

Work Number: PHL-1703.14

Project Manual for:

INTERNATIONAL PLAZA PEDESTRIAN ACCESS



Prepared by:

**City of Philadelphia
Department of Aviation
Capital Development Group**

KS Engineers, P.C.
530 Walnut Street, Suite 460
Philadelphia, PA 19106

Bid Number: 6681

Bid Opening Date: NOVEMBER 6, 2025

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PROJECT MANUAL

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CITY OF PHILADELPHIA
DEPARTMENT OF AVIATION

DESCRIPTION OF WORK

THIS PROJECT COMPRISES THE DEMOLITION OF THE EXISTING WALKWAY BETWEEN TERMINAL A-WEST TO INTERNATIONAL PLAZA ALONG DEPARTURE ROADWAY AT PHILADELPHIA INTERNATIONAL AIRPORT. THE PROJECT INCLUDES BUT NOT LIMITED TO EXCAVATION AND CONCRETE DEMOLITION, EMBANKMENT, ASPHALT, CONCRETE CURB, DRAINAGE AND THE PLACEMENT OF NEW PERVIOUS 4" THK, 10' WIDE PERVIOUS CONCRETE FOR A LENGTH OF APPRIMIMATELY 1600 LF.

A NON-MANDATORY, VIRTUAL PRE-BID MEETING IS SCHEDULED FOR **OCTOBER 15, 2025** ON MICROSOFT TEAMS AT **1:30PM** AND CAN BE ACCESSED VIA THE FOLLOWING LINK:

<https://teams.microsoft.com/meet/2143351047522?p=olfQxcKonKNE1SWRVi>

ANY/ALL REQUESTS FOR INFORMATION FROM BIDDERS MUST BE SUBMITTED IN WRITING ON THE "Q & A" TAB WITHIN PRE-QUALIFICATION SOLICITATION **B2625320** ON WWW.PHLCONTRACTS.PHILA.GOV NO LATER THAN **OCTOBER 21, 2025**.

QUOTES ARE TO BE SUBMITTED BEFORE 10:30AM EST ON **NOVEMBER 6, 2025** ON WWW.PHLCONTRACTS.PHILA.GOV.

AN OPENING OF THE SEALED QUOTES WILL BE PUBLICLY CONDUCTED VIRTUALLY VIA ZOOM.

NOTICE: NO QUOTE WILL BE ACCEPTED UNLESS THE PRE-QUALIFICATION QUESTIONNAIRE WITH ALL QUESTIONS FULLY ANSWERED IS SUBMITTED WITHIN THE PRE-QUALIFICATION SOLICITATION **B2625320** ON WWW.PHLCONTRACTS.PHILA.GOV ON OR BEFORE **OCTOBER 21, 2025**.

THE PROCUREMENT COMMISSIONER RESERVES THE RIGHT TO REJECT THE BID.

To the Procurement Commissioner:

.....hereby proposes to furnish all the labor, materials and equipment and incidentals, perform the whole of the work, and submit to all conditions, as represented, intended and implied, both particularly and generally, by the Plans, Special Specifications, Standard Specifications, Standard Details, Standard Contract Requirements, Form of Agreement, the Ordinance authorizing the work and this bid at the prices herein stated, and agrees that each item bid shall be complete in itself, and the City may increase or diminish the amount of work there under, or omit the item without invalidating the unit price bid for it or any other item, on the following terms to wit:

ITEM NO.	SPEC REFER.	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE		ITEM TOTAL	
					DOLLARS	CENTS	DOLLARS	CENTS
1	015526-1	1	LS	Maintenance and Protection of Traffic				
2	017113-1	1	LS	Mobilization				
3	017123.16-1	1	LS	Construction Surveying				
4		1	AL	Additional Corrective Work	\$50,000	.00	\$50,000	.00
5	310000-1	1,200	CY	Class 1 Excavation				
6	310000-2	100	CY	Foreign Borrow Excavation				
7	310000-3	700	CY	Placement and Compaction of Embankment and Fill				
8	311000-1	1	LS	Clearing and Grubbing				
9	329119.13-1	400	CY	Topsoil Furnished and Placed				
10	329119.13-2	200	LBS	Seeding and Soil Supplements - Formula B Residential Mix				
11	329119.13-3	3	TON	Mulching - Wood Fiber				
12	101453-1	4	EA	Remove Post Mounted Signs, Type B				
13	311000-2	1	LS	Tree Trimming To A Max Height Of 20'				
14	311000-3	13	EA	Selective Tree Removal				
15	311000-4	7	EA	Remove Lighting Bollards				
16	311000-5	1	EA	Remove Inlet Frame and Grate				
17	312350-1	700	LF	Sawcutting				
18	320116.71-1	45	SY	Milling Of Asphalt Paving Surface, 1.5" Depth, Milled Material Retained By Contractor				
19	321600-2	800	SY	Remove Cement Concrete Sidewalk				
20	321600-4	550	LF	Remove Plain Cement Concrete Curb				
21	321723-3	50	LF	4" Pavement Marking Removal				

**PHILADELPHIA INTERNATIONAL AIRPORT
INTERNATIONAL PLAZA PEDESTRIAN ACCESS**

**BID 6681
PHL-1703.14**

ITEM NO.	SPEC REFER.	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE		ITEM TOTAL	
					DOLLARS	CENTS	DOLLARS	CENTS
22	321723-8	30	SF	Pavement Marking Removal				
23	330526.16-1	2	EA	Remove Gas Pipeline Marker Post				
24	347113.26-1	70	LF	Remove Existing Guide Rail (Contractor's Property)				
25	347113.26-3	2	EA	Remove Terminal Sections				
26	321116-1	90	SY	Subbase No. 2A, 8" Depth				
27	321219-1	130	SY	1.5" PennDOT 413 9.5MM Wearing Course				
28	321219-2	90	SY	2.5" PennDOT 413 12.5MM Wearing Course				
29	321219-3	90	SY	4.5" PennDOT 413 12.5MM Wearing Course				
30	321219-4	90	SY	Asphalt Tack Coat				
31	321600-1	40	SY	Cement Concrete Sidewalk				
32	321600-3	700	LF	Plain Cement Concrete Curb				
33	321600-5	200	SF	Detectable Warning Surface, Polymer Composite				
34	347113.26-2	40	LF	Type 31-S Guide Rail				
35	347113.26-4	2	EA	Terminal Section, Single				
36	321343-1	1,800	SY	4" PennDOT 520 Pervious Concrete				
37	321343-2	750	CY	14" PennDOT 520 No. 57 Coarse Aggregate				
38	321343-3	2,150	SY	PennDOT 520 Geotextile, Class 4, Type A				
39	321343-4	40	CY	4" PennDOT 520 No. 1 Coarse Aggregate				
40	334900-1	1,600	LF	4" Perforated Pipe Underdrain				
41	334900-2	10	LF	8" Pipe Underdrain				
42	334900-3	300	LF	4" Pipe Underdrain				
43	334900-4	1	SET	Type C Concrete Top Unit With Structural Steel Grate				
44	334900-5	3	SET	Grade Adjustment of Existing Manholes				
45	334900-6	1	EA	Standard Inlet Box				
46	334900-7	1	EA	Top Slab With Round Opening For Manhole Cover				
47	334900-8	1	SET	Manhole Frame and Cover				

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ITEM NO.	SPEC REFER.	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE		ITEM TOTAL	
					DOLLARS	CENTS	DOLLARS	CENTS
48	338000-1	1	LS	Relocate & Rewire Overheight Vehicle Phone and Enclosure				
49	338000-2	2	SET	17" X 30" Open Bottom Handhole Box, 18" Depth				
50	338000-3	1	SET	17" X 30" Open Bottom Handhole Box, 30" Depth				
51	101453-2	100	SF	Post Mounted Signs, Type B				
52	321723-1	650	LF	4" White Hot Thermoplastic Pavement Markings				
53	321723-2	750	LF	24" White Hot Thermoplastic Pavement Markings				
54	321723-4	1	EA	White Preformed Thermoplastic Legend, "MPH", 8' - 0"				
55	321723-5	2	EA	White Preformed Thermoplastic Legend, "Wrong Way Arrow", 23' - 0"				
56	321723-6	1	EA	White Preformed Thermoplastic Legend, "2", 8' - 0"				
57	321723-7	1	EA	White Preformed Thermoplastic Legend, "5", 8' - 0"				
58	330526.16-2	2	EA	Gas Pipeline Marker Post				
59	312514-1	8	EA	Inlet Filter Bag For Type M Inlet				
60	312514-2	6	EA	Inlet Filter Bag For Type C Inlet				
61	312514-3	4,300	LF	Compost Filter Sock, 12" Diameter				
62	312514-4	100	LF	Compost Filter Sock, 24" Diameter				
63	312514-5	400	SY	Temporary Short-Term, Rolled Erosion Control Product, Type 2A				
64	265600-1	9	EA	Solar Lighting Bollard				
65	265600-2	1	EA	Solar Flashing Beacon				
TOTAL BID AMOUNT								

BID BOND

FOR CITY OF PHILADELPHIA BID NUMBER: _____
(Please fill in)

KNOW ALL MEN BY THESE PRESENTS, that we _____, as

Principal (hereinafter called the "Principal Obligor"), and

Surety, are jointly and severally held firmly bound unto the City of
Philadelphia hereinafter called the City, in the sum of

TEN PER CENT (10%) of the GROSS AMOUNT OF THE BID

Lawful money of the United States of America, to be paid to the said City of Philadelphia, its successors and assigns, to which payment well and truly to be made, we do bind ourselves and each of us, our and each of our successors and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated the _____ day of _____ A.D. 2025.

