files.
    - a. The Design consultants and Contractors and Sub Contractors acknowledge and represent the following Right Of Reliance regarding Electronic Models and/or Drawing deliverables:
      - 1) Models may be transferred for the purpose of allowing the recipient's to develop derivative models to develop the means and methods by which to construct the project.
      - 2) It must be clear that each party be able to rely on the fact that the model furnished by others "match the 2D Contract Documents or shop drawings in their equivalent state of development"
- 1.8 Coordination with DIA Asset Management System:
- A. The full intent is to produce comprehensive record documents integrating existing data in the form of digital files and models, reconciled to actual field conditions, modifications or additions facilities or components of existing facilities according to new Contract Documents, and to produce record documents which could be incorporated into DIA asset management system.
  - B. Utilize the BIM to link all necessary data content to the model and follow the BIM execution plan as collaboratively modified by the Contractor, Designer, DIA BIM Administrators and approved by DIA Project Manager.
  - C. Provide the following information through the execution of the Contract for all elements that requires periodical maintenance. The information shall include but is not limited to:
    1. Project title, number, project manager contact information, contractor and

- subcontractor contact information
2. Actual geometry and pertaining shop drawings, relation to project records.
  3. Operational Manuals and safety, MSDS and cut sheets and technical information.
  4. Details of all components' maintenance procedures and requirements.
  5. Details of all applicable warranties including but not limited to; warranty providers, manufacturers information, warranty start and finish dates, contacts , bonding company name, consent of surety,
  6. Equipment location (by room number and location description or grid location format acceptable to DIA Project Manager, for civil projects), equipment make and model.
  7. List of all spare parts including but not limited to; equipment make and model, location, manufacturers cut sheet, submittal number or link, receiver's name and contact information, receiving department and suppliers reordering information.
  8. Commissioning results, acceptance criteria, and test reports.

#### 1.9 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI through the PCM program or in the form specified in Section 019990 "Standard Forms" as directed by the DIA Project Manager.
1. DIA Project Manager will distribute the RFIs to the proper entities.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's Work or work of subcontractors.
- B. DIA Project Manager has the right to reject RFI's that are frivolous or does not contain proper information and required data to properly evaluate the request and respond in a timely manner.
- C. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Architect[ **and DIA Project Manager**].
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.

13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
  - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- D. RFI Forms: Use Unifier to generate RFI's. RFI's must list all applicable Contract Documents. Fill all applicable fields on the RFI form clearly and indicate any impacts it might have on the project.
  1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. DIA Project Manager will review each RFI, determine action required, and respond. RFI's received by DIA Project Manager after 1:00 p.m. will be considered as received the following working day. Direct responses by any entity other than DIA Project Manager shall not be binding to the City and County of Denver. E-mails, and verbal conversations must be followed by an official RFI or proper contractual vehicle before it is considered for any additional compensation or time impact to the project terms and conditions.
  1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of DIA Project Manager's actions on submittals.
    - g. Incomplete RFIs or inaccurately prepared RFIs.
  2. DIA Project Manager's action may include a request for additional information, in which case DIA Project Manager's time for response will date from time of receipt of additional information.
  3. DIA Project Manager's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Title 11 - Changes In the Work, Contract Price or Contract Time of the General Conditions as amended by Special Conditions.
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify DIA Project Manager in writing within five (5) days of receipt of the RFI response or the time required by Title 11 of the Contract General Conditions.
- F. RFI Log: Within Unifier, prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. The log shall include but not limited to the following data:
  1. Project name.

2. Name and address of Contractor.
3. Name and address of DIA Project Manager.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date DIA Project Manager's response was received.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**PART 4 - MEASUREMENT (Not Used)**

**PART 5 - PAYMENT**

5.1 METHOD OF PAYMENT:

- A. No additional Payment will be made for compliance with the requirements of this section. All the cost and time impacts shall be included in the Contract Unit prices or Lump Sum Contract Amount.

**END OF SECTION 013100**

## **SECTION 013119 - PROJECT MEETINGS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. The Work specified in this Section requires the Contractor's superintendent and Quality Control representative to attend meetings scheduled by the DIA Project Manager for the collection and dissemination of information related to the subject Contract.
- B. The DIA Project Manager will prepare the minutes of each meeting and distribute them to each of the participants.

#### **1.3 OTHER MEETINGS**

- A. The Contractor will be advised of times, dates and places of Contract meetings.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### **3.1 PRECONSTRUCTION MEETING**

- A. A Preconstruction Meeting will be scheduled by the DIA Project Manager after the Contract has been signed by all parties. The purpose of this meeting is to introduce the City's Representatives to their counterparts in the Contractor's organization and to establish lines of communication between these representatives and outline some Contract requirements. The Contractor's Superintendent and Quality Control Representative(s) shall attend this meeting.
- B. The DIA Project Manager will distribute a notice of this meeting, along with an agenda of the subjects to be addressed.
- C. The DIA Project Manager will explain and discuss the responsibilities and authorities of the City, the Designer, and the DIA Project Manager's organization.

- D. The DIA Project Manager will provide highlights of the following information at this meeting:
1. Equal Employment Opportunity (EEO), Minority Business Enterprise. (MBE) and Women Business Enterprise (WBE) requirements.
  2. Insurance, laws, codes, traffic regulations and permit requirements of public agencies and their regulations.
  3. Procedures for submitting shop and working drawings, product data and samples.
  4. Monthly pay estimate cutoff dates.
  5. Payment procedures.
  6. Request for information procedures.
  7. Communication procedures.
  8. Contractor-required Daily Report showing the quantitative progress of work, the use of men, material and equipment, problems, potential delays, weather, shift, down equipment, material and equipment received and information received from the City. Daily reports will be submitted to the DIA Project Manager within 48 hours of start of work. Daily Reports are required every day, including weekends and holidays.
  9. Scheduling and coordination requirements.
  10. Quality control/assurance procedures.
  11. Environmental requirements and permits.
  12. Procedures for processing change orders.
  13. As-built documents.
  14. Project closeout requirements.
- E. The Contractor will introduce the Contractor's representatives and briefly describe each person's responsibilities. The Contractor will provide the following:
1. A list of all subcontractors.
  2. Office, storage areas and construction area layouts, along with temporary easements.
  3. Safety, first aid, emergency actions and security procedures including the name of the Contractor's insurance company.
  4. 60 day preliminary schedule.
  5. Sequence of Work.
  6. Construction methods and general work site layout and haul plan.
  7. Housekeeping procedures. Include a written plan for dealing with and preventing FOD (Foreign Object Damage).
  8. The Contractor's general erosion and sedimentation control plans, noise, hazardous material, air and water pollution control plans and Quality Control Plan.
  9. Coordination and notification for utility work.
  10. The Contractor's procedures to coordinate its work with the work of other contractors and its procedures for sharing access to the work site.
  11. Deliveries and priorities of major equipment.
  12. Submittal Schedule.
- F. Explanations provided by the DIA Project Manager will not amend, supersede or alter the terms or meaning of any Contract document, and the Contractor shall not claim

reliance on such explanations as a defense to any breach or failure by the Contractor to perform as specified in the Contract.

### 3.2 CONSTRUCTION PROGRESS MEETINGS

- A. Progress meetings will be scheduled weekly and more often as necessary by the DIA Project Manager to promote the competent and timely execution of the Contract.
- B. The meetings will be held at the work site or at a location selected by the DIA Project Manager. Meetings will be chaired by the DIA Project Manager or the DIA Project Manager's representative.
- C. The Contractor's personnel, as listed in Part 3 of this Section, shall attend unless otherwise agreed by the DIA Project Manager.
- D. The DIA Project Manager will be responsible for publishing minutes of the meetings.
- E. At a minimum, the following items will be addressed at each meeting. The items addressed in the meeting do not waive notification or submittal requirements as required elsewhere in the Contract.
  - 1. Safety: Contractor shall report any safety issues.
  - 2. Quality Control:
    - a. The Contractor's Quality Control representative shall present and review all Deficiencies, CCR's, and NCR's issued and the status of each item.
    - b. The Contractor's Quality Control Representative shall present and discuss the Independent Testing Agency weekly test report and/or testing schedule.
    - c. The Contractor's Quality Control representative shall report on inspections by other agencies and any follow-up activity required.
    - d. The DIA Project Manager will present and discuss issues regarding quality control.
  - 3. Quality Assurance
    - a. The DIA Project Manager will present and discuss issues regarding quality assurance.
  - 4. Design activities: Open discussion, including the following:
    - a. Contractor shall make the DIA Project Manager aware of any elements not completed in their design as soon as possible.
    - b. The Architect will update on the progress of completing the design.
    - c. The DIA project Manager will maintain action items to resolve incomplete designs as soon as possible to minimize project costs.
  - 5. Shop drawings/submittals:
    - a. The Contractor shall provide four (4) copies of and review the Contractor's submittal schedule and provide any updated information and/or changes to



- the schedule.
- b. The Contractor shall provide information on the status of submittals requiring re-submittal.
  - c. The Contractor shall review any accepted submittals that the Contractor plans to re-submit with changes.
6. Construction activities: Open discussion to include coordination items with other Contractors and/or agencies.
7. Schedule:
- a. The Contractor shall provide to the DIA Project Manager four (4) copies of the Contractor's three week look-ahead schedule and review at the meeting the items on the schedule. The schedule shall be in bar chart format based on the approved CPM, and shall include dates of testing activities, anticipated dates of inspection by DIA and other agencies, items in progress, percentage of completion of items, responsible subcontractor for the items.
8. Project cost: All current or pending issues pertaining to Project Cost will be discussed in detail. Review all updates required to the Change Order Log so DIA Project Manager can maintain a current Change Order Log.

#### **PART 4 - MEASUREMENT**

##### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable multiplier or work request bid item.

#### **END OF SECTION 013119**

## SECTION 013210 - SCHEDULE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
    - 1. Preliminary construction schedule.
    - 2. Contractor's construction schedule.
    - 3. Contractor's monthly construction schedule update.
    - 4. As-built schedule.
    - 5. Three-week look-ahead schedule.
    - 6. Daily construction reports.
    - 7. Submittal schedule.
    - 8. Fabrication schedule.
    - 9. Material delivery schedules, cranes, special equipment and staging status.
    - 10. Special reports:
      - a. Weather impacts and mitigations.
      - b. Recovery Schedule and alternatives.
  - B. Related Requirements:
    - 1. Section 011100 "Summary of Work" for preparing a combined Contractor's construction schedule.
    - 2. Section 011420 "Work Sequence and Constraints".
    - 3. Section 012910 "Schedule of Values".
    - 4. Section 013300 "Submittal Procedures" for submitting schedules and reports.
    - 5. Section 014310 "DIA Quality Assurance" for submitting a schedule of tests and inspections.
    - 6. Sections 014310, 014320, 014510, 014520, 014525 and 014545 for submitting a schedule of tests and inspections.
- #### 1.3 DEFINITIONS
- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  2. Predecessor Activity: An activity that precedes another activity in the network.
  3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity or group of activities bundled in hammock or codes under a WBS unit as scheduled. The sum of costs for all activities or WBS must equal the total Contract Sum unless otherwise approved by DIA Project Manager. All costs shall be accounted for in the schedule and shall be balanced to where no activity can be unfunded in the project budget. The cost loading at any level acceptable to DIA Project control group shall not relieve the Contractor of its obligation to fund all necessary work to complete the project.
- C. CPM: Critical Path Method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Resource Loading: The allocation of direct man hours and equipment necessary for the completion of an activity as scheduled. The contractor shall account for the indirect man hours in the cost. The indirect labor hours could be tracked and reported separately if agreed upon between the Contractor and the DIA project control group.
- G. Direct man hours: Man hours related only to the physical construction of the Work, i.e. masonry, mechanical, electrical, drywall, carpeting, etc.
- H. Indirect man hours: Man hours related to support of the physical construction of the Work, i.e. cleanup, mobilization, traffic control, temporary activities, badging, supervision and overhead, etc.
- I. WBS- Work Breakdown Structure: A hierarchical arrangement of the schedule activities which allows for roll-up and summarization to a predetermined level. The sum of all the WBS must equal all the Contract scope of Work including any temporary items necessary to deliver complete operational system in the time established for each mile stone or project work. WBS must equal or exceed the Schedule of Value line

items broken by discipline and measurable units. The WBS system shall be only broken down to a manageable count. The level of breakdown shall be established jointly between DIA Project control team and the CM/GC project control staff. In the absence of a timely agreement the DIA Project Manager shall have control of the time and progress payment until an acceptable schedule is accepted.

- J. Stored Material: Schedule all material intended to be paid as stored material shall be separated as progress activities and cost loaded as agreed upon by the DIA Project Manager and as permissible by the Contract (no markups or profits, insured, inspected and paid).

#### 1.4 SUBMITTALS

- A. Coordinate a meeting with DIA scheduling group to address the level of details and the structures necessary to produce a schedule that is accurate, practical and valid provide the following information:

1. Meet the intent of the Contract term, milestones and coordinate the Work to be performed in the most efficient manner.
2. Utilize Primavera Unifier to evaluate the progress of the Work and assure the proper resources has been committed to meet the intent of the Contract document on time, cost and quality and minimize the disruption of airport operation.
3. Ability to evaluate the impact of future changes on the completion of the Contract.
4. Ability to mitigate and reduce the impacts of changes regardless of the cause of those changes and delay impacts.
5. Ability to allocate causes and provide clear responsibility of delays and recoveries for the benefit of a successful completion of the project.

- B. Format for Submittals: Submit required submittals in the following format:

1. The contractor shall generate a computerized Critical Path Method (CPM) schedule for the Work utilizing the Precedence Diagram Method (PDM) in Gantt chart view.
2. The schedule shall be submitted to the DIA Project Manager electronically in PDF format and on a CD in dynamic format which will allow manipulation and generation of report to evaluate and review any part of the schedule.
3. Preliminary and Construction Schedule formats shall contain a title block showing:
  - a. Contractor's name.
  - b. Contract number and title.
  - c. Data date.
  - d. Symbol definitions.
4. Schedules shall contain a time line at the top.
5. The Activity table (Layout) shall include at a minimum the following columns:

- a. Activity ID.
  - b. Activity name.
  - c. Original duration.
  - d. Schedule % complete.
  - e. Start.
  - f. Finish.
  - g. Total Float.
6. A report shall accompany all schedules containing a list of all approved changes to the original approved (baseline) schedule.
  7. A mitigation report shall be required when at the discretion of either party it become apparent that the project is not progressing on time regardless of the cause of delays and impacts, or issued construction changes has negative impact and require a mitigation effort through several viable alternatives.
- C. Preliminary construction schedule:
1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule and date on label.
  2. Approval of preliminary construction schedule will not constitute approval of schedule of values for cost-loaded activities.
  3. Submit schedule at preconstruction meeting.
  4. The DIA Project Manager will respond within 14 days with acceptance or direction to revise and resubmit.
- D. Contractor's Construction Schedule:
1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
  2. Submit schedule within 30 days after Notice to Proceed.
  3. The DIA Project Manager will respond within 14 days with acceptance or direction to revise and resubmit.
  4. Failure of the contractor to have a construction schedule approved by the DIA Project Manager will be considered cause for withholding progress payment.
  5. The acceptance of the schedule is for general conformity to the Contract requirements and shall not constitute any relief of any Contract requirements
- E. Construction Schedule Monthly Updates:
1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
  2. Submit schedule with Pay Application.
  3. DIA Project Manager will respond within 14 days with acceptance or direction to revise and resubmit.
  4. Submit request for construction schedule changes with narrative.
  5. Failure of the contractor to have a construction schedule approved by the DIA Project Manager will be considered cause for withholding progress payment.

F. As-built Construction Schedule:

1. After all Contract Work items are complete, the contractor shall submit an as-built construction schedule showing actual start and finish dates for all work items and milestones.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of DIA Project Manager's request.

B. Pre-scheduling Conference: Conduct conference at pre-bid meeting to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the set-up in Primavera P6 of preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:

1. Review content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing, area separations, interim milestones and partial Owner occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review submittal requirements and procedures.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
9. Review procedures for updating schedule.
10. Review requirements for content and input of direct man hour resources in activities.
11. Review requirements for cost loading of activities.

1.6 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values.

1. Work items in the construction schedule shall be identified in a Work Breakdown Structure (WBS) format that corresponds with the technical specifications.
2. At a minimum WBS shall correspond to the first tier level of the Master Format.
3. Secure time commitments for performing critical elements of the Work from entities involved.
4. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion and final completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. Activity Duration: Define activities so no field activity is longer than 20 days, unless specifically allowed by DIA Project Manager.
  2. Critical Path Activities: No more than 25 percent of the activities may be on the critical path.
  3. Procurement Activities: Include procurement process activities for the following long lead items and major items as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  4. Submittal Review Time: Include review and re-submittal times indicated in Section 013300 "Submittal Procedures" in schedule unless time frame reduced by approval of DIA Project Manager. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
  5. Startup and Testing Time: Include adequate days for startup and testing.
  6. Substantial Completion: Indicate date established for Substantial Completion.
  7. Punch List and Final Completion: Include days for completion of punch list items and final completion.
  8. Failure to include any work item required for performance of this Contract shall not excuse the contractor from completing all Work within applicable completion dates, regardless of the City's approval of the schedule.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
  2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  3. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary of Work". Delivery dates indicated stipulate the earliest possible delivery date.
  4. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary of Work". Delivery dates indicated stipulate the earliest possible delivery date.
- D. Milestones: Include milestone indicated in the Contract documents in schedule, including, but not limited to, the Notice to Proceed, phasing requirements, Substantial

Completion and final completion.

- E. Three Week Look-ahead Schedule: The Contractor shall provide to the DIA Project Manager four (4) copies of the Contractor's three week look-ahead schedule and review at the DIA Project Manager's weekly progress meeting. The schedule shall be in bar chart format based on the approved CPM, and shall include dates of testing activities, anticipated dates of inspection by DIA and other agencies, items in progress, percentage of completion of items and responsible subcontractor for the items.
- F. Recovery Schedule:
1. If the latest completion time for any work item does not fall within the time allowed by the construction schedule, the sequence of work and/or duration shall be revised by the contractor through concurrent operations, additional manpower, additional shifts or overtime, additional equipment, or alternative construction methods until the schedule produced indicates that all significant Contract completion dates, occupancy dates and milestones will be met. No additional costs will be allowed if such expediting measures are necessary to meet the agreed completion date or dates except as provided elsewhere in the Contract documents.
  2. When periodic update indicates the Work is behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.
  3. Provide narrative indicating changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished. Narrative shall be submitted in accordance with the General Conditions on changes in time.
- G. Contract Extensions:
1. If the Contractor is granted an extension of time for completion of any milestone or Contract completion date under the provisions of the Contract, the determination of the total number of extended days will be based upon the current analysis of the schedule and upon all data relevant to the extension. Such data shall be incorporated into the next monthly update of the schedule.
  2. The Contractor acknowledges and agrees that delays in work items which, according to schedule analysis, do not affect any milestone dates or the Contract completion date shown on the CPM network at the time of the delay will not be the basis for a Contract extension.
- H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
1. Use Primavera P6 operating system.
- I. Schedule Narratives: In addition to the schedule the contractor shall submit a narrative that explains the basis for the Contractor's determination of construction logic. It shall include estimated quantities and production rates, hours per shift, work days per week, and types, number and capacities of major construction equipment to be used and whether the Contractor plans to work weekends or holidays



- J. Subcontractor Coordination: The Contractor shall schedule and coordinate the Work of all of its subcontractors and suppliers including their use of the work site. The Contractor shall keep the subcontractors and suppliers informed of the project construction schedule to enable the subcontractors and suppliers to plan and perform their work properly.
- K. Failure to Submit Required Schedules: Failure of the Contractor to have a construction schedule approved by the DIA Project Manager will be considered cause for withholding progress payment(s).

## 2.2 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type CPM construction schedule at the preconstruction meeting.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities. The preliminary schedule shall show all significant work tasks that occur in the first 60 days, including planning, mobilization, shop submittals and approval time, procurement, fabrication and construction. It shall identify work items or milestones that affect or are affected by the City, other Contractor's work, utilities and other third parties and it shall list major data submittals required by the Contract.
- C. Narrative: The preliminary schedule shall be accompanied by a narrative describing the Contractor's approach to mobilization, procurement and construction during the first 60 days. The narrative shall elaborate on the basis of durations, production rates, and major equipment to be used, and shall identify all major assumptions used to develop the schedule.
- D. In lieu of the preliminary schedule the Contractor may at the Contractor's own discretion submit the Construction Schedule at the Preconstruction Meeting. If the Construction Schedule is submitted in lieu of the Preliminary Schedule, the DIA Project Manager will respond within 30 days with acceptance or direction to revise and resubmit within 10 days.

## 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work.
  - 1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    - a. Preparation and processing of submittals.
    - b. Mobilization and demobilization.

- c. Purchase of materials.
    - d. Delivery.
    - e. Fabrication.
    - f. Utility interruptions.
    - g. Installation.
    - h. Work by the City, other contractors, utilities and other third parties that may affect or be affected by Contractor's activities.
    - i. Testing and commissioning.
    - j. Punch list and final completion.
  2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
  3. Cost and Resource-Loading of CPM Schedule:
    - a. Assign cost to construction activities on the CPM schedule.
    - b. Each activity cost shall reflect an appropriate value subject to approval by DIA Project Manager.
    - c. Total cost assigned to activities shall equal the total Contract Sum.
    - d. Activities shall be resource loaded with direct man hours required to perform physical construction of the Work. Indirect man hours shall not be included as resources in activities.
- B. Contract Modifications: For each proposed Contract modification and concurrent with its submission, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule.
- C. Schedule Updating:
  1. The contractor shall submit a monthly progress report at the end of each month following the Notice to Proceed. At the end of each month, the Contractor and DIA Project Manager shall agree on the progress of the Work and the Contractor shall update the construction schedule accordingly. The updated construction schedule is a prerequisite to the submittal of the Contractor's application for progress payment. The schedule shall be made in accordance with the requirements of this Section. This review does not constitute an approval of the construction schedule and shall not be used for the purposes of modifying the initially approved construction schedule.
  2. The contractor's monthly progress report shall include a written narrative describing the overall progress of the Work, provide a critical path analysis, discuss significant problems with proposed corrective action, and how the status of major changes and any other changes in sequence of the Work.
  3. Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
    - a. Identification of activities that have changed.
    - b. Changes in early and late start dates.
    - c. Changes in early and late finish dates.
    - d. Changes in activity durations in workdays.
    - e. Changes in the critical path.

- f. Changes in total float or slack time.
    - g. Changes in the Contract Time.
4. Changes to the Schedule: The construction schedule may be changed when one or more of the following occur.
  - a. When a change order significantly affects the Contract completion date or sequence of work items.
  - b. When the contractor elects to change the sequence or duration of work items affecting the critical path.
  - c. When the DIA Project Manager directs a change that affects a milestone date(s) specified in the Special Conditions or alters the length of a critical path.
5. Minor revisions submitted at monthly progress review meetings are not considered as changes in this context.
6. If, after submitting a request for change to the construction schedule, the DIA Project Manager does not agree with the request, the DIA Project Manager will schedule a meeting with the Contractor to discuss the differences. If a settlement cannot be reached on the change in the construction schedule or if the Contractor has failed to submit revisions to the network, the DIA Project Manager has the option of providing suggested logic and/or duration times in all subsequent updating reports. The suggested logic and/or duration times will remain in effect until the change in the construction schedule is settled or until the logic and duration are superseded
  - a. If the Contractor has any objections to the data furnished by the DIA Project Manager, the Contractor shall advise the DIA Project Manager within ten (10) days in writing, fully supporting the objections with a counter plan. The revisions suggested by the DIA Project Manager shall be used for updating reports until the DIA Project Manager approves the counter plan.
  - b. If the Contractor does not submit a counter plan and data within ten days after the date of the DIA Project Manager's suggested logic, the Contractor is deemed to have concurred with the DIA Project Manager's suggested logic/duration time changes. The DIA Project Manager's plan will be the basis of negotiations for any adjustment of the time and cost for performance of the Work.
  - c. Insert articles for other schedules and lists to suit Project, depending on complexity.

## **PART 3 - EXECUTION**

### **3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.

1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications of personnel that Contractor proposes to employ for DIA approval.
  2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
- B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule with each monthly payment application.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate final completion percentage for each activity.

#### **PART 4 - MEASUREMENT**

##### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

**END OF SECTION 013200**

## **SECTION 013223 - CONSTRUCTION LAYOUT, AS-BUILT AND QUANTITY SURVEYS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section covers Denver International Airport (DIA) procedures and accuracy requirements for survey services for construction layout, as-built and quantity surveys.
- B. Before commencing any field surveys on DIA property, the Contractor shall coordinate a pre-survey preparation activities meeting. This meeting is to be arranged through the Denver International Airport (DIA) Project Manager's Office with the attendance of the Contractor, the Contractor's surveyor and the DIA Survey Section. The Contractor is responsible for obtaining DIA related survey guidance, NGS control stations, projection parameters and training materials from the DIA Survey Section prior to beginning any survey work.
- C. Reference Contract General Conditions.
- D. Survey Project Checklist, provided after the end of this Section, will be reviewed at the pre-survey preparation activities meeting.

#### **1.3 REFERENCE DOCUMENTS:**

- A. Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples".
- B. Federal Aviation Administration Advisory Circular 150/5300-16A - "General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey".
- C. Federal Aviation Administration Advisory Circular 150/5300-17C - "Standards for Using Remote Sensing Technologies in Airport Surveys".
- D. Federal Aviation Administration Advisory Circular 150/5300-18B - "General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards".
- E. DIA Design Standards Manual (DSM) Volume 12 and Construction Plan Manual, Technical Specifications Division 1.

- F. Colorado Department of Transportation (CDOT) Survey Manual.

#### 1.4 SUBMITTALS

- A. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for the submittal process.
- B. Survey Statement of Work (SSOW):
1. The Contractor must develop a complete SSOW and submit it to the DIA Project Manager. The SSOW is the Contractor's written description of the Contractor's methodology for surveying services that will be provided as part of the Project, including specific features that will be surveyed, action items, timelines necessary airport resources and general information.
  2. SSOW must be submitted within ten (10) working days of the Notice to Proceed (NTP) and prior to commencement of any survey or layout work on the site.
  3. The SSOW will be reviewed and approved by the DIA Survey Section. Under no circumstances will work begin until the SSOW has been approved. Review comments and/or approval will be sent to the DIA Project Manager within three (3) working days of the delivery of such document to the DIA Survey Section.
- C. Survey and layout data must be submitted in the format indicated below. The data must be submitted immediately after completion and shall be certified and/or stamped by a current Colorado Registered Professional Land Surveyor where it is required by the Contract Documents.
1. All Raw Data files, either GPS or conventional must use a Trimble format.
  2. All copies of original pages of field notes or electronic field notes must be in Adobe Portable Document Format (PDF).
  3. All original field notebooks used for this Project must be submitted at the end of Contract.
  4. All as-built points files must be in either CSV or TXT format.
  5. All CAD drawings must be in Autodesk Civil 3D format.
  6. CAD layers are specified in DIA Design Standards Manual Volume 12.
  7. DIA will provide the Autodesk Civil 3D drawing template.
- D. Survey and Quality Control Plan (SQCP):
1. The Contractor must develop a complete SQCP and submit it to the DIA Project Manager. The SQCP is the Contractor's written description detailing the Contractor's methodologies for data collection, data safeguarding and quality assurance. Provide insight on how the Contractor will completely check all data to ensure it is complete, reliable, and accurate. Identify data safeguards used to protect this sensitive and safety critical data. Utilize a checklist based quality control process with definable and repeatable standards for each element ensuring consistency of work between different personnel within an organization. Submit the plan in a non-editable format such as Adobe Portable Document Format (PDF).
  2. The SQCP must be submitted within ten (10) working days of the NTP and prior to commencement of any survey or layout work on the site.
  3. The SQCP will be reviewed and approved by the DIA Survey Section.

4. Under no circumstances will work begin until the SSOW has been approved. Review comments and/or approval will be sent to the DIA Project Manager within three (3) working days of the delivery of such document to the DIA Survey Section.

E. Weekly Project Status Report:

1. Submit a project status report via email DIA Project Manager every Monday by 2:00 P.M. Mountain Time, from the date of the task order until the date of Substantial Completion. Include in the reports the percentage complete for each of the major portions of the Work with the estimated completion date or completion date. Provide the status of ongoing work, with expected completion dates, and any unusual circumstances and/or deviations from this guidance. Status reports should be brief and contain the current information in the text of the email. See the example of a Project Status Report as provided after the end of this Section.

F. Final Project Survey Report:

1. The Final Project Survey Report, if required, use format from AC 150/5300-18B 2.6.4.
2. Final Project Survey Report must be stamped and signed by a current Colorado Registered Professional Land Surveyor.

## 1.5 EQUIPMENT

A. Equipment Calibration:

1. Equipment must be regularly checked, and calibrated for accuracy at the beginning of any survey project to ensure that the equipment is operating appropriately. Errors due to poorly maintained or malfunctioning equipment will not be accepted. If any equipment errors are found to exist they must be reported to the DIA Survey Section prior to the start of any surveying. These errors will need to be verified and eliminated prior to performing any survey work. For projects lasting longer than six (6) months, the checking, and calibration of equipment shall be repeated. Furthermore, documentation must verify such equipment has met acceptable tolerances.
2. The Contractor MUST submit to the DIA Project Manager written proof that survey equipment has been checked and calibrated before commencing any survey work. This could be in the form of field notes. If repairs are made, documentation of such repairs from an authorized equipment vendor is required.

B. See CDOT Survey Manual for acceptable procedures for calibrating equipment electronic survey instruments adjustments, calibration or repairs:

1. All electronic survey instruments shall be repaired, adjusted, or calibrated only by an authorized equipment vendor or manufacturers service department.
2. A calibration check on all types of electronic survey instrumentation is essential to obtain and maintain the tolerances required for any DIA project. At the

- beginning of any DIA project, all survey equipment utilized to perform the survey shall be calibrated by the surveyor in charge of the Project.
3. See CDOT Survey Manual for acceptable procedures for calibrating equipment.

C. Baseline Calibration Requirements:

1. See CDOT Survey Manual for the procedures to check the survey equipment and the method of reporting the findings to the DIA Project Manager and the DIA Survey Section.
2. The Contractor MUST submit to the DIA Project Manager written proof that survey equipment has been checked and calibrated before commencing any survey work. This could be in the form of field notes. If repairs are made, documentation of such repairs from an authorized equipment vendor is required.

1.6 SURVEY CONTROL

- A. All airport construction project surveys MUST USE the DIA Low Distortion Projection (LDP) coordinate system implemented on August 1, 2011. The prior coordinate system, the DIA Grid is no longer supported. Surveys MUST NOT utilize DIA Grid coordinate system for collecting construction as-built information.
- B. Since the DIA LDP utilized the NAD83 (2007) data, all NGS horizontal points MUST use the NAD83 (2007) data. The DIA Survey Section will provide this data during the mandatory pre-survey preparation activities meeting. The DIA Survey Section will also provide coordinates for all NGS Control Points in DIA LDP based upon the location of the Project.
- C. Since DIA has established National Geodetic Survey (NGS) horizontal control points, the Contractor MUST use the published latitudes, longitudes and heights with the projection parameters for these control points that are received and NOT the DIA LDP rectangular coordinates for base station setups for the Geodetic Verification Survey. The Contractor must verify each NGS Horizontal and Vertical primary control point stations by:
  1. Physically visiting each control station to determine its usability and checking its identity.
  2. Ascertaining its unmoved position.
  3. Determining its condition, stability, visibility.
  4. The submission of a recovery report to NGS if one has not been recently recorded.
- D. Geodetic Verification Survey Instructions and Procedures:
  1. The geodetic verification survey is created to insure the stable position of the DIA control points that are used to reference the temporary design/construction control points to the National Spatial Reference System (NSRS). Acceptable monuments will be identified by the DIA Survey Section and will be limited to monuments of the NSRS with permanent identifiers (PIDS) and published positions and elevations. Temporary design/construction control points established for such project will be referenced by direct measurement to at least



two (2) separate NGS control stations.

- a. The Contractor will attempt to recover each identified monument and determine its condition, stability and suitability for the intended use. A location sketch and visibility diagram will be prepared for each station. A minimum of three (3) digital photographs, one of each type described in AC 150/5300-18B, Section 1.5.2.1, will be captured, captioned and properly named. A recovery note will be filed with NGS if no current recovery is shown in the NSRS database.
- b. After recovering the identified NSRS NGS control stations that are located on DIA property, the procedure to verify the control points are as follows:
  - 1) When using a remote GPS base station on the airfield, the Contractor must occupy the Primary Airport Control Station (PACS) and observe the Secondary Airport Control Station (SACS) for a duration of at least ten (10) minutes (600 epochs), along with a five (5) second collection interval. Then reverse the setup, occupy the SACS and observe the PACS for a duration of at least ten (10) minutes (600 epochs), along with a five (5)-second collection interval. The end results are two (2) independent GPS observations. Compare the newly measured distances or inverse distances (from new observations) against the distances determined from the published positions. Submit results to the DIA Survey Manager and DIA Survey Section in Microsoft Excel format.
  - 2) When using a Virtual Reference Station (VRS) on the airfield, the Contractor must observe the PACS and the SACS for a duration of at least ten (10) minutes (600 epochs), along with a five (5)-second collection interval. Then reverse the setup, occupy the SACS and observe the PACS for a duration of at least ten (10) minutes (600 epochs), along with a five (5)-second collection interval. The end results are two (2) independent GPS observations. Compare the newly measured distances or inverse distances (from new observations) against the distances determined from the published positions. Submit results to the DIA Survey Manager and DIA Survey Section in Microsoft Excel format.
  - 3) When using conventional methods on the airfield, measure the distance between the PACS and SACS using a calibrated electronic distance meter instrument (EDMI). Compute the inverse using either the NGS program INVERS3D (available on the NGS website at <http://www.ngs.noaa.gov/TOOLS/>) or a comparable commercial product. Compare the newly measured distances or inverse distances, from new observations, against the distances determined from the published positions. Submit results to the DIA Survey Manager and DIA Survey Section in Microsoft Excel format.
  - 4) Obtain elevation checks either from GPS observations or from digital levels. The distances must agree within, plus or minus, three ( $\pm 3$ ) cm; the difference in ellipsoidal height must agree within, plus or minus, four ( $\pm 4$ ) cm, and the difference in orthometric height must agree within, plus or minus, five ( $\pm 5$ ) cm. If the tolerances are not met the data must be recollected.

- 5) Provide the results or the comparisons as part of the observational data in a report to the DIA Project Manager to be reviewed and approved by the DIA Survey Section prior to the start of construction and include this approved report in the final report.
  - 6) Submit a recovery report for the NGS horizontal control stations to the NGS.
- E. NGS website: <http://www.ngs.noaa.gov/PROJECTS/NGSforms/recovery.pdf>. The Following are Limitations and Additional Information on NGS Control Stations and NGS Benchmarks:
1. The use of control monuments and projection parameters for construction layout other than those shown on the Contract Drawings or furnished by or approved by the DIA Survey Section is STRICTLY PROHIBITED. Use of other monuments is solely at the risk of the Contractor.
  2. The DIA Survey Section will provide the contractor with the projection parameters and any assistance in implementing the DIA LDP coordinate system. It is up to the Contractor to use the correct methodology in performing any survey task which shall be submitted to the DIA Project Manager and reviewed during the pre-survey preparation activities meeting.
  3. The DIA Survey Section will need all pertinent data from the contractor to check and verify that the Contractor implemented the DIA LDP correctly.
- F. Modifications to AC 150/5300-18B, Section 2.6.10.1.1, Verification of Survey Marks:
1. DIA is modifying the requirement for verification of PACS and SACS and replace it with a requirement to verify the unmoved position and elevation of both the PACS and SACS for any airside projects and any two (2) DIA approved NGS horizontal control stations for any landside project.
  2. The surveyor must follow the same verification procedure as stated in paragraph 1.6.C of this Section.
- G. Reporting Damage or Errors of NGS Control Stations:
1. Report damaged or destroyed airport control points, bench marks, and section corner monuments promptly to the DIA Project Manager.
    - a. If section corner monuments are damaged or destroyed during construction activities, such points shall be re-established pursuant to Laws of the State of Colorado Regulating the Practice of Land Surveying by a Registered Professional Land Surveyor in the State of Colorado.
    - b. If NGS control stations or NGS bench marks are damaged, moved, altered or destroyed by the Contractor, the City's cost of reestablishing such points shall be borne by the Contractor.
    - c. The City will not be responsible for any increased costs or delays to the Contractor relating to reference points, airport control points, or bench marks which are damaged, moved, altered or destroyed by the Contractor or its subcontractors, suppliers, agents or employees or other Contractors working on the site.