WHEREAS, the above bounded Principal Obligor, submitted a bid pursuant to the above-referenced Bid Number to perform certain work for the City of Philadelphia.

NOW, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the City shall accept the bid of the Principal Obligor, the Principal Obligor shall enter into a contract with the City in accordance with the terms of such bid, and furnish such bond or bonds as are specified in the bid documents with good and sufficient surety, for the faithful performance of the contract and for the prompt payment of labor and material furnished in the prosecution thereof; or in the event of the failure or refusal of the Principal Obligor to enter such contract and give such bond or bonds, if the Principal Obligor shall pay to the City the difference between the amount specified in said bid and such larger amount for which the City may legally contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

And we do for ourselves and each of us, our and each of our heirs, executors, administrators, successors, and assigns, hereby authorize and empower the City Solicitor of Philadelphia or any other attorney of any court of record in Pennsylvania or elsewhere by him or here deputized for the purpose, upon the filing of this instrument or a copy thereof, duly attested as correct by the City Solicitor of Philadelphia, to appear for us or either of us, our or either of our heirs, executors, administrators, successors or assigns, in favor of the City of Philadelphia for the sum named in this bond, without defalcation, with costs of suit, release of errors, and with five percentum added for collection fees; hereby waiving the benefit of all exemption laws and the holding of inquisition on any real estate and authorizing the entry of such condemnation upon any writ of fieri fascias and agreeing that said real estate may be sold under the same; and further waiving all errors, defects, and imperfections whatsoever in the entering of the said judgment or any process thereon, and hereby agreeing that no writ or error or objection or motion or rule to open or strike off judgment or to stay execution or appeal, shall be made or taken thereto.

And for the doing of these acts, this instrument or a copy thereof attested as aforesaid shall be full warrant and authority.

CORPORATE SEAL:

PRINCIPAL OBLIGOR:

President or Vice President

Secretary or Treasurer (or either of their
assistants)

SURETY:

Attorney-In-Fact

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- Note: 1) All sellers must utilize this Bid Bond form when submitting a bid to the City.
- 2) If Principal Obligor is an individual or partnership, Bid Bond should be signed by owner or authorized general partner. Please identify on the Bid Bond the type of business (e.g. individual proprietorship or partnership) and title of party executing the Bid Bond.
- 3) Bid Bond must be executed by a surety company duly authorized and licensed to act as surety by the Pennsylvania Insurance Commissioner pursuant to the laws of the Commonwealth of Pennsylvania.

1. The City is making a concerted effort to expedite the processing of contracts and reduce contract-processing time to an absolute minimum.
A careful analysis of this problem indicates that in the past there has been a serious cause of delay by the successful bidder to return contract documents to the Procurement Department. Therefore, the awarded vendor should be as responsive as possible when returning contract documents.
2. PERFORMANCE OF WORK BY CONTRACTOR

I, the undersigned Contracting Seller, am required to perform, on the site and with my own work force, work with a value of at least twenty percent (20%) of the original total contract price, exclusive of profit, overhead and the costs of procuring insurance and bonds. I, the undersigned Contracting Seller shall submit with my Quote a complete description of the work that will be performed (e.g., earthwork, paving, brickwork, roofing, etc.), the percentage of the total work this represents, and the estimated dollar value thereof.

I shall perform the following work:

Percentage of the total contract to be performed by Contracting Seller

Estimated cost of work to be performed by Contracting Seller:

\$ _____

NOTICE TO SELLERS

WORKING CAPITAL LINE OF CREDIT

The Philadelphia Industrial Development Corporation's ("PIDC") Contract Line-of-Credit provides short-term financing to small businesses who qualify for the program, including minority, woman, disabled-owned businesses performing contracts in the city of Philadelphia. Loans will typically fund the short-term capital needed to provide construction, procurement, or professional services to public, institutional or certain private users. Please contact Marla S. Hamilton at 215-496-8125 or mhamilton@pidcphila.com for more information.

NOTICE TO SELLERS

Chapter 17-1600 of The Philadelphia Code entitled “Economic Opportunity Plans” has been amended to require: 1. The filing¹ of the Successful Seller’s “certified Plan” with the Chief Clerk of City Council within fifteen (15) days of receiving a notice of award from the Procurement Department and 2. Publication of the certified Plan, in a downloadable format, on the OEO website. The “certified Plan” shall mean the winning Seller’s Economic Opportunity Plan containing its M/W/DSBE commitments as signed by both Seller and the Executive Director of the Office of Economic Opportunity (OEO).

Seller is required to sign and date the Plan and return it with its Quote, but the City reserves the right to obtain the Successful Seller’s signature thereon at any time prior to OEO certification. Successful Seller will receive, with the notice of award, a copy of the certified Plan for its records.

¹ Procurement Department will file the certified Plan with the Chief Clerk of Council on behalf of the winning seller.

Notice to Sellers

Workforce Diversity

Amendments to Chapter 17-1600 of The Philadelphia Code establish that the Labor Standards Unit in the Mayor's Office of Labor is responsible for monitoring and enforcing contractor compliance with Workforce Diversity goals included in Economic Opportunity Plans (EOP) on City Contracts. This includes a requirement for a Workforce Diversity Plan. Projects that fall under the Workforce Diversity requirements are public works contracts and contracts for the purchase of services where the Procurement Department solicits sealed bids which will cost the City more than \$100,000 must include an EOP.

Compliance with the Workforce Diversity requirements will be evaluated in stages throughout the contract term. The first step is that the successful seller will be required to submit a Workforce Diversity Form upon notification of award. The Workforce Diversity Form is included with this Notice of Award. It is due back to the Procurement Department within 10 days upon receipt of notice of award. A Notice to Proceed will not be issued until the form is submitted to the City and received satisfactory review by the Labor Standards unit. Failure to return the completed Form in a timely manner may be cause for cancellation of award.

On the form Bidders must indicate what steps they will take to make their "best and good faith efforts" to meet the workforce diversity goals. This form constitutes evidence that the successful seller intends to use Best and Good Faith Efforts to meet the stated goals and has a plan to accomplish that throughout the duration of the project.

After the Notice to Proceed has been issued the contractor is required to notify the Labor Standards Unit of any changes in the information contained in the Workforce Diversity form within five (5) days of any such changes occurring.

The Labor Standards unit will review certified payrolls to ensure that workforce diversity goals are being met. If the goals are not being met, the Unit will meet with the contractor to ascertain why. Additionally, when conducting on-site interviews related to prevailing wage enforcement, the Labor Standards Unit may also include questions related to workforce diversity.

The specific Workforce Diversity Goals for FY 20 are as follows:

Apprentices	Journeyman
All minorities: 50%	African American: 22%
Female: 5%	Asian: 3%
	Hispanic: 15%
	Female: 5%



WORKFORCE DIVERSITY PLAN

BID#: _____ CONTRACT#: _____ DATE SUBMITTED: _____
PROJECT NAME: _____
COMPANY NAME: _____ CONTACT PERSON: _____
TELEPHONE#: _____ EMAIL: _____

As identified in the City of Philadelphia's Annual Disparity Assessment of Workforce Diversity, the current employment hourly goals for Journeymen is 40% minority (22% African American, 15% Hispanic, and 3% Asian) and 5% female. Apprentice is 50% minority and 5% female. You must utilize Best and Good Faith Efforts to remain in compliance with the Workforce Diversity Goals outlined above. Overall employment goals are to be achieved by the completion of the contract.

PLEASE NOTE: Best and Good Faith Efforts are defined as efforts, the scope, intensity and appropriateness of which are designed and performed to foster meaningful and representative opportunities for an appropriately diverse workforce. Pro forma efforts are not Best and Good Faith Efforts. You are expected to make appropriate outreach to labor sources (e.g. union hiring hall, job training organizations, etc.) to satisfy the goals. Failure to demonstrate Best and Good Faith Efforts may result in the Labor Standards Unit ("LSU") imposing remedies and penalties for non-compliance.

Please provide an estimate of your quarterly employment utilization for each category.

Quarter	Total Workers	Journeymen				Apprentice	
		African American %	Hispanic %	Asian %	Female %	Minority%	Female%
Quarter 1*							
Quarter 2							
Quarter 3							
Quarter 4							

**17-1605(4)(c) of The Philadelphia Code requires the Labor Standards Unit ("LSU") to determine, after completion of this quarter, whether you are on track to meet the Workforce Diversity Goals. If you are not achieving your committed percentages at this stage, LSU will take appropriate enforcement action including issuance of fines of \$300. for each violation, stop payment on your contract and any other available remedies.*

Note: The information in this form is required for Public Works and Service contracts as outlined in Chapter 17-600 of the Philadelphia Code.



Please answer the following questions concerning your efforts to achieve the diversity goals on this project. If you need more space, please attach an additional sheet of paper.

1. What are the estimated Total Project Hours for this project? _____
2. If your estimated quarterly employment utilization for each category of minority and female workers falls below the identified Workforce Diversity goals established by the Annual Disparity Assessment (referenced above), please provide a brief explanation for each category in which you anticipate a shortfall.

3. How do you plan to achieve the diversity goals on this project (Journeyman and Apprentices)?

4. Please identify the Labor Organization(s), if any, with whom you have a collective bargaining agreement.

5. Did you contact the Labor Organization(s) applicable to the scope of the work of this contract in writing (dated within 30 days of submission of this form) to request a diverse workforce?

☐ Yes ☐ No, please provide a brief explanation

Please provide a copy of your request as well as a copy of any responses received.