2. Report alleged errors in NGS control stations or NGS bench marks promptly to the DIA Project Manager.
  - a. Discontinue use of NGS control stations or NGS bench marks alleged to be in error until the accuracy of points can be verified or as directed.
  - b. Claims for extra compensation for alteration or reconstruction allegedly due to errors in NGS control stations or NGS benchmarks will not be allowed unless original NGS control stations and NGS bench marks still exist or substantiating evidence proving error is furnished by the Contractor, and unless the Contractor has reported such errors to the DIA Project Manager as specified herein.

#### 1.7 TEMPORARY SURVEY CONTROL

- A. The Contractor MUST set a minimum of either 'chiseled X' in concrete; a drill hole with lead and tack in concrete; a PK nail in asphalt or a 5/8" rebar in natural ground. An 'Inked X' set as a control point is UNACCEPTABLE.
- B. When a contractor establishes temporary control points for DIA survey work the Contractor MUST follow FAA guidelines. All temporary control points must be referenced to the National Spatial Reference System (NSRS) through the use of the NGS control stations provided by the DIA Survey Section. Temporary control may be necessary based on project site location. Below are the acceptable means to establish temporary geodetic control for DIA design or construction projects:
  1. Temporary control must be established under close cooperation with the DIA Survey Section following the procedures outlined in AC150/5300-16 "General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to National Geodetic Survey" only in the following cases:
    - a. Large airport airfield construction project that significantly changes the airport geometry and would trigger the need to acquire new Digital Stereo Imagery following AC 150/5300-17 "General Guidance and Specification for Aeronautical Survey Airport Imagery Acquisition and Submission to the National Geodetic Survey". Examples include a new runway and taxiway complex, significant modification of existing runway or taxiway system, development of new outboard deice pad complex or establishment of new mid airfield concourse and terminal complex. The size and complexity of the Project will dictate the need to acquire new digital stereo imagery for significant construction.
    - b. Construction that establishes a new ILS CAT II/III Operations.
    - c. New Instrument Development Procedure.
    - d. New Airport Layout Plan Survey Update.
    - e. New Airport Obstruction Chart Update.
    - f. New Airport Mapping Database.
  2. On DIA construction projects, the Contractor, excluding large airport airfield construction projects referenced under Section 1.06.A.1, may use temporary

- control points on their project site. These temporary control points must be referenced to the nearest DIA primary control points and **MUST BE** referenced vertically to two (2) different benchmarks. Also, all surveyors **MUST** obtain permission to establish temporary control points on DIA property by means of communicating with the DIA Survey Section.
3. In addition, all vertical control **MUST BE** established only through the use of a digital level unless otherwise authorized by the DIA Survey Section.
  4. Minimum Construction Horizontal and Vertical Accuracy Tolerance:
    - a. Adjustments:
      - 1) No adjustment of the survey field data will be permitted without the written consent of the DIA Project Manager and the DIA Survey Section. If it is determined that an adjustment is necessary, a weighted least squares adjustment method is recommended.
    - b. Primary Control Benchmark Minimum Vertical Accuracy Tolerance:
      - 1) Setting of primary control benchmarks shall meet the Minimum Vertical Accuracy Tolerance of a NGS First Order Class II as the square root of the total horizontal distance of the level loop in miles multiplied by 0.035 feet.
      - 2) The results of this evaluation shall be recorded in the field book for each differential level loop. At least two (2) established benchmarks on the same or mathematically related datum shall be used to verify that the starting mark has not been disturbed. No adjustments of the data used for this evaluation will be allowed.
    - c. Secondary Control Benchmark Minimum Vertical Accuracy Tolerance:
      - 1) Setting of secondary control benchmarks for construction shall meet the same Minimum Construction Vertical Accuracy Tolerance required for the item being staked in accordance with Part 1 of this Section.
  5. Whether establishing temporary control points or not, the Contractor must set up a pre-survey preparation activities meeting with the DIA Project Manager and DIA Survey Section to discuss Geodetic Control Verification, obtain pertinent survey data, and projection parameters before the commencement of any survey work.
  6. If temporary control points are needed, the Contractor can set and collect temporary control while performing as outlined in Part 1 of this Section. This procedure requires a ten (10) minute (600 epochs) for each temporary control point set. Once the data is collected the Contractor is required to submit to the DIA Project Manager all GPS raw data in a Trimble format with a spreadsheet that displays the comparison from each observation of the NGS control stations and the Contractor's temporary control points. Only the redundant values of the temporary control points should be averaged. The results must be reviewed and approved by the DIA Survey Section, allowing at least seventy-two (72) hours to review and either approve or reject the temporary control. All temporary control

points MUST BE approved before any survey work can commence.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 CONSTRUCTION LINES AND GRADES**

- A. The Contractor shall make surveys and layouts as necessary to delineate the Work. The Contractor shall make the surveys for the proper performance of the Work. As a part of such surveys, the Contractor shall furnish, establish and maintain in good order survey control points that may be required for the completion of the Work subject to the approval of the DIA Project Manager as to their location, sufficiency and adequacy. However, such approval by the DIA Project Manager shall not relieve the Contractor of responsibility for the accuracy of the Contractor's survey work.
- B. The DIA Project Manager shall have the right to check surveys and layouts made by the Contractor prior to approving any of the Work. The Contractor shall give advance notice of not less than forty-eight (48) hours to the DIA Project Manager to enable such checking prior to placing any work. The Contractor shall furnish assistance as may be required for checking purposes when so requested by the DIA Project Manager.
- C. The Contractor shall furnish skilled labor, instrument platforms, ladders and such other temporary structures as may be necessary for making and maintaining points and lines in connection with the surveys required.
- D. The City may draw the Contractor's attention to errors or omissions in lines or grades, but the failure to point out such errors or omissions shall not give the Contractor any right or claim nor shall in any way relieve the Contractor of obligations according to the terms of this Contract.
- E. The Contractor's instruments and other survey equipment shall be accurate, suitable for the surveys required in accordance with recognized professional standards and in proper operating condition and adjustment at all times. Surveys shall be performed under the direct supervision of a current Colorado Registered Licensed Surveyor.
- F. Field Notes:
  - 1. The Contractor shall record surveys in field notebooks or as electronic field notes, whichever is more appropriate to the type of survey work. Copies of the original pages of field notebooks shall be furnished to the DIA Project Manager and the DIA Survey Section at intervals required by the DIA Project Manager. Each field notebook shall be furnished to the DIA Project Manager when filled or at completion of project. Field notes shall be kept in the form and style shown in the book "Surveying with Construction Applications" by Barry F. Kavanagh, Fourth Edition. No erasures are allowed on the data entered in the field book. Cross out errors, and write correct entries above. The person that makes correction in the field book should initial above corrections made. An

explanatory note shall be made for all corrections to original figures. All editing of computer records shall be done on a copy of the original with all changes initialed. Electronic data from data collectors shall be provided in formats in accordance with DIA Design Standards Manual Volume 12 and Construction Plan Manual Technical Specifications Division 1. These will be used to supplement field books and shall be supplied to the DIA Project Manager and DIA Survey Section on Compact Disk (CD).

2. If the DIA Project Manager or DIA Survey Section finds errors in the field notes DIA will have the Contractor correct and resubmit the notes. This review does not relieve the Contractor from the responsibility of maintaining accurate survey data. Whichever method of note-taking the Contractor starts with, the Contractor must use the same method throughout the Contract duration.

- G. The DIA Project Manager may at any time use line and grade points and markers established by the Contractor. The Contractor's surveys are a part of the Work and may be checked by the DIA Project Manager or the DIA Project Manager's representatives at any time. The Contractor shall be responsible for any lines, grades or measurements that do not comply with specified or proper tolerances or which are otherwise defective and for any resultant defects in the Work. The Contractor will be required to conduct resurveys or check surveys to correct errors indicated by review of the field notebooks.

### 3.2 SUBSURFACE UTILITIES ENGINEERING (SUE)

- A. Refer to Section 011810 "Utilities Interface" for information related to underground utilities.

### 3.3 QUANTITY SURVEYS FOR PAYMENT

- A. When the specifications or the DIA Project Manager require items in the Schedule of Prices and Quantities to be measured by surveying methods, the Contractor shall perform the surveys. All such surveys, including control surveys run for establishing the measurement reference lines, shall be performed in the presence of the DIA Project Manager or the DIA Project Manager's representative who will witness the surveying operation and who will sign the field notes or keep duplicate field notes, at the DIA Project Manager's option. The Contractor will reduce the field notes and calculate final quantities for payment purposes. The note reductions and calculations will be given to the DIA Project Manager upon request.

### 3.4 SURVEYING ACCURACIES AND TOLERANCES IN CONTROL SURVEYS, CONSTRUCTION LAYOUTS AND QUANTITY CALCULATIONS

1. See CDOT Survey Manual or FAA Specifications for acceptable tolerances.

### 3.5 AS-BUILT CONSTRUCTION SURVEYS

- A. Coordinate the as-built record submittal to comply with the approved BIM Execution

Plan, GIS system requirements and DIA Asset Management System. All survey data must be developed in accordance with the requirements of Section 013223 "Construction Layout, Asbuilt and Quantity Surveys".

### 3.6 AS-BUILT CONSTRUCTION SURVEY CONTROL

- A. See Article 1.5 - EQUIPMENT of this Section for calibration and accuracy requirements.
- B. See Article 1.6 - GEODETIC SURVEY CONTROL of this Section for system requirements.
- C. See Article 1.7 - TEMPORARY SURVEY CONTROL of this Section for requirements on Contractor's temporary control points and surveys.

### 3.7 AS-BUILT CONSTRUCTION SURVEY ACCURACIES

- A. See Article 3.4 - SURVEYING ACCURACIES AND TOLERANCES IN CONTROL SURVEYS, CONSTRUCTION LAYOUTS AND QUANTITY CALCULATIONS of this Section.

### 3.8 LINE CODING SYSTEM PER DIA SURVEY SECTION STANDARDS

- A. <Insert requirements>

### 3.9 CAD DRAWINGS PER DIA GIS LAYER STANDARDS

- A. Where CAD drawings are required follow DIA DSM 12.

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 013223**

Survey Check list

Step	Yes	No	N/A	Project Kickoff Phase
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor meet with DIA PM obtain the data standards and general requirements for data gathering?
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor meet with Airport Survey Office to obtain airport survey control points, projection parameters, and airport survey training materials?
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor provide Survey Statement of Work to DIA PM?
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor provide Geodetic Verification Survey to DIA PM?
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor provide Survey Control Plan to DIA PM?
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor provide Imagery Plan to DIA PM? (Only required if collecting aerial imagery)?
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did the FAA accept survey plans?
Step	Yes	No	N/A	Construction Phase (As-Builts)
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor perform field survey of project site to collect accurate as-built data?
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did the Consultant/Contractor provide DIA PM with subsurface utility data?
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Each week, did the Consultant/Contractor provide DIA PM with Project Status Reports?



11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did the Consultant/Contractor provide DIA PM with 30% as-built data in both CADD and GIS formats including all attribute information and metadata?
12a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did DIA PM report 30% QA findings via email to Consultant/Contractor?
12b	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If required, did the Consultant/Contractor provide DIA PM with 60% as-built data in both CADD and GIS formats including all attribute information and metadata?
12c	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If applicable, did DIA PM report 60% QA findings via email to Consultant/Contractor?
12d	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If required, did the Consultant/Contractor provide the DIA PM with 90% as-built data in both CADD and GIS formats including all attribute information and metadata?
12e	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If applicable, did DIA PM report 90% QA findings via email to Consultant/Contractor?
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did the Consultant/Contractor provide DIA PM with 100% as-built data in both CADD and GIS formats including all attribute information and metadata?
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did Consultant/Contractor provide DIA PM with a completed Final Survey Report?
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Did DIA PM report QA findings via email to Consultant/Contractor?

SAMPLE OF A WEEKLY PROJECT STATUS REPORT:

Anyplace Field/Anywhere International Airport

AIP X-XX-XXXX-XXX-20XX

Survey progress update #1

July XX to July XX

Eagle Eye Surveying completed a second week of ground surveying. The first week verified PACS and SACS control, collected runway centerline, and primary surface topographic information.

To date we have surveyed for Runway 12-30:

Airport Control (PACS, SACS, ANY B540) 100%

Runway and Stop way Ends 100%

NAVAIDS (VOR, NDB, Airport Beacon, VASI, PAPI, and REILs) 100%

Runway and Stop way Obstructions (Primary surface, approaches, transitional surfaces) 100%

Aircraft Movement and apron areas 75%

Prominent airport buildings / potential close-in obstructions 42%

This week we will be analyzing the collected obstruction survey data relative to the object identification surfaces. We will check both the required points for each obstruction zone and the navigational aids, and generate the appropriate field documentation. We completed subcontract negotiations with aerial photography sub consultant SkyCamera, Inc. and are submitting the proposed flight map with ground reference points for review and approval before completing our final week of field surveying. This week we will be setting aerial targets and surveying in the targets and Photo ID points, and collecting final outlying obstruction data. Aerial photography is promised to us 2 to 4 days after our targets are in place.

Sincerely,

Any Surveyor, P.S.  
Eagle Eye Surveying



## SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.
  - 4. Preconstruction video recordings.
  - 5. Periodic construction video recordings.
  - 6. Web-based construction photographic documentation.
- B. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
  - 2. Section 017720 "Contract Closeout" for submitting photographic documentation as project record documents at Project closeout.
  - 3. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
  - 4. Section 024116 "Structure Demolition" for photographic documentation before building demolition operations commence.
  - 5. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.
  - 6. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.
- C. Alternates: Refer to Division 01 Section 012300 "Alternates" for description of Work in this Section affected by Alternates.

#### 1.3 ALLOWANCES

- A. Costs: Photographic documentation services are included under the cash allowance for construction photographic services established in Section 012100 "Allowances."

#### 1.4 UNIT PRICES

- A. Basis for Bids: Base number of construction photographs on average of **20** photographs per **week** over the duration of Project.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: The person providing the photographs must be sufficiently trained and competent as to provide clear, concise, and accurate images of the work.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each **photograph**. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- C. Digital Photographs: Submit image files within **three (3)** days of taking photographs.
1. Digital Camera: Minimum sensor resolution of **10** megapixels.
  2. Format: Minimum **3200 by 2400** pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Project title and Project number.
    - b. Name and contact information for photographer.
    - c. Name of DIA Project Manager.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
      - 1) Include work order number or change order number if applicable.
    - g. Unique sequential identifier keyed to accompanying key plan.
    - h. Photograph number.
- D. Construction Photographs: Submit **two (2)** individual digital copies of each set of photographs
1. Format: Provide JPG digital images on CD with each image formatted to 8-by-10-inch (203-by-254-mm)
  2. Identification: Provide a separate file within each CD containing the following information:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of DIA Project Manager.
    - d. Name of Contractor.
    - e. Date photograph was taken if not date stamped by camera.

- f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- g. Unique sequential identifier keyed to accompanying key plan.

## 1.6 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.
- B. Web-Based Photographic Documentation Service Provider: A firm specializing in providing photographic equipment, Web-based software, and related services for construction projects, with record of providing satisfactory services similar to those required for Project.

## 1.7 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

## PART 2 - PRODUCTS

### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of **10**megapixels, and at an image resolution of not less than **3200 by 2400**pixels.
- B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to DIA Project Manager.
  - a. .

## PART 3 - EXECUTION

### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.

- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software. Provide commercial quality, digital color photographs in PDF format. PDF file shall be security-free, bookmarked by date with all photos rotated to the correct orientation. Identify the following information on each photograph on the lower right corner.
1. Subject description (include work order number or change order number if applicable)
  2. Station point of camera and direction of view. Include letter size diagram of project indicating Station point
  3. Date and time each photo was taken
  4. Name of Contractor.
  5. Photograph number
  6. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to DIA Project Manager.
- D. Preconstruction Photographs: Before **starting construction**, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by DIA Project Manager.
1. Flag **construction limits** before taking construction photographs.
  2. Take **20** photographs to show existing conditions adjacent to property before starting the Work.
  3. Take **20** photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take **20** photographs **monthly, coinciding** with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. DIA Project Manager-Directed Construction Photographs: From time to time, DIA Project Manager will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Time-Lapse Sequence Construction Photographs: Take **20** photographs as indicated, to show status of construction and progress since last photographs were taken.
1. Frequency: Take photographs **monthly, coinciding** with the cutoff date associated with each Application for Payment.
  2. Vantage Points: Following suggestions by DIA Project Manager and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than **two** of the required shots from same vantage point each time to create a time-lapse sequence as follows:

- a. Commencement of the Work, through completion of subgrade construction.
  - b. Above-grade structural framing.
  - c. Exterior building enclosure.
  - d. Interior Work, through date of Substantial Completion.
- H. Final Completion Construction Photographs: Take **20** color photographs after date of Substantial Completion for submission as project record documents. DIA Project Manager will inform photographer of desired vantage points.
1. Do not include date stamp.
- I. Additional Photographs: DIA Project Manager may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum
1. Three days' notice will be given, where feasible.
  2. In emergency situations, take additional photographs within 24 hours of request.
  3. Circumstances that could require additional photographs include, but are not limited to, the following:
    - a. Special events planned at Project site.
    - b. Immediate follow-up when on-site events result in construction damage or losses.
    - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    - d. Substantial Completion of a major phase or component of the Work.
    - e. Extra record photographs at time of final acceptance.
    - f. Owner's request for special publicity photographs.

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

## **END OF SECTION 013233**



## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. DESCRIPTION
- B. The Work specified in this Section summarizes the requirements for the submittal of documents to the DIA Project Manager that are defined in these Specifications. It also describes the procedures for "supplemental" submittals.
- C. For design/build contracts: The Design Build (D/B) team must follow all the requirements of the procedures and the product details and keep all the submittals current and approved prior to any placement of work.
- D. The Design Build team will be the administrator of the submittal process and shall keep all Inspectors, subcontractors, special inspectors, and CCD Building Inspection Department up to date on all approved submittals.
- E. All Informational, Action, Work and Shop Drawings, shall be submitted under one log and sequentially numbered and will follow the same procedure below. Additional information for specific submittals will be addressed in other specification sections.

#### 1.3 SUBMITTAL SCHEDULE

- A. The Contractor shall provide a submittal schedule within 14 days after Notice to Proceed. The Submittal Schedule shall be directly related to the CPM schedule, shall identify all the submittals, and shall include the following information for each submittal item:
  - 1. Specification section, Contract article, or special condition.
  - 2. Specification Subparagraph.
  - 3. Item description.
  - 4. Date the submittal shall be submitted.
  - 5. Name of subcontractor or supplier.
- B. The submittal schedule shall be updated every two (2) weeks by the Contractor and submitted with the progress payment request.

- C. For large files that cannot be loaded or e-mailed through the electronic Project Manager application (Unifier), submit the files on a CD, DVD or USB flash drive media.

#### 1.4 ELECTRONIC SUBMITTALS

- A. Before the initiation of the submittal process, coordinate and insure that all submittals comply and follows the requirements of the DIA BIM Execution Plan of the DIA Design Standards Manual 12, Chapter 4.3.2.
- B. Submit request for progress payment applications utilizing TEXTURA software as instructed by DIA Project Manager.
- C. Submit subcontractor's Contract's information required by the CCD Small Business Office utilizing B2G software as instructed by DIA Project Manager.
- D. Submit scanned copies of all City and County of Denver Development Department/ Building Inspection Department Approved drawings including all approvals of Deferred Submittals; including but not limited to shoring plans, Fire Protection distribution plans, and structural shop drawings to DIA Project Manager as Informational Submittals. The lack of approval of the BID department on any document shall be basis for rejection of Work and non-compliance.
- E. Submit electronically scanned copies of all documents required by Chapter 17 "Special Inspection and Testing" of the International Building Code 2009 as amended by City and County of Denver 2011. Keep scale and clarify dimension where electronic copies are not as originally scaled and dimensioned.
- F. All submittals shall be delivered to the DIA Project Manager utilizing the Primavera Construction Manager program (PCM) as attachments and as separate file when files are too large to attach or of an electronic media that is not supported by PCM or Utilizing the EPPM Unifier software uploaded to the share drive Unifier's project site when directed by DIA Project Manager.

##### 1. Acceptable electronic formats

- a. Print document format (pdf) shall have no security and bookmark every applicable submittal. All pages shall be completely legible and oriented to correct reading view.

##### 2. Formats are acceptable only with written permission of the DIA Project Manager or required by DIA BIM Project Execution Plan. For files in any of the following formats the corresponding stringency will apply:

- a. Microsoft Office 2007 or newer. All files shall be fully compatible with Microsoft Office 2007.
  - 1) AutoCAD files shall be self contained with no external x-references.
- b. Other files pre-approved by the DIA Project Manager.

3. Electronic file names: Each electronic document shall have a unique file name. File name convention shall be as follows: XXXXX-AAA-BBBBBB-CCCRZ. These designations mean the following:
  - a. XXXXX = DIA Contract number
  - b. AAA = sequential submittal number starting at 001.
  - c.BBBBBB = specification section containing submittal requirements
  - d. CCC = sequential specification submittal number starting at 001.
  - e. RZ = sequential revision number. RZ not required on initial submittals.
  - f. Example A: "CE52006-005-013700-002", five submittals have been logged overall with two submittals made to specification section 013700.
  - g. Example B: "CE52006-009-013700-002R3, nine submittals made overall and three revisions to submittal 013700-002.

#### 1.5 INITIAL SUBMITTAL

- A. Each submittal document shall include a title block showing the following information:
  1. Date of submittal and revision dates.
  2. Contract title and number.
  3. The names of Contractor, subcontractor, supplier, manufacturer and when applicable, the seal and signature of an engineer registered in the State of Colorado, for the involved discipline.
  4. Identification of product by either description, model number, style number or lot number.
  5. Subject identification by Contract Drawing or specification reference.
- B. On each submitted drawing, include a blank space on each sheet, three inches by four inches, in the lower right corner, just above the title block, in which the DIA Project Manager or the Designer of Record may indicate the action taken.
- C. Make submissions sufficiently in advance so that the DIA Project Manager review may be completed not less than 30 days before Work represented by those submittals is scheduled to be performed.
- D. Allow a minimum cycle of 30 days for review of each submittal by the DIA Project Manager.
- E. Accompany submittal documents with DIA transmittal form CM-30 (refer to Section 019990 "Standard Forms") that shall contain the following information:
  1. Contractor's name, address and telephone number.
  2. Submittal number and date.
  3. Contract title and number.
  4. Supplier's, manufacturer's or subcontractor's name, address and telephone number.
  5. Identification of variations from Contract Documents.
  6. Contractor's stamp and signature certifying the Contractor's review.
  7. Identification of submittal:

- a. If the submittal is being made on a General Condition or Special Condition, reference the General or Special Condition number the first two digits of the specification section shall be 00XXXX.
  - b. If the submittal is being made under a specification section, reference the specification number, paragraph number and subparagraph number.
  - c. If the submittal is being made under a drawing, reference the drawing(s) number and sub-number.
- F. The Contractor shall at the time of submission describe variations from the Contract documents in writing, separate from the submittal document. If the DIA Project Manager approves any such variations, an appropriate Contract change order shall be issued, except that if the variation is minor and does not involve a change in price or in time of performance, a modification need not be issued. If a submission contains variations and the variation column is not marked on the transmittal form, it will not be considered for review and acceptance. Along with marking the transmittal as a variation, a description must be included which outlines all the differences including maintenance and utility services along with any cost savings from an item not containing the variation.
- G. Changes in accepted submittal documents will not be permitted unless those changes have been accepted, in writing, by the DIA Project Manager.
- H. The form and quality of submittal documents shall comply with Section 013325 "Shop and Working Drawings, Product Data and Samples".

#### 1.6 SUPPLEMENTAL SUBMITTALS

- A. Supplemental submittal documents initiated by the Contractor for consideration of corrective procedures shall contain sufficient data for review. Make supplemental submittals in the same manner as initial submittals with the appropriate primary transmittal referenced.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### 3.1 CONTRACTOR'S REVIEW

- A. The Contractor shall review all submittal documents, stamp and sign as reviewed and approved as complying with Contract Documents prior to submission to the DIA Project Manager. Submittal documents that are submitted to the DIA Project Manager will not be reviewed and will be returned to the Contractor. Contractor is responsible for any delays in the Project due to improperly reviewed, stamped and signed submittals.
- B. For Design/Build Contracts the Contractor review shall include the DOR review with complete input and notes from all Consultants and Sub-Consultants working on the

Project.

- C. The Owner review period for D/B Contracts shall be limited to ten (10) business days from the time complete submittal documents have been submitted.
- D. For D/B Contracts: The D/B team is responsible to obtain all approvals for all deferred submittals, shop drawings and significant changes from the CCD Development Service Department.
- E. All submittals must delineate any deviation from the intended design and must submit request for substitution to address any significant variation.

### 3.2 REVIEW BY DIA PROJECT MANAGER

- A. Submittal documents will be reviewed by the DIA Project Manager, the designer and the DIA Project Manager for conformance to requirements of the Contract Drawings and specifications. Review of a separate item will not constitute review of an assembly in which the item functions. The DIA Project Manager will withhold approval of submittals that depend on other submittals not yet submitted. Review and acceptance will not relieve the Contractor from the Contractor's responsibility for accuracy of submittals, for conformity of submittal document to requirements of Contract Drawings and specifications, for compatibility of described product with contiguous products and the rest of the system, or for protection and completion of the Contract in accordance with the Contract Drawings and specifications.
- B. The City, the designer, and/or the DIA Project Manager will review the submittal documents for general conformance with the Contract Documents and mark the Action Code, sign and date the transmittal.
- C. The Action Codes have the following meanings:
  - 1. A - ACCEPTED is an approval, and means that the illustration and description appears to conform to the respective requirements of the Contract Documents.
  - 2. B - ACCEPTED AS NOTED is an approval, and means that the illustration and description will conform to the respective requirements of the Contract Documents after changes in recognition of the reviewer's comments. Submittals so marked need to be submitted for record copy only.
  - 3. C - REVISE AND RESUBMIT means that the submittal is unacceptable and must be revised and resubmitted.
  - 4. E - NOT ACCEPTED means that the submittal is not approved and that a new submittal in accordance with the Contract Documents shall be made.
  - 5. F - RECEIPT ACKNOWLEDGED, means an item is received by the DIA Project Manager but no review was made. This mark is for use in resubmitting items that were previously Accepted.

### 3.3 CONTRACTOR'S RESPONSIBILITIES

- A. Coordinate each submittal document with the requirements of the Work. Place

particular emphasis upon ensuring that each submittal of one trade is compatible with other submittals of that trade and submittals of other trades including producing as needed drawings showing the relationship of the Work of different trades.

- B. Contractor's responsibility for errors and omissions in submittal documents and associated calculations is not relieved by the DIA Project Manager's review, correction and acceptance of submittals.
- C. Contractor's liability to the City, in case of variations in the submittal document from the requirements of the Contract Documents, is not relieved by the DIA Project Manager's review and acceptance of submittals containing variations unless the DIA Project Manager expressly approves the deviation in writing, in which the DIA Project Manager describes the variation.
- D. The Contractor shall maintain a file of all approved submittal documents at the work site. The complete file of approved submittal documents shall be turned over to the DIA Project Manager with the as-built documents at the end of the job.
- E. Schedule impact due to resubmittal requirements is the responsibility of the Contractor.

#### **PART 4 - MEASUREMENT**

##### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

#### **END OF SECTION 011000**

## SECTION 013325 - SHOP AND WORKING DRAWINGS, PRODUCT DATA AND SAMPLES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. The Work specified in this Section consists of preparing and submitting shop and working drawings, product data, samples and record documents required by other specifications Sections.
  - 1. The Contractor shall submit all shop drawings, working drawings, product data and samples, as defined in the General Conditions, to the DIA Project Manager in accordance with the requirements in the technical specifications. The DIA Project Manager will return one (1) copy of the shop drawings, working drawings and product data to the Contractor with a written transmittal within the time periods noted in the specifications.
- B. The Contractor shall not submit as shop drawings copies or reproductions of drawings issued to the Contractor by DIA.

#### 1.2 SUBMITTALS

- A. Refer to Section 013300 "Submittal Procedures" for submittal procedures.
- B. All submittals shall be delivered to the DIA Project Manager in electronic format. All submittals must be of a consistent format (all PDF). No combination of electronic file types will be allowed unless required by a specific specification section.
  - 1. Acceptable electronic formats: Comply with the electronic file formats approved by DIA Design Standards Manual (DSM) Chapter 12. If any of the files are in any of the formats listed below then the version of the software shall be no less than identified below:
    - a. Adobe Acrobat 8.0 or newer. All files shall be fully compatible with Adobe Acrobat 8.0.
    - b. Microsoft Office 2007 or newer. All files shall be fully compatible with Microsoft Office 2007.
    - c. AutoDesk AutoCAD 2007 or newer. All files shall be fully compatible with AutoDesk AutoCAD 2007.
    - d. AutoCAD files shall be self contained with no external x-references.
    - e. Revit 2012.
    - f. Other files pre-approved by the DIA Project Manager.
  - 2. Adobe Acrobat Requirements:
    - a. Drawings shall have security set to "No Security". Commenting, printing,

- adding photos, form fields and document signing must be allowed.
- b. PDF submittals shall be one continuous file. No external links are allowed.
  - c. All individual components of submittals shall be bookmarked inside the PDF file.
  - d. All original documents shall be directly converted from the original electronic format to PDF. Scanning of files shall only be allowed by the DIA Project Manager when the original electronic information is not obtainable.
  - e. Failure to comply with these requirements will result in a return of file to the Contractor for immediate revision.
3. Electronic files submitted shall correspond with DIA File Control Numbering System available from the DIA Project Manager. All files shall contain the prefix CE06010.14.02, which represents submittal number/specification section/item/revision.
- a. SUBMITTAL NUMBER attribute shall be obtained from the DIA Project Manager.
  - b. SPECIFICATION SECTION attribute shall be a six-digit number corresponding to the specification section requiring submitted data.
  - c. ITEM attribute will be a two-digit number designating the corresponding submittal item number.
  - d. REVISION attribute will be for revised and resubmitted submittals, an "R" followed by a number (IE: R3).
- C. Quantities
1. One (1) electronic submittal in Unifer containing electronic files of each shop or working drawing.
  2. One (1) electronic submittal in Unifer containing electronic files of manufacturer's standard schematic drawings.
  3. One (1) electronic submittal in Unifer containing electronic files of manufacturer's calculations and manufacturer's standard data.
  4. One (1) electronic submittal in Unifer containing electronic files of manufacturer's printed installation, erection, application and placing instructions.
  5. Nine (9) samples of each item specified in the various specification sections, unless otherwise specified.
  6. One electronic submittal in Unifer containing electronic files of inspection, test reports and certificates of compliance.
  7. Note: If manufacturer's printed information is in color, all copies of submittals must be in color.
- D. Review:
1. Submittal review comments by the DIA Project Manager will be in electronic form and incorporated into the electronic submittal file.
  2. Resubmittals of electronic documents shall modify the original electronic file with new information and include the DIA Project Manager's comments with appropriate responses and additional information.



### 1.3 CHANGES

- A. Changes in products for which shop or working drawings, product data or samples have been submitted will not be permitted unless those changes have been accepted and approved in writing by the Deputy Manager of Aviation as provided in Section 012510 "Substitutions".

### 1.4 QUALITY CONTROL

- A. Shop drawings and record documents shall be prepared to a high standard of quality, prepared and printed from Revit and checked in Navisworks models..
- B. Refer to DIA Manual 12 "BIM Project Execution Plan" for other requirements that may be applicable to this Article.

## PART 2 - PRODUCTS

### 2.1 SHOP AND WORKING DRAWINGS

- A. Prepare shop and working drawings on in electronic format that is current and approved by DIA to a scale large enough to easily depict and annotate each of the various items.
- B. Comply per other BIM requirements for Shop and Working Drawings as established in DIA Manual 12 "BIM Project Execution Plan".
- C. Include the following as they apply to the subject:
  - 1. Contract title, work order and number.
  - 2. Respective Contract drawing numbers.
  - 3. Applicable specification section numbers.
  - 4. Relation to adjacent structure or materials.
  - 5. Field dimensions clearly identified as such.
  - 6. Applicable standards such as ASTM or Federal Specification number, FAA, AASHTO and pertinent authority specifications or standards.
  - 7. Identification of deviations from the Contract Drawings and specifications.
  - 8. Drawing name, number and revision.
  - 9. Contractor's stamp, initialed or signed, certifying:
    - a. Verification of field measurements.
    - b. Review of submittals for compliance with Contract requirements.
    - c. Compatibility of the Work shown thereon with that of affected trades.
  - 10. Blank space on each sheet per Technical Specifications Section 013300 "Submittal Procedures".
- D. Drawings of equipment and other items that contain multiple parts shall include

exploded views showing the relationship of parts and the description of the parts into the smallest units that may be purchased or serviced.

- E. Comply with all submittal requirements of Section 013300 "Submittal Procedures".

## 2.2 PRODUCT DATA

- A. Modify manufacturer's standard and/or schematic drawings to delete information which is not applicable to the Contract. Supplement standard information with additional information applicable to this Contract.
- B. Modify manufacturer's standard(s), diagrams, schedules, performance charts, illustrations, calculations and other descriptive data to delete information which is not applicable to the Contract. Indicate dimensions, clearances, performance characteristics and capacities. Include with the submittal electrical, plumbing, HVAC and any other diagrams, as applicable.
- C. Modify erection, application and placing instructions to delete information that is not applicable to the Contract or work order.
- D. Include the following:
1. Contract title, work order and number.
  2. Respective Contract drawing numbers.
  3. Applicable Contract technical specification section numbers.
  4. Applicable standards such as ASTM or Federal Specification number, FAA, AASHTO and pertinent authority specification or standards.
  5. Identification of deviations from the Contract Drawings and specifications.
  6. Contractor's stamp, initialed or signed, certifying:
    - a. Dimensional compatibility of the product with the space in which it is intended to be used.
    - b. Review of submittals for compliance with Contract requirements.
    - c. Compatibility of the product with other products with which it is to perform or which will be next to it.
    - d. The products electrical, plumbing, control and HVAC requirements conform to Contract Documents and the necessary utilities are provided for in the Contract Documents.
- E. Comply with all submittal requirements of Section 013300 "Submittal Procedures".

## 2.3 SAMPLES

- A. Submit samples of sizes and quantities to clearly illustrate full color range and functional characteristics of products and materials including attachment devices.
- B. Erect field samples and mockups at the work site as specified in specification Sections and at locations acceptable to the DIA Project Manager. All field samples shall be

erected in a location that will be readily visible throughout the life of the Contract to allow comparison of the Work as it progresses to the field sample. Field samples and mockups may be incorporated into the Work at Contractor's risk if approved by DIA Project Manager.

- C. The Contractor shall verify, through appropriate inspections and tests, that the samples submitted meet the specifications and shall provide inspection and test data with the samples. The review and comments on the sample shall not relieve the Contractor of the Contractor's responsibility for completion of the Contract.
- D. Show the following information:
1. Contract title and number.
  2. Respective Contract drawing numbers.
  3. Applicable technical specification section numbers.
  4. Applicable standards such as ASTM or Federal Specification number.
  5. Identification of deviations from the Contract Drawings and specifications
  6. Contractor's stamp, initialed or signed, certifying:
    - a. Dimensional compatibility of the product with the space in which it is intended to be used
    - b. Review of submittals for compliance with Contract requirements
    - c. Compatibility of the product with other products with which it is to perform or which will be next to it
  7. If multiple samples are submitted and the DIA Project Manager is requested to make a choice, each sample shall have a unique identification number attached to it so the returned transmittal can state the identification number of the accepted sample and the Contractor will know which one it is.
- E. Comply with all submittal requirements of Section 013300 "Submittal Procedures".

## **PART 3 - EXECUTION**

### **3.1 CONTRACTOR RESPONSIBILITIES**

- A. Reference requirements of General Conditions Article 405.
- B. Verify field measurements, catalog numbers and similar data.
- C. The Contractor shall not start work for which submittals are required until a transmittal has been received by the Contractor marked with the Action Code ACCEPTED or ACCEPTED AS NOTED by the DIA Project Manager, as noted by the DIA Project Manager.
- D. Before making submittals ensure that products will be available in the quantities and at the times required by the Contract.

- E. Submit final, corrected, reproducible sepias of Contract and shop and working drawings showing the Work as actually installed, placed, erected and applied. Refer to Section 017720 "Contract Closeout".

### 3.2 REVIEW BY THE DIA PROJECT MANAGER

- A. One (1) electronic copy of the marked-up shop and working drawing and one (1) electronic copy of the product data will be returned to the Contractor by the DIA Project Manager. Only the transmittal form, appropriately marked with the Action Code and comments, if any, will be returned on sample submittals.
- B. Contractor's responsibility for errors and omissions in submittals for compatibility will not be reduced, waived or otherwise limited by the review and acceptance of submittals by the DIA Project Manager.

## PART 4 - MEASUREMENT

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## PART 5 - PAYMENT

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable multiplier for the division under which the work falls.

## END OF SECTION 013325

## **SECTION 013510 - CONSTRUCTION SAFETY**

### **GENERAL**

#### RELATED DOCUMENTS

- a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### SUMMARY

- b. Work specified in this Section includes construction safety precautions and programs by the Contractor and the basis for reviews by the DIA Project Manager.

For projects enrolled under DIA Rolling Owner Contributed Insurance Program (ROCIP) program reference the Contract Special Conditions for all safety requirements.

#### RESPONSIBILITY

The General Conditions make it clear that all safety precautions during the construction process are the responsibility of the Contractor. The Contractor is responsible for the health and safety of the Contractor's employees, agents, subcontractors and their employees, and other persons on the worksite, for the protection and preservation of the Work and all materials and equipment to be incorporated therein, and for the worksite and the area surrounding the worksite. The Contractor shall take all necessary and reasonable precautions and actions to protect all such persons and property.

This Section shall be interpreted in its broadest sense for the protection of persons and property by the Contractor and no action or omission by the DIA Project Manager or the DIA Project Manager's authorized representatives shall relieve the Contractor of any of its obligations and duties hereunder.

#### SUBMITTALS

- c. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for the submittal process. The Contractor's Operational Safety Plan shall be submitted and approved under the general Contract prior to commencing any Work. If a Task Order is issued where the Work is not covered by the approved Contractor's Operational Safety Plan, then a revision to the Safety Plan specific for the Work in the Task Order shall be resubmitted for approval.

- 1) **NOTE: NO PROGRESS PAYMENT SHALL BE APPROVED UNTIL THE**

CONTRACTOR'S OPERATIONAL SAFETY PLAN HAS BEEN ACCEPTED BY  
THE DIA PROJECT MANAGER.

DIA PROJECT MANAGER'S REVIEW

- d. Provide a Contractor's Operational Safety Plan as described below and in Article 1.4 of this Section.

The Contractor shall provide six (6) copies of its Operational Safety Program to the DIA Project Manager for review at least ten (10) calendar days before on-site construction begins. The Contractor's program must meet, as a minimum, all applicable federal, state and local government requirements, and the following:

- 1) The Contractor must, as part of the Contractor's safety program, submit six (6) copies of the following information for acceptance by the DIA Project Manager prior to the commencement of construction activities. The Operational Safety Plan must address all aspects listed below. If an item is not applicable, then this must be noted in the Safety Plan.
  - a) Name of the Contractor's site safety representative.  
If the Contractor is running multiple shifts or working more than (40) hours per week, the name of an assistant site safety representative who can act in the absence of the site safety representative.  
Twenty-four (24) hours per day emergency phone numbers of Contractor site management to be used in case of injury or accident. Provide at least four contacts.  
The Contractor's method of ditching and trenching excavation to be used including how slopes will be stabilized with calculations showing the slope stability. The Contractor shall also show how material will be stored beside the excavation. Stored material will include the excavated and backfilled material.  
How injuries or accidents will be handled including samples of the forms used to report injuries or accidents.  
How employees will be handled who are unable to safely perform their duties, including how the Contractor will determine whether an employee is unable to safely perform the DIA Project Manager's duties.  
How and when equipment will be checked to see that it is safe, that all safety guards are in place, and that the equipment is being used for its designed purpose and within its rated capacity.  
How and when all electric devices will be checked for proper grounding and insulation. Describe the methods that will be used to lock out electric systems that should not be energized.  
How trash and human organic waste will be disposed of.  
How snow and ice will be removed by the Contractor in the DIA Project Manager's project area.  
How concrete forms will be anchored to ensure their stability, including calculations showing that the forms will safely hold the maximum construction loads.  
How flammable materials will be stored and handled, and how any spills will be

cleaned up and removed for disposal.

What system will be used to prevent fires and, if fires do occur, who will be trained to fight them. Also, what firefighting equipment will the Contractor have available and how will this equipment's condition be monitored.

How materials will be received, unloaded, stored, moved and disposed of.

How personnel working above ground level will be protected from falling.

How people working beneath the construction work will be protected.

What will be done to protect personnel in case of severe weather.

How adequate lighting will be provided and monitored.

How air quality will be monitored to ensure that chemical exposures are below established OSHA Permissible Exposure Limits. How employees will be protected if these limits are exceeded.

How the safety of work platforms, man lifts, material lifts, ladders, shoring, scaffolding, etc., will be ensured relating to load capacity and the protection of personnel using or working around them.

The type of personal protective equipment that will be used to protect employees from hazards.

The type of safety training that will be provided to employees to inform them of safe work procedures.

How audits and inspections will be performed to ensure compliance with the Safety Plan and applicable OSHA regulations.

Procedures to ensure that welding and other hot work is performed safely.

How compressed gases will be safely stored, handled and used.

Methods to ensure that employees safely enter, work in, and exit confined spaces.

How the hazards of chemicals will be communicated to workers, including the use of material safety data sheets and chemical labels.

Methods to ensure that forklifts and other powered industrial trucks are operated in a safe manner.

How an effective hearing conservation program will be used to protect employees from high noise levels and prevent hearing loss.

How employees will be protected from the effects of jet blast.

- e. Prior to the start of any work by a contractor or subcontractor employee, the Contractor shall provide the DIA Project Manager with a list of its employees, subcontractor's employees and other personnel the Contractor has requested to work at Denver International Airport, who have signified in writing that they have been briefed on, or have read and understand, the Contractor's Safety Plan.

## PRODUCTS

### CONTRACTOR'S OPERATIONAL SAFETY PLAN

- f. Provide a Contractor's Operational Safety Program as described in Part 1 of this Section.

## EXECUTION

### IMPLEMENT CONTRACTOR'S OPERATIONAL SAFETY PLAN

- g. Implement the approved Contractor's Operational Safety Plan as described in Article 1 of this Section and in Section 011100 "Summary of Work".

If the Contractor experiences lost time or an injury rate greater than 75 percent of the national average for all construction, the Contractor shall notify the DIA Project Manager and audit its safety procedures and submit a plan to reduce its rates.

If at any time the lost time or injury rates experienced by the Contractor are 150 percent or more of the national average for construction, the Contractor shall notify the DIA Project Manager and immediately hire an independent safety professional who shall audit the Contractor's procedures and operations and make a report of changes that the Contractor should implement to reduce the rate including changing personnel.

- 1) Six (6) copies of this report shall be submitted to the DIA Project Manager. The Contractor shall immediately begin implementing the recommendations of the independent safety professional.

A weekly report shall be submitted by the Contractor to the DIA Project Manager on the status of the implementation of the recommendations.

Failure to comply with these requirements is a basis to withhold a portion of progress payments.

### ROLLING OWNER CONTRIBUTED INSURANCE PROGRAM (ROCIP)

Implement Rolling Owner Contributed Insurance Program (ROCIP) as provided in the Project Manual issued for bid or proposal

## MEASUREMENT

### METHOD OF MEASUREMENT

- h. No separate measurement shall be made for work under this Section.

## PAYMENT

### METHOD OF PAYMENT

- i. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.



**PART 13 - END OF SECTION 013510**

## SECTION 013516 - ALTERATION PROJECT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes special procedures for alteration work.

#### 1.3 DEFINITIONS

- A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.
- B. Consolidate: To strengthen loose or deteriorated materials in place.
- C. Design Reference Sample: A sample that represents the Architect's prebid selection of work to be matched; it may be existing work or work specially produced for the Project.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.
- F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

- J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.
- K. Retain: To keep existing items that are not to be removed or dismantled.
- L. Strip: To remove existing finish down to base material unless otherwise indicated.

#### 1.4 COORDINATION

- A. Alteration Work Subschedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.
  - 1. Schedule construction operations in sequence required to obtain best Work results.
  - 2. Coordinate sequence of alteration work activities to accommodate the following:
    - a. Owner's continuing occupancy of portions of existing building.
    - b. Owner's partial occupancy of completed Work.
    - c. Other known work in progress.
    - d. Tests and inspections.
  - 3. Detail sequence of alteration work, with start and end dates.
  - 4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
  - 5. Use of elevator and stairs.
  - 6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use in existing structure. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.
- B. Pedestrian and Vehicular Circulation: Coordinate alteration work with circulation patterns within Project building(s) and site. Some work is near circulation patterns [**and adjacent to restricted areas**] <Insert item of concern>. Circulation patterns cannot be closed off entirely and in places can be only temporarily redirected around small areas of work. [**Access to restricted areas may not be obstructed.**] Plan and execute the Work accordingly.

#### 1.5 PROJECT MEETINGS FOR ALTERATION WORK

- A. Preliminary Conference for Alteration Work: Before starting alteration work, **conduct** [conference at **Project site**].
  - 1. Attendees: In addition to representatives of Owner, and Contractor, testing service representative, specialists, shall be represented at the meeting.

2. Agenda: Discuss items of significance that could affect progress of alteration work, including review of the following:
    - a. Alteration Work Subschedule: Discuss and finalize; verify availability of materials, specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
    - b. Fire-prevention plan.
    - c. Governing regulations.
    - d. Areas where existing construction is to remain and the required protection.
    - e. Hauling routes.
    - f. Sequence of alteration work operations.
    - g. Storage, protection, and accounting for salvaged and specially fabricated items.
    - h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
    - i. Qualifications of personnel assigned to alteration work and assigned duties.
    - j. Requirements for extent and quality of work, tolerances, and required clearances.
    - k. Embedded work such as flashings and lintels, special details, collection of waste, protection of occupants and the public, and condition of other construction that affects the Work or will affect the work.
  3. Reporting: **Record** conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.
- B. Coordination Meetings: Conduct coordination meetings specifically for alteration work at **weekly** intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, and Contractor, each specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of alteration work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to alteration work.
  2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of alteration work. Include topics for discussion as appropriate to status of Project.
    - a. Alteration Work Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
    - b. Schedule Updating: Revise Contractor's Alteration Work Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each entity present, including review items listed in the "Preliminary Conference for Alteration Work" Paragraph in this article and the following:

- 1) Interface requirements of alteration work with other Project Work.
- 2) Status of submittals for alteration work.
- 3) Access to alteration work locations.
- 4) Effectiveness of fire-prevention plan.
- 5) Quality and work standards of alteration work.
- 6) Change Orders for alteration work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

## 1.6 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.

1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed.

## 1.7 INFORMATIONAL SUBMITTALS

A. Alteration Work Subschedule:

1. Submit alteration work subschedule within **[seven] [30] <Insert number>** days of date established for **[ commencement of alteration work] <Insert requirement>**.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.

C. Alteration Work Program: Submit **30 days** before work begins.

D. Fire-Prevention Plan: Submit **30 days** before work begins.

## 1.8 QUALITY ASSURANCE

A. Specialist Qualifications: An experienced firm regularly engaged in specialty work similar in nature, materials, design, and extent to alteration work as specified in each Section and that has completed a minimum of **five** recent projects with a record of

successful in-service performance that demonstrates the firm's qualifications to perform this work.

1. Field Supervisor Qualifications: Full-time supervisors experienced in specialty work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on-site when specialty work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.
    - a. Construct new mockups of required work whenever a supervisor is replaced.
  - B. Title X Requirement: Each firm conducting activities that disturb painted surfaces shall be a "Lead-Safe Certified Firm" according to 40 CFR 745, Subpart E, and use only workers that are trained in lead-safe work practices.
  - C. Alteration Work Program: Prepare a written plan for alteration work for whole Project, including each phase or process and protection of surrounding materials during operations. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project alteration work program with specific requirements of programs required in other alteration work Sections.
    1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
    2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
  - D. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.
  - E. Safety and Health Standard: Comply with ANSI/ASSE A10.6.
- 1.9 STORAGE AND HANDLING OF SALVAGED MATERIALS
- A. Salvaged Materials:
    1. Clean loose dirt and debris from salvaged items unless more extensive cleaning is indicated.
    2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
    3. Store items in a secure area until delivery to Owner.
    4. Transport items to Owner's storage area designated by Owner.
    5. Protect items from damage during transport and storage.
  - B. Salvaged Materials for Reinstallation:

1. Repair and clean items for reuse as indicated.
  2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.
- C. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.
- D. Storage: Catalog and store items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.
1. Identify each item for reinstallation with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
  2. Secure stored materials to protect from theft.
  3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F (3 deg C) or more above the dew point.
- E. Storage Space:
1. Owner will arrange for limited on-site location(s) for free storage of salvaged material. This storage space **includes** security for stored material.
  2. Arrange for off-site locations for storage and protection of salvaged material that cannot be stored and protected on-site.

#### 1.10 FIELD CONDITIONS

- A. Survey of Existing Conditions: Record existing conditions that affect the Work.
1. Comply with requirements specified in Section 013233 "Photographic Documentation."
- B. Discrepancies: Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Owner's Removals: Before beginning alteration work, verify in correspondence with Owner that the following items have been removed:
1. Items will be listed as required by each Task order.
- D. Size Limitations in Existing Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within existing spaces, areas, rooms, and openings, including temporary protection.

## **PART 2 - PRODUCTS - (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 PROTECTION**

- A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from alteration work.
1. Use only proven protection methods, appropriate to each area and surface being protected.
  2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
  3. Erect temporary barriers to form and maintain fire-egress routes.
  4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
  5. Contain dust and debris generated by alteration work, and prevent it from reaching the public or adjacent surfaces.
  6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
  7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
  8. Provide supplemental sound-control treatment to isolate demolition work from other areas of the building.
- B. Temporary Protection of Materials to Remain:
1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
  2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.
- C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- D. Utility and Communications Services:
1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
  2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration work.
  3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.



- E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.
1. Prevent solids such as adhesive or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from alteration work.
  2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

### 3.2 PROTECTION FROM FIRE

- A. General: Follow fire-prevention plan and the following:
1. Comply with NFPA 241 requirements unless otherwise indicated. **Perform duties titled "Owner's Responsibility for Fire Protection."**
  2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
    - a. If combustible material cannot be removed, provide fire blankets to cover such materials.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
  2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
  3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
  4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
  5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
  6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
    - a. Train each fire watch in the proper operation of fire-control equipment and alarms.

- b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
  - c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
  - d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
  - e. Maintain fire-watch personnel at each area of Project site until as required after conclusion of daily work.
- C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.
- D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
- 1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

### 3.3 PROTECTION DURING APPLICATION OF CHEMICALS

- A. Protect motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.
- B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in alteration work program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.
- C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.
- D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.
- E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

### 3.4 GENERAL ALTERATION WORK

- A. Have specialty work performed only by qualified specialists.

- B. Ensure that supervisory personnel are present when work begins and during its progress.
- C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 013233 "Photographic Documentation."
- D. Perform surveys of Project site as the Work progresses to detect hazards resulting from alterations.
- E. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
  - 1. Do not proceed with the work in question until directed by Architect.

END OF SECTION **013516**

## **SECTION 013520 - CONSTRUCTION SAFETY - AIRSIDE**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. The Work specified in this Section includes construction safety precautions and programs by the Contractor for airside, and the basis for reviews by the DIA Project Manager.
- B. Related Specification Sections:
  - 1. Section 011420 "Security Requirements and Sensitive Security Information".
  - 2. Section 011430 "Vehicle and Equipment Permitting".
  - 3. Section 011810 "Utilities Interface".
  - 4. Section 013510 "Construction Safety".

#### **1.3 RESPONSIBILITY**

- A. The General Conditions make it clear that all safety precautions during the construction process are the responsibility of the Contractor. The Contractor is responsible for the health and safety of the Contractor's employees, agents, subcontractors and their employees, and other persons on the worksite, for the protection and preservation of the Work and all materials and equipment to be incorporated therein, and for the worksite and the area surrounding the worksite. The Contractor shall take all necessary and reasonable precautions and actions to protect all such persons and property.
- B. This Section shall be interpreted in its broadest sense for the protection of persons and property by the Contractor and no action or omission by the DIA Project Manager or the DIA Project Manager's authorized representatives shall relieve the Contractor of any of its obligations and duties hereunder.

#### **1.4 SUBMITTALS**

- A. Refer to Section 013300 "Submittal Procedures" and 013325 "Shop and Working Drawings, Product Data and Samples" for the submittal process. The Contractor's Safety Plan shall be submitted and approved under the general Contract prior to commencing any Work. If a Task Order is issued where the Work is not covered by

the approved Contractor's Safety Plan, then a revision to the Safety Plan specific for the Work in the Task Order shall be resubmitted for approval.

1. NOTE: NO PROGRESS PAYMENT SHALL BE APPROVED UNTIL THE CONTRACTOR'S SAFETY PLAN HAS BEEN ACCEPTED BY THE DIA PROJECT MANAGER.
- B. Scope: The Contractor's Safety Plan Compliance Document (SPCD) shall be developed and submitted by the contractor for the DIA Project Manager's review and approval. The SPCD shall be developed according to the guidelines and requirements provided in Federal Advisory Circular No. 150/5370-2F "Operational Safety on Airports During Construction" and will describe how the Contractor will comply with the requirements of the Construction Safety and Phasing Plan (CSPP). The SPCD shall cover the actions of not only the construction personnel and equipment, but the actions of inspection personnel and airport staff for the duration of construction activities.
- C. Definitions:
1. Approach Surface: A surface longitudinally centered on the extended runway centerline and extending outward and upward from either a runway threshold or 200 feet behind a threshold. This surface is needed to define where unobstructed airspace above the runway begins.
  2. Notice To Airmen (NOTAM): A notice to the flying public (airmen) through FAA's NOTAM system. Normally initiated by message to the nearest FAA Flight Service Station. Issuance of the NOTAM will be coordinated through the DIA Project Manager and DIA Operations.
  3. Object Free Area: A two-dimensional ground area surrounding runways, taxiways and taxi lanes which is clear of objects, except for objects whose location is fixed by function.
  4. Safety Area (see AC 150/5300-13A): A defined surface adjacent to runways, taxiways and taxi lanes prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot or excursion from the paved surface. Each safety area must be cleared and graded and have no potentially hazardous ruts, humps, depressions or other surface variations. Each safety area must be drained by grading or storm sewers to prevent water accumulation. Each safety area must be capable under dry conditions of supporting snow removal and aircraft rescue and firefighting equipment and or supporting the occasional passage of aircraft without causing any damage to the aircraft. No objects may be located in any safety area, except for objects that need to be located in a safety area because of their function. These objects must be constructed, to the extent practical, on frangibly mounted structures of the lowest practical height, with the frangible point no higher than three (3) inches above grade.
- D. Policy: Aviation safety is a primary consideration during airport construction. These activities shall be planned and scheduled to minimize disruption of normal aircraft activities. If the clearances and restrictions described in this plan cannot be maintained while construction is underway, action will be taken by the Contractor to perform Work at night or during periods of minimal aircraft activity.

- E. Safety Impacts: The Contractor shall take all necessary steps and precautions to mitigate the impact of hazardous conditions as they may relate to the Work. Potentially hazardous conditions which may occur during airport construction include, but are not limited to, the following:
1. Trenches, holes, or excavations on or adjacent to any active runway, taxiway, taxi lane, apron or related safety areas.
  2. Unmarked/unlighted holes or excavations on or adjacent to any active runway, taxiway, taxi lane, apron or related safety areas.
  3. Mounds or piles of earth, construction material, temporary structures, or other objects on or in the vicinity of any active runway, taxiway, taxi lane, apron or related safety, approach, or departure areas.
  4. Pavement drop-offs which would cause, if crossed at normal operating speeds, damage to aircraft that normally use the airport. The maximum drop-off is 3 inches per FAA Advisory Circular 150/5300-13.
  5. Vehicles or equipment (whether operating or idle) on any active runway, taxiway, taxi lane, apron or related safety, approach, or departure areas.
  6. Vehicles, equipment, excavations, stockpiles, or other materials that could impinge upon NAVAID-critical areas and degrade or otherwise interfere with electronic NAVAIDS or interfere with visual NAVAIDS facilities.
  7. Unmarked utility, NAVAIDS, weather service, runway lighting, underground power or signal cables that could be damaged during construction.
  8. Objects or activities anywhere on or in the vicinity of an airport which would be distracting, confusing, or alarming to pilots during aircraft operations.
  9. Unflagged/unlighted low visibility items such as tall cranes, backhoes, scrapers, dump trucks, rollers, compactors, dozers and the like, in the vicinity of an active runway, taxiway, taxi lane, apron or related safety, approach, or departure areas.
  10. Dirt, debris, or other transient accumulations which temporarily obscure pavement markings or pavement edges, or derogate the visibility of runway or taxiway markings or lighting or of construction and maintenance areas.
  11. Trash or other materials with foreign object damage (FOD) potential, whether on runways, taxiways, taxi lanes, aprons or in related safety areas.
  12. Failure to control vehicle, human and large animal access to, and nonessential nonaeronautical activities on, open aircraft movement areas.
  13. Failure to maintain radio communication between construction vehicles and air traffic control or other on-field communications facilities.
  14. Construction activities or material which could hamper Aircraft Rescue and Fire Fighting (ARFF) vehicle access from ARFF stations to all parts of the runway/taxiway system, runway approach and departure areas, or aircraft parking locations.
  15. Inadequate fencing or other marking to separate construction areas from open aircraft operating areas.
  16. Bird attractions such as edibles (food scraps, etc.), trees, brush, other trash, grass/crop seeding, or ponded water on or near the airport.

F. Safety Requirements:

1. General:
  - a. During performance of this Contract, the airport runways, taxiways, taxi

- lanes, and aircraft parking aprons shall remain in use by aircraft to the maximum extent possible, consistent with continual safety. Aircraft use of areas near the Contractor's Work will be controlled to minimize disturbance to the Contractor's operation. However, AIRCRAFT HAVE THE RIGHT OF WAY AT ALL TIMES. The Contractor shall not allow employees, subcontractors, suppliers, or any unauthorized persons to enter or remain in any airport area which would be hazardous to persons or to aircraft operations.
- b. Contractor personnel, airport staff and field inspectors directly involved in on-airport construction shall:
    - 1) Be aware of the types of conditions, safety problems, and/or hazards identified each day at the airport. To insure that all personnel are aware, daily meetings between management and supervisory personnel and their employees shall be scheduled prior to any work commencing on the shift.
    - 2) Inspect daily all work and/or storage areas for which the Contractor is responsible to be aware of current conditions.
    - 3) Promptly take all steps needed to remedy any unsafe or potentially unsafe condition. Coordinate with the DIA Project Manager to insure immediate corrective action is undertaken
  - c. Before commencement of construction activity the Contractor, through coordination with the DIA Project Manager and DIA Operations, shall give notice using the NOTAM system of construction on the airfield. In addition, a NOTAM shall be issued for the completion of construction on the airfield.
2. Construction Area Marking: Temporary lighting, barricades, flagging, and flashers are required as shown on the plans and per FAA Advisory Circular150/5370-2F Chapter 2 Section 220.b.(1)(2) Flag lines, traffic cones, flashers, edge lights, and/or signs shall be used as necessary:
- a. To clearly separate all construction from other parts of an air operations area
  - b. To identify isolated hazards, such as open manholes, excavations, areas under repair, stockpiled material, waste areas, etc.
  - c. Vehicle and pedestrian access routes used for airport construction shall be controlled to prevent any unauthorized entry of persons, vehicles or animals.
  - d. Vehicle parking areas for Contractor employees shall be designated in advance to minimize traffic in open/active aircraft movement areas.
3. Cables and Utilities:
- a. Special attention shall be given to preventing unscheduled interruption of utility services and facilities. The location of all cables and utilities shall be identified prior to construction activities.
  - b. There shall be coordination among the Contractor, the DIA Project Manager, DIA Operations, the FAA, the National Weather Service, utility companies, and any other appropriate entity or organization. NAVAIDS,

- weather service facilities, electric cables, and other utilities must be fully protected during the entire construction time.
- c. Power, communication and control cables leading to and from any FAA NAVAIDS, weather service, and other facilities will be marked in the field by the appropriate individuals as identified in Section 011810 "Utilities Interface" for the information of the Contractor before any work in their general vicinity is started. Thereafter, through the entire duration of construction, utilities shall be protected from any possible damage.
  - d. At the intersection of expansion joints and centerline lighting circuits on taxiways and runways, the electrical conduit may be within the 21" portion of the Portland cement concrete pavement. Coordination with the DIA Project Manager's representative and the DIA Electrical Department is of utmost importance for both the scheduling of an outage and the removal of conductors while cutting the joint.
4. Vehicle and Employee Identification:
- a. Contractor vehicles and equipment shall be flagged for high daytime visibility and if appropriate, lighted for nighttime operations. Vehicles which are not marked and lighted shall be escorted by a vehicle that is equipped with appropriate marking and lighting devices. Marking and lighting shall be in conformance with FAA AC 150/5210-5, current edition, or as outlined in Section 011430 "Vehicle and Equipment Permitting" of the Contract Documents.
  - b. The Contractor will be required to conform to the specific requirements as outlined in Section 011420 "Security Requirements and Sensitive Security Information (SSI)" of the Contract documents.
5. Radio Communications:
- a. The Contractor's construction superintendent and flag personnel shall be required to coordinate directly with the DIA Project Manager or designated Representative. Only the DIA Project Manager or designated Representative shall monitor transceiver radios tuned to the frequency for communications with DIA Operations and B Tower Control. Radios shall be used to obtain the proper clearance in regard to the movement of equipment, trucks, etc., on the airfield. Further, any unusual occurrences in the flight pattern of approaching or departing aircraft shall be acknowledged by all concerned so that operation of the airport and the construction work can be safely carried on at all times.
6. Haul Routes Crossing Active Aircraft Operation Areas:
- a. The Contractor shall provide a minimum of one (1) broom truck to continuously clean the surface of the active taxiway, taxi lane or apron of any foreign object damage (FOD) or other objectionable debris that may result from hauling activities. Additional broom trucks may be required to expedite the cleanup process. Opening the taxiway, taxi lane or apron to aircraft operations shall only be approved after a visual inspection of the pavement surface by the DIA Airfield Operations Manager.



- b. The Contractor shall not work within the minimum of the following: 160 ft. of the centerline of an active taxiway, 310 ft. of the centerline of an active runway, or the minimum requirements of the FOD or Safety Zone unless otherwise noted in the Contract Documents and as approved in writing by the DIA Project Manager.
- c. All construction equipment and vehicles shall be flagged for high daytime visibility and if appropriate, lighted for nighttime operations. Vehicles which are not marked and lighted shall be escorted by a vehicle that is equipped with appropriate marking and lighting devices. Marking and lighting shall be in conformance with FAA AC 150/5210-5, current edition.
- d. All Contractor and Subcontractor employees must be aware of the types of safety problems and hazards associated with aircraft operations and construction activities.

## PART 2 - PRODUCTS

### 2.1 CONTRACTOR'S SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

- A. Provide a Contractor's Safety Plan Compliance Document as described below and in Part 1 of this Section.
- B. The Contractor shall provide an electronic (pdf) copy of its Safety Plan to the DIA Project Manager for review at least ten (10) calendar days before on-site construction begins. The Contractor's program must meet, as a minimum, all applicable federal, state and local government requirements, and the following:
  1. The Contractor must, as part of the Contractor's SPCD, submit electronic (pdf) copy of the following information for acceptance by the DIA Project Manager prior to the commencement of construction activities. **THE SAFETY PLAN MUST ADDRESS ALL ASPECTS LISTED BELOW. IF AN ITEM IS NOT APPLICABLE, THIS MUST BE NOTED IN THE SPCD.**
    - a. Name of the Contractor's site safety representative.
    - b. If the Contractor is running multiple shifts or working more than 40 hours per week, the name of an assistant site safety representative who can act in the absence of the site safety representative.
    - c. Twenty-four (24) hours per day emergency phone numbers of Contractor site management to be used in case of injury or accident. Provide at least four (4) contacts.
    - d. The Contractor's method of ditching and trenching excavation to be used including how slopes will be stabilized with calculations showing the slope stability. The Contractor shall also show how material will be stored beside the excavation. Stored material will include the excavated and backfilled material.
    - e. How injuries or accidents will be handled including samples of the forms used to report injuries or accidents.
    - f. How employees will be handled who are unable to safely perform their

- duties, including how the Contractor will determine whether an employee is unable to safely perform the Contractor's duties.
- g. How and when equipment will be checked to see that it is safe, that all safety guards are in place, and that the equipment is being used for its designed purpose and within its rated capacity.
  - h. How and when all electric devices will be checked for proper grounding and insulation. Describe the methods that will be used to lock out electric systems that should not be energized.
  - i. How trash and human organic waste will be disposed of.
  - j. How snow and ice will be removed by the Contractor in the Contractor's project area.
  - k. How concrete forms will be anchored to ensure their stability, including calculations showing that the forms will safely hold the maximum construction loads.
  - l. How flammable materials will be stored and handled, and how any spills will be cleaned up and removed for disposal.
  - m. What system will be used to prevent fires and, if fires do occur, who will be trained to fight them. Also, what firefighting equipment will the Contractor have available and how will this equipment's condition be monitored.
  - n. How materials will be received, unloaded, stored, moved and disposed of.
  - o. How personnel working above ground level will be protected from falling.
  - p. How people working beneath the construction work will be protected.
  - q. What will be done to protect personnel in case of severe weather.
  - r. How adequate lighting will be provided and monitored.
  - s. How air quality will be monitored to ensure that chemical exposures are below established OSHA Permissible Exposure Limits. How employees will be protected if these limits are exceeded.
  - t. How the safety of work platforms, man lifts, material lifts, ladders, shoring, scaffolding, etc., will be insured relating to load capacity and the protection of personnel using or working around them.
  - u. The type of personal protective equipment that will be used to protect employees from hazards.
  - v. The type of safety training that will be provided to employees to inform them of safe work procedures.
  - w. How audits and inspections will be performed to ensure compliance with the Safety Plan and applicable OSHA regulations.
  - x. Procedures to ensure that welding and other hot work is performed safely.
  - y. How compressed gases will be safely stored, handled and used.
  - z. Methods to ensure that employees safely enter, work in, and exit confined spaces.
  - aa. How the hazards of chemicals will be communicated to workers, including the use of material safety data sheets and chemical labels.
  - bb. Methods to ensure that forklifts and other powered industrial trucks are operated in a safe manner.
  - cc. How an effective hearing conservation program will be used to protect employees from high noise levels and prevent hearing loss.
  - dd. How employees will be protected from the effects of jet blast.
- C. Prior to the start of any work by a Contractor or Subcontractor employee, the Contractor shall provide the DIA Project Manager with a list of its employees,

subcontractor's employees and other personnel the Contractor has requested to work at Denver International Airport, who have signified in writing that they have been briefed on, or have read and understand, the Contractor's Safety Plan.

### **PART 3 - EXECUTION**

#### **3.1 IMPLEMENT CONTRACTOR'S SAFETY PLAN COMPLIANCE DOCUMENT**

- A. Implement the approved Contractor's SPCD as described in Part 1 and Part 2 of this Section.
- B. If the Contractor experiences lost time or an injury rate greater than 75 percent of the national average for all construction, the Contractor shall audit its safety procedures and submit a plan to reduce its rates.
- C. If at any time the lost time or injury rates experienced by the Contractor are 150 percent or more of the national average for construction, the Contractor shall immediately hire an independent safety professional who shall audit the Contractor's procedures and operations and make a report of changes that the Contractor should implement to reduce the rate including changing personnel.
  - 1. An electronic pdf copy of this report shall be submitted to the DIA Project Manager.
  - 2. The Contractor shall immediately begin implementing the recommendations of the independent safety professional.
  - 3. A weekly report shall be submitted by the Contractor on the status of the implementation of the recommendations.
  - 4. Failure to comply with these requirements is a basis to withhold a portion of progress payments.

### **PART 4 - MEASUREMENT**

#### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

### **PART 5 - PAYMENT**

#### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 013520**

## **SECTION 014100 - REGULATORY REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section identifies primary compliance with the State, City and County of Denver's regulatory requirements including:
  - 1. City and County of Denver / Department of Aviation.
  - 2. Colorado Department of Public Health and Environment.
  - 3. City and County of Denver Development Services, including the Department of Public Works and Division of Wastewater Management.
  - 4. The standards which govern design and construction projects at Denver International Airport.
- B. Construction shall be based on the latest edition of the referenced codes including additions and revisions thereto that are in effect at the time of Project bidding or Task Order pricing or GMP established, whichever is latest, and as specifically related.
- C. RELATED SECTIONS
  - 1. Section 015719 "Temporary Environmental Controls" for environmental and related permitting requirements.

#### **1.3 BUILDING CODE**

- A. All design and construction work shall be governed by the Building Code for the City and County of Denver, latest edition. This is based upon the International Building Code of the International Code Council with Denver Amendments to this code. Appendix N of the Denver Amendments addresses Construction of Airport Buildings and Structures.
  - 1. This Contract shall be based on IBC 2009 as Amended by Denver dated 2011.

#### **1.4 DENVER BUILDING DEPARTMENT**

- A. For review and approval of all construction documents for compliance to the Denver building code:

City and County of Denver  
Ed Kocman, Project Coordinator  
Development Services  
201 West Colfax Avenue, Dept 203  
Denver, Colorado 80202  
Telephone 720-865-2912  
Fax 720-865-2880

- B. The Contractor is to coordinate with the STRP Permit Coordinator when obtaining building permits or information from Development Services' Project Coordinator.

#### 1.5 DENVER FIRE DEPARTMENT

- A. For review and approval of plans for compliance with the Denver Fire Department's requirements as they apply to the Denver International Airport:

Denver Fire Department  
745 West Colfax Avenue  
Denver, Colorado 80204  
Telephone 729-865-2833

- B. The Contractor is advised that the Denver Fire Department – Fire Prevention Bureau requires permitting for the following activities as they apply to the scope of work. The Contractor is responsible for obtaining the appropriate permits necessary to complete the work. All costs associated with this permitting and policy compliance shall be the responsibility of the Contractor. The policies all reference the International Fire Code (IFC).
  1. “Hot work”, which is defined as the operation of any equipment or tool that creates sparks, hot slag, or radiant or convective heat as a result of the work. This includes, but is not limited to, welding, cutting, brazing, or soldering.
  2. Use and storage of compressed gas for both temporary storage and permanent facility installation. This includes, but is not limited to, flammable gas (excluding propane-LPG), oxidizer (including oxygen), and inert and/or simple asphyxiates.
  3. Tank installation, which includes above-ground storage tanks (AST) and underground storage tanks (UST) for both temporary tanks and permanent facility installations.
- C. In addition to the above permits, the Denver Fire Department may require other permits that are associated with the specific work in the Contract Documents. Policies provided by the Denver Fire Department are meant to provide basic information for the most common conditions and situations. In any given occupancy, many other Uniform Fire Code requirements may be enforced. These should be addressed with the Denver Fire Department before construction begins and during construction with premise inspection(s).