Attached? ☐ Yes ☐ No

6. What resources will you utilize to recruit minority and female workers for this project?

☐ Urban Affairs Coalition ☐ CareerLink Philadelphia ☐ Opportunity Industrial Center
☐ Philadelphia works ☐ Finishing Trades Institute ☐ JEVS Orleans Technical Institute
☐ Philadelphia Housing Authority ☐ Other: _____

Note: The information in this form is required for Public Works and Service contracts as outlined in Chapter 17-600 of the Philadelphia Code.



7. If you have not identified any minority or female apprentices for this project, please provide your plan to meet the established Workforce Diversity Goal(s):

8. Please provide a copy of your company's Equal Employment Opportunity statement and any published non-discrimination policies.

Attached? ☐ Yes ☐ No

Contractor hereby verifies that all information submitted to the City including without limitation, this Workforce Diversity Plan and all attachments thereto, is true and correct and Contractor is notified that the submission of false information is subject to the penalties of 18 Pa.C.S. Section 4904 relating to unsworn falsification to authorities.

Prepared by: _____ Title: _____

Signature: _____ Date: _____

Note: The information in this form is required for Public Works and Service contracts as outlined in Chapter 17-600 of the Philadelphia Code.

DIESEL ENGINE EMISSIONS CONTROLS FOR PUBLIC WORKS PROJECTS

In accordance with Executive Order 1-07 and in furtherance of *Greenworks Philadelphia*, City establishes a requirement to include clean diesel specifications in public works contracts. Contractor, by submission of its bid, agrees to meet the requirements of this Section. This Section applies to contract bids advertised between July 1, 2013 and June 30, 2014 in which the total estimated dollar amount is \$1,000,000 or greater, and to all bids, awarded on or after July 1, 2014, regardless of estimated dollar amount. Notwithstanding the foregoing, engine noncompliance shall not constitute a material breach of contract nor shall monetary penalties be assessed as provided in subsection E.2 until after January 1, 2014. If noncompliant vehicles subject to this Section are observed prior to January 1, 2014, the City may issue written warnings to the contractor.

A. Covered Vehicles: Vehicles covered under this Section include any non-road diesel engine that has a horsepower greater than 50.

B. Requirements

1. All bids for public works contracts and all applicable contracts entered into as a result of such bids covered under this Section shall include specifications that all contractors, and all of the contractor's subcontractors, if any, in the performance of such contracts use ultra-low sulfur diesel fuel, and a listed clean diesel technology for reducing the emission of pollutants for diesel-powered non-road engines. Clean diesel technologies are further defined in part D of this Section. Retrofit emission control devices shall consist of diesel oxidation catalysts (DOC) or such other technologies that provide a minimum emissions reduction of twenty percent (20%) of particulate matter with a mean aerodynamic width of less than ten (10) microns (PM10) in the application for which it is verified. Any retrofit emission control device installed to comply with this Section must be either listed by the Environmental Protection Agency (EPA) or the California Air Resources Board (CARB) as a verified diesel retrofit technology that reduces particulate matter emissions by 20% or more, or must be certified by the diesel retrofit device manufacturer as a product that reduces particulate matter emissions by 20% or more for the covered vehicle.
2. No later than two business days before any covered vehicle is brought onto the City's contract site, the successful bidder (hereinafter, "contractor") shall submit to the City's project manager information about the vehicle including confirmation that the appropriate emissions control technology has been installed on the vehicle or that the vehicle is Tier 4 or Tier 4 Interim. Except as otherwise provided, any vehicle covered under this Section shall be in compliance with this Section prior to being brought onto the contract site.

- a. Contractor shall submit the following information for each covered vehicle (using *Fleet Roster for Public Works Construction Projects* form):
 1. vehicle identification number (VIN), if applicable, or vehicle serial number, and the vehicle type, make, year and owner;
 2. the horsepower rating of each engine;
 3. the emission control device manufacturer name, model, and verifying/certifying organization; and
 4. the type of fuel to be used and approximate expected quantity.
 - b. In the event contractor has purchased appropriate emissions control technology, but the technology is not delivered before use of the covered vehicle is required on the contract site, the contractor shall, in addition to submission of a.i. through iv. above, submit proof of purchase of the emissions control technology. Installation of the appropriate emissions control technology must be completed within five (5) days of delivery of the technology. In no event may the contractor use the covered vehicle without the use of the emission control technology, for which the technology has already been purchased and identified, on the contract site for longer than sixty (60) days.
 - c. If a covered vehicle owned by a contractor breaks down on the contract site, the contractor may use, if a compliant replacement is unavailable, a temporary vehicle that is not compliant while the covered vehicle is being repaired; the temporary vehicle cannot remain on site for more than 30 cumulative days after the date of the initial breakdown of the covered vehicle. Contractor shall notify the project manager in writing prior to bringing a non-compliant vehicle on the contract site.
3. The contractor shall establish truck-staging zones for vehicles that are waiting to load or unload material at the contract site. Such zones shall be located where the emissions from the trucks will have minimum impact to the public.
 4. The contractor shall not permit idling of delivery and/or dump trucks, or equipment on the contract site during periods of non-active use, and it should be limited to three (3) minutes in accordance with the Philadelphia Traffic Code Anti-Idling Ordinance Section 12-1127(1) of The Philadelphia Code
(http://www.phila.gov/philacode/html/data/title12/chapter_12_1100_misce)

llaneous /12 1127 excessive idling of an.html) and the Pennsylvania Diesel-Powered Motor Vehicle Idling Act, Title 35 Purdons Pennsylvania Statutes, Section 4601 *et seq.*

C. Exemptions

1. Subject to written approval the City of Philadelphia Air Management Services (AMS), covered vehicles will be exempted from low diesel emission controls if one or more of the following conditions exist:
 - a. it is physically impossible to install appropriate emissions control technology on the vehicle;
 - b. installation of the appropriate emissions control technology would render vehicle operation unsafe due to obstructed sightline;
 - c. installation of the appropriate emissions control technology would void any applicable expressed manufacturer's warranty on the vehicle; or
 - d. the covered vehicle will not be at the work site for more than a total of three (3) business days.
2. In support of a request for exemption, contractors shall provide to AMS one of the following:
 - a. a signed letter from one or more diesel technology vendors, written on the vendor's formal stationary, certifying that no emissions controls that would reduce Particulate Matter (PM) emissions by at least 20% and allow for safe operation could be physically installed, or the cost of installing such control technology would cost 150% more than the purchase price of the clean diesel technology device;
 - b. a signed letter from the vehicle manufacturer certifying that the installation of any device to reduce PM emissions by 20% or more would void the applicable expressed manufacturer's warranty, along with a copy of the warranty for each vehicle for which an exemption is sought; or
 - c. a signed letter on the contractor's company letterhead stating that the covered vehicle will remain on site for no longer than three (3) days total during the duration of the project.
3. In no event will the City grant an exemption from the required use of ultra-low sulfur diesel fuel or the idling laws.

D. Definitions

1. Contract site – all areas covered under the contract, and areas accessed for purposes of performing activity under the contract;
2. Non-active use – a period of time greater than five (5) minutes when a piece of diesel equipment is not being operated in performance of its work;
3. Non-road – diesel vehicles listed by EPA for use in non-road applications. These include construction, agricultural, and other industrial vehicles that are not legally operable on highways;
4. On-road – vehicles listed by EPA for on-highway applications;
5. Truck-staging zone – a designated area on the contract site where delivery or pickup activities will be located;
6. Ultra-low sulfur diesel fuel – Diesel fuel with a sulfur content of 15 parts per million or less;
7. Vehicle – a piece of diesel-powered equipment being used for contract activities; and
8. Listed diesel technology – includes:
 - a. *Diesel oxidation catalyst – a device similar to a catalytic converter that reduces diesel emissions and does not require regeneration;*
 - b. *Tier 4 or Tier 4 Interim – any vehicle certified by EPA as meeting Tier 4 emissions standards or Tier 4 Interim emissions standards.*
 - c. *Particulate filter – a device that traps soot produced by the engine and vaporizes this soot through the application of heat, requiring only periodic maintenance;*
 - d. *Closed crankcase ventilation – a device that reduces fugitive emissions from the vehicle's crankcase by routing them through the tailpipe;*
 - e. *Selective catalytic reduction – A device that reduces emissions of oxides of nitrogen by treating exhaust with urea;*
 - f. *Emissions upgrade groups – groups of replacement components that, when installed during vehicle overhaul, reduce engine emissions;*
 - g. *Engine repower – the replacement of a vehicle's engine with a newer model to reduce tailpipe emissions; and*
 - h. *Any other technology verified by EPA or CARB to reduce diesel particulate emissions by 20% or more.*

E. General

1. City reserves the right to request purchasing and/or installation documents to verify contractor's, any subcontractor's, installation of the retrofit in the vehicle. These purchasing documents shall be provided to the City's project manager and AMS by the contractor within five (5) days of the request. The contractor shall in addition submit written notification to the City's project manager and AMS when an addition or deletion of diesel retrofit equipment, used by it or its subcontractors, occurs.
2. Any false certification or representation in connection with the requirements of this Section and/or any failure to comply with the requirements of this Section shall constitute a material breach of contract entitling the City to all rights and remedies provided in the contract and otherwise available at law and/or in equity, including but not limited to the monetary assessment set forth herein. For contracts of \$500,000.00 or less, an assessment of \$500.00 per offense per day shall be imposed upon the contractor for every covered vehicle operating in violation of this section. For all other contracts, an assessment of \$1000.00 per offense per day shall be imposed upon the contractor for every covered vehicle operating in violation of this section. In addition, it is understood that false certification or representation is subject to penalties under Title 18 Pa. C.S.A. § 4904 (relating to unsworn falsification to authorities).

F. Monitoring and Penalties for Non-Compliance

1. City reserves the right to request purchase and/or installation documents to verify contractor's and any subcontractor's installation of the retrofit in the vehicle. These purchase documents shall be provided to the City's project manager by the contractor within five (5) days of the City's request.
2. Any false certification or representation in connection with these requirements for Diesel Engine Emissions Controls and/or any failure to comply with these requirements shall constitute a material breach of contract entitling the City to all rights and remedies limited to the monetary assessment set forth herein. For contracts of \$500,000 or less, an assessment of \$500.00 per offense per day shall be imposed upon the contractor for every covered vehicle operating in violation of this section. For all other contracts, an assessment of \$1000.00 per offense per day shall be imposed upon the contractor for every covered vehicle operating in violation of this section. In addition, it is understood that false certification or representation is subject to penalties under Title 18 Pa. C.S.A § 4904 (relating to unsworn falsification to authorities).

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BID PROCESSING FEES

Quotes shall be accompanied by a non-refundable processing fee and must be received by the City of Philadelphia prior to the date and time of the bid closing. Payments must be in the exact amount that is specified in paragraph 11 of the Standard Contract Requirements and the Seller Quote Checklist within the bid solicitation.

Electronic Payment Submission

Electronic payment submission of Bid Processing fees can be made at:
<https://secure.phila.gov/PaymentCenter/AccountLookup/>

OTHER

BEFORE YOU START

Other Payment Center Payments.

ALARM REGISTRATION AND ALARM FINES	CODE VIOLATION NOTICES	PARKING TICKETS
BID PROCESSING FEE	ANNUAL BID SECURITY FEE	PERFORMANCE SECURITY FEE

Bid number must be referenced on the payment

***Please note: Electronic payments made by credit card will have an additional service charge.



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NOTICE TO SELLERS

Contractors and their subcontractors are required to submit weekly certified payroll records to the Labor Standards Unit through an electronic system, LCP Tracker, or as directed by the Labor Standards Unit. Failure to pay Prevailing Wage, as applicable, or to submit certified payroll records is a substantial breach of Contract and may be subject to fines and penalties as prescribed by Section 17-107 of The Philadelphia Code which may include withholding from any sums due to the Contractor under the Contract so much as may be necessary to pay the employees the difference between the wages required to be paid hereunder and the wages actually paid to such employees, and the City may make such payments directly to the appropriate employees.

NOTICE TO SELLERS

Pursuant to the Mayor's Executive Order 7-14, available on-line at <http://www.phila.gov/ExecutiveOrders/Executive%20Orders/EO%207-14.pdf>, Contractor agrees that Contractor and all of its Subcontractors, at any tier, shall report to the OIG knowledge of violations subject to investigation by the OIG pursuant to the Order; shall cooperate fully with representatives of the OIG by providing complete and accurate information as well as necessary assistance in matters under investigation; shall keep conversations and contact with the OIG confidential, except and to the extent the OIG may authorize disclosure; and shall instruct their employees that under no circumstances shall any person take or threaten any action in an attempt to prevent anyone from providing information to a City official regarding conduct that may be investigated by the OIG, or from cooperating with the OIG, or retaliate against anyone for doing so or against anyone who is about to do so.

All entities and individuals affected by Mayor's Executive Order 7-14 are advised to thoroughly read the Order, especially Section 3, **Type of Matters Investigated by the OIG**, Section 4, **Entities Subject to Investigation by the OIG**, Section 8, **Duties of Executive Agencies and Other Entities**, Section 9, **Responsibilities of Officers and Employees of Executive Agencies and Other Entities**, and Section 10, **Responsibilities of City Contractors, Recipients of City Assistance and Recipients of City Funding**.

Act 141 VERIFICATION FORM ADDENDUM



Commonwealth of Pennsylvania
Public Works Employment Verification Form

Complete and return the form to the contracting Public Body prior to the award of the contract.

Company Legal Name: _____

Doing Business As: _____

(if different from Legal Name)

Mailing Address:

Street Address 1

Street Address 2

City

State

Zip Code

Check one:

☐

Contractor

☐

Subcontractor

Contracting Public Body: _____

Contract/Project Number: _____

Project Description: _____

Project Location: _____

Date Enrolled in E-Verify (MM/DD/YYYY): _____

As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ("the Act") through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, _____, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

Authorized Representative Signature

Date of Signature

Printed Name: _____

Phone Number: _____ Email: _____

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MEMORANDUM

TO: Municipal Operating Departments and Awarding Agencies

FROM: Andre Bragg, Director, Fair Labor Standards

DATE: Effective August 6th, 2025

RE: Updated Prevailing Wage Schedule for the City of Philadelphia

The Philadelphia Labor Standards Unit has issued an updated prevailing wage rate schedule for construction projects done on behalf of the City of Philadelphia. Enclosed herein you will find the two (2) decisions, which comprise the updated prevailing wage schedule. They are as the follows:

- I. Building Construction**
- II. Heavy and Highway Construction**

Please direct any questions or concerns regarding the prevailing wage rate schedule to my attention:

**Philadelphia Labor Standards Unit
Municipal Services Bldg., 1st Floor Room 170C
1401 John F. Kennedy Blvd.
Philadelphia, PA 19102-1670
Telephone Numbers: (215) 686-2132
Fax Number: (215) 686-2116**

Thank you for your cooperation.

**PREVAILING WAGE RATE SCHEDULE
FOR CONSTRUCTION WORK DONE ON BEHALF OF CITY OF PHILADELPHIA
INCLUDING REPAIR, ALTERATION, AND REMODELING WORK**

I. BUILDING CONSTRUCTION

A. Job Classification and Wage Rates

	Basic Hourly Rate	Fringe Benefits
ASBESTOS WORKER		
Journeyman	59.37	46.03
Handler Level 1	32.62	23.87
Handler Level 2	47.46	23.87
BOILERMAKER	52.10	35.72
BRICKLAYER	48.70	32.11
CARPENTER	55.82	30.52
CEMENT MASON	48.70	32.46
DRY WALL FINISHER	42.25	32.56
ELECTRICIAN	70.97	47.27
(Telecommunication Senior Tech)	65.86	35.64
(Telecommunication Tech A)	61.91	33.51
ELEVATOR CONSTRUCTOR	71.85	40.03
FOOTNOTES FOR ELEVATOR MECHANICS:		

A. PAID VACATION: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% for 6 months to 5 years of service.

B. Eight Paid Holidays (provided employee has worked 5 consecutive days before and the working day after the holiday): New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day and the Friday after Thanksgiving Day, and Christmas Day.

GLAZIER	49.96	38.34
IRONWORKER		
Structural & Ornamental	53.20	41.01
Reinforcing (Rodsetter)	50.29	34.77
Rigger & Machinery Mover	46.73	34.39
LABORER		
Journeyman Class One	39.10	27.42
Journeyman Class Two	39.20	27.42
Journeyman Class Three	39.25	27.42
Journeyman Class Four	39.40	27.42
Journeyman Class Five	39.45	27.42
Journeyman Class Six	39.24	27.42
Journeyman Class Seven	40.38	27.42
Journeyman Class Eight	40.43	27.42
Journeyman Class Nine	40.53	27.42

Prevailing Wage Schedule (Effective 08/06/2025)
Building Construction

Journeyman Class Ten	40.68	27.42
Journeyman Class Eleven	40.93	27.42
Journeyman Class Twelve	39.50	27.42
LABORER: ASBESTOS ABATEMENT, LEAD ABATEMENT, TOXIC WASTE HANDLING, HAZARDOUS WASTE HANDLING		
MASTER ABATEMENT TECHNICIAN	41.00	27.70
LANDSCAPE LABORER		
Class I	30.85	24.38
Class II	30.85	24.38
LATHER	52.64	29.46
LINE CONSTRUCTION		
Lineman	62.54	31.36
Winch Truck Operator	43.78	27.18
Ground hand	37.52	24.90
Watch/Flag Person	26.74	21.19
MARBLE SETTER	48.40	32.45
MARBLE FINISHER	40.52	29.90
MILLWRIGHT	57.39	35.81
(as of 5/1/2026)	60.20	35.81
PAINTER		
Brush & Roller	44.38	34.55
Spray, Steel, & Swing	45.63	34.55
Bridges	61.81	33.95
PILEDRIVERMAN	51.48	41.74
(as of 5/1/2026)	53.23	41.74
(Diver)	64.35	41.74
(as of 5/1/2026)	66.54	41.74
(Diver Tender)	51.48	41.74
(as of 5/1/2026)	53.23	41.74
PLASTERER	43.78	33.09
PLUMBER	67.53	38.31
POINTER, CAULKER, & CLEANER	50.00	31.20

POWER EQUIPMENT OPERATOR

Group One	54.52	34.49
(as of 5/1/2026)	55.67	35.34
Group One A	57.52	35.38
(as of 5/1/2026)	58.68	36.22
Group Two	54.27	34.42
(as of 5/1/2026)	55.43	35.26
Group Two A	57.29	35.29
(as of 5/1/2026)	58.44	36.14
Group Three	50.18	33.22
(as of 5/1/2026)	51.34	34.06

Prevailing Wage Schedule (Effective 08/06/2025)
Building Construction

Group Four	49.88	33.13
(as of 5/1/2026)	51.04	33.97
Group Five	48.16	32.62
(as of 5/1/2026)	49.32	33.46
Group Six	47.17	32.33
(as of 5/1/2026)	48.34	33.16
Group Seven (A)*	66.26	39.55
(as of 5/1/2026)	67.73	40.48
Group Seven (B)*	65.97	39.46
(as of 5/1/2026)	67.44	40.39