1. Any questions can be addressed to the Fire Prevention Bureau between 6:30 AM and 9:00 AM Monday-Friday at 720-913-8242 or 720-913-8237.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 PERMITS AND CERTIFICATIONS**

- A. The Contractor shall maintain records on site of all permits acquired by federal, state, and local agencies. Posting of permits shall conform to requirements of the respective agencies.
- B. At the completion of any inspection by other agencies, the Contractor shall forward copies of the status of the inspection and copies of any approved or "signed-off" inspections by the respective agencies to the DIA Project Manager.
- C. At the time of request for Substantial Completion, the Contractor shall forward to the DIA Project Manager all permits approved by the respective agencies.

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

## **END OF SECTION 014100**

## SECTION 014210 - REFERENCED MATERIAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 REFERENCED MATERIAL

- A. The following documents may be available for examination at the Owner's offices unless otherwise noted. The referenced material and documents are not part of the Contract Documents unless otherwise specified. For further information, contact DIA Project Manager at least ten (10) calendar days prior to the scheduled bid opening or after Notice to Apparent Low Bidder. Unless otherwise noted, copies of referenced material may be purchased:

1. Environmental Impact Statement (EIS).
2. Geotechnical Reports:
  - a. Borings, other field and laboratory explorations and investigations have been made to indicate subsurface materials at particular locations. Explorations and investigations conducted by designers and their subconsultants are solely for the purpose of study and design.
  - b. The subsurface exploration and investigation information is presented or made available to indicate some of the conditions that may be encountered during construction and is offered as supplementary information only. Geotechnical information presented in the referenced material represents the opinion of soils consultants as to the character of the materials encountered. Subsurface information was directly obtained only at the specified location and necessarily indicates subsurface conditions only at the respective plan location, depths penetrated and only at the time of the exploration.
  - c. Neither the City nor the Designers assume any responsibility whatever in respect to the sufficiency or accuracy of borings made, or of the logs of test borings, or of other investigations, or of the interpretations made thereof, and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations are representative of those existing throughout such area, or any part thereof, or that unforeseen developments may not occur. It is expressly understood that the making of deductions, interpretations and conclusions from all of the accessible factual information, including the nature of the materials to be excavated, the difficulties of doing other work affected by the geology, groundwater elevations and other subsurface conditions at the site of the Work are the



- Contractor's sole responsibility.
- d. Information derived from inspection of logs of borings, topographic maps, technical memorandum, reports or plans showing information of the subsurface of site conditions will not relieve the Contractor from any risk or from properly examining the site and making such additional investigations as the Contractor may elect or from properly fulfilling all the terms of the Contract Documents.
3. Available Geotechnical Reports.
  4. Available Conceptual Utility and Drainage Reports.
  5. Denver International Airport Design Standards Manual 12 - "Engineering Data System", dated 2012.
  6. Woolpert, Inc. Report - "A Low Distortion Projection for Denver International Airport (DEN)", dated 12/10/2010.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**PART 4 - MEASUREMENT**

4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

**PART 5 - PAYMENT**

5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 014210**

## SECTION 014220 - ABBREVIATIONS AND SYMBOLS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 REFERENCE LIST

- A. Documents published by the following agencies may be referenced within these Contract Documents to define the quality of materials, equipment, workmanship and other features of Work. Unless otherwise stated, the reference documents shall be of the latest edition as of the date of the Advertisement for Bids.
- B. Wherever used in the Contract Documents, the following abbreviations will have the meanings listed:

AALA	American Association of Laboratory Accreditation
AAN	American Association of Nurserymen
AAO	Affirmative Action Officer
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AFI Air	Filter Institute
AGTS	Automated Guideway Transportation System
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
APEN	Air Pollution Emission Notes
APWA	American Public Works Association
ARI	Air Conditioning and Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASNT	American Society for Non-Destructive Testing
ASPE	American Society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWPA	American Wood Preserver's Association
AWS	American Welding Society
AWWA	American Water Works Association

BID	Building Inspection Division, Department of Public Works
BIM	Building Information Modeling
CAR	Corrective Action Report
CCD	City and County of Denver
CCR	Contractor Change Request
CCRL	Cement Concrete Reference Laboratory
CD	Change Directive
CDOH	Colorado Department of Highways or Colorado Department of Health
CDOT	Colorado Department of Transportation
CMEC	Concrete Materials Engineering Council
CN	Change Notice
CO	Change Order
COE	Corps of Engineers
CPM	Critical Path Method
CR	Change Request
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DFD	Denver Fire Department
DIA	Denver International Airport
DOT	United States Department of Transportation
DOR	Designer of Record
DWB	Denver Water Board
EEO	Equal Employment Officer or Equal Employment Opportunity
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
FM	Factory Mutual Association
FS	Federal Specifications (U.S. General Services Administration)
GCC	General Contract Conditions
IAPMO	International Association of Plumbing and Mechanical Officials
IBR	Institute of Boiler and Radiator Manufacturer's
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
ISA	Instrument Society of America
ITA	Independent Testing Agency
MIL	Military Specifications (Naval Publications and Forms Center)
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
NAAB	National Association of Air Balance
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards (now called National Institute of Standards and Technology)
NCR	Nonconformance Report
NEC	National Electric Code (NFPA 70)
NECA	National Electric Contractors Association
NEMA	National Electrical Manufacturer's Association
NESC	National Electrical Safety Code

NFC	National Fire Code (as published by NFPA)
NFPA	National Fire Protection Association
NICET	National Institute for the Certification of Engineering Technologies
NIST	National Institute of Standards and Technology
NGS	National Geological Survey
NLMA	National Lumber Manufacturers Association
NOAA	National Oceanic and Atmospheric Administration
NRMCA	National Ready Mix Concrete Association
NTP	Notice to Proceed
NVLAP	National Voluntary Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PDM	Precedent Diagram Method
PS	Product Standard of NIST (U.S. Department of Commerce)
PM	Project Manager (DIA)
PMT	Project Management Team (Parsons/HNTB)
QA	Quality Assurance
QC	Quality Control
RAR	Remedial Action Request
RFI	Request for Information
SC	Special Contract Condition
SDI	Steel Door Institute
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association
SSPWC	Standard Specifications for Public Works Construction
TCP	Traffic Control Plan
TSA	Transportation Security Administration
UBC	Uniform Building Code (published by ICBO)
UL	Underwriters Laboratories, Inc.
UMC	Uniform Mechanical Code (published by ICBO)
UPC	Uniform Plumbing Code (published by ICBO)
USC	United States Code
WBS	Work Breakdown Schedule

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION (Not Used)**

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 014220**

## SECTION 014225 - REFERENCE STANDARDS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section contains a summary of industry-accepted and recognized standards published by trade associations, government and institutional organizations which are referred to in the various Sections of these specifications or elsewhere in the Contract Documents.
- B. Standards listed herein are included in the Contract Documents by this reference and become a part of the Contract Documents to the same extent as though included in their entirety unless specific limitations are noted in the individual specifications Sections.
- C. Listings of reference standards include name and address of the organization publishing the standard, plus the full name and designator of each of the standards referenced herein.
- D. If a publication date or edition number is listed with the reference standard, that publication date or edition number shall apply. Otherwise, the publication date or edition number in effect at the Contract date shall apply.
- E. Inclusion of reference standards herein does not make the DIA Project Manager an agent of the publishing agency, nor does it obligate the DIA Project Manager to perform inspections required by or to enforce rules or regulations contained in the reference standards.

#### 1.3 SCHEDULE OF REFERENCE STANDARDS

- A. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 444 North Capitol Street, NW, Suite 249, Washington, DC 20090:

AASHTO M 36      Corrugated Metal Pipe.

AASHTO M216      Standard Specification for Lime for Soil Stabilization.

AASHTO T26      Standard Method of Test for Water to be Used in Concrete.

- AASHTO T84      Specific Gravity and Absorption of Fine Aggregate.
- AASHTO T85      Specific Gravity and Absorption of Coarse Aggregate.
- AASHTO T103     Freeze-Thaw.
- AASHTO T219     Standard Methods of Testing Lime for Chemical Constituents and Particle Sizes.

B.    AMERICAN CONCRETE INSTITUTE (ACI) P.O. Box 19150, Redford Station,  
Detroit, MI 48219, (313) 372-9800:

- ACI 211.1      Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
- ACI 211.2      Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
- ACI 301        Specifications for Structural Concrete for Buildings.
- ACI 304        Recommended Practices for Measuring, Mixing, Transporting and Placing Concrete.
- ACI 304.2R    Placing Concrete by Pumping Methods.
- ACI 305R      Hot Weather Concreting.
- ACI 306R      Cold Weather Concreting.
- ACI 315        Details and Detailing of Concrete Reinforcement.
- ACI 318        Building Codes Requirements for Reinforced Concrete  
(NOTE: Reference to ACI 318 may be limited to more stringent requirements of local building code).

C.    AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) 1916 Race Street,  
Philadelphia, PA 19103, (215) 299-5585:

- ASTM A 27     Mild to Medium Strength Carbon - Steel Casting for General Application.
- ASTM A 36     Structural Steel.
- ASTM A 47     Malleable Iron Castings.
- ASTM A 82     Specification for Steel Wire, Plain, for Concrete Reinforcement.
- ASTM A 123    Hot-dip Galvanizing.
- ASTMA 184    Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.

- ASTM A 185 Specifications for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement.
- ASTM A 283 Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and Bars.
- ASTM A 615 Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- ASTM A 706 Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
- ASTM C 25 Method for Chemical Analysis of Limestone, Quicklime and Hydrated Lime.
- ASTM K 29 Unit Weight of Aggregate.
- ASTM C 31 Methods of Making and Curing Concrete Test Specimens in the Field.
- ASTM C 33 Specification for Concrete Aggregates.
- ASTM C 39 Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- ASTM C 42 Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
- ASTM C 76 Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.
- ASTM C 88 Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
- ASTM C 94 Specification for Ready Mixed Concrete.
- ASTM C 109 Mortar Bar Test for Cement.
- ASTM C 110 Methods for Physical Testing of Quicklime, Hydrated Lime and Limestone.
- ASTM C 117 Materials Finer than 75 mm (No. 200) Sieve in Mineral Aggregates by Washing.
- ASTM C 131 Resistance of Abrasions of Small Size Coarse Aggregate by Use of the Los Angeles Machine.
- ASTM C 136 Method for Sieve Analysis of Fine and Coarse Aggregates.
- ASTM C 138 Unit Weight, Yield and Air Content of Concrete.
- ASTM C 143 Test Method for Slump of Portland Cement Concrete.
- ASTM C 150 Specification for Portland Cement.
- ASTM C 171 Specification for Sheet Material for Curing Concrete.
- ASTM C 172 Method of Sampling Fresh Concrete.
- ASTM C 173 Test Method for Air Content of Freshly Mixed Concrete by the Volumetric



Method.

ASTM C 231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

ASTM C 260 Specification for Air Entraining Admixture for Concrete.

ASTM C 309 Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

ASTM C 443 Joints for Circular Concrete Sewer and Culvert Pipe Using Rubber Gaskets.

ASTM C 494 Specification for Chemical Admixtures for Concrete.

ASTM C 595 Blend Hydraulic Cements.

ASTM C 618 Specification for Fly Ash and Raw or Calcined Natural Pozzolan for as a Mineral Admixture in Portland Cement Concrete. Use

ASTM C 655 Reinforced Concrete D Load Culvert, Storm Drain and Sewer Pipe.

ASTM C 789 Precast Reinforced Concrete Box Sections for Culverts, Storm Drains and Sewers.

ASTM C 803 Test Method for Penetration Resistance of Hardened Concrete.

ASTM C 805 Test Method for Rebound Number of Hardened Concrete.

ASTM C 977 Specification for Quicklime and Hydrated Lime for Soil Stabilization.

ASTM D 75 Sampling Aggregate.

ASTM D 422 Test Method for Particle Size Analysis of Soils.

ASTM D 516-88 Standard Test Method for Sulfate Ions in Water.

ASTM D 693 Crushed Stone, Crushed Slag and Crushed Gravel for Dryer Water-Bound Macadam Base Courses and Bituminous Macadam Base and Surface Courses of Pavements.

ASTM D 698 Test Method for Moisture Density Relations of Soils and Soil- Aggregate Mixtures Using 5.5-lb. Hammer and 12-Inch Drop.

ASTM D 751 Burst Strength.

ASTM D 1556 Test Method for Density of Soil in Place by the Sand-Cone Method.

ASTM D 1557 Test Method for Moisture Density Relations of Soils and Soil- Aggregate Mixtures Using 10-lb. Hammer and 18-Inch Drop.

- ASTM D 1682          Ultraviolet Resistance Grab Tensile Strength Grab Tensile Elongation Toughness.
- ASTM D 1751          Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- ASTM D 1752          Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- ASTM D 2167          Test Method for Density of Soil in Place by the Rubber-Balloon Method.
- ASTM D 2216          Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock and Soil Aggregate Mixtures.
- ASTM D 2363-78      Trapezoid Tear Strength.
- ASTM D 2419          Sand Equivalent Value of Soils and Fine Aggregate.
- ASTM D 2487          Test Method for Classification of Soils for Engineering Purposes.
- ASTM D 2922          Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Method.
- ASTM D 3017          Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- ASTM D 3665          Random Sampling of Paving Materials.
- ASTM D 4253          Test Method for Maximum Index Density of Soils Using Vibratory Table.
- ASTM D 4318          Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- ASTM D 4397          Specification for Polyethylene Sheeting for Construction, Industrial and Agricultural Applications.
- ASTM D 4546          Test Method for One-Dimensional Swell or Settlement Potential of Cohesive Soils.
- ASTM E 329          Recommended Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as Used in Construction.
- ASTM F 477          Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- ASTM F 758          Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport and Similar Drainage.
- D.      AMERICAN WELDING SOCIETY (AWS), 550 NW LeJeune Road, Miami, FL  
33135AWS Code for Welding in Building Construction (Structural Welding Code).
- E.      CONCRETE REINFORCING STEEL INSTITUTE (CRSI)933 N. Plum Grove Road,

Schaumburg, IL 60195, (312) 490-1700:

Manual of Standard Practice.

- F. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) Division of Administration, Office of Bid Plans, 4201 E. Arkansas Avenue, Denver, CO 80222:

Standard Specifications for Road and Bridge Construction (latest edition) Colorado Standard Plans, M&S Standards.

- G. FEDERAL HIGHWAY ADMINISTRATION (FHWA) Superintendent of Documents, US Government Printing Office, Washington DC, 20402:

Manual of Uniform Traffic Control Devices (latest edition).

**PART 2 - PRODUCTS (Not used)**

**PART 3 - EXECUTION (Not used)**

**PART 4 - MEASUREMENT**

4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

**PART 5 - PAYMENT**

5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section.

**END OF SECTION 014225**

## SECTION 014230 - DEFINITIONS AND CONVENTIONS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section contains a list of definitions of words or phrases and grammatical or contextual conventions commonly used in these Contract Documents.

#### 1.3 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Alphabetical Listing of Definitions:
  - 1. **As indicated:** Shown on the drawings by graphic indication, notes or schedules, or written in the specifications or elsewhere in the Contract Documents.
  - 2. **As directed, as approved, as requested:** Unless otherwise indicated, these terms imply "by the DIA Project Manager" and require that an instruction be obtained by the Contractor from the DIA Project Manager.
  - 3. **Concealed:** Embedded in masonry, concrete or other construction; installed in furred spaces; within double partitions or hung ceilings; in trenches; in crawl spaces or in enclosures.
  - 4. **Ensure:** To make certain in a way that eliminates the possibility of error.
  - 5. **Exposed:** Not installed underground or "concealed" as defined above.
  - 6. **Furnish or Provide:** To supply, install and connect complete and ready for safe and regular operation of particular work unless specifically otherwise noted.
  - 7. **Indicated, Shown, or Noted:** As depicted on drawings or specifications.
  - 8. **Install:** To erect, mount and connect complete with related accessories.
  - 9. **Or equal, or approved equal:** Refers to products which, in the opinion of the DIA Project Manager, are similar in all respects to products specified by proprietary brand name. Refer to Section 012510 "Substitutions" for procedures for submittal of proposed substitutions.
  - 10. **Rework:** To repair existing items or work required to be removed and replaced in order to accomplish the Work in accordance with the Contract Documents.
  - 11. **Related Work:** Includes, but not necessarily limited to, mentioned work associated with, or affected by, the Work specified.
  - 12. **Reviewed, Satisfactory, Accepted, or Directed:** Assumes by or to the DIA Project Manager.

13. **Similar, or Equal:** Same in materials, weight, size, design, construction, capacity, performance and efficiency of specified product.
14. **Supply:** To purchase, procure, acquire and deliver complete with related accessories.
15. **Unless Otherwise Indicated and Unless Otherwise Noted:** General note to perform work as indicated or shown on drawings or in specifications unless specifically directed otherwise elsewhere in the Contract Documents; may be abbreviated "U.O.N.", "U.O.I.", or "U.N.O."

C. BIM Model Definitions:

1. **Building Information Model (BIM):** BIM is a digital representation of the physical and functional characteristics of the Project and is referred as a Model(s), which term may be used to describe a Model Element, a single Model or technology used to creates the Model.
2. **Design Model:** A Model that has reached the stage of completion that would customarily be expressed by an architect or engineer in two dimensional Construction Documents.
3. **Construction Model:** The equivalent of shop drawing and other information useful to construction. A model that consists of data imported from a "Design Model or", if none exist, from a designer's "Construction Document".
4. **Federated Model:** Distinct component models "linked" together in such a manner that the linked data sources so not lose the indent or integrity by being so linked.
5. **Level of Development (LOD):** LoD describes the level of completeness to which a Model Element is developed.
6. **Model Element:** Is a portion of the BIM representing a component system or assembly within a building or building site.
7. **Model Element Author:** The party responsible for developing the content of a specific Model Element to the LoD for a particular phase of the Project.

1.4 BIM REFERENCE STANDARDS

- A. Refer to DIA Design Standard Manual (DSM) Volume 12, and the proposed minimum requirements of DSM Chapter 4.3.2 "BIM Execution Plan for additional BIM" for more detail requirements and regulations for this Project. The execution plan shall be further developed jointly with DIA and the Contractor to specifically address the administrative steps necessary to provide comprehensive BIM system before during and after construction.

1.5 CONVENTIONS

A. Specifications Format:

1. In order to standardize the location of information in the Contract Documents, the specifications generally are organized in one or more of the following formats:
  - a. The "MASTERFORMAT" 2011 Edition published by the Construction

Specifications Institute.

- b. The Standard Specifications for Road and Bridge Construction published by CDOT.
- c. The alpha-numeric system as published by the FAA.

B. Organization of Drawings and Specifications:

1. Organization of the specifications into divisions and sections, and arrangement or numbering of drawings is intended solely for the convenience of the Contractor in the Contractor's responsibilities to divide the Work among subcontractors or to establish the extent of work to be performed by any trade.
2. Neither the Owner nor the DIA Project Manager assume any liability arising out of jurisdictional issues or claims advanced by trade organizations or other interested parties based on the arrangement or organization of drawings or specifications.

C. Gender and Number:

1. For convenience and uniformity, parties to the Contract, including the Owner, Contractor, and DIA Project Manager, and their subcontractors, suppliers, installers, consultants or other interested parties are referred to throughout the Contract Documents as if masculine in gender and singular in number. Such reference is not intended to limit the meaning of the Contract Documents to the masculine gender or singular number.

D. Singular vs. Plural:

1. Materials, products, equipment or other items of work referred to in the singular shall be construed as plural where applicable by the intent of the Contract Documents and shall not limit quantities to be provided by the Contractor.

E. Imperative Mood:

1. Specifications and notes on the drawings or elsewhere in the Contract Documents are generally written in the imperative mood as instructions to the Contractor, whether the Contractor is specifically addressed or not.

F. References to Subcontractors or Trades

1. References to subcontractors, trades or other entities which are not parties to the Contract shall be construed as meaning the Contractor whose responsibility it shall be to divide the Work among subcontractors or trades. Such references are used as a matter of convention, and are not intended to preclude or direct the Contractor's responsibility to divide the Work.

G. Abbreviations

1. A list of abbreviations used in the Contract Documents is included in Technical Specifications Section 014220 "Abbreviations and Symbols"; an abridged list of abbreviations used on the drawings is included with the drawings.

2. Abbreviations are believed to be those in general use in the construction industry. Contact the DIA Project Manager for clarification of abbreviations for which the meaning is not clear.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**PART 4 - MEASUREMENT**

4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

**PART 5 - PAYMENT**

5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section.

**END OF SECTION 014230**

## **SECTION 014310 - DIA QUALITY ASSURANCE**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. General Conditions Sections including, but not limited to, the following:
  - 1. General Conditions Title 17, Section 1701 - "Construction Inspection by the City"
  - 2. General Conditions Title 17, Section 1702 - "Authority of Inspectors".
  - 3. General Conditions Title 17, Section 1703 - "Observable Defects".
  - 4. General Conditions Title 17, Section 1704 - "Defects – Uncovering Work".
  - 5. General Conditions Title 17, Section 1705 - "Latent Defects".
  - 6. General Conditions Title 17, Section 1706 - "Removal of Defective Materials and Work".

#### **1.2 SUMMARY**

- A. This Section identifies DIA Inspection activities to be performed by inspectors employed by DIA and working under the direction of the DIA Project Manager.
- B. Inspection and tests, conducted by persons or agencies other than the Contractor, shall not in any way relieve the Contractor of the Contractor's responsibility and obligation to meet requirements of all Contract Documents and the referenced standards.
- C. The inspection and approval of Work by other agencies above does not constitute inspection or acceptance of work required by DIA. Technical specifications may contain requirements more stringent than Building Inspection Division or other code agency requirements.
- D. Related Sections:
  - 1. Section 014510 "Contractor Quality Control".



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## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 MANUFACTURING AND FABRICATION INSPECTIONS**

- A. The DIA Project Manager may elect to perform additional inspections and/or tests at the place of the manufacture, the shipping point or at the destination to verify conformance to Contract Documents. Inspections and tests performed by DIA shall not relieve the Contractor from the responsibility to meet the requirements of the Contract Documents, nor shall such inspections/tests be considered to be a guarantee for acceptance of materials that will be delivered at a later time.
- B. The DIA Project Manager or the DIA Project Manager's authorized representative may inspect at its source any material or assembly to be used in the Work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the Work and to obtain samples for testing and further inspection.
- C. Should the DIA Project Manager conduct plant inspections the following conditions shall exist:
  - 1. The DIA Project Manager shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
  - 2. The DIA Project Manager shall have full access during scheduled production or warehousing working hours to parts of the plant that are concerned with the manufacture, production, storage or shipping of materials being furnished.
  - 3. The Contractor shall arrange for adequate office or working space that can reasonably be needed for conducting a plant inspection. Office or working space shall be conveniently located with respect to the plant and/or warehouse as required by the DIA Project Manager.
- D. It is understood and agreed that DIA shall have the right to re-test at DIA's expense any materials that have been tested and accepted at the source of supply after it has been delivered to the site.

### **3.2 INSPECTIONS AND TESTS**

- A. It is understood and agreed that DIA shall have the right to take samples and perform testing of samples at different intervals or at intervals concurrent to the Contractor's testing program. The Contractor shall be issued a Non- Conformance Report (NCR) or a Remedial Action Request (RAR) in the event DIA tests fail.
- B. Materials accepted on the basis of a certificate of compliance may be sampled and inspected/tested by DIA or its designer at any time. The fact that the materials were accepted on the basis of such certification shall not relieve the Contractor of the Contractor's responsibility to use materials that conform to the Contract Documents.

- C. DIA inspection shall include but not be limited to Initial Inspection, Follow-up Inspection, Completion Inspection, Pre-Final Acceptance Inspection, and Final Acceptance Inspection. The Contractor shall comply with the requirements of these inspections as identified in Section 014510 "Contractor Quality Control".

### 3.3 NONCONFORMING WORK AND MATERIALS

A. Remedial Action Request (RAR) OR Discrepancy List:

1. The DIA Project Manager will request the Contractor to take remedial action when minor defect of nonconforming work is discovered and the item does not need engineering evaluation or proposed solution and the nonconformance has not been covered and is repairable.
2. The discrepancy list could replace the RAR form and log system if each item on the list has sufficient information to track the item and close it prior to any covering of the defect
3. Discrepancy list could include deficiencies temporarily until an appropriate document like Corrective Action Report (CAR) or Non-Conformance Report (NCR) is issued.
4. Items of Non-Conformance that cannot be recovered may require a variance approval of the Engineer of Record or the Designer of Record or the Special Inspection discrepancy in variance of the Contract Documents shall not be addressed by an RAR and must be issued as NCR and must be closed by the Special Inspection Agency.
5. The DIA Project Manager will document remedial action that cannot be taken immediately (the same day) by issuing a Remedial Action Request form to the Contractor. Remedial Action Requests are appropriate when the affected element of work is in-progress and discrepancies can be rectified as the work proceeds. RAR's shall be written when work can be brought back into conformance with the Contract Documents.
6. When issued, a Remedial Action Request will preclude payment for elements noted and will remain in effect until corrective actions have been submitted, approved and performed.
7. Upon satisfactory completion of the remedial action, the Contractor shall transmit the RAR form with the Contractor's statement of action taken (including any applicable test results) to the DIA Project Manager. The DIA Project Manager will perform a follow-up inspection to verify the RAR has been satisfactorily completed. The RAR then will be closed.
8. Deficiency list will preclude payment for the elements noted or a deduction for the amount of defect must be deducted from the progress payment if the element is submitted as completed and up to the total value of the element as indicated by the schedule of value.

B. Nonconformance Report (NCR)

1. The DIA Project Manager will issue a Nonconformance Report to the Contractor whenever there are violations of the terms of the Contract that cannot be immediately brought back into conformance, including materials received and/or items of the Work found not to be in conformance with Contract requirements.

When issued, a Nonconformance Report will preclude payment for elements noted and will remain in effect until corrective actions have been submitted, approved and performed.

2. The Nonconformance Report form will describe the nature and extent of nonconforming elements and will include space for the Contractor's corrective action proposal, the designer's review of the Contractor's proposal, reinspection and/or verification of approved corrective rework and a space for the DIA Project Manager's disposition of the nonconformance matter. Copies of the Nonconformance Report, at each step of its processing (i.e., initial issuance to Contractor through final disposition), will be sent to the DIA Project Manager.
3. The DIA Project Manager will make the disposition of nonconforming items/materials.

C. The Contractor is contractually obligated to correct any item deemed deficient.

#### **PART 4 - MEASUREMENT**

##### **4.1 METHOD OF MEASUREMENT**

A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### **5.1 METHOD OF PAYMENT**

A. No separate payment will be made for work under this Section. The cost of the Work described in this Section shall be included in the unit price item, work order or lump sum bid item. If the City is required to re-inspect Work because the previous inspection showed that the Work was defective or not in conformance, the Deputy Manager or the Deputy Manager's authorized representative may deduct from the Contract value the cost of re-inspection and/or retesting at the rate of \$100.00 per man-hour.

#### **END OF SECTION 014310**

## **SECTION 014510 - CONTRACTOR QUALITY CONTROL**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section identifies the Quality Control activities to be performed during all phases of the Contract by the Contractor.
- B. The Contractor shall have in place his/her Quality Control Program as necessary to ensure that all materials and work are completed in compliance with Contract Documents. The Contractor is solely responsible for Quality Control and shall provide the necessary quality control personnel to assure that all materials, workmanship, and tests are in conformance with the Project documents with the exception of those tests and/or audits that may be conducted by the City as defined in the contract documents.
- C. Test schedules and/or testing requirements for materials used on this project are included in the technical specifications. Laboratory and field testing identified in the specifications shall be conducted by an Independent Testing Agency (ITA) retained by the Contractor.
- D. The Owner or the consultant working as the Owner representative will employ a Special Inspector to perform all required inspections and tests required by the Special Inspection Statement as approved by the Building Official and any tests required by the Building Official to fulfill the code and the regulatory authority's requirements. The agency qualifications and requirements is defined in section 014545 "Special Inspection and Owner Testing Agencies".
- E. The Owner or its consultant working as Owner agent will employ a testing agency to perform all the required Quality Assurance and Special Inspection Testing of material and Inspection of workmanship required by the Contract Documents. The Contractor must schedule these tests and provide access to the Owner agents' inspectors and testers to perform these tests and inspections. The performance of the tests by the Owner does not relieve the Contractor of his/her responsibility to deliver a fully functional building meeting all the requirements of the Contract Documents and their intent. The Contractor must develop its own testing program for processing, acceptance from the subcontractor or suppliers at a frequency defined by the contractor for its own process control and to assure delivery of the intended acceptable workmanship. All time impacts of testing and retesting shall be accounted for in the updated schedule and any mitigation of time impacts shall be the responsibility of the Contractor.

### 1.3 SUBMITTALS

- A. Refer to Section 013300 "Submittals" and Section 013325 "Submittal Procedures" for submittal requirements.
- B. Quality Control Plan: Within ten (10) days after Notice to Proceed, the Contractor shall submit a Quality Control Plan for review and acceptance. The Quality Control Plan shall be accepted by the DIA Project Manager prior to any Work or materials being incorporated into the Project. Acceptance by the DIA Project Manager does not relieve the Contractor of its responsibility to comply with the Contract Requirements. The Contractor Quality Control Plan shall address the following as a minimum:
1. A general description of Quality Control monitoring to be performed until final acceptance by DIA. Include monitoring activities of Work and the work site during times that no construction activity is scheduled to take place.
  2. An individual designated by the Contractor whose sole responsibility is Quality Control Management. This individual shall be highly qualified in all phases of construction as it relates to this Project and shall have the authority to direct work changes required to bring the Work into conformance with Contract requirements, including stopping non-conforming work in progress. A detailed resume of the proposed Quality Control Manager including applicable education, experience and certifications shall be included in the Quality Control Plan.
  3. At the discretion of the DIA Project Manager, for Small Projects, Early Work Packages and Task Orders all of value less than \$1,000,000 or a duration which is less than three (3) months, the Contractor may assign one of the Contractor's staff, i.e. Contractor's Superintendent, Office Engineer, Field Engineer, or Contractor's Project Manager as Quality Control Manager. The assigned person must be available on site to discuss quality issues and manage all aspects of the Project Quality Control Plan and coordinate all required Special Inspection and Quality Assurance testing and provide proposed solutions on all quality issues at any time as to not cause any delay to the project. Any delays caused in part or in all due to defective or no conforming work shall be borne by the Contractor.
  4. Quality Control inspection staff as needed to assist the Quality Control Manager with implementation of the Quality Control Program. Duties of the Quality Control Inspectors shall be limited strictly to inspection of the ongoing work. Sampling and testing of materials shall be performed by Quality Control personnel other than Quality Control Inspectors. Quality Control Inspectors shall inspect only those work elements for which they are qualified. Resumes of the proposed Quality Control Inspectors including applicable education, experience and certifications shall be included in the Quality Control Plan.
  5. An Organization Chart identifying all Quality Control staff by name and function. The chart shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work including tests performed by the special inspection or the independent testing agency or the Owner testing Agency. If necessary, different Quality Control staff can be utilized for specific inspection and testing functions for different items of work. The chart shall show that the Quality Control Manager, Quality Control Inspectors, and Quality Control testing personnel are outside of the production staff with clear lines of authority for Quality Control.
  6. The Owner and/or the Owner Program Management Team acting as the Owner

agent will employ a testing and /or special inspection agency. The Contractor's testing and inspection shall be performed for the processing, preparation and to request owner's inspection and as necessary to produce the required product as specified in the Contract Documents. While the test frequency performed by the Contractor is not required to meet a minimum frequency, it should be noted that the Owner or its Agent could mandate a testing frequency for those activities that are not meeting a repetitive success rate of 97%. Tests performed by the Owner's agent cannot be used for process control of the Contractor's Work or as a subcontractor work acceptance by the prime contractor.

7. Any test performed by any agency on the Project shall be recorded and show a passing re-inspection of all failing tests.
8. Any tests submitted by the Contractor for basis of acceptance, or payment reduction when performed by the Contractor's agency, must meet all standards and must be certified to have followed approved procedure, processed in a certified lab by properly certified or licensed personnel by properly certified testers and on calibrated and certified equipment. Authentications of tests must be preapproved and cannot be selectively submitted. All tests shall be recorded in the field witnessed by DIA inspector to be accepted as a record test of the material in question. Any failing tests could be the sole basis for rejecting the material.
9. Each technical specification division's requirements for quality control identifying each item requiring submittal and approval/acceptance prior to installation of work, all inspections to be performed during work and prior to acceptance of work, each item of work requiring testing by the independent testing agency or the Owner provided testing agency, and the testing frequency.
10. The plan shall address all elements of special inspection required by the statement of special inspection as approved by the Building Official. All special inspections and tests will be performed by an agency(s) employed directly by the Owner or a consultant acting as an Owner agent as defined by Chapter 17 of the IBC.
11. The Contractor is responsible for the complete record of inspection file including but not limited to all manufacturer certificates, certificates of material compliance, Certificates of Material Testing Record, successful re-inspection of all deficiency items, proper deposition of design related NCR's and CAR's, Structural Engineers' observation reports, certification letters from the Special Inspection Agency(s), Building Inspectors' records of approvals, permit cards, fire suppression and fire- alarm tests records as witnessed by the authorities of jurisdiction and any record necessary to achieve a certificate of occupancy.
12. The Contractor must keep track of all logs of discrepancies and submit periodic updates, as required by the DIA Project Manager, of all open issues and track the closure of open items in a timely manner.
13. Establish controls and documentation format to ensure that items or materials that have been accepted through receiving inspection are used or installed. Identification and traceability shall be provided throughout all inspections, test activities and records. For stored items, provisions shall be made for the control of item/material identification, consistent with the expected duration and type of storage.
14. A methodology of monitoring, testing and exercising of all equipment, valves and/or assemblies to ensure the Work installed is in proper working order.
15. A list of suppliers and subcontractors. This list shall include items to be supplied

- by each supplier and/or subcontractor and shall identify work to be performed by each subcontractor. The list shall be updated and resubmitted as required.
16. Manufacturer's quality control plans and any certification to allow the fabrication of the material without special inspection and testing in accordance with section 1704.2.2 of the IBC.
  17. All approvals related to Special Inspection are subject to the acceptance or approval of the Building Official as regulated by sections 105, 106, 109 and Chapter 17 of the Building code as amended by CCD.
  18. Emergency contact information including name, company, title, work phone number, home phone number and other means of contact. The Emergency Contact list shall include at least four individuals. The Emergency Contact list shall be maintained on a daily basis. In the event there is any change in any of the information, the Contractor shall forward the updated list to the DIA Project Manager and to DIA Maintenance Control (303-342-2800). The Emergency Contact list shall include the project number, project title and date of issue.

C. Contractor's Daily Foreman Report:

1. A Contractor's Daily Foreman report shall be completed on form included in Technical Specifications Section 019990 "Standard Forms". The Foreman may add sheets of information to this form as needed. The report shall address as a minimum the following:
  - a. Daily activities.
  - b. Quantities of material placed and completed.
  - c. Weather.
  - d. Safety issues.
  - e. Personnel by trade.
  - f. Equipment on site with time used.
  - g. Equipment under repair.
  - h. Work delays.
  - i. Other possible delays.
  - j. Materials delivered.
  - k. Any other issues pertinent to the Work.
2. The Contractor's Daily Foreman Reports reporting shall be computerized or typed and may contain an electronic signature. Reports shall be transmitted to the DIA Project Manager electronically on the following work day.