*****TOXIC/HAZARDOUS WASTE REMOVAL*****

ROOFER	44.13	34.77
Shingle	34.35	22.20
Slate & Tile	37.35	22.20
SHEET METAL WORKER	59.22	50.56
(Sign Makers and Hangers)	25.03	21.41
SOFT FLOOR LAYER (Resilient Floor)	53.93	30.54
SPRINKLER FITTER	66.22	34.25
STEAM FITTER	70.32	43.09
STONE MASON	48.40	32.45
SURVEYING AND LAYOUT		
(Chief of Party)	65.96	30.09
(as of 5/1/2026)	67.52	30.44
(Instrument Person)	57.36	30.09
(as of 5/1/2026)	58.71	30.44
(Rodman)	45.88	23.19
(as of 5/1/2026)	46.97	23.54
TERRAZZO MECHANIC	51.36	30.16
TERRAZZO FINISHER (Grinder)	45.08	28.46
TERRAZZO FINISHER (Finisher)	44.81	28.46
TILE SETTER	51.36	30.16
TILE FINISHER	40.52	29.90
TRUCK DRIVER		
Journeyman Class I	37.57	23.32
Journeyman Class II	37.67	23.32
Journeyman Class III And Low Boy	37.92	23.32
WALL COVERER	46.47	34.55
WELDER - Rate for craft to which, welding work is incidental.		
WINDOW TINTER	24.97	12.38

B. Job Classification Definitions: Building Construction,

1. Laborer Classifications:

Class One: Strip concrete, dismantle concrete, load, unload, handle and/or transport reinforced steel and steel mesh, carry lumber, handle miscellaneous building materials operate

jack hammers, use paving breakers and other pneumatic tools, build scaffolds, perform raking, handle asphalt, perform spading and concrete pit work, perform grading, perform form pinning or shorting, perform demolition work with exception of burners, lay conduits, lay ducts, perform sheeting or lagging, lay non-metallic pipe, perform caulking.

Class Two: Power Buggies, Burners on Demolition.

Class Three: Wagon drill operator (single)

Class Four: Powderman, wagon drill operator (multiple), perform circular caissons excavations, caisson groundman, perform underpinning excavation, perform laborers' work at depth of eight (8) feet or below.

Class Five: Caisson bottom worker.

Class Six: Yard worker.

Class Seven: Trackmen, Brakemen, Groutmen, Bottom Shaft Men, All Other Men in Free Air Tunnels.

Class Eight: Caisson Foreman

Class Nine: Miner Helper, Form Setters.

Class Ten: Miners Bore Driver, Blasters, Drillers, Pneumatic Shield Operator.

Class Eleven: Welders & Burners.

Class Twelve: Mason Tenders

Landscape Laborers:

Class I: Landscape laborer

Class II: Farm tractor driver, hydro seeder, mulched nozzle worker, backhoe operator, bulldozer crawler type loader, tree crane operator.

Laborer - Lather and Plasterer: Wheel and/or hod carry any lather and plaster materials used by lathering and plastering contractors' build scaffolds; build runways; perform clean-up and removal of debris as covered by lathering and plastering contractor's contract; deliver any material used by lathering and plastering contractor, from curbside to building and back, unless motor vehicles are permitted to enter building with required materials; all mortar designated for use by plasterer shall be carried via wheel barrow or hod; all plastering and fire proofing machines, as well as guns and mixers requiring the assistance of a worker other than plasterer operator, shall be manned by helper (tender).

2. Truck driver classifications:

Class I: Helper, stake body truck operator (single axle, dumpster).

Class II: Dump truck operator, tandem truck operator, batch truck operator, semi-trailer truck operator, agitator-mixer truck operator, dump Crete type vehicle operator, asphalt distributor, farm tractor operator (when tractor used to transport materials), stake body truck (tandem) operator.

Class III: Euclid type; off highway equipment back truck operator; belly dump truck operator; double-hitched equipment trailer operator; straddle carrier (Ross) operator; low-bed trailer truck operator.

3. Power Equipment Operator Classifications – Building

Group One:

Handling steel and stone in connection with erection Cranes doing hook work

Any machines handling machinery

Helicopters

Concrete Pumps (building)

Machines similar to above, including remote control equipment

Group One A:

Handling steel and stone in connection with erection.

Cranes doing hook work

Prevailing Wage Schedule (Effective 08/06/2025)
Building Construction

Any machines handling machinery

Concrete Pumps (Building)

High Rail/Burro Crane

Rail Loader (Winch Boom Type)

All equipment in this group which previously received the hour in lieu of an oiler will receive Wage Group I (A). Equipment in this Wage Group that does not require an oiler.

Machines similar to above, including remote control equipment

Group Two:

All types of cranes

All types of backhoes

Cableways

Draglines

Keystones

All types of shovels

Derricks

Pavers 21E and over

Trenching machines

Trench shovels

Cable spinning machine

Gradalls

Front- end Loaders

Boat Captain

Hoist with Two Towers

Building Hoists-double drum (unless used as a single drum)

Pippin type backhoes

Tandem scrapers

Tower type crane operation erecting dismantling jumping or jacking

Drills self-contained (Drillmaster type)

Fork lift (20ft. and over)

Motor Patrols (fine grade)

Batch Plant with Mixer

Carryalls, Scrapers, Tournapulls

Roller (High Grade Finishing)

Spreaders (Asphalt)

Bulldozers and Tractors

Mechanic-Welder

Conveyor Loaders (Euclid-Type Wheel)

Concrete Pumps (Heavy Highway)

Milling Machine

Bobcat

Side Boom

Directional Boring Machines

Vermeer Saw Type Machine (other than hand held)

Tractor Mounted Hydro Axe

Chipper with boom

All Autograde and concrete finishing machines

Bundle Pullers/Extractors (Tubular)

Machines similar to the above including remote control equipment

***Surcharge**

Group Two (A):

Crawler backhoes and Crawler gradalls over one (1) cubic yard factory rating

Hydraulic backhoes over one (1) cubic yard factory rating

Single person operation truck cranes 15 ton and over factory rating

Cherry picker type machinery and equipment 15 ton and over factory rating, etc.

Cranes doing hook work will be paid Wage Group I (A).

All equipment in this Group which previously received the hour in lieu of an oiler will receive Wage Group II (A) including concrete pumps (Heavy/Highway).

Machines similar to the above including remote control equipment

*Surcharge

Group Three:

Asphalt Plant Engineers

Conveyors (except building conveyors)

Well Driller

Forklift Trucks of all types

Ditch Witch (small trenchers)

Motor Patrols

Fine Grade machines

Rollers

Concrete Breaking Machines (Guillotine Only)

Stump Grinder

High or Low Pressure Boilers

Building Hoist (single drum)

Elevator Operator (New Construction)

Machines similar to above including remote control equipment

Group Four:

Seamen Pulverizing Mixer

Form Line Graders

Farm Tractors

Road Finishing Machines

Concrete Spreaders (Heavy Highway)

Power Broom (self-contained)

Seed Spreader

Grease Truck

Machines similar to the above including remote control equipment

Group Five:

Compressors

Pumps

Well pint pumps

Conveyors (Building)

Welding Machines

Heaters

Tireman, Power Equipment

Maintenance Engineers (Power Boats)

Miscellaneous Equipment

Operator

Elevator Operator (Renovations)

House Car

Machines similar to above including remote control equipment

Group Six:

Fireman

Oilers and Deck Hands (Personnel Boats)/Grease Truck Helpers

*Surcharge

Group Seven (A):

Handling steel and stone in connection with erection

Cranes doing hook work

Any machines handling machinery

Cable spinning machine

Helicopters

Concrete pumps (Building)

High Rail/Burro Crane

Rail Loader (Winch Boom Type)

Machines similar to above, including remote control equipment

Group Seven B

All types of cranes

All types of backhoes

Cableways

Conveyor Loader (Euclid-Type Wheel)

Drag Lines

Keystones

All types of shovels

Derricks

Pavers 21E and over

Trench shovels

Trenching machines

Gradalls

Front-end Loaders

Boat Captain

Hoist with two towers

Concrete Pumps (Heavy, Highway)

Building Hoists-double drum (unless used as a single drum)

Milling Machine

Mucking Machines in Tunnel

Pippin type backhoes

Bobcat

Tandem scrapers

Side Boom

Tower type crane—operation, erecting, dismantling,

Jumping or jacking

Directional Boring Machines

Vermeer Saw Type Machine (other than hand held)

Drills self-contained (Drillmaster type)

Fork Lift (20 ft. & over)

Track or Mounted Hydro Axe

Motor Patrols (Fine Grade)

Chipper with boom

Batch Plant with Mixer

All autograde and concrete finishing machines

Prevailing Wage Schedule (Effective 08/06/2025)
Building Construction

Carryalls, Scapers & Tournapulls
Rollers (High Grade Finishing)
Bundle Pullers/Extractors (Tubular)
Spreaders (Asphalt)
Bulldozers and Tractors
Mechanic – Welders
Production Switch Tamper
Ballast Regulators
Tie Replacer
Rail/Road Loader
Power Jack liner
Machines similar to above, including remote control equipment