D. Contractor's Daily Quality Control Inspection Report:

1. Contractor's Daily Quality Control Inspection Reports shall be completed on the form included in Technical Specifications Section 019990 "Standard Forms". The reports shall be written by the Quality Control Manager and all Inspectors. The Quality Control Manager and Inspectors may add sheets of information to this form as required. The report shall address as a minimum the following:
  - a. The work requiring inspection identified by the technical item number and description.
  - b. Results of the inspections.

- c. Material compliance with approved submittals.
  - d. Proper storage of materials and equipment.
  - e. Adherence to plans and technical specifications.
  - f. Review and description of quality control tests.
  - g. Compliance of testing frequencies.
  - h. Location and nature of defects or deviations found.
  - i. Causes for rejection.
  - j. Corrections required to bring the Work into conformance with the Contract.
  - k. Any other issues pertinent to the Work.
2. Contractor's Daily Quality Control Inspection Reports shall be computerized and may contain an electronic signature of the author. Reports shall be transmitted to the DIA Project Manager electronically on the following work day.
- E. For Small Projects, EWP on CM/GC Contracts, Task Orders all for a base bid Contract value of less than \$1,000,000 and/or a duration of three months or less, a report with both daily and quality information may be combined at the discretion of the DIA Project Manager.
- F. Deficiency List: The Quality Control Manager shall establish a deficiency list including the minimum information for each deficiency item; description, date, location, drawings reference, detail reference, specification reference and superseding document NCR, or CAR, date of expected solution date repaired date inspected by Owner representative and accepted.
- G. Corrective Action Report (CAR)
1. Conditions adverse to quality will be reviewed by the Contractor to determine the cause and to recommend a corrective action that will preclude recurrence. The condition, its cause and the corrective action planned shall be reported to the DIA Project Manager prior to implementation. Follow-up action shall be taken to verify implementation of the corrective action. The Contractor will document the corrective action and a copy of the Corrective Action Report (CAR) will be transmitted to the DIA Project Manager. For any deficiency that deals with a special inspection issue or propose any alteration to the original design must be addressed in a CAR issued by the Contractor or an NCR issued by the Owner and must be reviewed by the Engineer of Record for approval and must be re-inspected by the Special Inspector or the DIA inspector for approval and closure.
- 1.4 DOCUMENTATION
- A. The Contractor shall not change or alter approved submittals, procedures, specifications, drawings or other pertinent documentation without the DIA Project Manager's written authorization.
- B. All records and documents that are quality related shall be prepared, identified and maintained by the Contractor and shall be made available to DIA upon request. Records shall be protected from damage, deterioration or loss. A copy of the records



and documents shall be maintained at the Work site at all times unless the DIA Project Manager has approved other locations in writing. Retention time for all quality records shall be not less than three (3) years from date of Final Acceptance of the Contract.

- C. The Contractor is responsible for the complete record of inspection file including but not limited to all manufacturer certificates, certificates of material compliance, Certificates of Material Testing Record, successful re-inspection of all deficiency items, proper deposition of design related NCR's and CAR's, Structural Engineers' observation reports, certification letters from the Special Inspection Agency(s), Building Inspectors' records of approvals, permit cards, fire suppression and fire-alarm tests records as witnessed by the authorities of jurisdiction and any record necessary to achieve a Certificate of Occupancy. Also reference paragraph 1.2.B.11 of this Section.
- D. The Contractor shall maintain records at the actual worksite and at Contractor's office to show the inspection status of materials and items installed in order to ensure that the required inspections and tests have been performed in a timely and correct manner.
- E. The Contractor must keep a record of all deficiency issues and show positive evidence of closure (passing re-inspection or re-test) to every issue.

#### 1.5 INSPECTIONS AND TESTS

- A. Inspections, tests and system shut down requests, conducted by persons or agencies other than the Contractor, shall not in any way relieve the Contractor of his responsibility and obligation to meet all specifications and the referenced standards. The Contractor's designated Quality Control Representative shall inspect the work and shall ensure the Work complies with the Contract requirements prior to any requests for inspection or testing.
- B. When the specifications, laws, ordinances, rules, regulations or orders of any public agency having jurisdiction require the DIA Project Manager's surveillance of inspections or tests, the Contractor shall notify the DIA Project Manager of the place, date and time 48 hours prior to the inspection and/or test. The Contractor shall be responsible for notifying and requesting inspection by other agencies including but not limited to the Denver Building Inspection Division, Denver Fire Department and Denver Water Department. Prior to request for other agency inspections, the Contractor shall meet and plan inspection times with the DIA Project Manager and or the DIA Project Manager's designated representative.
- C. Special inspections or tests may be required by the technical specifications, City, State and/or Federal Agencies in addition to those tests already performed. The Contractor shall notify the DIA Project Manager at least 48 hours in advance of the additional inspections or tests.
- D. Quantities will be verified as defined in the Pre-Work Meetings.

## 1.6 INSPECTION PLAN

- A. The Contractor shall utilize the following six-point inspection plan to ensure the conformance of the Work performed by the Contractor meets the requirements of the Contract Drawings and specifications, the referenced codes and standards and the approved submittals:
1. **Pework Coordination:** Prior to the start of construction work on the Contract and prior to the start of Work under each separate specification section and prior to the start of Work where a change in a construction operation is contemplated by the Contractor, and prior to a new subcontractor starting work, a coordination meeting will be held with the Contractor's superintendent, Quality Control and Safety representative(s), the ITA representative, the DIA Project Manager and DIA inspectors. Supervisory, Safety and Quality Control, representatives of all applicable subcontractors will also attend. Prior to the meeting, the Contractor's Quality Control Manager shall provide the DIA Project Manager with a meeting agenda for review. The Contractor's Quality Control Manager shall conduct the meeting and distribute the approved agenda. The Quality Control Manager shall develop and electronically distribute finalized meeting minutes within 24 hours upon completion of the meeting.
  2. The purpose of the meeting is to ensure that the Contractor's personnel have no misunderstandings regarding their safety and quality procedures as well as the technical requirements of the Contract. The following items shall be presented and reviewed by the Contractor:
    - a. Contract requirements and specifications.
    - b. Shop drawings, certifications, submittals and as-built drawings.
    - c. Testing and inspection program and procedures.
    - d. Contractor's Quality Control program.
    - e. Familiarity and proficiency of the Contractor's and subcontractor's workforce to perform the operation to required workmanship standards including certifications of installers.
    - f. Safety, security and environmental precautions to be observed.
    - g. Any other preparatory steps dependent upon the particular operation.
    - h. The Contractor's means and methods for performing the Work.
  3. **Initial Inspection:** Upon completion of a representative sample of a given feature of the Work and no later than two weeks after the start of a new or changed operation, the DIA Project Manager and/or the DIA Project Manager's designated representatives will meet with the Contractor's Quality Control representative and applicable subcontractor's supervisor and their Quality Control representatives to check the following items, as a minimum:
    - a. Workmanship to established quality standards.
    - b. Conformance to Contract Drawings, specifications and the accepted shop drawings.
    - c. Adequacy of materials and articles utilized.
    - d. Results of inspection and testing methods.
    - e. Adequacy of as-built drawings maintained daily.
    - f. Once accepted, the representative sample will become the physical

baseline by which ongoing work is compared for quality and acceptability. To the maximum practical extent, approved representative samples of work elements shall remain visible until all work in the appropriate category is complete. Acceptance of a sample does not waive or alter any Contract requirements or show acceptance of any deviation from the Contract not approved in writing by the DIA Project Manager.

4. Follow-up Inspection: The Contractor's Quality Control representative will monitor the Work to review the continuing conformance of the Work to the workmanship standards established during the preparatory and initial inspections.
5. Completion Inspection: Forty-eight (48) hours prior to the completion of an item or segment of work and prior to covering up any work, the Contractor will notify the DIA Project Manager who will verify that the segment of work is substantially complete, all inspections and tests have been completed and the results are acceptable. The purpose of this inspection is to allow further corrective work upon, or integral to, the completed segment of work. THIS IS NOT AN ACCEPTANCE INSPECTION. If any items are determined to be deficient, need correction or are non-conforming, a Deficiency List will be prepared and issued to the respective Contractor for correction, repair or replacement of any deficient or non-conforming items. The DIA Project Manager and Contractor's Quality Control representative will verify the correction of the deficient and/or non-conforming items prior to the start of the next operation.
6. Pre-Final Acceptance Inspection: Prior to requesting a Pre-Final Acceptance Inspection by DIA, all work and operational systems to be inspected shall be satisfactorily completed and tested by the Contractor. The Contractor's written request for this inspection shall be made seventy-two (72) hours in advance. With the request shall come a list of any known deficiencies and when they will be corrected. If the list is too large or contains too many significant items, in the opinion of the DIA Project Manager, no inspection will be held because of the incompleteness of the Work.
7. The DIA Project Manager will schedule the Pre-Final Acceptance Inspection and will prepare a list of deficient items (punch list) discovered during the inspection. If during the inspection the list becomes too large or too many significant items are on the list, the inspection will be canceled by the DIA Project Manager. After the inspection is completed, the Deficiency List will be transmitted to the Contractor for correction of the deficient items.
8. Final Acceptance Inspection: After the Contractor has completed all items on the Deficiency List (generated from the Pre-Final Acceptance Inspection) he shall request a Final Acceptance Inspection. The request shall be made in writing at least seventy-two (72) hours in advance of the inspection. All areas must be cleaned and ready for turnover prior to this inspection. The DIA Project Manager, the design consultant, a representative of the funding agency (if applicable) and other interested parties will inspect the subject Work to ensure that all deficiencies have been satisfactorily attended to and that no new deficiencies have appeared and that all systems are completely functional. Any outstanding or additional deficient items will be noted and handled per the requirements of the Pre-Final Acceptance Inspection noted above until the Work is acceptable to the DIA Project Manager.

## 1.7 CONTRACTOR SUBMITTAL OF PROPOSED CONTRATOR'S TESTING AGENCIES

- A. The Contractor shall employ the services of a Testing Agency for process control and acceptance by the subcontractors and suppliers or material delivery for Contractor convenience or contractual obligations with others. The Contractor's Testing Agency must be accredited agency to perform any test required to be submitted for compliance with a Contract requirement or for use of data by the Owner agency's for any official use, for examples and not to grant any obligation on the Project Management Team, any payment reduction factor calculation. Any dispute or requirement to recalibrate testing equipment or machine, proof of compliance of material that was installed in contrary to manufacturer recommendation, any apparent defect due to adverse weather, improper installation, incomplete material record.
- B. Contractor's testing agency must be a qualified entity(s) that has performed testing on similar jobs in size and complexity and has been accredited by AASHTO or CCRL or an approved equal to perform the test(s) required in the Contract. The CTA may also provide technicians to perform the required inspections. However, inspection and testing cannot be performed simultaneously by the same technician.
- C. The Contractor shall not submit for acceptance to the DIA Project Manager any testing agency or laboratory utilized in the design or construction document preparation or presently employed by DIA as part of DIA Quality Assurance.
- D. For consideration of acceptance, the Contractor shall submit to the DIA Project Manager the following items received from the CTA:
1. Affidavit of current accreditation from a national certification and/or accreditation program.
  2. Evidence that the CTA Laboratory is accredited to perform the testing required in the Technical Specifications.
  3. Resumes and evidence of professional engineer registration and licensing in the State of Colorado for the personnel reviewing and signing test reports.
  4. Resumes and current certifications verifying that SIA management and supervisory personnel, laboratory staff, field testing technicians, and inspecting technicians are qualified in accordance with ASTM C 1077, D 3666, D 3740, and E 329 requirements to perform the Work. NICET, ACI, WAQTC, Lab-CAT, CDOT, NRMCA, PCA, AWS, ASNT certifications or a degree in a related engineering field with construction field experience can demonstrate qualifications. A list summarizing all management, supervisory, laboratory, field testing, and inspection personnel assigned to the Project including the testing and/or inspection each individual will be performing, certifications held by each individual, and the expiration date of each certification.
  5. A matrix indicating each technical specification section, paragraph, quantity and type of sampling and/or testing required.
  6. Copies of all laboratory, field testing, and inspection report forms.

## 1.8 SAMPLES

- A. The Contractor shall maintain at the worksite a copy of all samples submitted and

accepted by the DIA Project Manager. Samples shall be made available to the designer or the DIA Project Manager's designated representatives for review and comparison in the field. Prior to use on the project, the DIA Project Manager must accept all items and materials.

- B. The installed work will be compared to the samples and if any of the work is not of the same quality, material, finish, color, texture or appearance as the sample, that portion that is not the same will be considered defective and in nonconformance.
- C. Contractor selection of samples will only be considered if taken at random. The Contractor shall permit representatives of DIA to witness the selection of samples. Inspection or tests of items or materials that fail shall be sufficient cause to terminate further inspections/tests of the same brand, make or source of that product.
- D. The Contractor is obligated to correct any item deemed deficient.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 REQUIREMENTS**

- A. All materials required for the Contract shall be new except where specified otherwise. The DIA Project Manager may elect to perform additional inspections and/or tests at the place of the manufacture, the shipping point or at the destination to verify conformance to applicable specifications. Inspections and tests performed by DIA shall not relieve the Contractor from the responsibility to meet the specifications, nor shall such inspections/tests be considered a guarantee for acceptance of materials that will be delivered at a later time.
- B. The Contractor is obligated to correct or remove non-conforming materials, whether in place or not. If necessary, the DIA Project Manager will send written notification to the Contractor to correct or remove the defective materials from the project. If the Contractor fails to respond, the DIA Project Manager may order correction, removal and/or replacement of defective materials by others, in which case the Contractor shall bear all costs incurred by such actions.
- C. Materials accepted on the basis of a Certificate of Compliance may be sampled and inspected/tested by DIA or its designer at any time. The fact that the materials were accepted on the basis of such certification shall not relieve the Contractor of his responsibility to use materials that conform to the specifications.
- D. The Contractor shall impose upon his suppliers the same quality control requirements, including inspection and test procedures, as imposed upon him by the specifications and referenced standards. The Contractor shall apply appropriate controls, designed to ensure that all materials supplied meet the requirements and specifications.

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the Work described in this Section shall be included in the applicable multiplier for the division under which the Work falls. If the City is required to re-inspect Work or conduct a special test because a previous inspection, requested by the Contractor, showed that the Work was defective or not in conformance, the Deputy Manager/ Program Manager or his authorized representative may deduct from the contract value the cost of re-inspection at the rate of \$100.00 per man-hour.

**END OF SECTION 014510**

## **SECTION 014525 - MATERIAL TESTING AGENCY**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. ASTM Standards:
  - 1. ASTM C 1077 - Standard Practices for Laboratory Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
  - 2. ASTM D 3666 - Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials.
  - 3. ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
  - 4. ASTM E 329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.
  - 5. ASTM E 543 - Specification for Agencies Performing Nondestructive Testing.
- C. Standard testing practices for other disciplines.

#### **1.2 SUMMARY**

- A. The Contractor shall employ the services of a Material Testing Agency (MTA). This Section identifies the requirements for the Contractor to employ a Material Testing Agency and identifies the required activities of the Material Testing Agency.
- B. Laboratory and field testing requirements to be conducted by the MTA for materials and construction methods used on this project are included in the appropriate technical specifications. Where the Specifications reference the CDOT Standard Specifications for Road and Bridge Construction, the references shall also mean CDOT Field Materials Manual for schedule of tests unless otherwise stated. As a minimum the MTA described in this Section shall perform all applicable tests listed in the manual including the independent assurance sampling and testing. In the event of such a conflict between the schedule and a specification in these technical provisions, the more comprehensive testing shall govern unless otherwise noted.
- C. Inspections and tests conducted by the MTA shall not in any way relieve the Contractor of the Contractor's responsibility and obligation to meet all specifications and referenced standards. Employment of the MTA does not relieve the Contractor of providing the required Quality Control program.

- D. When inspections or tests by the MTA prove that the item or material does not meet all applicable specifications and requirements, the cost incurred for the re-testing or re-inspection shall be borne by the Contractor as per this Section.
- E. Samples will only be considered if taken at random. The Contractor shall permit representatives of the City to witness the selection of samples. Inspection or tests of items or materials that fail shall be sufficient cause to terminate further inspections/tests of the same brand, make or source of that product.
- F. The Contractor is obligated to correct any item deemed deficient at no additional cost to DIA.

### 1.3 SUBMITTALS

- A. All submittals shall comply with requirements of Sections 013300 "Submittal Procedures" and 013325 "Shop and Working Drawings, Product Data and Samples" for submittal requirements.

### 1.4 CONTRACTOR SUBMITTAL OF PROPOSED TESTING AGENCIES

- A. The Contractor shall employ the services of a Material Testing Agency (MTA) that has been accredited by AASHTO or CCRL or an approved equal to perform the test(s) required in the Contract. The MTA may also provide technicians to perform the required inspections. However, inspection and testing cannot be performed simultaneously by the same technician. The Contractor shall receive written acceptance from the DIA Project Manager of the MTA prior to any permanent work being installed or tested.
- B. The Contractor shall not submit for acceptance to the DIA Project Manager any testing agency or laboratory utilized in the design or construction document preparation or presently employed by DIA as part of DIA Quality Assurance, Material Testing or special inspection agencies..
- C. For consideration of acceptance, the Contractor shall submit to the DIA Project Manager the following items received from the MTA:
  - 1. Affidavit of current accreditation from a national certification and/or accreditation program(s).
  - 2. Evidence that the MTA Laboratory is accredited to perform the testing required in the Contract Documents.
  - 3. Resumes and evidence of professional engineer registration and licensing in the State of Colorado for the personnel reviewing and signing test reports.
  - 4. Resumes and current certifications verifying that MTA management and supervisory personnel, laboratory staff, field testing technicians, and inspecting technicians are qualified in accordance with ASTM C 1077, D 3666, D 3740, and E 329 requirements to perform the Work. NICET, ACI, WAQTC, LabCAT, CDOT, NRMCA, PCA, AWS, ASNT certifications or a degree in a related engineering field with construction field experience that can demonstrate qualifications. A list



summarizing all management, supervisory, laboratory, field testing, and inspection personnel assigned to the Project including the testing and/or inspection each individual will be performing, certifications held by each individual, and the expiration date of each certification.

5. A matrix indicating each technical specification section, paragraph, quantity and type of sampling and/or testing required.
6. Copies of all laboratory, field testing, and inspection report forms.

## 1.5 SUBMITTAL OF REPORTS

- A. Test results shall be submitted by the Contractor to the DIA Project Manager after completion of inspections/tests by the MTA and prior to incorporation of the item(s) into the Work unless the test or inspection must be done during or after installation.
- B. All field test results including but not limited to fresh concrete properties and in-place moisture-density shall be reported in legible draft form to the DIA Inspector immediately at the test site. Any failing test shall be reported separately to the DIA Inspector or DIA Project Manager. The draft test results shall also be attached to the Daily Quality Control Inspection Report (reference Section 014510 "Contractor Quality Control") and transmitted to the DIA Project Manager the next work day.
- C. Typed test reports shall be provided to the DIA Project Manager as specified in the "Weekly Reports" Article in this Section. The test reports shall be numbered sequentially in chronological order. Individual tests shall be numbered sequentially. The reports and tests shall also be organized per specification section. All test results must be reviewed and signed by a registered licensed engineer in the State of Colorado. The signature represents that the test procedures used are in strict conformance with the applicable testing standard, the calculated data are true and accurate, the tools and equipment used were in calibration, the sample was not contaminated and the persons running the test were qualified.
- D. Reports of inspections and test activities are record documents and shall be maintained in a manner that provides integrity of item identification, acceptability and traceability. Reports shall identify the following:
  1. Contractor's name.
  2. DIA Contract number and title.
  3. Material Testing Agency name.
  4. Name of item(s) inspected/tested including a physical description and, as applicable, model and make.
  5. Quantity of items.
  6. Inspection/test procedure used. If national standards are used, any deviation from these standards.
  7. Date the sample was taken and the date the test was made.
- E. Location (by coordinates, building grid or station number and elevation) of where tests and/or samplings were performed including environmental condition where applicable. Include plan drawing indicating location of test, lot size and location and work item sampled or tested.

1. Name of inspector/tester.
2. In the event the testing or sampling is a re-test or re-sampling, reference the previous respective testing or sampling report.
3. Specified requirements in the Contract that the item must meet. Include reference to technical specification section and paragraphs.
4. Acceptability.
5. Deviations/nonconformance.
6. Corrective action.
7. Evaluation of results.
8. All information required for the specific test as specified in the applicable ASTM standard.
9. Signature of authorized evaluator.

#### 1.6 WEEKLY SUMMARY REPORTS

- A. The MTA and Quality Control Manager shall prepare and submit to the DIA Project Manager a weekly summary report each week which summarizes by specification section all work activities and results for the quality control tests and inspections conducted during that period. The weekly summary report shall be submitted within two (2) weeks from the end of the reporting period. At a minimum, the weekly summary report shall identify all inspections, test types, test locations, testers, test results, specifications, whether the test passed or failed, quantity of materials placed and the number of tests performed for each material, and the material supplier, installer and Contractor. Re-tests shall be identified in a fashion that easily correlates to the failing test. Any failed tests that have not been corrected when the report is published shall be highlighted and noted in the cover letter of the report. A current Corrective Action Report log (CAR) shall also be included in the weekly summary report.
- B. The weekly report shall be submitted per Sections 013000 and 013350 requirements.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### 3.1 REMOVAL OF NONCONFORMING MATERIAL

- A. The Contractor is obligated to correct or remove nonconforming materials, whether in place or not. If necessary, the DIA Project Manager will send written notification to the Contractor to correct or remove the defective materials from the project. If the Contractor fails to respond, the DIA Project Manager may order correction, removal and/or replacement of defective materials by others, in which case the Contractor shall bear all costs incurred by such actions.

### 3.2 PERFORMANCE

- A. If the DIA Project Manager determines that the MTA or its personnel are not effectively enforcing or performing the testing and documentation requirements specified in the Contract, the DIA Project Manager will, in writing, require the Contractor to remove and replace MTA or such personnel at no cost to DIA.

### 3.3 CONTROL OF MEASURING AND TEST EQUIPMENT

- A. The MTA shall select measuring and test equipment in such a manner as to provide proper type, range, accuracy, calibration and tolerance for determining compliance with specified requirements. Measuring and test devices shall be calibrated, adjusted and maintained at prescribed intervals prior to use based upon equipment stability and other conditions affecting measurement. Provisions shall be made for the proper handling and storage of equipment. Calibration shall be accomplished using certified standards that have a known traceable relationship to the National Institute of Standards and Technology. Every calibrated measuring and test device shall show the current status, date of last calibration and the due date for the next calibration. Calibration records shall be maintained onsite as quality records and shall be made available for inspection upon the DIA Project Manager's request.

## **PART 4 - METHOD OF MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under the Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the Work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item. If the City is required to re-inspect work because the previous inspection showed that the work was defective or not in conformance, the Deputy Manager or the Deputy Manager's authorized representative may deduct from the Contract value the cost of re-inspection at the rate of \$100.00 per man-hour.

## **END OF SECTION 014525**

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## SECTION 014545 - SPECIAL INSPECTION AGENCY AND OWNER TESTING AGENCY(S)

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. International Building Code 2009 amended by Denver 2011.
- C. Special Inspection Statement issued as part of the application for building permit for the specific task or project.

#### 1.2 SUMMARY

- A. The Owner will employ the services of Special Inspection Agency(s) (SIA). This Section identifies the requirements for the CM/GC to coordinate, facilitate and support the Owner and its agents and consultants to fulfill the requirements of Special Inspection requirements as identified in the IBC 2009 as amended by Denver 2011.
  - 1. Any additional tests deemed necessary by the Building Official, Engineer of Record, Special Inspector or DIA Project Manager to assure these agencies that all material and work on the Project meet the requirements of the Contract and all applicable codes and regulations.
  - 2. Minimum Laboratory and field testing requirements to be conducted by the SIA for materials and construction on this Project are included in the Table at the end of this Section.
  - 3. All caissons and piers drilling on this Project shall be continuously inspected by Special Inspection Agency hired by the Owner directly or through the Engineer of Record or its sub-consultants.
  - 4. The Contractor shall not perform any work which could cover work or material that has not passed the requirement of special inspection or require the presence of the special inspector to meet the requirements of continuous or periodic inspection.
  - 5. It is the responsibility of the Contractor to plan, coordinate all testing requirements on the project to assure no delays are occurring due to the lack of inspection or testing.
  - 6. The Contractor must allow sufficient time in the schedule to perform all required inspection and testing.
  - 7. All rework due to nonconformance, failing tests or rework to test covered work prior to proper inspection and testing shall be borne by the Contractor.
  - 8. All re-inspections and re-testing costs due to non-conformances or failing tests or revisiting to test covered or incomplete work shall be borne by the Contractor at a

cost of \$100 per hour in addition to all direct and indirect costs associated with testing.

9. Periodic welding inspection shall include the minimum of fitting inspection and final inspection at all times.
10. Inspections and tests conducted by the SIA shall not in any way relieve the Contractor of the Contractor's responsibility and obligation to meet all specifications and referenced standards. Employment of the SIA does not relieve the Contractor of providing the required Quality Control program.
11. When inspections or tests by the SIA prove that the item or material does not meet all applicable specifications and requirements, the cost incurred for the re-testing or re-inspection shall be borne by the Contractor. Reference Article 5.1 of this Section.
12. Samples will only be considered if taken at random. The Contractor shall permit representatives of the City to witness the selection of samples. Inspection or tests of items or materials that fail shall be sufficient cause to terminate further inspections/tests of the same brand, make or source of that product.
13. The Contractor is obligated to correct any item deemed deficient at no additional cost to DIA.

### 1.3 SUBMITTALS

- A. All submittals shall comply with requirements of Section 013300 "Submittals" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal requirements.

### 1.4 CONTRACTOR SUBMITTAL OF PROPOSED CONTRATOR'S TESTING AGENCIES

- A. Projects requiring Special Inspection where the Contractor is utilizing Certified shop to produce material. DIA requires that testing be performed to satisfy the certification be no less than the following: All material and workmanship meets the requirements of a Contractor Material Testing Agency.
- B. The Contractor shall employ the services of a Testing Agency for process control and acceptance by the subcontractors and suppliers or material delivery for Contractor convenience or contractual obligations with others.
- C. The Contractor's Testing Agency must be accredited agency to perform any test required to be submitted for compliance with a Contract requirement or for use of data by the Owner agency's for any official use, for examples and not to grant any obligation on the DIA Project Management Team, any payment reduction factor calculation. Any dispute or requirement to recalibrate testing equipment or machine, proof of compliance of material that was installed in contrary to manufacturer recommendation, any apparent defect due to adverse weather, improper installation, incomplete material record.
- D. Contractor's testing agency must be a qualified entity(s) that has performed testing on similar jobs in size and complexity and has been accredited by AASHTO or CCRL or an approved equal to perform the test(s) required in the Contract. The CTA may also

provide technicians to perform the required inspections. However, inspection and testing cannot be performed simultaneously by the same technician.

- E. The Contractor shall not submit for acceptance to the DIA Project Manager any testing agency or laboratory utilized in the design or construction document preparation or presently employed by DIA as part of DIA Quality Assurance.
- F. For consideration of acceptance, the Contractor shall submit to the DIA Project Manager the following items received from the CTA:
  - 1. Affidavit of current accreditation from a national certification and/or accreditation program.
  - 2. Evidence that the CTA Laboratory is accredited to perform the testing required in the Contract Documents.
  - 3. Resumes and evidence of professional engineer registration and licensing in the State of Colorado for the personnel reviewing and signing test reports.
  - 4. Resumes and current certifications verifying that SIA management and supervisory personnel, laboratory staff, field testing technicians, and inspecting technicians are qualified in accordance with ASTM C 1077, D 3666, D 3740, and E 329 requirements to perform the Work. NICET, ACI, WAQTC, LabCAT, CDOT, NRMCA, PCA, AWS, ASNT certifications or a degree in a related engineering field with construction field experience can demonstrate qualifications. A list summarizing all management, supervisory, laboratory, field testing, and inspection personnel assigned to the Project including the testing and/or inspection each individual will be performing, certifications held by each individual, and the expiration date of each certification.
  - 5. A matrix indicating each technical specification section, paragraph, quantity and type of sampling and/or testing required.
  - 6. Copies of all laboratory, field testing, and inspection report forms.

## 1.5 SUBMITTAL OF REPORTS

- A. Test results shall be submitted by the Special Inspector and/or Owner Testing Agency to the DIA Project Manager after completion of inspections/tests by the SIA/OTA and prior to incorporation of the item(s) into the Work unless the test or inspection must be done during or after installation.
- B. All field test results including but not limited to fresh concrete properties and in-place moisture-density shall be reported in legible draft form to the DIA/PMT Inspection and the Contractor Quality Control Manager immediately at the test site. Any failing test shall be reported separately to the DIA/PMT Inspector or DIA Project Manager within two (2) hours after the discovery. The draft test results shall also be attached to the Daily Quality Control Inspection Report and transmitted to the DIA Project Manager on the next work day.
- C. The Contractor's Quality Control Manager or his/her Authorized representative must keep track and official record of all tests passed, failed or defected. The Contractor shall be fully responsible to show passing tests of all required elements. The lack of any passing test record of any required element does not waive the requirement to of

testing or inspection as required by the Contract Documents and the IBC code. The Contractor shall bear all costs associated with recovering missing tests including but not limited to the cost of the cost of disassembling, testing or inspecting, reassembling, and any indirect time or cost impacts of a missing required test or inspection.

- D. Typed test reports shall be provided by the testing agency to the DIA Project Manager as specified in Part 1 of this Section Weekly Summary Reports. The test reports shall be numbered sequentially in chronological order. Individual tests shall be numbered sequentially. The reports and tests shall also be organized per specification section. All test results must be reviewed and signed by a registered licensed engineer in the State of Colorado. The signature represents that the test procedures used are in strict conformance with the applicable testing standard, the calculated data are true and accurate, the tools and equipment used were in calibration, the sample was not contaminated and the persons running the test were qualified.
- E. A plan of work and administrative procedure shall be established to assure that all test and inspections frequency required are performed and all defects are tracked and retested and re-inspected to meet all applicable specifications, codes, and standards.
- F. The Contractor shall track all tests performed on the daily reports and shall submit a statement for each phase of the Work showing all elements of Quality have been completed and all defects are addressed or scheduled to be addressed prior to covering the Work.
- G. Reports of inspections and test activities are record documents and shall be maintained in a manner that provides integrity of item identification, acceptability and traceability. Reports shall identify the following:
1. Contractor's name.
  2. DIA Contract number and title.
  3. Testing Agency name.
  4. Name of item(s) inspected/tested including a physical description and, as applicable, model and make.
  5. Quantity of items.
  6. Inspection/test procedure used. If national standards are used, any deviation from these standards.
  7. Date the sample was taken and the date the test was made.
  8. Location, by coordinates, building grid or station number, of where tests and/or samplings were performed including environmental condition where applicable. Include plan drawing indicating location of test and work item sampled or tested.
  9. Name of inspector/tester.
  10. In the event the testing or sampling is a re-test or re-sampling, reference the previous respective testing or sampling report.
  11. Specified requirements in the Contract that the item must meet. Include reference to technical specification section and paragraphs.
  12. Acceptability.
  13. Deviations/nonconformance.
  14. Corrective action.
  15. Evaluation of results.

16. All information required for the specific test as specified in the applicable ASTM standard.
17. Signature of authorized evaluator.

#### 1.6 WEEKLY SUMMARY REPORTS

- A. The SI/OTA shall prepare and submit to the DIA Project Manager a weekly summary report each week which summarizes by specification section all work activities and results for the quality control tests and inspections conducted during that period.
- B. The weekly summary report shall be submitted within two (2) weeks from the end of the reporting period. At a minimum, the weekly summary report shall identify all inspections, test types, test locations, testers, test results, specifications, whether the test passed or failed, quantity of materials placed and the number of tests performed for each material, and the material supplier, installer and Contractor.
- C. Re-tests shall be identified in a fashion that easily correlates to the failing test. Any failed tests that have not been corrected when the report is published shall be highlighted and noted in the cover letter of the report. The ITA shall identify costs of re-testing or additional site visits required due to scheduling changes by the Contractor. A current Corrective Action Report log (CAR) shall also be included in the weekly summary report.
- D. The weekly report shall be submitted per Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" requirements.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### 3.1 CORRECTION OR REMOVAL OF NONCONFORMING MATERIAL

- A. The Contractor is obligated to correct or remove nonconforming materials, whether in place or not. If necessary, the DIA Project Manager will send written notification to the Contractor to correct or remove the defective materials from the Project. If the Contractor fails to respond, the DIA Project Manager may order correction, removal and/or replacement of defective materials by others, in which case the Contractor shall bear all costs incurred by such actions.

#### 3.2 PERFORMANCE

- A. If the DIA Project Manager determines that the SIA or its personnel are not effectively enforcing or performing the testing and documentation requirements specified in the Contract, the DIA Project Manager will, in writing, require the Contractor to remove and



replace SIA or such personnel at no cost to DIA.

### 3.3 CONTROL OF MEASURING AND TEST EQUIPMENT

- A. The SIA shall select measuring and test equipment in such a manner as to provide proper type, range, accuracy, calibration and tolerance for determining compliance with specified requirements. Measuring and test devices shall be calibrated, adjusted and maintained at prescribed intervals prior to use based upon equipment stability and other conditions affecting measurement.
- B. Provisions shall be made for the proper handling and storage of equipment. Calibration shall be accomplished using certified standards that have a known traceable relationship to the National Institute of Standards and Technology. Every calibrated measuring and test device shall show the current status, date of last calibration and the due date for the next calibration. Calibration records shall be maintained onsite as quality records and shall be made available for inspection upon the DIA Project Manager's request.

## PART 4 - METHOD OF MEASUREMENT

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for Work under the Section. DIA/PMT staff will track all costs and remark the conditions and track all associated impacts for credits to the City. The contractor record of the same is only valid if signed by the DIA Project Manager or authorized representative.

## PART 5 - PAYMENT

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for Work under this Section. The cost of the Work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item. If the City is required to re-inspect work because the previous inspection showed that the work was defective or not in conformance, the Director of Construction or the Director of Design's authorized representative may deduct from the Contract value the cost of re-inspection and re-testing at the rate of \$100.00 per man-hour. For tests required by the Contractor for its own use, processing control, additional tests not required by the specs, code or regulation the City through its owner's agent may deduct from the Contract value the cost of re-inspection at the rate of \$100.00 per man hour and any additional charges associated and re-testing with the additional inspection or testing.

## END OF SECTION 014545

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TECHNICAL SPECIFICATIONS  
01 GENERAL REQUIREMENTS  
014545  
SPECIAL INSPECTION AGENCY AND OWNER TESTING  
AGENCY(S)

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DENVER INTERNATIONAL AIRPORT  
ON CALL MISC. BHS MILLWRIGHT SVCS  
CONTRACT NO.201418968

## SECTION 015210 - TEMPORARY FACILITIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
  - 2. Section 312319 "Dewatering" for disposal of ground water at Project site.
  - 3. Section 321216 "Asphalt Paving" for construction and maintenance of asphalt pavement for temporary roads and paved areas.
  - 4. Section 321313 "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.

#### 1.3 DESCRIPTION

- A. The Work specified in this Section consists of furnishing, installing, operating, maintaining and removing temporary construction barriers, enclosures and field facilities including the Contractor's construction offices, staging areas, yards, storage areas, electrical power, telephone, water, fire protection and sanitary service.
- B. Construction Offices, Construction Yards and Storage Areas:
  - 1. The Contractor's offices, construction yards laydown and storage areas shall be located as shown on the Contract Drawings and/or as designated by the DIA Project Manager. All construction offices, staging areas and material storage areas are to occur within these areas.
  - 2. Any activity that is expected to result in disturbance of the ground surface equal to or greater than one acre or part of a larger project that is expected to disturb equal to or greater than one acre, is required to be identified in the Construction Activities Stormwater Management Plan (CASMP) and/or Stormwater Management Plan (SWMP). These areas include, but are not limited to, laydowns, borrow areas, stockpiles, and storage areas regardless of the location.
  - 3. All areas of ground disturbance are required to be stabilized in accordance with State, local, and airport rules and regulations prior to permit termination and/or

- closure of the Contract.
4. The Contractor shall restore any area on DIA property that becomes contaminated as a result of its operations in accordance with Airport Rule and Regulation 180. Restoration shall be either to applicable standards under Federal and State law or to such other levels as may be required by the Manager of Aviation, at the Manager's sole discretion.
  5. All temporary facility sites must be inspected prior to Contract closeout. The DIA Project Manager or authorized representative shall conduct an inspection of contractor areas used during the life of the project. These areas include but are not limited to, staging areas, laydown areas, borrow areas, and contractor yards and offices. The DIA Project Manager will ensure these areas have been properly stabilized in accordance with DIA Rules and Regulations and restored to the condition in which the City initially provided to the Contractor. A representative from DIA Environmental Services shall be present during the final walk through.
  6. Contractor materials shall be managed in accordance with all applicable Environmental Regulations.
  7. Temporary facilities which the Contractor desires to locate in secondary laydown and staging areas adjacent to the Work or within the project limits are subject to approval by the DIA Project Manager. If approved, these areas must also be included in the CASMP and/or SWMP.
  8. Access to and security of the Contractor's construction offices, yard, temporary facilities and storage areas shall be as shown on the Contract Drawings or as specified in the Contract Special Conditions.
  9. Contractor Field Office:
    - a. The Contractor shall acquire all necessary permits for installation and construction work related to the Contractor's field office and fencing.
    - b. Jack the mobile office unit off its wheels and provide support. Enclose the underside of the trailer with weatherproof skirting.
    - c. Install tie downs in compliance with all applicable codes.
    - d. Water and sewer lines to the field office, if installed, shall be installed so they will not freeze.
- C. Electrical Service:
1. Provide lighting and power for field offices, storage facilities and other construction facilities and areas.
  2. Provide power centers for electrically operated and controlled construction facilities including tools, equipment, testing equipment, interior construction lighting, heating, cooling and ventilation equipment.
  3. Provide night security lighting at secured areas within construction limits at offices, storage facilities, temporary facilities and excavated areas.
  4. Provide battery operated or equivalent emergency lighting facilities at construction areas where normal light failures would cause employees to be subjected to hazardous conditions. Test such facilities monthly and maintain a record of these tests for the DIA Project Manager's review.

5. Contractor shall bear all costs of temporary electric service permits, fees and deposits required by the governing authorities, and connection charges and temporary easements including installation, maintenance and removal of equipment.
6. Comply with requirements of Division 26 Sections.

D. Water Service:

1. The Contractor shall provide water to his employees and subcontractors. The Contractor shall not use in place fire hydrants or standpipes as sources for construction water or potable water.
2. Comply with requirements of Division 22 Sections.

E. Fire Protection:

1. Furnish, install and maintain temporary portable fire protection equipment throughout the construction period at all buildings (including the project site), maintenance shops, and fuel storage on all large construction equipment and at the location of any flammable materials or construction materials.
2. Comply with requirements of Division 21 Sections.

F. Sanitary Service:

1. .
2. Provide general washing facilities adequate for the number of employees.
3. Provide special washing facilities adequate for the number of employees engaged in the application of paints, coating and other volatile or hazardous materials.

1.4 SUBMITTALS

- A. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- B. Submit a shop drawing within five (5) days of the Notice to Proceed that shows the following:
  1. Temporary facilities equipment and materials (include manufacturer's literature).
  2. Details and layout of temporary installations including fences, roads, parking, buildings, storage areas and drainage plans.
  3. Lighting plan showing temporary lighting facilities, electrical service panel location, electrical circuit diagram and anticipated light level on the working roadway, pathway or construction surface.
  4. As-built description of any temporary underground utilities referenced to the Airport grid and benchmark system within five (5) days of completion of the installation.

## 1.5 QUALITY CONTROL

- A. Provide products for, and the execution of, the Work of this Section that will satisfy the requirements of the NEC, OSHA and local codes. Provide products that satisfy requirements of NEMA and are UL listed.

## PART 2 - PRODUCTS

### 2.1 ELECTRICAL SERVICE

- A. Provide temporary power and lighting equipment consisting of fixtures, transformers, panel boards, groundings, lamps, switches, poles, conduits and wiring sized and capable of continuous service and having adequate capacity to ensure a complete operating system. Comply with NEMA and Division 26 requirements.
- B. Provide temporary extension cords to supply tools not longer than 200 feet, except that additional length may be used if equipment will be grounded within 200 feet of tool or power.
- C. Portable power generators shall be grounded.

### 2.2 DRINKING WATER SERVICE

- A. Provide sanitary materials and equipment that satisfies the requirements of codes and regulations pertaining to temporary water systems. Bottled products may be used if those products comply with codes. Clearly label portable containers having a dispensing tap and used only for drinking water. Provide single service disposable cups and a sanitary container for dispensing cups. A trash receptacle shall be provided and maintained beside each portable water supply.

### 2.3 FIRE PROTECTION

- A. Fire extinguishers shall be UL rated and shall comply with the Uniform Fire Code.

### 2.4 SANITARY SERVICE

- A. Provide materials and equipment adequate for the intended purposes, which will neither create unsanitary conditions nor violate the codes applicable to temporary sanitary facilities. Enclosures for toilet and washing facilities shall be weatherproof, sight proof, ventilated and sturdy, and shall be maintained in clean conditions.
- B. Provide washing facilities as needed. Furnish soap, single-service paper towels, towel dispenser and towel receptacle. If paints, coatings and other volatile or hazardous materials injurious to humans will be applied as part of the Contract, provide washing facilities with warm water of approximately 120 degrees F.

## **PART 3 - EXECUTION**

### **3.1 ELECTRICAL SERVICE**

- A. The approximate location of primary power lines is shown on the Construction Drawings. The Contractor shall locate electrical service where it will not interfere with equipment, storage spaces, traffic, and prosecution of the Work or the work of others. Installation shall present a neat and orderly appearance and shall be structurally sound. Maintain service in a manner that will ensure continuous electrical service and safe working conditions.
- B. Comply with requirements of Division 26 Sections.

### **3.2 WATER SERVICE**

- A. Install the systems in a neat and orderly manner. Make them structurally and mechanically sound. Provide continuous service. Modify, relocate and extend the systems as the Work progresses.
- B. Comply with requirements of Division 22 Sections.
- C. Locate systems where they will be convenient to work stations, sanitary facilities and first aid station but will not interfere with traffic, work areas, materials handling equipment, storage areas or the work of other contractors.
- D. Install vacuum breakers, backflow preventers and similar devices in a manner and location which will prevent temporary water from returning to the water mains.

### **3.3 FIRE PROTECTION**

- A. Install products in conformance with the requirements of the applicable Denver Fire Department and OSHA regulations.
  - 1. Provide functional, approved fire extinguishers that are clearly identified for fire and an accessible supply of water during the period of construction. These fire extinguishers shall remain in place until permanent fire protection systems are functional.
  - 2. Furnish not less than one (1) 20-pound fire extinguisher, type 2A-20ABC within ten (10) feet of cutting and welding operations.
  - 3. Provide 20-pound fire extinguishers, type 2A-20ABC no further then 100 feet apart in buildings.
  - 4. Provide not less than one (1) 20-pound fire extinguisher, type 2A-20ABC on any equipment of 75 horsepower or more.
- B. Instruct construction personnel as to location and use of temporary fire protection equipment.
- C. Fire extinguishers shall be located for easy access. Their location shall be clearly marked so that they can be seen at least 75 feet away.

- D. Comply with requirements of Division 21 Sections.

### 3.4 SANITARY SERVICE

- A. Place temporary sanitary and washing facilities in a neat and orderly manner within the limits of the Work and convenient to the work stations. Make these facilities structurally and mechanically sound. Modify, relocate and extend the facilities as required by progress of the Work.
- B. The waste from the sanitary and wash facilities shall be disposed of in accordance with all applicable rules, regulations and laws and with the least environmental impact.

### 3.5 FENCING

- A. Contact all utility service companies prior to planning fence location and post locations for certification of current utilities. Locate pothole posts planned within five (5) feet of known utilities. Submit fencing plan and typical details to DIA Project Manager at least seven (7) days before planned execution for review and acceptance.

### 3.6 SIGNAGE

- A. Contractor shall not provide any signage for temporary facilities without prior approval from the DIA Project Manager.

### 3.7 TEMPORARY FACILITIES AS-BUILT DRAWINGS

- A. Provide as-built drawings showing vertical and horizontal location. The location of all regulating and shut-off devices along with all branches shall be shown. The as-built drawings shall be based upon the DIA grid coordinate system and benchmark. As-built drawings shall be furnished within forty-eight (48) hours prior to the Contractor's request for turning on services.

### 3.8 REMOVAL

- A. The Contractor shall locate all temporary facilities including the underground utilities so they can be completely removed without damaging permanent work or the work site of other contractors.
- B. The Contractor shall remove all temporary facilities, including all underground utilities, and restore the site to the condition in which the City initially provided it to the Contractor.
- C. The Contractor shall stabilize all areas of disturbance in accordance with State, local, and airport rules and regulations.
- D. In accordance with Part 1 of this Section, an inspection of temporary facilities used by



the Contractor is required prior to Contract closeout.

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 015210**

## **SECTION 015525 - TRAFFIC CONTROL**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. The Work specified in this Section consists of furnishing plans and designs for traffic control and haul routes, implementing these plans with all necessary personnel and equipment. Installation may require but not be limited to signage, cones, flaggers, signal lights, lighting and temporary roads.
- B. All Work must be in conformance with the Manual of Uniform Traffic Control Devices (MUTCD), Colorado Department of Highway Standards.
- C. The Contractor must coordinate the Contractor's proposed traffic control needs with the needs of other contractors on the airport construction site in writing through the DIA Project Manager.
- D. Reference Contract General Condition, GC 805.

#### **1.3 QUALITY CONTROL**

- A. Temporary signal work shall conform to "Standard Specifications for Public Works Construction".
- B. Designate a qualified person to inspect and test traffic control devices daily and to ascertain that those devices are continuously operating, serviceable, in place and clean.
- C. Provide trained personnel who will be responsible for design, implementation and inspection of traffic control needs.

#### **1.4 SUBMITTALS**

- A. Refer to Technical Specifications Sections 013300 "Submittals" and 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- B. Submit a Traffic Control Plan (TCP) that includes, at a minimum, the following list of items for approval before starting Work. Submit an updated TCP when necessary to

modify traffic operation or undertake a construction activity that creates a different traffic pattern:

1. Traffic blockade and reductions anticipated to be caused by construction operations.
  2. Temporary detours.
  3. Show and describe proposed location, dates, hours and duration of detours, vehicular traffic routing and management, traffic control devices for implementing detours and details of barricades.
- C. Submit Haul Route Plan for both on- and off-site hauls. The Haul Route Plan shall be submitted 30 days prior to hauling any permanent material. The Plan shall be updated as the Contractor's plans change.
- D. Specific Traffic Considerations: The DIA Project Manager may require the Contractor to revise the Traffic Control Plan to address traffic considerations not included in the Contractor's plan.

## **PART 2 - PRODUCTS**

### **2.1 TRAFFIC CONTROL DEVICES**

- A. Devices which include signs, delineators, striping, barriers, barricades and high level warning devices shall conform to the latest revision of the "Manual on Uniform Traffic Control Devices" and the latest revision of the Colorado Department of Transportation Standard Plans.

## **PART 3 - EXECUTION**

### **3.1 TEMPORARY TRAFFIC CONTROL DEVICES**

- A. Place temporary control devices in a manner that allows for the smooth flow of traffic at the posted speed limit, limiting hazards or abrupt changes in direction.
- B. Place traffic cones or delineators as directed by the MUTCD. Operate warning lights between sunset and sunrise.
- C. Place control devices so that approaching traffic is alerted to hazards and variances to normal traffic patterns.
- D. Place high rise warning flag units where motorist's visibility of warning devices, traffic signals, and pedestrian crosswalks will be either limited or obscured.
- E. Place barricades, cones and similar protective devices where personnel and equipment will be working within five feet of the edge of a lane bearing traffic.
- F. Clean and repair damaged devices or replace them with new devices as required.

### 3.2 TEMPORARY TRAFFIC STRIPING AND PAVEMENT MARKINGS

- A. Stripe and mark bituminous and Portland cement pavement before diverting traffic. Maintain stripes and marks until permanent traffic marking and striping has been provided, or the temporary condition is no longer required. Remove temporary striping and marks when no longer required.

### 3.3 FLAGGERS

- A. Furnish flaggers where construction equipment may intermittently encroach on traffic lanes, haul routes, and where construction operations would affect public or construction safety and convenience and also where active haul roads cross existing access roads.

### 3.4 CONSTRUCTION VEHICULAR TRAFFIC

- A. Restrict construction vehicles to approved haul routes.

### 3.5 CONTROLLING VEHICULAR AND PEDESTRIAN FLOW ADJACENT TO WORK SITE

- A. Ensure that construction operations will not impede normal traffic. Where work is in the area of pedestrian or occupant activity, the Contractor shall erect barriers to prevent pedestrian intrusion into the work site. The barriers will be a minimum of 42 inches in height and shall not be penetrable from floor or grade to the top of the barrier. Barriers erected in areas where there is a change in grade of over 6 inches shall meet barrier requirements as defined in the UBC and the DBC.

### 3.6 SIGNS

- A. Coordinate and pay any expense associated with the furnishing and installation of all parking regulatory signs, such as "No Stopping Any Time," etc., at the work site. The Contractor must contact the DIA Project Manager a minimum of five (5) working days in advance of construction for installation, relocation or removal of regulatory parking signs.
- B. Furnish and install any necessary advance detour or guidance signing.
- C. Authorize, modify and install regulatory parking controls and vehicle turn restrictions.
- D. Implement those traffic control modifications outside of the traffic control zone which are necessary to manage diverted traffic.

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 PAYMENT

- A. Payment for Traffic Control under these schedules will be for work performed under the applicable unit price item or lump sum bid item.

**END OF SECTION 015525**

## SECTION 015719 - TEMPORARY ENVIRONMENTAL CONTROLS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The Work specified in this Section consists of avoiding or mitigating adverse environmental impacts caused by construction activities in the areas of air quality, water quality, natural resources, and noise pollution. Reference the General Contract Conditions 806 "Protection of Drainage Ways", 807 "Protection of Environment", 808 "Hazardous and Explosive Materials or Substances", and 809 "Archaeological and Historical Discoveries", and the following link:  
<http://business.flydenver.com/community/enviro/documents/es301.pdf>
1. The Contractor, in conducting any activity on airport property or in conducting work for an airport project not on airport property, shall comply with all applicable airport, local, state, and federal rules, regulations, statutes, laws, and orders ("Environmental Requirements"). In addition, Environmental Requirements shall include applicable Environmental Guidelines developed for DIA's Environmental Management System (EMS), as summarized in the airport's Rules and Regulations Part 180 "Environmental Management", which can be located on the airport's website at the following link:  
<http://business.flydenver.com/community/enviro/documents/es301.pdf>  
Information on DIA's EMS as well as current versions of DIA's
  2. Environmental Guidelines and Environmental Policy are also located on the airport's website at the following link:  
<http://business.flydenver.com/community/enviro/documents/es301.pdf>
  3. Information on DIA's EMS as well as current versions of DIA's Environmental Guidelines and Environmental Policy are also located on the airport's website at the following link: <http://business.flydenver.com/community/enviro/index.asp>
  4. These Environmental Requirements address, but are not limited to, requirements regarding the management of hazardous materials, petroleum products, or any other substance, the National Environmental Policy Act (NEPA), and water quality and air quality regulations. Each entity, including subcontractors and sub-consultants providing products, goods, and/or services on behalf of DIA, must be aware of the DIA Environmental Policy, the significant environmental aspects for DIA, and which of these aspects are relevant to the activities conducted by the entity.
  5. The Contractor shall comply with all Environmental Requirements and accept responsibility for compliance with all environmental quality standards, limitations

and permit requirements promulgated thereunder. The Contractor shall obtain all environmental permits required for implementation of the project. Failure of these specifications to specifically mention any Environmental Requirement does not relieve the Contractor from compliance with all applicable Requirements.

6. If the City, as Owner, is determined by any federal, state or local government agency, department, board or commission, or in any judicial proceeding to have violated any such environmental protection rules, laws or regulations as a result of Contractor's acts or omissions, the Contractor agrees to indemnify and hold harmless the City from any and all prosecutions, payment of any and all fines or penalties, and the cost of abatement and remediation, except that the Contractor shall not be required under General Contract Condition 807 to indemnify the City from any amounts which are attributable to the negligence of the City.
7. Work shall not commence on any project until all FAA approvals have been received, applicable permits have been issued and signed by permittee, and all inspection requirements have been satisfied in accordance with State and local permitting requirements.

### 1.3 SUBMITTALS

- A. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- B. Within ten (10) days after Notice to Proceed on a task order, the Contractor shall submit the following if applicable, unless waived by the DIA Project Manager:
  1. Submittals pertaining to water quality management:
    - a. Copy of the application completed for the City and County of Denver Construction Activities Stormwater Discharge Permit (CASDP) and the CASDP issued for the Project by the Denver Department of Public Works. This submittal consists of three (3) items: The Authorization to Discharge, the Sewer Use & Drainage Permit, and the approved Construction Activities Stormwater Management Plan (CASMP).
      - 1) Revisions or amendments to the CASMP by the Contractor: At the completion of the Project, after final stabilization has been achieved and accepted in accordance with CASDP requirements, the Contractor shall submit a copy of the CASDP Inactivation Request.
    - b. Copy of the certification issued by the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) under the Colorado Discharge Permit System (CDPS) for discharges associated with construction activities and/or industrial activities. Before obtaining this permit, the Contractor shall submit a draft permit application and the final permit application for DIA review and approval PRIOR to submittal to CDPHE. The Contractor need not submit copies of the general permits or the general permit rationales.
      - 1) At the completion of the Project, after final stabilization has been

achieved and accepted in accordance with the State of Colorado CDPS requirements, the Contractor shall submit a copy of the CDPS Inactivation Notice or Notice of Termination.

- c. Copy of the certification issued by the State of Colorado CDPS under its General Permit for Construction Dewatering Activities: Before obtaining this permit, the Contractor shall submit a draft permit application and the final permit application for DIA review and approval PRIOR to submittal to CDPHE. The Contractor need not submit a copy of the general permit or the general permit rationale.
    - 1) At the completion of the Project, the Contractor shall submit a copy of the CDPS Notice of Termination.
  - d. Copies of any certification issued by the State of Colorado under its Industrial Permitting program for minimal discharges of process wastewater: Before obtaining a permit, the Contractor shall submit a draft permit application and the final permit application for DIA review and approval PRIOR to submittal to CDPHE. The Contractor need not submit a copy of the issued permit or the permit rationale.
    - 1) The Contractor shall submit copies of Discharge Monitoring Reports (DMRs) and at completion of the Project, the CDPS Notice of Termination.
  - e. A copy of the well permit from the state Division of Water Resources for every new well that diverts or for the monitoring of groundwater.
  - f. A copy of the Notice of Intent for any borehole structure filed with the state Division of Water Resources.
2. Submittals pertaining to sewage holding tanks associated with buildings and trailers: For purposes of this Section, the generic term "sewage holding tank" means "individual sewage disposal system (ISDS)", "privy vault", "septic tank", or "septic system":
- a. Copy of the permit application for a sewage holding tank.
  - b. Copy of the Sewer Use & Drainage Permit issued by the Denver Department of Public Works.
  - c. Copy of the ISDS permit issued by the Denver Department of Environmental Health.
3. Submittals pertaining to air quality management:
- a. Copy of any permit issued by the CDPHE Air Pollution Control Division (APCD): Before obtaining a permit, the Contractor shall submit a draft permit application and the final permit application for DIA review and approval PRIOR to submittal to CDPHE.
    - 1) In cases where the City has already obtained a dust control permit, the Contractor shall submit a copy of the paperwork transferring the



permit over to the Contractor's company name and a copy of the transferred permit.

- b. Dust control plan: For projects where the State of Colorado requires a dust control permit, this submittal is waived. This plan must address appropriate control measures that the Contractor will employ to minimize the release of fugitive dust from the site. In addition, the Contractor must comply with the requirements in Article 3.1 below.
  - c. Copies of the Notices of Relocation.
4. Submittals pertaining to storage tanks and containers:
- a. Copy of the approved application issued by the State of Colorado, Department of Labor and Employment, Division of Oil and Public Safety, for installation of petroleum, or other regulated substances, storage tanks located on airport property and used for the Project.
  - b. Copy of permits issued by the Denver Fire Department for storage tank installations, storage tank removals, and hazardous materials use/storage.
  - c. Copy of Spill Prevention, Control, and Countermeasure (SPCC) Plan for petroleum storage tanks and containers with capacity of 55 gallons of oil or greater located on airport property and used for the Project.
5. Copies of any other plans, permits, permit applications, correspondence with regulatory agencies, including violations, waste manifests, results of laboratory analyses, or other environmental documentation required for the Project not previously identified herein.

#### 1.4 RELATED DOCUMENTS

- A. Code of Federal Regulations (CFR) Publications, including, but not limited to, the following:
  - 1. 33 CFR 323 - Permits for discharges of dredged or fill materials into waters of the United States.
  - 2. 40 CFR - Protection of Environment.
  - 3. 49 CFR 171-180 Hazardous Materials Transportation Regulations.
- B. Colorado Revised Statutes, including, but not limited to, the following:
  - 1. Water Quality Control, Title 25, Article 8.
  - 2. Air Quality Control, Title 25, Article 7.
  - 3. Hazardous Waste, Title 25, Article 15.
  - 4. Noise Abatement, Title 25, Article 12.
  - 5. Petroleum Storage Tanks, Title 8, Article 20.5.
  - 6. Liquefied Petroleum Gas (LPG) Storage Tanks, Title 8, Article 20, Part 4.
  - 7. Solid waste regulations.
- C. City and County of Denver Executive Orders, including, but not limited to, the following:

1. Executive Order No. 115 - Required Use of Denver-Arapahoe Disposal Site (Landfill).
  2. Executive Order No. 123 - Greenprint Denver Office and Sustainability Policy.
- D. Denver Revised Municipal Code, Title II, Sections 48-44 and 48-93 - Solid Waste.
- E. City and County of Denver Construction Sites Program.
- F. City and County of Denver Construction Activities Stormwater Management Plans Information Guide.
- G. Any other applicable rules, regulations, ordinances, and guidance must be followed as applicable.
- H. Refer to Section 013300 "Submittal Procedures" and 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- I. Refer to Section 017419 "Construction Waste Management" for waste management requirements

## **PART 2 - PRODUCTS**

### **2.1 PRODUCTS**

- A. Products required for the Work shall meet all Environmental Requirements.
- B. At a minimum, products for erosion and sediment control must conform to the technical requirements contained in the City and County of Denver "Construction Activities Stormwater Manual" and the current version of the "Urban Drainage and Flood Control District's Urban Storm Drainage Criteria Manual, Volume 3: Best Management Practices". These documents are posted at the following websites:  
<http://denvergov.org/wastewatermanagement/WastewaterManagement/EngineeringandPermits/ErosionControl/tabid/442674/Default.aspx>  
[http://www.udfcd.org/downloads/down\\_critmanual.htm](http://www.udfcd.org/downloads/down_critmanual.htm)

## **PART 3 - EXECUTION**

### **3.1 AIR POLLUTION CONTROLS**

- A. The Contractor shall use appropriate control measures to comply with applicable air quality permit requirements. Additionally, the Contractor must be aware of the following procedures and techniques while conducting construction activities on DIA property. NOTE: Application of dust control measures should be discussed and outlined in the Dust Control Plan.
1. Apply water as needed to the construction site haul roads, disturbed surface areas and public access roads as needed to suppress dust. The use of

chemical stabilizer can be requested by the Contractor. The type of stabilizer to be used and locations of use must be included in the Dust Control Plan, which must be approved by the DIA Project Manager prior to application.

2. The Contractor shall suspend all earthmoving activities if wind speed exceeds 30 mph. For purposes of this Section, the generic term "earthmoving" means clearing, grubbing, excavation, topsoil removal, backfilling, embankment work, grading, trenching, drilling, and installation of borings. Contractors are expected to check wind speeds with the airport's ramp tower to demonstrate compliance with this requirement. In addition, the Project may be shut down if two of three of the Runway Visual Range (RVR) instruments read visibility of 2,400 feet or less. The instruments are used by FAA Control Tower personnel to ensure safe aircraft operations. Costs for shutdowns due to wind velocities or RVR readings shall not be grounds for delay or extra cost claims.

- B. Burning of materials is strictly prohibited on DIA property.

### 3.2 WATER POLLUTION CONTROLS

- A. The Contractor shall conduct construction activities in accordance with all applicable permit requirements. In addition, the Contractor shall comply with the following procedures and requirements while conducting activities on DIA property:

1. Water encountered during construction cannot be discharged to the stormwater system or placed onto the ground surface without a permit AND prior written approval by the DIA Project Manager. If groundwater or stormwater is anticipated to be encountered and the Contractor desires to discharge it to the stormwater system or onto the ground surface, then the Contractor must obtain an appropriate CDPS discharge permit in advance of the discharge unless this activity is specifically authorized under the CDPS Construction Stormwater Permit.
2. If water is encountered and the Contractor desires to discharge these waters to the sanitary sewer system, then the Contractor must obtain approval from DIA Environmental Services in advance of the discharge.
3. The Contractor shall ensure that stormwater that comes in contact with storage areas does not become impacted and discharged to the stormwater sewer system or to an impervious surface. Furthermore, any materials in storage areas shall not be stored directly on the ground. Refer to Section 264200 "Cathodic Protection" for cathodic protection requirements.
4. The Contractor shall not operate any valves, sluice gates or other drainage appurtenances related to any DIA sewer system without the prior approval of both the DIA Project Manager and DIA Environmental Services. Any violation of this directive may result in the payment of a financial penalty by the Contractor if the State of Colorado assesses such a penalty.

### 3.3 EROSION CONTROL AND SEDIMENTATION CONTROL

- A. This Work consists of constructing, installing, maintaining and removing, if required, temporary and permanent control measures during the life of the Contract (and

possibly afterward) until the Contractor achieves final stabilization of the site to prevent or minimize erosion, sedimentation, and pollution of any state waters in accordance with all Environmental Requirements.

- B. The Contractor is responsible for compliance with all requirements in accordance with the CASDP, the City and County of Denver Construction Sites Program, the approved CASMP, and CDPS-issued permits.
- C. Temporary facilities, including but not limited to storage areas, laydowns, borrow areas, and contractor offices and work yards, shall be managed in accordance with Section 015210 "Temporary Facilities".
- D. Clean soil fill may be stockpiled in any area that has been previously approved and signed off by the DIA Section Manager of Construction, Design and Planning, and Environmental Services. Soil stockpiles are considered a potential pollutant source and must be addressed in the CASMP and/or SWMP.
- E. Make immediately available, upon the DIA Project Managers request, all labor, material and equipment judged appropriate by the DIA Project Manager to maintain suitable erosion and sediment control features. These actions requested by the DIA Project Manager take precedence over all other aspects of project construction that have need of the same labor, material and equipment, except those aspects required to prevent loss of life or severe property damage.

### 3.4 CONSTRUCTION OF CONTROL MEASURES FOR EROSION AND SEDIMENTATION

- A. The Contractor must install control measures in accordance with the most recent version of the "Urban Drainage and Flood Control District's Urban Storm Drainage Criteria Manual, Volume 3: Best Management Practices and the City and County of Denver Construction Activities Stormwater Manual". These documents are posted at the following websites: [http://www.udfcd.org/downloads/down\\_critmanual.htm](http://www.udfcd.org/downloads/down_critmanual.htm)  
<http://denvergov.org/wastewatermanagement/WastewaterManagement/EngineeringandPermits/ErosionControl/tabid/442674/Default.aspx>
  - 1. Deviations from these two documents are allowed with written consent from the City and County of Denver NPDES Inspector.

### 3.5 STORAGE OF OIL, FUELS, OR HAZARDOUS SUBSTANCES

- A. The Contractor shall prevent oil or other hazardous substances, as defined in federal and state regulations, from entering the ground, drainage or local bodies of water, and shall provide containment, diversionary structures, or equipment to prevent discharged oil from reaching a watercourse and take immediate action to contain and clean up any spill of oily substances, petroleum products, or hazardous substances. The Contractor shall provide one or more of the following preventive systems at each petroleum storage site:

1. Dikes, berms, or retaining walls capable of containing at least 100% of the volume of the largest single tank and equipped with sufficient freeboard to contain precipitation events. The secondary containment must be “sufficiently impermeable” to prevent a release to the environment.
  2. Culverting, curbing, guttering or other similar structures capable of containing at least 100% of the volume of the largest single tank and freeboarding from precipitation.
- B. The provision of such preventive systems shall be subject to acceptance by the DIA Project Manager prior to tank installation and shall follow the SPCC regulations (40 CFR Part 112).
- C. Prior to bringing any containers of 55-gallon or above capacity onto DIA property for storage of oil, fuel, or other petroleum substances, the Contractor may be required to prepare an SPCC Plan that conforms to 40 CFR Part 112. The plan must include either a certification from a Professional Engineer or self-certification, if applicable, as well as management approval from the legally responsible Contractor representative.

### 3.6 SPILL RESPONSE AND NOTIFICATION

- A. The Contractor is responsible for all spills that may result from its activities. For ANY suspected or confirmed release or spill of oil, fuel, solid waste, hazardous waste, unknown materials, lavatory waste, or miscellaneous chemicals, etc., that occurs as the result of the Contractor’s activities on DIA property, the Contractor is required to take immediate action to mitigate the release or spill and report it to the DIA Project Manager and to the DIA Communications Center at (303) 342-4200.
- B. The Contractor is responsible for notifying the appropriate regulatory agency(ies) in the event suspected and/or confirmed releases are identified, in accordance with regulatory requirements.

### 3.7 SITE REMEDIATION AND RESTORATION

- A. The Contractor shall be required to perform any necessary site assessment and remediation activities required by applicable regulatory agency(ies).
- B. During routine construction activities, the Contractor is required to manage soils using typical construction techniques. The Contractor must differentiate between soils and wastes, including contaminated soils versus clean soils, and determine those materials that can remain on DIA property and those that must be transported off site for disposal.
- C. During all construction activities that require the management of soils, the Contractor must notify the DIA Project Manager and DIA Environmental Services (ES) that soils being managed may be impacted by industrial activities conducted at the airport. “Process knowledge” pertaining to previous use and/or impact for the location(s) under construction can be used to determine whether impacted soils are probable. Also, common indices such as soil staining and odor can be used as a determination for the

probable condition. If probable contamination conditions are suspected, the Contractor will notify the DIA Project Manager and DIA ES immediately. At that time, which may be before the Work is initiated where indicative conditions exist, all work will cease until a sampling and analysis approach is determined and implemented by the proper responder.

- D. If the site conditions warrant based on evidence of spillage or contamination, process knowledge, and/or visual or olfactory observations, the Contractor may be required to conduct sampling and analysis to confirm that no remedial action is required. Prior to conducting any removal activities, the Contractor must provide a Scope of Work to the DIA Project Manager describing the proposed site assessment activities.
- E. The impacted project will modify its operation to include a segregation area where probable impacted soils can be placed, stored, and sampled for characterization. Should the soil materials be determined to exceed the applicable standards, the DIA Project Manager, in conjunction with DIA ES, will be responsible for the proper disposal of these materials. Materials that are determined to contain contamination levels below the applicable standards can be considered clean soils and placed back into the excavation or reused elsewhere on DIA property. In accordance with Part 3 of this Section, materials removed that are suitable for recycling will be placed within areas designated on DIA to store these materials.
- F. The Contractor shall restore any area on the Airport which becomes contaminated as a result of its operations. Restoration shall be either to applicable standards under federal and state law or to such other levels as may be required by the Manager of Aviation, at the Manager's sole discretion. Such restoration shall be completed at the earliest possible time, and the Contractor's restoration shall be subject to inspection and approval by the Manager of Aviation or duly authorized representative. See DIA Rules & Regulations - Part 180.

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid items. The Contractor shall be responsible for payment of all fees associated with review of environmental permit applications and processing of environmental permits.

**END OF SECTION 015719**

## **SECTION 015810 - TEMPORARY SIGNS**

### **PART 1 - GENERAL**

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes requirements for the following:
  - 1. Construction signage visible to the public.
  - 2. Temporary directional, informational or regulatory signage.
- B. Related Requirements:
  - 1. Section 015210 "Temporary Facilities" for requirements for temporary facilities.

#### 1.3 SUBMITTALS

- A. Submit temporary sign finishes, materials and paint, etc., for review and approval by DIA Project Manager prior to any fabrication.

#### 1.4 QUALITY CONTROL

- A. Construction and other temporary signage visible to the public must be commercial grade quality, professionally fabricated and installed for the location of the sign. The Contractor is responsible to maintain this signage until it is no longer needed, and to remove signage from the site.

### **PART 2 - PRODUCTS**

#### 2.1 GENERAL

- A. Interior signs that are visible and not physically accessible to the public may be made of rigid board, such as "Gator Board", with vinyl messages. All edges must be finished and conceal all attachments.
- B. Interior signs that are visible and physically accessible by the public must be



vandal-proof. Acceptable examples of vandal-proof signs are messages applied second surface with concealed tamperproof fasteners.

- C. Exterior signs must be vandal-proof and fabricated of weatherproof materials.

### **PART 3 - EXECUTION**

#### **3.1 HARDWARE**

- A. Interior Signs: Attach with suitable adhesive and/or tape which may be removed without damage to finishes.
- B. Exterior Signs: Must be secured to withstand site conditions and varying weather conditions.

#### **3.2 SIGN FINISHES, MATERIALS AND PAINT**

- A. Provide temporary signage to reflect permanent sign design and/or as directed by the DIA Signage Design Project Manager. Submit temporary sign finishes, materials and paint, etc., for review and approval prior to any fabrication.

#### **3.3 MAINTENANCE**

- A. The Contractor is responsible to maintain temporary signage until it is no longer needed, as determined by DIA Project Manager.

#### **3.4 REMOVAL**

- A. The Contractor is responsible to remove all temporary signs, clean and refurbish affected areas to their original, or intended, condition.

### **PART 4 - MEASUREMENT**

#### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

### **PART 5 - PAYMENT**

#### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work

described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 015810**

## SECTION 016000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 012300 "Alternates" for products selected under an alternate.
  - 2. Section 012510 "Substitutions" for requests for substitutions.
  - 3. Section 014225 "Reference Standards" for applicable industry standards for products specified.

#### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

#### 1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
  2. DIA Project manager's Action: If necessary, DIA Project Manager will request additional information or documentation for evaluation within one week of receipt of a comparable product request. DIA Project Manager will notify Contractor of approval or rejection of proposed comparable product request within **15**days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
    - b. Use product specified if DIA Project Manager does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

#### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  2. If a dispute arises between contractors over concurrently selectable but incompatible products, DIA Project Manager will determine which products shall be used.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

- C. Submittal Time: Comply with requirements in Section 017720 "Contract Closeout."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," DIA Project Manager will make selection.
  5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  3. Products:
    - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
    - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
  4. Manufacturers:
    - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies

- with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
- b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match DIA Project Manager's sample", provide a product that complies with requirements and matches DIA Project Manager's sample. DIA Project Manager's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012510 "Substitutions" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by DIA Project Manager from manufacturer's full range" or similar phrase, select a product that complies with requirements. DIA Project Manager will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
- ## 2.2 COMPARABLE PRODUCTS
- A. Conditions for Consideration: DIA Project Manager will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, DIA Project Manager may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

## 2.3 MATERIALS

- A. General: Comply with requirements specified in other Sections.
1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Section 018113.13 "Sustainable Design Requirements - LEED for New Construction and Major Renovations," Section 018113.16 "Sustainable Design Requirements - LEED for Commercial Interiors," Section 018113.19 "Sustainable Design Requirements - LEED for Core and Shell Development."
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to DIA Project Manager for the visual and functional performance of in-place materials.