II. HEAVY AND HIGHWAY CONSTRUCTION

A. JOB CLASSIFICATION AND WAGE RATES

	Basic Hourly Rate	Fringe Benefits
BOILERMAKER	55.00	35.82
CARPENTER	57.36	30.09
(as of 5/1/2026)	58.71	30.44
CEMENT MASON	45.00	34.21
(as of 5/1/2026)	45.00	35.81
ELECTRICIAN	70.97	47.27
IRONWORKERS		
Structural & Ornamental	53.20	41.01
Reinforcing (Rodsetter)	50.29	34.77
Rigger & Machinery Mover	46.73	34.39
LABORERS		
Group One	39.80	27.80
Group Two	40.40	27.80
Group Three	40.40	27.80
Group Four	34.60	27.80
Group Five	40.65	27.80
Group Six	40.70	27.80
Group Seven	40.75	27.80
Group Eight	40.30	27.80
Group Nine	40.15	27.80
Group Ten	40.40	27.80
Group Eleven	40.20	27.80
Group Twelve	41.90	27.80
Group Thirteen	43.90	27.80
Group Fourteen	40.50	27.80
LANDSCAPING LABORER		
Class I	30.43	23.95
Class II	29.13	23.95
LINE CONSTRUCTION		
Lineman	62.54	31.36
Winch Truck Operator	43.78	27.18
Ground hand	37.52	24.90
Watch/Flag Person	26.74	21.19
MILLWRIGHT	57.39	35.81
(as of 5/1/2026)	60.20	35.81
PAINTERS		
Brush & Roller	44.38	34.55
Spray, Steel, & Swing	45.63	34.55
Bridges	61.81	33.95
PILEDRIVERMAN	51.48	41.74
(as of 5/1/2026)	53.23	41.74
(Diver)	64.35	41.74
(as of 5/1/2026)	66.54	41.74

Prevailing Wage Schedule (Effective 08/06/2025)
Heavy/Highway Construction

(Diver Tender)	51.48	41.74
(as of 5/1/2026)	53.23	41.74
POWER EQUIPMENT OPERATOR		
Group One	54.52	34.49
(as of 5/1/2026)	55.67	35.34
Group One A	57.52	35.38
(as of 5/1/2026)	58.68	36.22
Group Two	54.27	34.42
(as of 5/1/2026)	55.43	35.26
Group Two A	57.29	35.29
(as of 5/1/2026)	58.44	36.14
Group Three	50.18	33.22
(as of 5/1/2026)	51.34	34.06
Group Four	49.88	33.13
(as of 5/1/2026)	51.04	33.97
Group Five	48.16	32.62
(as of 5/1/2026)	49.32	33.46
Group Six	47.17	32.33
(as of 5/1/2026)	48.34	33.16
Group Seven (A)*	66.26	39.55
(as of 5/1/2026)	67.73	40.48
Group Seven (B)*	65.97	39.46
(as of 5/1/2026)	67.44	40.39

***TOXIC/HAZARDOUS WASTE REMOVAL**

POWER EQUIPMENT OPERATOR DREDGER		
Class A1	42.66	14.01
Class A2	38.02	13.73
Class B1	36.89	13.66
Class B2	34.73	13.53
Class C1	33.78	13.18
Class C2	32.69	13.11
Class D	27.16	12.58
STEAM FITTER	72.52	44.89
STONE MASON	48.40	32.45
SURVEYING AND LAYOUT		
(Chief of Party)	65.96	30.09
(as of 5/1/2026)	67.52	30.44
(Instrument Person)	57.36	30.09
(as of 5/1/2026)	58.71	30.44
(Rodman)	45.88	23.19
(as of 5/1/2026)	46.97	23.54
TRUCK DRIVER		

Class I	37.42	23.32
Class II	37.52	23.32
Class III	38.02	23.32

B. Job Classification Definitions: Heavy and Highway Construction

1. Laborer Classifications:

Group One: Yard workers: (laborer, scale mixerman, burnerman, dustman, feeder)

Group Two: General laborer; Asphalt Shovelers; Sheeting, Shoring & Lagging – Laborer; Stone, Granite & Artificial Stone Setting Laborer; Hod Carriers; Scaffold Building; Relief Joint & Approach Slabs; Assembling & Placing Gabions; Pneumatic Tool Laborers; Concrete Forms & Stripping Laborers; Concrete Lumber Material Laborers; Steel & Steel Mesh (carrying & handling); Form Pinners; Mortar Mixers; Pouring & Placing Concrete; Grade Men.

Group Three: Vibrator Laborers; Finish Surface Asphalt Rakers; Jackhammer Operators; Paving Breaker Operator; Pipelayer & Caulker (all joints up to within 5 feet of the Building Foundation Line); Conduit & Duct Layers

Group Four: Flag person

Group Five: Miners

Group Six: Welders and Burners.

Group Seven: Miner Bore Driver; Blasters; Drillers Pneumatic Shield Operator

Group Eight: Form Setters

Group Nine: Trackmen; Brackmen; Groutmen; Bottom Shaft Men; All other Laborers in Free Air Tunnels; Underpinning (When an underpinning excavation for a pier hole of five feet square or less and eight feet or more deep is dug, the rate shall apply only after a depth of eight feet is reached, to the men working in the bottom)

Group Ten: Circular Caissons (Where an excavation for circular caissons are dug eight feet or more below the natural grade level adjacent to the starting point of the caisson hole, at ground level, for the men working in the bottom); Welders, Burners & Air Tuggers

Group Eleven: Powdermen; Multiple Wagon Drill Operator Laborer

Group Twelve: Caisson Laborer Foreman

Group Thirteen: Toxic/Hazardous waste Handler

Group Fourteen: Wagon Drill/Hydraulic Track Drill Operator Laborer

Landscape Laborers:

Class I: Landscape laborer

Class II: Farm tractor driver, hydroseeder, mulcher nozzle worker, backhoe operator, bulldozer crawler type loader, tree crane operator.

2. Power Equipment Operator Classifications - Heavy, & Highway

Group One:

Handling steel and stone in connection with erection Cranes doing hook work

Any machines handling machinery

Cable spinning machine

Helicopters

Concrete Pumps (building)

Machines similar to above including remote control equipment

Group One A:

Handling steel and stone in connection with erection.

Cranes doing hook work

Any machines handling machinery

Concrete Pumps (Building)

High Rail/Burro Crane

Rail Loader (Winch Boom Type)

All equipment in this group which previously received the hour in lieu of an oiler will receive Wage Group I (A). Equipment in this Wage Group that does not require an oiler.

Machines similar to above, including remote control equipment

Group Two:

All types of cranes

All types of backhoes

Draglines

Keystones

All types of shovels

Derricks

Pavers 21E and over

Trenching machines

Trench shovels

Gradalls

Front- end Loaders

Boat Captain

Hoist with Two Towers

Building Hoists-double drum (unless used as a single drum)

Pippin type backhoes

Tandem scrapers

Tower type crane operation erecting dismantling jumping or jacking

Drills self-contained (Drillmaster type)

Fork lift (20ft. and over)

Motor Patrols (fine grade)

Batch Plant with Mixer

Carryalls, Scrapers, Tournapulls

Roller (High Grade Finishing)

Bulldozers and Tractors

Mechanic-Welder

Conveyor Loaders (Euclid-Type Wheel)

Concrete Pumps (Heavy Highway)

Milling Machine

Bobcat

Side Boom

Directional Boring Machines

Vermeer Saw Type Machine (other than hand held)

Tractor Mounted Hydro Axe

Chipper with boom

All Autograde and concrete finishing machines

Bundle Pullers/Extractors (Tubular)

Machines similar to the above including remote control equipment

Group Two A:

Crawler backhoes and Crawler gradalls over one (1) cubic yard factory rating

Hydraulic backhoes over one (1) cubic yard factory rating

Single person operation truck cranes 15 ton and over factory rating

Cherry picker type machinery and equipment 15 ton and over factory rating, etc.

Cranes doing hook work will be paid Wage Group I (A).

All equipment in this Group which previously received the hour in lieu of an oiler will receive Wage Group II (A) including concrete pumps (Heavy/Highway).

Machines similar to the above including remote control equipment

Group Three:

Asphalt Plant Engineers

Conveyors (except building conveyors)

Well Drillers

Forklift Trucks of all types

Ditch Witch (small trenchers)

Motor Patrols

Fine Grade machines

Rollers

Concrete Breaking Machines (Guillotine Only)

Stump Grinder

High or Low Pressure Boilers

Building Hoist (single drum)

Elevator Operator (New Construction)

Machines similar to above including remote control equipment

Group Four:

Seamen Pulverizing Mixer

Form Line Graders

Farm Tractors

Road Finishing Machines

Concrete Spreaders (Heavy Highway)

Power Broom (self-contained)

Seed Spreader

Grease Truck

Machines similar to the above including remote control equipment

Group Five:

Compressors Pumps

Well pint pumps

Conveyors (Building)

Welding Machines

Heaters

Tireman, Power Equipment

Maintenance Engineers (Power Boats)

Miscellaneous Equipment Operator

Elevator Operator (Renovations)

House Car

Machines similar to above including remote control equipment

Group Six:

Fireman

Oilers and Deck Hands (Personnel Boats)

Grease Truck Helpers

Group Seven A:

Handling steel and stone in connection with erection

Cranes doing hook work

Any machines handling machinery
Cable spinning machinery
Helicopters
Concrete pumps (Building)
High Rail/Burro Crane
Rail Loader (Winch Boom Type)
Machines similar to above, including remote control equipment
Group Seven B:
All types of cranes
All types of backhoes
Cableways
Conveyor Loader (Euclid-Type Wheel)
Drag Lines
Keystones
All types of shovels
Derricks
Pavers 21E and over
Trench shovels
Trenching machines
Gradalls
Front-end Loaders
Boat Captain
Hoist with two towers
Concrete Pumps (Heavy, Highway)
Building Hoists-double drum (unless used as a single drum)
Milling Machine
Mucking Machines in Tunnel
Pippin type backhoes
Bobcat
Tandem scrapers
Side Boom
Tower type crane operation, erecting, dismantling,
Jumping or jacking
Directional Boring Machines
Vermeer Saw Type Machine (other than hand held)
Drills self-contained (Drillmaster type)
Fork Lift (20 ft & over)
Tractor Mounted Hydro Axe
Motor Patrols (Fine Grade)
Chipper with boom
Batch Plant with Mixer
All autograde and concrete finishing machines
Carryalls, Scapers & Tournapulls
Rollers (High Grade Finishing)
Bundle Pullers/Extractors (Tubular)
Spreaders (Asphalt)
Bulldozers and Tractors
Mechanic – Welders
Production Switch Tamper

Ballast Regulators

Tie Replacer

Rail/Road Loader

Power Jack liner

Machines similar to above, including remote control equipment

***Surcharge**

Power Equipment Operator Dredger Classifications

Class A: Lead Dredgeman, Operator, Leverman, Licensed Tug Operator over 1000HP.