## **PART 3 - EXECUTION (Not Used)**

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

## **END OF SECTION 016000**



## **SECTION 016610 - STORAGE AND PROTECTION**

### **PART 1 - GENERAL**

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The Work specified in this Section consists of providing storage and protection of the materials, products and supplies which are to be incorporated into the construction and indicating such storage areas on the working drawings with the location and dates when such areas will be available for each purpose.
- B. Related Requirements:
  - 1. Section 015210 "Temporary Facilities" for requirements for temporary facilities.

#### 1.3 SUBMITTALS

- A. Refer to Technical Specifications Sections 013300 "Submittal Procedures" and 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures. Submit concurrently with submittals required in Section 013223 "Construction Layout, Asbuilt and Quantity Surveys".
- B. Submit working drawings showing locations of storage areas not indicated on the Contract Drawings.
- C. Submit descriptions of proposed methods and locations for storing and protecting products.

### **PART 2 - PRODUCTS**

#### 2.1 MATERIALS

- A. Materials required for the storage and protection of the items specified shall be durable, weatherproof and either factory finished or painted to present an appearance acceptable to the DIA Project Manager and the City. Storage facilities shall be uniform in appearance with similar materials used to the maximum extent possible.

## **PART 3 - EXECUTION**

### **3.1 GENERAL REQUIREMENTS OF EXECUTION**

- A. Palletize materials, products and supplies which are to be incorporated into the construction and stored off the ground. Material and equipment shall be stored only in those areas that are indicated as storage areas on the Contract Drawings and on the reviewed and accepted working drawings.
  - 1. Store these items in a manner which will prevent damage and which will facilitate inspection.
  - 2. Leave seals, tags and labels intact and legible.
  - 3. Maintain access to products to allow inspection.
  - 4. Protect products that would be affected by adverse environmental conditions.
- B. Periodically inspect stored products to ensure that products are being stored as stipulated and that they are free from damage and deterioration.
  - 1. Any damaged or deteriorated materials must be replaced immediately to avoid delays in the project schedule.
- C. Do not remove items from storage until they are to be incorporated into the Work.
- D. The Contractor shall ensure that all protective wrappings and coverings are secure and ballasted to prevent any items from deterioration and/or subsequent dislodgment. All items on the work site that are subject to becoming windborne shall be ballasted or anchored.

### **3.2 HANDLING AND TRANSPORTATION**

- A. Handling:
  - 1. Avoid bending, scraping or overstressing products. Protect projecting parts by blocking with wood, by providing bracing or by other approved methods.
  - 2. Protect products from soiling and moisture by wrapping or by other approved means.
  - 3. Package small parts in containers such as boxes, crates or barrels to avoid dispersal and loss. Firmly secure an itemized list and description of contents to each container.
- B. Transportation:
  - 1. Conduct the loading, transporting, unloading and storage of products so that they are kept clean and free from damage.

### **3.3 STORAGE**

- A. Store items in a manner that shall prevent damage to the Owner's property. Do not

store hydraulic fluids, gasoline, liquid petroleum, gases, explosives, diesel fuel and other flammables in excavations, except one day's supply of diesel fuel may be stored in open excavations.

- B. Provide sheltered weather-tight or heated weather-tight storage as required for products subject to weather damage.
- C. Provide blocking, platforms or skids for products subject to damage by contact with the ground.
- D. All material shall be stored according to the manufacturer's recommendations. Any material that has to be stored within specified temperature or humidity ranges shall have a 24-hour continuously written recording made of the applicable condition. Should the recording show that the material was not stored within the recommended ranges the material shall be considered defective and in nonconformance. If a certification from the manufacturer's engineering design representative is provided stating that the actual variations are acceptable and will in no way harm the material or affect warranties, then the deficiency will be considered corrected.
- E. Store hazardous material separately, with all material marked with a label showing the hazard and how to treat exposure to the material.
- F. Extra materials that are left over at the completion of the Work shall be removed from the Project site by the Contractor unless they are required to be delivered to the Owner as per Contract Document requirements for maintenance stock.

### 3.4 LABELS

- A. Storage cabinets and sheds that will contain flammable substances and explosive substances shall be labeled "FLAMMABLE - KEEP FIRE AWAY" and "NO SMOKING" with conspicuous, bold lettering and conforming to OSHA requirements.

## PART 4 - MEASUREMENT

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## PART 5 - PAYMENT

### 5.1 METHOD OF PAYMENT

- A. The cost of the Work described in this Section shall be included in the applicable unit price item, work order, or lump sum bid item. Reference Section 012910 "Schedule of Values" for additional requirements for the possible payment of stored material.

**END OF SECTION 016610**

## SECTION 017300 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. Installation of the Work.
  - 4. Cutting and patching.
  - 5. Coordination of Owner-installed products.
  - 6. Progress cleaning.
  - 7. Starting and adjusting.
  - 8. Protection of installed construction.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for limits on use of Project site.
  - 2. Section 013300 "Submittal Procedures" for submitting surveys.
  - 3. Section 017720 "Contract Closeout" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
  - 4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
  - 5. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

#### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor and professional engineer.
- B. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
  - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
    - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- D.

#### 1.5 QUALITY ASSURANCE

- A.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include, but are not limited to the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.

- e. Mechanical systems piping and ducts.
  - f. Control systems.
  - g. Communication systems.
  - h. Fire-detection and -alarm systems.
  - i. Conveying systems.
  - j. Electrical wiring systems.
  - k. Operating systems of special construction.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
- a. Water, moisture, or vapor barriers.
  - b. Membranes and flashings.
  - c. Exterior curtain-wall construction.
  - d. Sprayed fire-resistive material.
  - e. Equipment supports.
  - f. Piping, ductwork, vessels, and equipment.
  - g. Noise- and vibration-control elements and systems.
  - h.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Section 018113.13 "Sustainable Design Requirements - LEED for New Construction and Major Renovations," Section 018113.16 "Sustainable Design Requirements - LEED for Commercial Interiors," Section 018113.19

"Sustainable Design Requirements - LEED for Core and Shell Development,"  
and Section 018113.23 "Sustainable Design Requirements - LEED for Schools."

- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
  - 1. Description of the Work.
  - 2. List of detrimental conditions, including substrates.
  - 3. List of unacceptable installation tolerances.
  - 4. Recommended corrections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to **[local utility]** **[Owner]** that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field



measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify DIA Project manager promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish limits on use of Project site.
  - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 4. Inform installers of lines and levels to which they must comply.
  - 5. Check the location, level and plumb, of every major element as the Work progresses.
  - 6. Notify DIA Project manager when deviations from required lines and levels exceed allowable tolerances.
  - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by DIA Project Manager.

### 3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of DIA Project manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points DIA Project Manager before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of one permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

### 3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  - 4. Maintain minimum headroom clearance.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.

- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new

space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

- a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### 3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

- a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
  - B. Site: Maintain Project site free of waste materials and debris.
  - C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
    1. Remove liquid spills promptly.
    2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
  - D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
  - E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
  - F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
  - G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls." Section 017419 "Construction Waste Management and Disposal."
  - H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
  - I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
  - J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- 3.9 STARTING AND ADJUSTING
- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."

- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

### 3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

**END OF SECTION 017300**

## SECTION 017330 - CUTTING AND PATCHING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Reference General Contract Conditions - GC 315.

#### 1.2 SUMMARY

A. Section Includes:

- 1. Project information.
- 2. Work covered by Contract Documents.
- 3. Phased construction.
- 4. Work by Owner.
- 5. Work under separate contracts.
- 6. Future work.
- 7. Purchase contracts.
- 8. Owner-furnished products.
- 9. Contractor-furnished, Owner-installed products.
- 10. Access to site.
- 11. Coordination with occupants.
- 12. Work restrictions.
- 13. Specification and drawing conventions.
- 14. Miscellaneous provisions.

B. Related Requirements:

- 1. Section 015210 "Temporary Facilities" for limitations and procedures governing temporary use of Owner's facilities.
- 2. Section 015719 "Temporary Environmental Controls" for environmental control requirements.
- 3. Section 024119 "Selective Demolition" for selective demolition of structures and other elements.
- 4. Section 099113 "Exterior Painting" for exterior painting of areas of cutting and patching.
- 5. Section 09123 "Interior Painting" for interior painting of areas of cutting and patching.

- C. Alternates: Refer to Division 01 Section 012300 "Alternates" for description of Work in this Section affected by Alternates.



### 1.3 DEFINITIONS

- A. Cutting: Removal of existing construction to permit installation of or to perform other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

### 1.4 SUBMITTALS

- A. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- B. Cutting and Patching Proposal: Submit a proposal describing procedures at least thirty (30) calendar days before the time cutting and patching will be performed, requesting approval to proceed. Obtain approval of cutting and patching proposal by DIA Project Manager before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work. The proposal shall include at least the following information:
  - 1. Identification of the Contract and the Contractor's name.
  - 2. Description of proposed work:
    - a. Scope of cutting, patching, alteration or excavation.
    - b. The necessity for cutting or alteration.
    - c. Drawing showing location of the requested cutting or alteration, along with radar or x-ray report.
    - d. Trades that will execute the work.
    - e. Products proposed to be used.
    - f. Extent of refinishing to be done.
    - g. Alternatives to cutting and patching.
  - 3. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
  - 4. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted, and proposed dates of interruption of service.
  - 5. Proposed Dust Control and Noise Control Measures: Submit a statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
  - 6. Effect on the work and other surrounding work or on structural or weatherproof integrity of Project.
  - 7. Written concurrence of each contractor or entity whose work will be affected.
  - 8. Cost proposal, when applicable.

## 1.5 QUALITY CONTROL

- A. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance, decreased operational life or safety unless approved by the DIA Project Manager:
1. Primary operational systems and equipment.
  2. Air or smoke barriers.
  3. Fire protection systems.
  4. Control systems.
  5. Communication systems.
  6. Conveying systems.
  7. Electrical wiring systems.
  8. Operating systems of special construction as described in Divisions 13 and 26.
  9. HVAC systems.
- B. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or those results in increased maintenance, decreased operational life or safety unless approved by the DIA Project Manager:
1. Water, moisture or vapor barriers.
  2. Membranes and flashings.
  3. Exterior curtain wall construction.
  4. Equipment supports.
  5. Piping, ductwork, vessels and equipment.
  6. Noise control and vibration control elements and systems.
  7. Stud walls.
- C. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in DIA's sole opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactorily manner.
1. If possible, retain the original installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage the original installer or fabricator, engage another recognized, experienced and specialized firm as approved by the DIA Project Manager:
    - a. Processed concrete finishes.
    - b. Stonework and stone masonry.
    - c. Ornamental metal.
    - d. Matched-veneer woodwork.
    - e. Preformed metal panels.
    - f. Firestopping.
    - g. Window wall systems.
    - h. Terrazzo.

- i. Wall coverings.
  - j. HVAC enclosures, cabinets or covers.
- D. Cutting and Patching Conference: Before proceeding, meet at the Project site with all parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

## 1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during cutting and patching operations by methods and with materials so as not to void existing warranties.
- 1. If possible, retain the original installer or fabricator to patch the exposed Work listed below that is damaged during selective demolition. If it is impossible to engage the original installer or fabricator, engage another recognized, experienced and specialized firm as approved by the DIA Project Manager:
    - a. Ornamental metal.
    - b. Preformed metal panels.
    - c. Firestopping.
    - d. Terrazzo.
    - e. ProCoat paint finishes.
    - f. Granite flooring.
    - g. Wall coverings.
    - h. HVAC enclosures, cabinets or covers.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: All patching material shall be of the type specified for the material being patched. Comply with requirements specified in other specifications Sections.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually and texturally match existing adjacent surfaces to the fullest extent possible.
- 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials as approved by the DIA Project Manager.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. **Compatibility:** Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers. Provide additional substrates or materials if required to achieve desired final results of patching work.
  - 2. Immediately notify the DIA Project Manager, in writing, of unsuitable, unsafe or unsatisfactory conditions.
  - 3. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
  - 4. Proceed with patching only after construction operations requiring cutting are complete and inspected by the DIA Project Manager.

### **3.2 PREPARATION**

- A. **Temporary Support:** Provide temporary support of Work to be cut to ensure structural value or integrity.
- B. **Protection:** Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. **Adjoining Areas:** Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. **Existing Services:** Where existing services are required to be removed, relocated or abandoned, bypass such services before cutting to avoid or minimize interruption of services to occupied areas. Do not interrupt services in without approval by DIA Project Manager.
  - 1. Notify DIA Project Manager of any interruption of services with minimum seven (7) days notice.

### **3.3 POLLUTION CONTROLS**

- A. **Dust Control:** Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations. Reference Section 015719 "Temporary Environmental Controls" for requirements.
  - 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions such as ice, flooding and pollution.
  - 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of

demolition enclosures. Vacuum carpeted areas. Professionally clean carpeted areas if required.

- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to the condition existing before selective demolition operations began.

### 3.4 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Execute cutting and demolition by methods that will prevent damage to other work and will provide a proper surface to receive patching.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
  - 2. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerance and finishes.
  - 3. Restore work that has been cut or removed; install new products to provide complete work in accordance with requirements of the Contract Documents.
  - 4. Fit work airtight and fire safe to pipes, sleeves, ducts, conduit and other penetrations through surfaces as required by the Contract Documents.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and other similar operations, including excavation, using methods least likely to damage elements retained to adjoining construction. If possible review proposed procedures with original installer and comply with original installer's written recommendations.
  - 1. In general, use ground fault hand or small power tools designed (to short if metal is hit) for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to the size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete: Use a cutting machine such as an abrasive saw or a diamond-core drill.
  - 4. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other specification Sections.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing. For continuous surfaces, refinish entire unit to the nearest break line. For an assembly, refinish entire unit.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs on a painted surface, apply primer and intermediate paint coats over the patch and apply the final coat over the entire unbroken surface containing the patch. Provide additional coats until the patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- D. Fire Rated Construction: Where rated elements are cut, reconstruct to approved designs to provide original fire rating.

### 3.5 CORE DRILLING

- A. The Contractor shall execute a minimum of x-rays or ground penetrating radar at each location planned for core drilling prior to submittal to the DIA Project Manager and to utility representatives for approval for core drilling. The request for approval shall be submitted minimum seven (7) days in advance of the planned activity. The request for approval shall indicate on the x-ray or radar information regarding alternate locations or core drilling to avoid structural members and any embedded conduit. Embedded conduit may be metallic or plastic. The x-ray or radar system shall be capable of detecting both types of conduit.
- B. Core drilled "cores" and the core-drilled opening shall be inspected by DIA Project Manager representatives prior to installation of any systems in new openings.
- C. X-ray activities may not be performed during hours of activity or occupancy in the area of the x-ray system. The Contractor shall provide all manpower and barriers required to secure the areas affected by x-ray activities.

## PART 4 - MEASUREMENT

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable multiplier for the division under which the work falls

**END OF SECTION 017330**

## SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section describes the requirements for recycling and construction waste management for construction and demolition work.
- B. All wastes shall be managed in accordance with all local, state, and federal regulations.
- C. The Contractor shall recycle 100 % of concrete, asphalt, and metal. The Contractor shall recycle at least 75% of all other recyclable and salvageable materials.
- D. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submittal procedures.
  - 2. Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
  - 3. Section 015719 "Environmental Controls" for environmental control procedures.
  - 4. Section 018113 "Sustainable LEED Requirements" for LEED requirements.
  - 5. Section 024116 "Structure Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.
  - 6. Section 024119 "Selective Structure Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.
  - 7. Section 042000 "Unit Masonry" for disposal requirements for masonry waste.
  - 8. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

#### 1.3 DEFINITIONS

- A. Salvaged Materials: Defined as waste materials or materials that exist on the site that can be reused, either on site or by another entity.
- B. Recyclable Waste: Defined as all waste materials that exist on site or are generated during the construction process that can be recycled and/or remanufactured into another material. Recyclable waste includes, but is not limited to, the following:



1. Concrete.
2. Ferrous and non-ferrous metals.
3. Untreated wood, engineered wood.
4. Gypsum wallboard.
5. Corrugated cardboard, paper goods.
6. Plastic.
7. Glass, insulation.
8. Carpet.
9. Paints, fabric.
10. Rubber.
11. Stone and brick.

- C. Non-Recyclable Waste: Defined as all waste material that is not able to be recycled due to contamination, lack of recycling facilities, or salvage options, or high cost.
- D. High Cost: Defined as the cost to dispose of solid waste at a landfill plus 20%.
- E. Hazardous Waste: Defined in 40 CFR 261.3, and 6 CCR 1007-3 as a solid, a liquid, or a contained gaseous material that is no longer used or that no longer serves the purpose for which it was produced and meets the definitions of the regulations.

#### 1.4 SUBMITTALS

- A. The Contractor shall submit a Disposal and Recycling Summary Report once a month to the DIA Project Manager and DIA Environmental Services, quantifying the construction and demolition waste generated and recycled, reused, salvaged or disposed of on a monthly basis. This Disposal and Recycling Summary Report shall be in the format of Appendix A as provided in this Section below. The Contractor shall include the recycled materials manifests; weight tickets, receipts, and invoices specifically identifying the Project and waste material.
- B. The Contractor shall submit a Waste Management Plan within ten (10) days of NTP to the DIA Project Manager and DIA Environmental Services. See Part 1 of this Section for Waste Management Plan requirements.

#### 1.5 SOLID WASTE MANAGEMENT

- A. Solid waste is defined in 40 CFR 261.2 and includes all putrescible and non-putrescible solid, semisolid and liquid wastes, but does not include hazardous waste which is treated as a separate subset of solid waste. Hazardous waste is defined in 40 CFR 261.3, and 6 CCR 1007-3 as a solid, a liquid, or a contained gaseous material that is no longer used or that no longer serves the purpose for which it was produced and meets the definitions of the regulations. Certain types of non-hazardous solid waste may require special handling; such wastes are sometimes called "special waste."
- B. Hazardous and special solid waste may be generated by the actions of the Contractor including, but not limited to, the direct purchase of hazardous materials, demolition,

site preparation, grading, excavation, construction, or maintenance of equipment. If questionable material is encountered during construction activities, the Contractor must immediately notify the DIA Communications Center at (303) 342-4200 and the DIA Project Manager. Refer to Section 015719 "Environmental Controls" for additional information regarding the storage of hazardous substances.

- C. Remove scrap and waste material and dispose of it in accordance with all laws, codes, regulations, ordinances, and permits.
- D. The Contractor is responsible for the safe management and disposal of all hazardous and non-hazardous solid waste and shall dispose of such waste in accordance with all environmental requirements. Waste disposal options include reuse on the Project (with DIA approval only), sale, use for fuel, donation to other public or private projects, or through disposal in approved disposal sites, either free of charge or for a fee. The method of disposal is restricted according to the classification of the waste. Hazardous and non-hazardous solid waste shall not be abandoned, dumped, buried or in any other way disposed on DIA property.
- E. City and County of Denver Executive Order No.115 requires all non-recyclable non-hazardous solid waste generated at DIA to be directed to the Denver Arapahoe Disposal Site (DADS) landfill. This includes all non-hazardous solid waste collected or transported in Denver vehicles, Contractor vehicles, or subcontractor vehicles. Through the DIA Project Manager, the Contractor shall establish accounts in advance for the disposal of non-hazardous solid waste generated on the project. Therefore, this bid shall include costs for transportation to the DADS landfill only and the City is responsible for disposal fees and any applicable State surcharges. The Contractor is responsible for any special handling charge imposed by the transporter or the DADS landfill operator.
  - 1. In the interest of public relations and to maximize the long-term use of the Site, haul routes adjacent to DADS shall be limited to State Highway 30 or E-470 unless these routes are impassable. Refer to Exhibit A at the end of this Section for preferred haul route. Specifically, Gun Club Road between Interstate Highway 70 ("I-70") and Mississippi Avenue shall be avoided.
- F. Some of the naturally occurring material found by the Contractor, especially tar or oil-impregnated soil, may not be obviously hazardous. Physical and chemical analyses and tests may be required to determine if the material meets the criteria set forth in State of Colorado, CDPHE, Hazardous Materials and Waste Management Division (HMWMD) regulations. The Contractor shall pay for such chemical analyses and will coordinate with local authorities to determine the quantity and origin of samples analyzed for any questionable material. The Contractor will provide the classification information of the material to the City.
- G. The routes to be followed when transporting solid or hazardous wastes may be subject to the approval of the local agency having jurisdiction.
- H. The Contractor shall not wash down equipment in such a manner as to flush grease and oils into the Project site or onto airport property unless the waste is properly contained, treated, and disposed.

- I. The Contractor shall maintain copies of MSDSs for any and all materials used at the airport Project, at its on-site project office or other designated location. DIA Environmental Services may, at any time, request copies of MSDSs and/or waste manifests for any waste shipments from the project site. Any such request must be fulfilled within one (1) business day.
- J. The Contractor shall require all shipments to the work site to contain documentation that shows whether the material is hazardous or requires special handling, storage, or disposal; what type of material it is, what hazard(s) it poses, how to treat exposure(s); and the quantity of hazardous material in the shipment. This information must be provided to the DIA Project Manager prior to any hazardous material being allowed on site.
- K. Before leaving the site with any hazardous waste or material requiring special handling, storage or disposal, the Contractor must provide the DIA Project Manager with a detailed description of the material, its source, quantity, who is hauling it off site, and where it is being taken, along with verification that the destination site can legally receive it.

#### 1.6 WASTE MANAGEMENT PLAN

- A. The Contractor shall submit a Waste Management Plan within ten (10) days of NTP to the DIA Project Manager and DIA Environmental Services that meets the following minimum requirements:
  - 1. Contractor's name and Contract number.
  - 2. Include a communication plan that will describe how the Waste Management Plan will be conveyed to each new subcontractor that comes onto the site and how containers will be identified.
  - 3. A list of all materials, products, and wastes generated by the Project; materials that require special handling or storage for environmental, safety, or fire code reasons; and acknowledgment whether any of the wastes will become regulated wastes upon disposal. The list of materials, products, and wastes may include, but is not limited to, the following:
    - a. Trash and unclassified construction debris.
    - b. Asphalt spoils.
    - c. Concrete spoils.
    - d. Pavement sweepings.
    - e. Soils contaminated by chemicals or petroleum products during the Project.
    - f. Lime and cement trimmings.
    - g. Scrap metal.
    - h. Every chemical product used on the Project. Reuse of a product on site for its original intended purpose (e.g., cement trimmings from one part of the project used elsewhere on the airport) does not constitute generation of a waste for disposal.
  - 4. A copy or an electronic link to MSDSs for any and all materials used.
  - 5. A list of salvaged materials and recyclable waste. The list should detail the

- measures taken to salvage and/or recycle waste.
6. Identify and justify non-recyclable waste. Justification for non-recyclable waste should include at a minimum the cost and/or logistical obstacles that preclude a contractor from salvaging or recycling the waste. This justification must be approved by DIA Environmental Services.
  7. For each material and product listed, the Contractor shall identify the storage method, and identify measures to store hazardous waste separately from non-hazardous waste.
  8. For each waste listed, the Contractor shall identify the handling/transportation method, the disposal method, and the disposal facility utilized.
  9. If the Contractor anticipates generation of hazardous waste, the Contractor shall provide its USEPA (generator) identification number.
  10. Describe Project practices which will reduce waste at the source, such as requiring vendors to deliver materials in reusable packaging.
  11. Tonnage calculations that demonstrate the contractor will meet the Waste Management Goals to recycle, reuse, or salvage the demolition materials generated. Calculation shall be done by weight in tons.
  12. Pollution prevention measures.
  13. Training measures for management of hazardous materials and hazardous wastes on site.
  14. Approval of Contractor's Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations.
  15. Detailed information outlining how the Contractor's Waste Management Plan conforms to the LEED requirements of the Project.

## 1.7 CONSTRUCTION DEBRIS RECYCLING

- A. The Contractor shall salvage or recycle all materials and wastes as defined in Part 1 of this Section. The Contractor is responsible for coordinating all aspects with regard to recycling. The Contractor is encouraged to contact DIA Purchasing or DIA Environmental Services for information regarding recycling policies and practices.
- B. Dry concrete and asphalt materials are to be recycled. DIA maintains two dry concrete and asphalt recycling yards used for the accumulation and crushing of these materials. The only allowable materials at the recycle yards are dry concrete and asphalt materials derived from construction activities occurring on DIA property. The South Yard is located on 71st Ave just east of Jackson Gap Street. The North Yard is located on the south side of 110th, west of Queensburg Street. The use of these yards must be approved by the DIA Project Manager.
  1. Concrete washout activities are prohibited anywhere on DIA property unless the activity is specifically authorized under a CDPS permit and included in the SWMP, or the wash-water is collected and hauled off-site for disposal at an appropriately permitted facility. Concrete washout activities authorized by permit are only allowed at a designated concrete washout area as indicated in the approved CASMP and include the washing of the chute and tools ONLY. Concrete washout spoils are eligible for recycling once the washout has been segregated and allowed to dry and harden in accordance with permitted methods.

2. Rejected loads and/or other wet concrete or asphalt materials are **PROHIBITED TO BE PLACED ANYWHERE** on DIA property unless the Contractor holds a permit that authorizes the placement of such material on the site. Unless specifically authorized in a CDPS permit issued to the Contractor, these materials must be returned to the facility of origination or other permitted facility for proper disposal.
3. A Recycle Materials Manifest is required to be filled out by the Contractor for each load of concrete or asphalt placed in these areas and given to the responsible DIA Project Manager. It will be the responsibility of the Contractor to ensure the accuracy and completeness of the manifests. The Contractor will also be responsible for instituting controls to ensure that only the manifested materials are placed in the approved site. If two or more Contractors have material going into a site at the same time, they will need to coordinate their efforts to ensure that only approved and manifested materials are allowed on the site.
4. A copy of all manifests must be turned in on a monthly basis to the DIA Project Manager and DIA Environmental Services. A copy of the Recycled Materials Manifest form is available from the DIA Project Manager.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

- A. The Contractor is fully responsible to comply with all applicable laws and regulations whether noted in this Section or not.
- B. The City will deduct any fines, back-charges or any associated costs due to the Contractor's lack of compliance with all rules law and regulations.
- C. **THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL IMPACTS OF THE CONSTRUCTION ACTIVITIES BASED ON A PERFORMANCE BASIS AND WILL BE REQUIRED TO BE PROACTIVE TO AVOID ANY FORESEEABLE NEGATIVE IMPACT WHETHER NOTED IN THE APPROVED PERMIT CONDITIONS ON THE PLANS OR WHETHER IT IS REQUIRED AS PART OF THE PERMIT OR NOT.**

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the Work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item. The Contractor shall pay all applicable and charges as shown in Appendix B of this Section. Where the Contract Bid items assigns an allowance line item, the Contractor will be paid on actual invoices for recycling costs, but no time will be paid more than the cost of waste dump at landfill plus 20% and hauling.
  
- B. NOTE: Concrete and asphalt waste materials are considered a potential pollutant source and must be addressed in the CASMP and/or SWMP.

**END OF SECTION 017419**

## **APPENDIX A**

**Appendix A. Monthly Summary of Solid Waste Disposal and Diversion**

Project Name \_\_\_\_\_ Project Number \_\_\_\_\_  
 Contractor Name \_\_\_\_\_ License Number \_\_\_\_\_  
 Contractor Address \_\_\_\_\_  
 Month/year \_\_\_\_\_

Solid Waste Material	Recycled, Reused, Salvaged or Disposed	Date Material Disposed/ Diverted	Amount Disposed (Tons)	Amount Diverted (Tons)	Municipal Solid Waste Facility	Recycling /Reuse Facility	Comment (if disposed, state why not diverted.)
Concrete	1		n/a		n/a		
Ferrous/nonferrous metals			n/a		n/a		
Asphalt			n/a		n/a		
Untreated wood/engineered wood							
gypsum wall board							
corrugated cardboard, paper goods			0	0			
plastic			0				
glass, insulation							
carpet							
Paints							
fabrics							
Rubber							
Stone and brick							

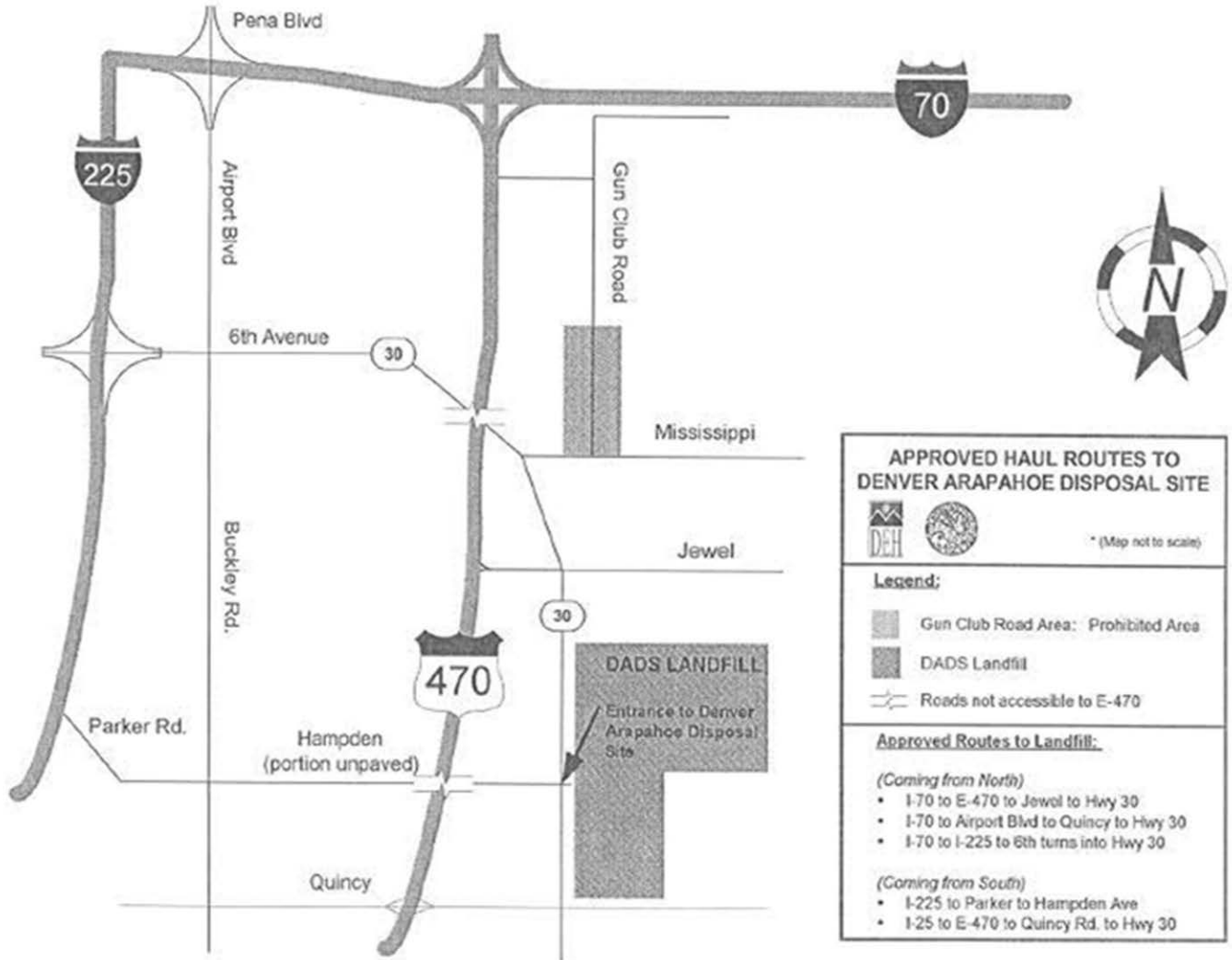
Diversion rate (excluding concrete metal, and asphalt) #DIV/0!

All receipts or equivalent for salvage, recycling, reuse, and disposal are hereby attached. This project has recycled all of the concrete and asphalt and at least 75% of all other debris generated.

Contractor signature \_\_\_\_\_ Date \_\_\_\_\_  
 DIA Approval: \_\_\_\_\_

**EXHIBIT A:**

MAP OF ROUTE TO DADS LANDFILL





## SECTION 017420 - CLEANING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The Work specified in this section consists of maintaining a clean, orderly, hazard free work site during construction, and final cleaning for the City's Final Acceptance. Failure to maintain the work site will be grounds for withholding monthly payments until corrected to the satisfaction of the DIA Project Manager.

#### 1.3 JOB CONDITIONS

- A. Safety Requirements

- 1. Maintain the work site in a neat, orderly and hazard-free manner in conformance with all federal, state and local rules, codes, regulations and orders, including all OSHA requirements, until Final Acceptance of the Work. Keep catwalks, underground structures, work site walks, sidewalks, roadways and streets, along with public and private walkways adjacent to the work site, free from hazards caused by construction activities. Inspect those facilities regularly for hazardous conditions caused by construction activities.

- B. Hazards Control:

- 1. Store volatile wastes in covered metal containers and remove those wastes from work site daily.
- 2. Do not accumulate wastes which create hazardous conditions.
- 3. If volatile and noxious substances are being used in spaces that are not naturally ventilated adequately, provide artificial ventilation.
- 4. Hazard controls shall conform to the applicable federal, state and local rules and regulations.
- 5. Provide appropriate waste receptacles in all areas in which employees are working. Waste receptacles shall be kept covered at all times. All materials on site shall be anchored and covered to prevent any objects from becoming wind-borne.

- C. Access:

- 1. Maintain the work site to permit access by other City contractors as required and

to allow access by emergency personnel.

#### 1.4 SUBMITTALS

- A. Washing Plan: The Contractor shall prepare a plan describing the specific procedures and materials to be utilized for any equipment, vehicle, etc., washing activities. The plan must be submitted to the DIA Project Manager and also approved by the DIA Project Manager and Environmental Services.
1. Outdoor washing at DIA is not allowed unless the materials will be collected or managed in a manner to ensure that they will not enter the municipally-owned separate storm sewer system (MS4). The materials can only be disposed at a location pre-approved by DIA Environmental Services (refer to DIA SWMP). Failure to comply with this requirement would result in the discharge of non-stormwater.
  2. Indoor washing must be conducted in accordance with the Best Management Practices (BMPs) detailed in the DIA SWMP. Refer to Section 015719 "Environmental Controls". In addition, all indoor washing must be conducted in a manner that ensures that there are no prohibited discharges to the sanitary sewer system.

### PART 2 - PRODUCTS

#### 2.1 CLEANING MATERIALS

- A. Utilize the type of cleaning materials recommended by the manufacturer for the surfaces to be cleaned.
- B. Maintain current Material Safety Data Sheets (MSDS) on site for all chemicals. DIA Environmental Services must approve the chemicals used prior to discharge to the sanitary sewer system.
- C. Ensure proper disposal of all wastes generated from the use of these materials. The Contractor must ensure compliance with all environmental regulations. No wastes can be disposed of on DIA property.

### PART 3 - EXECUTION

#### 3.1 INTERIM CLEANING

- A. Clean the work site every shift/workday for the duration of the construction Contract. Maintain structures, grounds, storage areas and other areas of work site, including public and private properties immediately adjacent to work site, free from accumulations of waste materials caused by construction operations. Place waste materials in covered metal containers. All hard concrete, steel, wood and finished walking surfaces shall be swept clean daily.

- B. Remove or secure loose material on open decks and on other exposed surfaces at the end of each workday or more often in a manner that will maintain the work site hazard free. Secure material in a manner that will prevent dislodgment by wind and other forces.
- C. Sprinkle waste materials with water or acceptable chemical palliative to prevent blowing of dust.
- D. Promptly empty waste containers when they become full and legally dispose of the contents at dumping areas off the City's property.
- E. Control the handling of waste materials. Do not permit materials to be dropped or thrown from structures.
- F. Immediately remove spillage of construction related materials from haul routes, work site, private property, public rights of way, or on the Denver International Airport site.
- G. Clean only when dust and other contaminants will not precipitate upon newly painted surfaces.
- H. Cleaning shall be done in accordance with manufacturer's recommendation.
- I. Cleaning shall be done in a manner and using such materials as to not damage the Work.
- J. Clean areas prior to painting or applying adhesive.
- K. Clean all heating and cooling systems prior to operations. If the Contractor is allowed to use the heating and cooling system it shall be cleaned prior to testing.
- L. Clean all areas that will be concealed prior to concealment.
- M. Dispose of all fluids according to the approved Washing Plan.

### 3.2 FINAL CLEANING

- A. Inspect interior and exterior surfaces, including concealed spaces, in preparation for completion and acceptance.
- B. Remove dirt, dust, litter, corrosion, solvents, discursive paint, stains and extraneous markings.
- C. Remove surplus materials, except those materials intended for maintenance.
- D. Remove all tools, appliances, equipment and temporary facilities used in the construction.
- E. Remove detachable labels and tags. File them with the manufacturer's specifications for that specific material for the City's records.

- F. Repair damaged materials to the specified finish or remove and replace.
- G. After all trades have completed their work and just before Final Acceptance, all catch basins, manholes, drains, strainers and filters shall be cleaned; roadway, driveways, floors, steps and walks shall be swept. Interior building areas shall be vacuum cleaned and mopped.
- H. Final cleanup applies to all areas, whether previously occupied and operational or not.
- I. Dispose of all fluids according to the approved Washing Plan.

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

#### **END OF SECTION 017420**

## **SECTION 017515 - SYSTEM STARTUP, TESTING AND TRAINING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Provide complete startup, testing and operator training services to ensure operability of all electrical and electronic equipment supplied.
- B. Coordinate all start-up and Testing with DIA commissioning Authority or DIA asset management.

#### **1.3 SUBMITTALS**

- A. Refer to Section 013300 "Submittal Procedures" and 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures. Submit the following:
  - 1. Test procedures.
  - 2. Test reports.
  - 3. Training outline.
- B. Qualification Data: Individuals providing services testing and training must be fully experienced and knowledgeable and have a minimum of 10 years of experience in the areas of work that they are providing services.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

#### **1.4 QUALITY ASSURANCE**

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

- B. Instructor Qualifications: A factory-authorized service representative, experienced in operation and maintenance procedures and training.
- C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.
- D. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination - Revit." Review methods and procedures related to demonstration and training including, but not limited to, the following:
  - 1. Inspect and discuss locations and other facilities required for instruction.
  - 2. Review and finalize instruction schedule and verify availability of educational materials, instructor's personnel, audiovisual equipment, and facilities needed to avoid delays.
  - 3. Review required content of instruction.
  - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

## 1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by DIA Project Manager.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.1 FIELD TESTS AND ADJUSTMENTS

- A. All electrical and mechanical equipment including the interfaces with control systems and the communication system, and all alarm and operating modes for each piece of equipment, shall be tested by the Contractor to the satisfaction of the DIA Project Manager before any facility is put into operation. Tests shall be as specified herein and shall be made to determine whether the equipment has been properly assembled, aligned and connected. Any changes, adjustments or replacements required to make the equipment operate as specified shall be carried out by the Contractor as part of the Work.

1. At least thirty (30) days before the time allowed in the construction schedule for commencing startup and testing procedures, the Contractor shall submit to the DIA Project Manager six (6) copies of the detailed procedures the Contractor proposes for testing and startup of all electrical and mechanical equipment. These procedures are submitted for review and acceptance by the Owner.
  2. The Contractor's startup and testing procedures shall include detailed descriptions of all pre-operational hardware, electrical, mechanical and instrumentation used for testing work.
    - a. Each control device, item of electrical, mechanical and instrumentation equipment, and all control circuits shall be considered in the testing procedures which shall be designed in a logical sequence to ensure that all equipment has been properly serviced, aligned, connected, wired, calibrated and adjusted prior to operation.
    - b. Motors shall be tested in accordance with ANSI/IEEE Publication 112. The Contractor is advised that failure to observe these precautions may place the acceptability of the subject equipment in question, and the Contractor may either be required to demonstrate that the equipment has not been damaged, or replace it as determined by the DIA Project Manager.
  3. Testing procedures shall be designed to duplicate as nearly as possible all conditions of operations and shall be carefully selected to ensure that the equipment is not damaged. All filters shall be in place during startup and testing.
    - a. Once the DIA Project Manager has accepted the testing procedures, the Contractor shall provide checkout, alignment, adjustment and calibration signoff forms for each item of equipment and each system that will be used.
    - b. The Contractor and the DIA Project Manager shall use the signoff forms in the field jointly to ensure that each item of electrical, mechanical and instrumentation equipment and each system has been properly installed and tested. The Contractor shall cooperate with project-wide systems contractors where startup and testing is to be conducted concurrently.
  4. Any special equipment needed to test equipment shall be provided by the Contractor to the City at no cost for a period of thirty (30) days during startup.
- B. Before starting up the equipment, the Contractor shall properly service it and other items, which normally require service in accordance with the maintenance instructions. The Contractor shall be responsible for lubrication and maintenance of equipment and replacement filters throughout the entire equipment "break-in" period described by the manufacturer.
1. The Contractor shall be responsible for the startup, adjustment, preliminary maintenance and checkout of all equipment and instrumentation. All systems shall be carefully checked for conformance with the design criteria.
  2. If any equipment or system does not operate as specified in the Contract, the Contractor shall immediately replace or repair components until it operates properly.
  3. The Contractor shall submit a test report to the DIA Project Manager within thirty

(30) days after completion of the system startup period.

### 3.2 SYSTEMS STARTUP AND TESTING

- A. The Contractor shall be responsible for a 30-day startup period during which time all hardware, electrical and mechanical equipment, communications, alarm systems and associated devices shall be energized and operated under local and automatic controls. The Contractor shall be present during the startup period with adequate labor and support personnel to adjust equipment and troubleshoot system failures that might arise.
- B. When a piece of electrical or mechanical equipment is found to be in conflict with specific criteria, an experienced representative of the manufacturer shall make an adjustment to the item.
- C. If adjustments fail to correct the operation of a piece of equipment or fixture, the Contractor shall remove the equipment or fixture from the Project site and replace it with a workable replacement that meets the specification requirements.
- D. The 30-day startup period shall commence thirty (30) days prior to the Contract completion date and shall be completed prior to final payment. If, during the startup, any system fails to operate in accordance with Contract requirements, the failure shall be corrected and the startup period shall begin again.
  - 1. At the end of the startup period, all filters shall be replaced with new ones.
  - 2. The City may, at its option, provide a Commissioning Representative to observe or participate in the startup and testing of any system. The Contractor shall coordinate with the Commissioning Representative relating to scheduling, reporting, forms, methods and procedures of the startup and testing.

### 3.3 FINAL INSTRUCTIONS AND OPERATION TRAINING

- A. After startup and testing is completed, the Contractor shall demonstrate to the City's personnel the proper manner of operating the equipment, programming messages, making adjustments, responding to alarms and emergency signals, and maintaining the system.
- B. The Contractor shall provide on-the-job training by a suitably qualified instructor to designated personnel and shall instruct them in the operation and maintenance of the systems. In the event qualified instructors on the Contractor's staff are not available, the Contractor shall arrange with the equipment manufacturer for such instruction at no additional cost to the City.
- C. The Contractor shall provide a minimum of sixteen (16) hours of maintenance training to the Airport. Classes shall accommodate up to five (5) people at a time.
- D. The Contractor shall provide a minimum of eight (8) hours of operator training to the Airport. Classes shall accommodate up to five (5) people at a time with up to two (2) separate courses (one for each shift).



- E. The Contractor shall provide a syllabus to the DIA Project Manager at least seven (7) calendar days prior to the start of each course that outlines topics to be covered, the proposed time allotted to each topic, and the target audience of the training session (technical, casual operator, overview, etc.). The Contractor shall not commence any training courses until the syllabus has been reviewed and approved by the DIA Project Manager.
- F. The Contractor shall video record all training sessions and provide to the DIA Project Manager. The Contractor shall provide video recordings in format as required in Section 017900 "Demonstration and Training" .
- G. The Contractor shall provide an annotated syllabus to the DIA Project Manager that indicates topics contained on each tape.

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or the lump bid item. No contractual item requiring startup or testing will be paid until the conditions of this Section are completely satisfied.

#### **END OF SECTION 017515**

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## **SECTION 017720 - CONTRACT CLOSEOUT**

### **PART 1 - GENERAL**

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Work specified in this Section includes procedures required prior to Final Acceptance of the Work in addition to those specified in Title 20 of the General Conditions and Technical Specification Section 017840 "Contract Record Documents".
- B. This Section also includes procedures and penalties to ensure prompt completion of the Project Closeout.
- C. Related Sections:
  - 1. Title 20 of the General Conditions.
  - 2. Section 017840 "Contract Record Documents" for required record documents.
  - 3. Section 019900 "Standard Forms" for required standard forms.
- D. SUBMITTALS
  - 1. Submit written Certification to the DIA Project Manager that, in the opinion of the Contractor, the Work is complete.
  - 2. Submit final survey within 60 days after issuance of Substantial Completion.
  - 3. Submit a Final Statement of Accounting to the DIA Project Manager.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### 3.1 PREPARATION FOR FINAL INSPECTION

- A. Before requesting inspection for Final Acceptance of the Work by the City, the Contractor shall inspect, clean, and repair the Work as required.
- B. The Contractor shall ensure that all items on the Closeout Checklist have been addressed and accepted by the DIA Project Manager.

### 3.2 FINAL INSPECTION

- A. The Contractor shall submit written certification to the DIA Project Manager when, in the opinion of the Contractor, the Work is complete. Such communication shall certify that:
1. The Work has been inspected by the Contractor for conformance with the Contract Documents.
  2. The Work has been completed in conformance with the Contract Documents, including all punchlist items.
  3. The Work is ready for final inspection by the City.
  4. All as-built documents have been submitted and accepted.
  5. All damaged or destroyed real, personal, public, or private property impacted by the Work has been repaired or replaced.
  6. All Warranties and Bonds have been completed, executed, submitted, and accepted.
  7. All personnel badges and vehicle permits have been returned to DIA Airport Security.
- B. The DIA Project Manager will inspect the Work in accordance with the Section 2002.1 of the City and County of Denver's Department of Aviation's General Contract Conditions.
- C. If the DIA Project Manager finds incomplete or defective Work:
1. The DIA Project Manager may, at the DIA Project Manager's sole discretion, either terminate the inspection, or prepare a punchlist and notify the Contractor in writing, listing the incomplete or defective Work.
  2. The Contractor shall take immediate steps to remedy all identified deficiencies and resubmit a written certification to the DIA Project Manager that Work is complete.
  3. The DIA Project Manager will then re-inspect the Work.

### 3.3 REINSPECTION FEES

- A. Should the DIA Project Manager be required to perform re-inspection(s) of the Work due to the Contractor prematurely claiming the status of the Work to be complete:
1. The Contractor shall compensate the City for such additional services at the rate of \$125.00 per man-hour, with a minimum charge of \$250.00.
  2. The City shall deduct the amount of such compensation from the final payment to the Contractor.

### 3.4 FINAL SURVEY FEES

- A. The Contractor shall complete and submit the final survey within 60 days after issuance of Substantial Completion. If the Contractor fails to complete and submit the final survey within this time frame it is understood that DIA will arrange for a qualified

surveying company to complete this work at the Contractor's expense. All costs associated with DIA arranging for and completing the final survey will be deducted from the final payment including compensation due the City for the DIA Project Manager's time to manage this work.

1. The DIA Project Manager's rate of compensation shall be set at \$150.00 per man-hour.
2. Survey submittals needing to be revised may extend the 60 day time frame at the DIA Project Manager's discretion.
3. Costs, including the DIA Project Manager's, for the review of the resubmitted survey shall be deducted from the final payment.

### 3.5 LATE CLOSEOUT FEES

- A. Within 100 days after issuance of substantial completion, all documentation required by this Contract to achieve Project Closeout shall be submitted. Failure to submit all required documentation shall result in fees to compensate the City for project management work while the project remains open.
  1. Fees at a minimum of two (2) hours per working day for the DIA Project Manager at the rate listed above.
  2. Fees at a minimum of four hours per working day for the Contract Administrator at the rate of \$75.00 per hour.
  3. The resubmittal of required documents may extend the 100 day time frame at the DIA Project Manager's discretion.
  4. A working day shall be defined as Monday through Friday excluding City holidays.

### 3.6 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a Final Statement of Accounting to the DIA Project Manager.
- B. The Final Statement of Accounting shall reflect all adjustments to the Contract amount and shall include the following:
  1. The original Contract Value.
  2. Additions and deductions resulting from the following:
    - a. Approved Change Orders.
    - b. Allowances.
    - c. Final quantities for unit price items, including required backup for the quantities.
    - d. Deductions for corrected work.
    - e. Penalties.
    - f. Deductions for liquidated damages.
    - g. Deductions for re-inspection payments.
    - h. Other adjustments.

3. Total Contract Value, as adjusted.
4. Previous payments.
5. Sum remaining due.

- C. If required, the DIA Project Manager will prepare a final Change Order, reflecting the approved adjustments to the Contract Value that were not included in previously issued Change Orders.

### 3.7 FINAL APPLICATION FOR PAYMENT

- A. The Contractor shall submit the final application for payment in accordance with the procedures and requirements detailed in Title 20 of the General Conditions.

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for Work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for Work under this Section, including any and all necessary relocations requested by the City. The cost of the Work described in this Section shall be included in the applicable bid items or contract price.

## **END OF SECTION 017720**

## **SECTION 017825 - OPERATION AND MAINTENANCE DATA**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. The Work specified in this Section consists of preparing and submitting operation and maintenance data for mechanical, electrical and other specified equipment.
- B. Coordinate all the requirements of the required data with DIA Asset Management System and in compliance with DIA DSM -12.

#### **1.3 SUBMITTALS**

- A. Refer to Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- B. All submittals must be provided in electronic data as indicated by DIA DSM manual 12 and as required by the DIA BIM and DIA Asset Management Sections.
- C. Submit one (1) electronic copy and two (2) bound hard copies of the proposed Operation and Maintenance Data Manual format including a table of contents not less than ninety (90) days prior to acceptance tests and final inspection.
- D. Submit one (1) electronic copy and two (2) bound hard copies of the complete Operation and Maintenance Data Manuals in final form thirty (30) days prior to system startup.
- E. Submit one (1) electronic copy and two (2) bound hard copies of Operation and Maintenance Data Manual within ten days after system startup is complete. These copies shall incorporate any comments made on the previous submittals, along with final readings on all settings and gauges taken while the system is in fully satisfactory operation.

#### **1.4 CONTINUOUS UPDATING PROGRAM**

- A. Furnish one electronic copy of the Contractor's letter indicating that suppliers have been notified to provide updated operation and maintenance data, service bulletins and other information pertinent to the equipment, as it becomes available.

## **PART 2 - PRODUCTS**

- A. The following products are the requirements of hard copies:
1. Paper size: 8-½ inches x 11 inches.
  2. Paper: White bond, at least 20 pound weight.
  3. Text: Typewritten.
  4. Printed data: Manufacturer's catalog cuts, brochures, operation and maintenance data. Clear reproductions thereof will be acceptable. If this data is in color, all final manuals must contain color data.
  5. Drawings: 8-½ inches x 11 inches, bound with the text. Larger drawings are acceptable provided they are folded to fit into a pocket inside the rear cover of the manual. Reinforce edges of large drawings.
  6. Prints of drawings: Black ink on white paper, sharp in detail and suitable for making reproductions.
  7. Flysheets: Separate each portion of the manual with colored, neatly prepared flysheets briefly describing the contents of the ensuing portion.
  8. Covers: Provide 40 to 50 mil, clear plastic, front and plain back covers for each manual. The front covers shall contain the information required in paragraph 3.2 below.
  9. Bindings: Conceal the binding mechanism inside the manual. Lockable 3-ring binders shall be provided.
  10. Training Videos: Provide in digital electronic format as per current DIA requirements.

## **PART 3 - EXECUTION**

### **3.1 GENERAL**

- A. Assemble each operation and maintenance manual using the manufacturer's latest standard commercial data, and include all additional information that is unique to the Project.

### **3.2 COVER**

- A. Include the following information on the front cover and on the inside cover sheet:
1. Operation and maintenance instructions.
  2. Title of structure or facility.
  3. Title and number of Contract.
  4. Contractor's name and address.
  5. General subject of the manual.
  6. Leave spaces for signatures of the City representatives and acceptance date.

### **3.3 CONTENTS OF THE MANUAL**

- A. An index of all volumes in each volume of multiple volume systems.

- B. An index in front of each volume. List and combine the literature for each system in the sequence of operation.
- C. Name, address and telephone numbers of Contractor, suppliers and installers along with the manufacturer's order number and description of the order.
- D. Name, address and telephone numbers of manufacturer's nearest service representatives.
- E. Name, address and telephone number of nearest parts vendor and service agency.
- F. Copy of guaranties and warranties issued to, and executed in the name of, the City.
- G. Anticipated date the City assumes responsibility for maintenance.
- H. Description of system and component parts including theory of operation.
- I. Pre operation check or inspection list.
- J. Procedures for starting, operating and stopping equipment.
- K. Post operation check or shutdown list.
- L. Inspection and adjustment procedures.
- M. Troubleshooting and fault isolation procedures for on-site level of repair.
- N. Emergency operating instructions.
- O. Accepted test data.
- P. Maintenance schedules and procedures.
- Q. Test procedures to verify the adequacy of repairs.
- R. One (1) copy of each wiring diagram.
- S. One (1) copy of each piping diagram.
- T. Location where all measurements are to be made.
- U. One (1) copy of each duct diagram.
- V. One (1) copy of control diagram.
- W. One (1) copy of each accepted shop drawing.
- X. One (1) copy of software programs imputable or changeable on site.
- Y. Manufacturer's parts list with catalog names, numbers and illustrations.



- Z. A list of components which are replaceable by the City.
- AA. An exploded view of each piece of the equipment with part designations.
- BB. List of manufacturer's recommended spare parts, current prices and recommended quantities for two years of operation.
- CC. List of special tools and test equipment required for the operation, maintenance, adjustment, testing and repair of the equipment, instruments and components.
- DD. Scale and corrosion control procedures.
- EE. Disassembly and re-assembly instructions.
- FF. Troubleshooting and repair instructions.
- GG. Calibration procedures.
- HH. Ordering information.
- II. Training course material used to train City staff, including slides and other presentation material.

#### **PART 4 - MEASUREMENT**

##### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order, or lump sum bid item.

#### **END OF SECTION 017825**

## **SECTION 017835 - WARRANTIES AND BONDS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. The Work specified in this Section consists of preparing and submitting warranties and bonds required by the Contract and these Specifications.

#### **1.3 SUBMITTALS**

- A. Refer to Technical Specifications Section 013300 "Submittal Procedures" and Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal procedures.
- B. Submit samples of warranties and bonds for review by Owner prior to execution of Work. Do not submit final warranties until sample warranties have been approved by the Owner.
- C. Submit executed warranties and bonds.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### **3.1 WARRANTIES AND BONDS**

- A. Execute the warranties and bonds required by the Contract Documents. Prepare and submit a list of all warranties and bonds on the form provided by the City. Reference Section 019990 "Standard Forms".
- B. Provide warranties or bonds for the materials, labor and time period set forth in the Sections of these specifications requiring such documents. All warranties shall be for a minimum period of one (1) year unless the specifications for a specific item require a greater period of time.
- C. Provide all warranties and bonds that the manufacturer or supplier furnishes at no

additional cost in regular commercial trade. All warranties shall be for a minimum period of one (1) year unless the specifications for a specific item require a greater period of time.

- D. The time period for all warranties and bonds shall begin on the date of Substantial Completion of the Work, as confirmed in writing by the DIA Project Manager.
- E. All warranties and bonds shall be executed with the warranty start date and full name and address of the Owner.
- F. All warranties shall be executed specifically to the Owner. Photocopies or reproductions of stock manufacturer's warranties will not be accepted.
- G. Warranties submitted for product substitutions shall be equal or better than warranties required for original specified products.

#### **PART 4 - MEASUREMENT**

##### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

#### **END OF SECTION 017835**

## SECTION 017840 - CONTRACT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. The Work specified in this Section consists of maintaining, marking, recording and submitting Contract record documents which include shop drawings, warranties, Contract Documents and contractor records.
- B. Refer to DIA – Design Standard Manual (DSM) 12 and Approved BIM execution for data format and file types acceptable for different type of data.
- C. Related Requirements:
  - 1. Section 013100 "Project Management and Coordination - Revit" for project management and coordination.
  - 2. Section 013223 "Construction Layout, Asbuilt and Quantity Surveys".
  - 3. Section 013300 "Submittal Procedures" for submittal requirements.
  - 4. Section 013325 "Shop and Working Drawings, Product Data and Samples" for submittal requirements.
  - 5. Section 017720 "Contract Closeout" for Contract closeout requirements.
  - 6. Section 017825 "Operation and Maintenance Data" for operation and maintenance data requirements.

#### 1.3 SUBMITTALS

- A. Each submittal of record documents shall contain the following information:
  - 1. Date.
  - 2. Project title and numbers.
  - 3. Contractor's name and address.
  - 4. Title and number of each record document.
  - 5. Certification that each document as submitted is complete and accurate.
  - 6. Signature of the Contractor or the Contractor's authorized representative.
- B. At the completion of this Contract, deliver all record documents including the following:
  - 1. As-built shop drawings, diagrams, illustrations, schedules, charts, brochures and other similar data.
  - 2. Warranties, guarantees and bonds.

3. Contract Documents.
  4. Contractor records.
- C. As-built Contract Drawings shall be submitted with each monthly progress payment application, and a complete set shall be submitted prior to final payment.
1. The Contractor shall provide a single electronic copy of each Contract drawing sheet which has been used to produce work during the payment period or work that payment is being requested on, which records the current as-built conditions of work, including the posting of any change orders or change directives not shown on the Contract Documents at the time of Contract signing.
    - a. The Contractor must show as-built work completed through the payment application date including but not limited to utilities, empty conduit, conduit for actual electrical lines, plumbing, HVAC, location of anchor bolts and support points for use by others.
    - b. The Contractor shall be liable for any costs incurred by the City or a third party due to errors or lack of information provided on the as-built drawings.
    - c. All markings on drawings shall be legible to identify the portion of work completed.
    - d. For projects utilizing BIM system by the Contractor or a consultant of the Contractor, all data formats shall be compatible and as approved by the BIM execution plan as required in DSM 12.

#### 1.4 QUALITY CONTROL

- A. Record documents shall be prepared to a high standard of quality, such as that set forth in MIL STD 100, ANSI Standard Drafting Manual Y14 or other relevant lower tier specification defining equal drafting quality for microfilming, except for daily reports.
- B. For projects utilizing BIM for Revit; follow approved BIM execution plan and DIA DSM 12 for record documents, formats and quality control and assurance procedures.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### 3.1 MAINTENANCE OF DOCUMENTS

- A. The Contractor must follow all the procedures established in the Contract Documents and DIA-DSM 12
- B. The Contractor shall maintain at the work site on a current basis one (1) record copy of all drawings, specifications, addenda, change orders, approved shop drawings, working drawings, product data and samples in good order and marked currently to record all changes made during construction.

C. Maintain at the field office one copy of the following record documents:

1. Contract Documents:

- a. Contract Drawings with all clarifications, requests for information, directives, changes and as-built conditions clearly posted.
- b. Contract Specifications with all clarifications, requests for information, changes, directives and record of manufacturer actually used along with product trade name.
- c. Reference Standards in accordance with Section 014225 "Referenced Standards" ..
- d. Affirmative Action Plan and documents.
- e. One (1) set of drawings to record the following:
  - 1) Horizontal and vertical location of underground utilities affected by the Work.
  - 2) Location of internal utilities; include valves, controls, conduit, duct work, switches, pressure reducers, size reducers, transitions, crosses, tees, filters, motors, heaters, dampers, regulators, safety devices, sensors, access doors and appurtenances that are concealed in the construction shall be shown with dimensions given from a visible and recognizable reference to the item being located in all three dimensions. The drawings shall also reference the applicable submittal for the item being located.
  - 3) Field changes of dimensions and details including as-built elevations and location (station and offset).
  - 4) Details not on original Contract Drawings but obtained through requests for information or by other communications with the City.

2. Contractor Records:

- a. Daily Quality Control Reports.
- b. Certificates of compliance for materials used in construction.
- c. Nonconformance Reports (NCRs).
- d. Remedial Action Requests (RARs).
- e. Completed inspection list.
- f. Inspection and test reports.
- g. Test procedures.
- h. Qualification of personnel.
- i. Approved submittals.
- j. Material and equipment storage records.
- k. Safety Plan
- l. Erosion, sediment, hazardous and quality plans.
- m. Hazardous material records.
- n. First report of injuries.

### 3.2 RECORDING

- A. Label each document page or article "PROJECT RECORD" in two-inch high letters.

- B. Keep record documents current daily.
- C. Legibly mark copies of the Contract Drawings to record actual construction.
- D. Legibly mark up each Section of the specifications and Contract Drawings to record:
  - 1. Manufacturer, trade name, catalog number and supplier of each product and item actually installed
  - 2. Changes made by change orders, requests for information, substitutions and variations approved by submittals.

### 3.3 DOCUMENT MAINTENANCE

- A. Follow all the required processes of the approved BIM Execution Plan as approved by DIA for this specific project or in formats acceptable to DIA BIM management system.
- B. Do not use record documents for construction purposes.
- C. Make documents available for inspection by the DIA Project Manager and any others having jurisdiction.

### 3.4 MONTHLY REVIEW

- A. Prior to any application for payment, the DIA Project Manager or the DIA Project Manager's designated representative will inspect the record documents to ensure that they are being maintained and contain the most current correct data with particular attention to as-built drawings.
- B. If, during the inspection, the DIA Project Manager determines that the documents are not being maintained and kept current as to as-built conditions, an amount may be withheld from the payment request and deducted from the Contract value to cover the City's cost of collecting and recording the as-built Contract data. This cost will be determined on the basis of \$100.00 per man-hour of effort.

## PART 4 - MEASUREMENT

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## PART 5 - PAYMENT

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work

described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

**END OF SECTION 017840**



## SECTION 017900 - DEMONSTRATION AND TRAINING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video recordings.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructor's names for each training module. Include learning objective and outline for each training module.
  - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module. Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.
- C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two (2) copies within seven (7) days of end of each training module.
  - 1. Identification: On each copy, provide an applied label with the following information:

- a. Name of Project.
  - b. Name and address of videographer.
  - c. Name of Architect.
  - d. Name of Construction Manager.
  - e. Name of Contractor.
  - f. Date of video recording.
2. Transcript: Prepared and bound in format matching operation and maintenance manuals. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video recording. Include name of Project and date of video recording on each page.
  3. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
  4. At completion of training, submit complete training manual(s) for Owner's use prepared and bound in format matching operation and maintenance manuals and in PDF electronic file format on compact disc].

## 1.5 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.
- D. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Section 014510 "Contractor Quality Control". Review methods and procedures related to demonstration and training including, but not limited to, the following:
  1. Inspect and discuss locations and other facilities required for instruction.
  2. Review and finalize instruction schedule and verify availability of educational materials, instructor's personnel, audiovisual equipment, and facilities needed to avoid delays.
  3. Review required content of instruction.
  4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

## 1.6 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by DIA Project Manager.

## PART 2 - PRODUCTS

### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
  - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    - a. System, subsystem, and equipment descriptions.
    - b. Performance and design criteria if Contractor is delegated design responsibility.
    - c. Operating standards.
    - d. Regulatory requirements.
    - e. Equipment function.
    - f. Operating characteristics.
    - g. Limiting conditions.
    - h. Performance curves.
  - 2. Documentation: Review the following items in detail:
    - a. Emergency manuals.
    - b. Operations manuals.
    - c. Maintenance manuals.
    - d. Project record documents.
    - e. Identification systems.
    - f. Warranties and bonds.
    - g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:
  - a. Instructions on meaning of warnings, trouble indications, and error messages.
  - b. Instructions on stopping.
  - c. Shutdown instructions for each type of emergency.
  - d. Operating instructions for conditions outside of normal operating limits.
  - e. Sequences for electric or electronic systems.
  - f. Special operating instructions and procedures.
  
4. Operations: Include the following, as applicable:
  - a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.
  - f. Safety procedures.
  - g. Instructions on stopping.
  - h. Normal shutdown instructions.
  - i. Operating procedures for emergencies.
  - j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
  
5. Adjustments: Include the following:
  - a. Alignments.
  - b. Checking adjustments.
  - c. Noise and vibration adjustments.
  - d. Economy and efficiency adjustments.
  
6. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
  
7. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
  
8. Repairs: Include the following:

- a. Diagnosis instructions.
- b. Repair instructions.
- c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
- d. Instructions for identifying parts and components.
- e. Review of spare parts needed for operation and maintenance.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017825 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

### 3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  1. Contractor will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
  2. Owner will furnish an instructor to describe Owner's operational philosophy.
  3. DIA Project Manager will furnish Contractor with names and positions of DIA participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  1. Schedule training with Owner, through DIA Project Manager, with at least seven (7) days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of **[an oral]** **[a written]** **[a demonstration]** performance-based test.

- F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

### 3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

- B. Video: Provide minimum 640 x 480 video resolution converted tomp4 format file type, on electronic media.

1. Electronic Media: Read-only format compact disc acceptable to Owner, with commercial-grade graphic label.
2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.
4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training DVD that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:
  - a. Name of Contractor/Installer.
  - b. Business address.
  - c. Business phone number.
  - d. Point of contact.
  - e. E-mail address.

- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.
  - a. Produce segments to present a single significant piece of equipment per segment.
  - b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
  - c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
  - 1. Furnish additional portable lighting as required.
- E. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.
- F. Transcript: Provide a transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.
- G. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.
- H. Failure of Video Recordings: If video recordings submitted by Contractor do not comply with Project requirements, or have audio and/or video problems, Contractor will be required to repeat training and video recording in compliance with this Section in order to re-create the training video.

#### **PART 4 - MEASUREMENT**

##### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

#### **PART 5 - PAYMENT**

##### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

#### **END OF SECTION 017900**

## SECTION 019113 - GENERAL COMMISSIONING REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. OPR and BoD documentation are included by reference for information only.

#### 1.2 SUMMARY

- A. Section includes general requirements that apply to implementation of commissioning without regard to specific systems, assemblies, or components.
- B. Related Sections:
  - 1. Section 230800 "Commissioning of HVAC" for commissioning process activities for HVAC&R systems, assemblies, equipment, and components.
  - 2. Section 337716 Baggage Handling Systems for commissioning of systems, assemblies, equipment, and components.

#### 1.3 DEFINITIONS

- A. BoD: Basis of Design. A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.
- B. Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.
- C. CxA: Commissioning Authority.
- D. OPR: Owner's Project Requirements. A document that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.
- E. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.



#### 1.4 COMMISSIONING TEAM

- A. Members Appointed by Contractor(s): Individuals, each having the authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, representatives of the Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.
- B. Members Appointed by Owner:
  - 1. CxA: The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. Owner will engage the CxA under a separate contract.
  - 2. Representatives of the facility user and operation and maintenance personnel.
  - 3. Architect and engineering design professionals.

#### 1.5 OWNER'S RESPONSIBILITIES

- A. Provide the OPR documentation to the CxA and Contractor for information and use.
- B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.
- C. Provide the BoD documentation, prepared by the Consultant and approved by Owner, to the CxA and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

#### 1.6 CONTRACTOR'S RESPONSIBILITIES

- A. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:
  - 1. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
  - 2. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
  - 3. Attend commissioning team meetings held on a weekly basis.
  - 4. Integrate and coordinate commissioning process activities with construction schedule.
  - 5. Review and accept construction checklists provided by the CxA.
  - 6. Complete paper and electronic] construction checklists as Work is completed and provide to the Commissioning Authority on a weekly basis.
  - 7. Review and accept commissioning process test procedures provided by the Commissioning Authority.
  - 8. Complete commissioning process test procedures.

## 1.7 CxA'S RESPONSIBILITIES

- A. Organize and lead the commissioning team.
- B. Provide commissioning plan.
- C. Convene commissioning team meetings.
- D. Provide Project-specific construction checklists and commissioning process test procedures.
- E. Verify the execution of commissioning process activities using random sampling. The sampling rate may vary from 1 to 100 percent. Verification will include, but is not limited to, equipment submittals, construction checklists, training, operating and maintenance data, tests, and test reports to verify compliance with the OPR. When a random sample does not meet the requirement, the CxA will report the failure in the Issues Log.
- F. Prepare and maintain the Issues Log.
- G. Prepare and maintain completed construction checklist log.
- H. Witness systems, assemblies, equipment, and component startup.
- I. Compile test data, inspection reports, and certificates; include them in the systems manual and commissioning process report.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION (Not Used)**

## **PART 4 - MEASUREMENT**

### 4.1 METHOD OF MEASUREMENT

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### 5.1 METHOD OF PAYMENT

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Lump Sum Contract price.

**END OF SECTION 019113**

## SECTION 019990 - STANDARD FORMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 FORMS

- A. The forms listed below and appended to this Section will be used for performance of the Work as indicated. This is not a complete listing of all required forms. Unless otherwise noted, all forms are in Unifier.
- B. The Contractor shall properly complete all forms required by the Contract or the DIA Project Manager.
- C. The DIA Project Manager shall review and approve all submitted forms. If submitted forms are not acceptable, the Contractor shall resubmit forms in an acceptable format.

#### 1.3 APPENDICES

- A. Attached to this Section are the following forms:
  - 1. Daily Quality Control Report (Form CM-13) (1 Page).
  - 2. Request for Information (Form CM-17) (1 Page).
  - 3. Submittal Transmittal Form (Form CM-30) (Page 1 of 2).
  - 4. Submittal Transmittal Form (Form CM-30) (Page 2 of 2).
  - 5. Contractor Warranty (Form CM-10) (4 Pages).
  - 6. Contractor/Subcontractor Warranty (Form CM-11) (4 Pages).
  - 7. Contractors Certification of Payment (Form CM-19) (this form shall be completed and submitted with each pay application) (1 Page).
  - 8. Pay Application Form (CM-18) (1 Page).
  - 9. Certificate of Current Cost or Pricing Data (Form CM-69) (1 Page).
  - 10. Subcontractor Partial Lien Release Form (Form CM-26) (1 Page).
  - 11. Subcontractor Final Lien Release Form (Form CM-70) (1 Page).
  - 12. Request for Substitution (Form CM-09) (5 pages).
  - 13. Closeout Check List (CM-75).
  - 14. System Shutdown Request Form

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 COMPLETING FORMS**

- A. All documents are to be filled digitally by the Contractor using the format provided by the DIA Project Manager using Adobe Acrobat. It is at the discretion of the DIA Project Manager if other forms or formats will be accepted.

### **3.2 SIGNING FORMS**

- A. Original hand-written signatures are acceptable for all documents. The Contractor is to fill out the document as indicated above prior to signing the hard copy. If the form is to be submitted digitally to the DIA Project Manager, the document shall be scanned and saved as an Adobe Acrobat pdf file.
- B. Digital signatures are acceptable for all documents. The Contractor is to fill out the document digitally in the format provided by the DIA Project Manager or a current version of Adobe Acrobat. The file must be signed using a current version of Adobe Acrobat and submitted digitally to the DIA Project Manager.
  - 1. Add digital signatures must contain the name of signer in plain text and the time and date the signature is executed.

## **PART 4 - MEASUREMENT**

### **4.1 METHOD OF MEASUREMENT**

- A. No separate measurement shall be made for work under this Section.

## **PART 5 - PAYMENT**

### **5.1 METHOD OF PAYMENT**

- A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the applicable unit price item, work order or lump sum bid item.

## **END OF SECTION 019990**