Class A1: Dozer Operator, Front-end Loader.

Class B1: Derrick Operator, Spider/Spill Barge Operator, Engineer, Electrician, Chief welder Chief Mate, Fill Placer, Operator 2, Maintenance Engineer, Licensed Boat Operator.

Class B2: Certified Welder.

Class C1: Mate, Drag Barge Operator, Steward, Assistant Fill Placer, Welder.

Class C2: Boat Operator.

Class D: Shoreman, Deckhand, Rodman, Scowman, Cook, Messman, Porter/Janitor, Oiler.

3. Truck Driver Classifications:

Class I: Helper, stake body truck operator (single axle, dumpster)

Class II: Dump truck operator, tandem truck operator, batch truck operator, semi-trailer truck operator, agitator-mixer truck operator, dumpcrete type vehicle operator, asphalt distributor, farm tractor operator (when used to transport materials), stake body truck (tandem) operator.

Class III: Euclid type, off highway equipment back truck operator, belly dump truck operator, double-hitched equipment trailer operator, straddle carrier (Ross) operator; lowbed trailer truck operator.

NOTE:

1. Contractors are advised to contact the Philadelphia Labor Standards Unit with any questions regarding job classification, prevailing wage rates, and fringe benefits.
2. Prior to employing apprentices on a public works project, the contractor is required to provide written evidence of employee's registration with a statewide training program recognized by the U.S. Bureau of Apprenticeship and Training (BAT). Contractors shall forward proper documentation for each bona fide apprentice to:

**Philadelphia Labor Standards Unit
Municipal Services Building
1401 John F. Kennedy Boulevard – 1st Floor, Room 170C
Philadelphia, PA 19102-1670
Telephone Number: (215) 686-2132
Fax Number: (215) 686-2116**

CITY OF PHILADELPHIA



**STANDARD CONTRACT REQUIREMENTS
FOR PUBLIC WORKS CONTRACTS**

PROCUREMENT DEPARTMENT

August 25, 2021

CITY OF PHILADELPHIA

STANDARD CONTRACT REQUIREMENTS

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STANDARD CONTRACT REQUIREMENTS

A. DEFINITIONS

1. **Definitions.** The terms used in the Contract Documents shall have the following meanings:
 - a. "ADA" has the meaning set forth in Paragraph 113 below.
 - b. "Amendment" means a written modification or change to any Contract Document signed by both Parties.
 - c. "Applicable Law" means all applicable present and future federal, state or local laws, ordinances, executive orders, rules, regulations and all court orders, injunctions, decrees and other official interpretations thereof of any federal, state or local court, administrative agency or governmental body, including the City of Philadelphia ("City"), the Commonwealth of Pennsylvania ("Commonwealth") and the United States of America ("USA"). Applicable Law includes, without limitation, laws, etc. relating to the environment, the Philadelphia Home Rule Charter ("HRC"), as amended from time to time, The Philadelphia Code ("Code"), as amended from time to time, and the specific laws set forth in Paragraphs 107–116 below, each as amended from time to time. Sellers submit quotes, and the parties execute, deliver and perform their respective obligations under the Contract, under and pursuant to the applicable provisions of all Acts of the General Assembly of the Commonwealth and applicable ordinances of the City, as such enactments may hereafter be supplemented or amended.
 - d. "Application for Final Estimate" has the meaning set forth in Paragraph 56 below.
 - e. "Application for Payment" has the meaning set forth in Paragraph 52 below.
 - f. "Application for Semi-Final Estimate" has the meaning set forth in Paragraph 55 below.
 - g. "Bid Solicitation" means a public invitation to submit competitive Quotes for a specific City contract or City contracts that is or are issued by the Procurement Department in accordance with Sections 8-200(1), 2(a) and 2(b) of the Philadelphia Home Rule Charter. A Bid Solicitation includes all addenda thereto issued by the Procurement Department.
 - h. "Change Order" means an instrument altering the scope of the work under the Contract issued under Paragraph 48 below.
 - i. The "City" means The City of Philadelphia, a corporation and body politic existing under the laws of the Commonwealth, and includes its various executive and administrative departments, agencies, boards and commissions, including the Department, and its legislature, City Council. The City is a City of the First Class under the laws of the Commonwealth.
 - j. "City Work" has the meaning specified in Paragraph 107(d) below.
 - k. "Contingent Price" means a price for a unit or component of work specified on the "Contingent Price List" published from time to time by the City.
 - l. "Commonwealth" means the Commonwealth of Pennsylvania.
 - m. "Contract" means the agreement of the Parties evidenced by the Contract Documents.
 - n. "Contract Documents" means the Standard Contract Requirements; the Department's Standard Details and Specifications, as they apply; the Department's General Bidding and Contract Requirements; the Technical Specifications; the Quote; the Plans with all of the notes thereon (excluding any records or reports of test borings, underground structures, and test piles); the Notice to Proceed ("NTP"), the Notice of Contract Award

("NCA"), the performance bond and the payment bond, as prepared by the Department and issued with the Bid Solicitation, and includes all exhibits, schedules and addenda, if any, to any of the foregoing documents, and any and all Amendments and Change Orders.

o. "Contractor" means the Person that has entered into the Contract with the City, has had its authorized individual(s) sign the Contract Documents on behalf of the Person but does not include, without the City's written consent, any subsidiary, affiliate, agent, etc., or parent company, if any, of the Contractor.

p. "Current Estimate" has the meaning set forth in Paragraph 53 below.

q. "Demographic Data" means statistical information on a group of individuals, aggregated by specific characteristics, including but not limited to race, ethnicity, gender identity, job title, salary range, length of employment, Philadelphia residence, and such other categories as may be established by regulation.

r. "Department" means the department, board, commission, or agency of the City for which the Contractor carries out the work under the Contract, except when the Department of Public Property ("DPP") supervises the Contract, in which case "Department" means the Department of Public Property.

s. "Disputed Change Order" means a Change Order issued by the City under Paragraph 49 below.

t. "Event of Insolvency" means (a) the filing of a voluntary petition by the Contractor under the Federal Bankruptcy Code or any similar state or federal law; or (b) the filing of an involuntary petition against The Contractor under the Federal Bankruptcy Code or any similar state or federal law which remains undismissed for a period of forty-five (45) days; or (c) the Contractor's making of an assignment for the benefit of creditors; or (d) the appointment of a receiver for the Contractor or for the property or assets of the Contractor, if such appointment is not vacated within forty-five (45) days thereafter; or (e) any other proceeding under any bankruptcy or insolvency law or liquidation law, voluntary or otherwise; or (f) the Contractor proves unable to pay its obligations as they mature; or (g) the Contractor is insolvent as otherwise defined under any Applicable Law.

u. "General Bidding and Contract Requirements" means the additional bidding and contract conditions and requirements specifically prepared by the Department for a specific Bid Solicitation (which may accompany the Technical Specifications) and may from time to time include, but not be limited to, Quote proposal forms, special or additional or supplementary instructions to Sellers, minimum wage rate schedules, prevailing wage rate schedules, contingent price lists, requirements of the City's Office of Economic Opportunity ("OEO"), and general tax requirements.

v. "Inspector" means the representative of the City's Project Manager assigned to inspect work and the delivery of services under the Contract.

w. "Labor Source" means a defined pool of trained and qualified individuals from which workers can be secured by agreement or through other means from an entity other than the contractor itself, including but not limited to a business, union hiring hall, job training organization, or registered apprenticeship program.

x. "Lump Sum Bid Breakdown" has the meaning set forth in Paragraph 52 below.

y. "Notice of Contract Award" (NCA) means a notice from the City to the Seller informing the Seller of the City's determination to award the Contract to the Seller.

z. "Notice to Proceed" (NTP) means a notice from the City to the Contractor authorizing the Contractor to commence work under the Contract.

aa. "Operating Commissioner" means the director, commissioner, or other head of the Department issuing the work to the Contractor pursuant to the Contract.

- bb. "Parties" means the City and the Contractor, and a "Party" means either the City or the Contractor.
- cc. "Person" means any individual, sole proprietorship, association, company, firm, partnership, limited partnership, joint venture, corporation, limited liability company or other form of entity or association recognized at law.
- dd. "PGW" means the Philadelphia Gas Works.
- ee. "Plans" means the general plans and design drawings which accompany the Technical Specifications, the Standard Details and Specifications, and such detail and supplementary drawings as may be furnished from time to time.
- ff. "Procurement Commissioner" means the head of the City's Procurement Department, or his or her designee.
- gg. "Procurement Department" means the Procurement Department of the City.
- hh. "Project" means all of the work which the City seeks to complete at the Project site, including, but not limited to, the work which the Contractor has agreed to perform under the Contract. The Project includes other work at the Project site by the City and by other contractors pursuant to other City contracts.
- ii. "Project Manager" means the designated representative of the City officer in charge of the construction branch, division or unit of the Department, or the individual specifically designated as "Project Manager" in the Technical Specifications, and any other individual who may be designated in writing by the Project Manager as his or her representative. The City may delegate or provide for the performance of certain of the duties and functions of the Project Manager by architectural or engineering firms under contract with the City.
- jj. "Proposal" means a Seller's price and other specific terms and conditions included in a Quote.
- kk. "Public Works Contract(s)" means any contract awarded by the Procurement Department for the construction, reconstruction, alteration, or repair of any public building or other public work or public improvement within the City and County of Philadelphia.
- ll. "Quote" means a Seller's signed response, including a Proposal, submitted to the Procurement Department pursuant to a Bid Solicitation.
- mm. "Report Date" means December 31st of the calendar year, immediately preceding the date the bid is filed.
- nn. "Responsibility" or "Responsible" means the capacity to perform a City contract in accordance with its terms and conditions. Elements of Responsibility include the following, among others: judgment, skill, promptness, faithfulness, skillful workers, honesty of the Contractor, financial standing, reputation, experience, resources, facilities, past history of adherence to plans and specifications, capacity and ability to do the work according to the plans and specifications, availability and efficiency, and such other factors as may be determined by law and the City.
- oo. "Seller" means a Person submitting a Quote, signed by the Person, to the Procurement Department pursuant to a Bid Solicitation. Seller includes only the Person who signs the Contract. Seller does not include, without the written consent of the City, any subsidiary, affiliate, agent, etc., or parent company, if any, of the Person.
- pp. "Semi-Final Estimate" has the meaning set forth in Paragraph 55.
- qq. "Shop Drawings" means all drawings, diagrams, illustrations, brochures, schedules, performance charts, instructions, and other data which are prepared by the Contractor, its Subcontractors, suppliers, or distributors, or equipment fabricators or manufacturers, and which illustrate the manufacture or fabrication of the product or equipment or any part thereof, and which are submitted to the Department to establish that the materials, articles and components of equipment Contractor proposes to supply will, when installed, meet all requirements of the Contract Documents.

oo. "Standard Contract Requirements" or "SCR" means these Standard Contract Requirements of the City in connection with the Bid Solicitations for, and the award, execution, and performance of Public Works Contracts, except as modified by the Department's General Bidding and Contract Requirements, the Technical Specifications and Plans and any other special requirements for the Contract. These Standard Contract Requirements are attached to and form an integral part of the Contract Documents.

rr. "Standard Details and Specifications" means the standard details and specifications for specific, recurring types of work or components thereof, as may be issued by the Department from time to time, *e.g.*, the Standard Details and Standard Specifications for Sewers, as issued by the Philadelphia Water Department, or the Standard Construction Items, as issued by the Department of Streets.

ss. "Structures" has the meaning set forth in Paragraph 83 below.

tt. "Subcontract" means a contract made between the Contractor and a Subcontractor, or between a Subcontractor and a sub-subcontractor at any tier, providing for the completion of one or more portions of the work which the Contractor has agreed to perform under the Contract, including agreements for the manufacture or supply of equipment, systems or components forming part of such work.

uu. "Subcontractor" means a Person performing at any tier under a contract with the Contractor or another Subcontractor one or more portions of the work which the Contractor has agreed to perform under the Contract. Subcontractors shall include, without limitation, vendors, manufacturers, suppliers, or other Persons contracting with a Subcontractor or the Contractor for the manufacture or supply of equipment, systems or components forming part of the work under the Contract. There is no contractual relationship (privity of contract) between the Contractor's Subcontractor, or a Subcontractor's subcontractor, and the City.

vv. "Substantial Completion" or "Substantially Complete" or "Substantially Completed" means that construction is sufficiently complete in accordance with Contract Documents and certified by the Project Manager, as modified by Change Orders or amendments, so that (a) the work under this Contract can be used, occupied or operated for its intended use, and (b) all applicable permits and licenses, including, if applicable, a statement or certificate of occupancy, shall have been duly issued by all government offices, including those of the City. In no event shall the Contract be certified as substantially complete until the Contractor has completed at least ninety percent (90%) of the work under the Contract.

ww. "Technical Specifications" means the written and detailed requirements, prepared by the Department, or its consultants or representatives, for materials, equipment, systems, standards and workmanship for the work under this Contract and related services to be performed under the Contract.

xx. "Unbalanced Quote" means an offer by the Contractor which (1) contains extremely low prices on items or types of work which are, as determined by the City in its sole discretion, unimportant or infrequently ordered or performed, and extremely high prices on items or types of work which are frequently ordered or performed, resulting in an effort to qualify as the low Seller while charging disproportionately high prices for certain items or types of work; or (2) contains prices for phases of the work to be performed early in the course of the work under this Contract that are, as determined by the City in its sole discretion, disproportionately high relative to prices for later phases of the work, resulting in payment of a disproportionately high percentage of the total Contract price early in the Contract period.

yy. "Working Days" means calendar days, less allowances for days or parts of days, in increments of one-quarter (1/4) day, for conditions entirely beyond the control of the Contractor as defined in Paragraph 25(c)(2); and also excludes New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, or the Monday thereafter when these days occur on Sunday, and Saturdays and Sundays shall not be considered as Working Days.

xx. "Working Drawings" means those drawings prepared by the Contractor to supplement the Plans and Shop Drawings to accurately and clearly depict all working and installation dimensions, arrangement and sectional views, units of equipment in the proposed positions for installation, details of required attachments and connections, and dimensioned locations between units and in relation to the existing and proposed structures. Working Drawings shall show all necessary details and information for making connections between the various

trades including, but not limited to, power supplies and interconnecting wiring between units, accessories, and appurtenances.

2. **Interpretation; number, gender.** The words "herein" "hereof" and "hereunder" and other words of similar import refer to the Contract as a whole, including all of the Contract Documents, and not to any particular article, paragraph, subparagraph or clause contained in the Contract Documents. Whenever the context requires, words used in the singular shall be construed to include the plural and vice versa, and pronouns of any gender shall be deemed to include the masculine, feminine and neuter genders.

B. QUOTE SUBMISSION REQUIREMENTS

3. Qualifications of Seller.

a. Each Seller must demonstrate to the satisfaction of the City that it is Responsible, capable of performing the work under the Contract, and has successfully completed contracts equivalent in scope and nature, and comparable in magnitude. Seller must further demonstrate that: 1) it has the necessary financial resources, equipment, and workforce to perform the work under the Contract in a proper and satisfactory manner, in accordance with the Contract Documents, and within the time specified, and 2) that the possible award of this Contract to the Seller will not, in the City's sole discretion, overextend the Seller because it is already performing another City contract or other contract(s) or project(s).

b. As required by Section 17-101, as amended, of The Philadelphia Code, entitled "Prequalification of Prospective Bidders for Contracts for Construction of Public Works", all Sellers shall submit to the Procurement Department through PHLContracts, by the date specified in the Quote advertisement(s), a "City of Philadelphia Prequalification Questionnaire," for the purpose of determining the Seller's Responsibility. Should the Seller omit any required information, or refuse to give any required information, or should the information submitted by Seller, in the judgment of the Procurement Commissioner, taking into consideration the recommendations of the Operating Commissioner, reveal that the Seller is not sufficiently equipped or qualified to enter into or perform the Contract, the City shall not accept any Quote from such Seller(s), and the Procurement Commissioner shall notify the Seller to that effect. In such case, Section 17-101 of The Philadelphia Code shall govern any appeal to which the Seller may be entitled.

4. Examination of Contract Documents and Site.

a. Sellers shall thoroughly acquaint themselves with the Contract Documents, including, without limitation, a careful study and review of the Plans and Technical Specifications. Sellers shall examine in detail the Project site and shall acquaint themselves with conditions affecting the work under the Contract and the overall Project, and, when applicable, the condition of walls and foundations of overlying and adjacent structures, the character of the paving, and the soil and subsurface soil. The Quote shall be prepared with due regard to the provisions of the Contract Documents and to the conditions existing or to be anticipated at the Project site.

b. Where test borings, test piles, and existing underground and above-ground structure locations are reported on, or included with, the Contract Plans or Technical Specifications, or where they are provided as separate Plans or Technical Specifications, they are for the information of the City only and are not provided to Sellers to show the conditions to be encountered by the Seller; the correctness, accuracy, or interpretation of the information is not guaranteed or warranted in any fashion by the City; and in no event is any boring or underground or above-ground structure information to be considered as a part of the Contract, notwithstanding any provision to the contrary that may appear in the Technical Specifications. If a Seller uses any of this information in preparing its Quote, Seller shall assume any and all risks resulting from conditions that differ from the conditions or approximation shown on the Plans or Shop Drawings.

1. If Seller desires to obtain similar data or information, or to conduct an independent subsurface investigation of the Project site, the Seller must notify the Department in writing at least ten (10) days prior to the date for opening of Quotes, or not later than five (5) days after the date on which Quotes are first advertised by the City, whichever date is earlier. Upon written notice from Seller, the City shall afford Seller the opportunity, at Seller's sole expense, to make test borings or soundings, to drive test piles, or to dig test pits on that portion of the Project site in which the work under this Contract will take place. Seller shall be responsible for complying with all Applicable Law relating to such activity. The foregoing to the contrary notwithstanding, the

City reserves the right to reject such investigations by any Seller when the City deems such rejection to be in the City's best interest. If the City permits such investigations by any Seller, then (a) each such Seller, prior to its entry onto the Project site, shall deliver to the City a certificate of insurance conforming to the

requirements of Paragraph 30 below, and a License Agreement in the form provided by the City; (b) each such Seller shall indemnify, defend and hold the City harmless from and against any and all claims, causes of action, suits, damages, losses, costs and expenses, whether for personal injury or property damage or for any other reason, arising out of such Seller's entry on the Project site; (c) such Seller covenants and agrees that it shall restore the Project site to the same condition as existed prior to such Seller's entry onto the Project site; (d) the City reserves the right to require the delivery of payment and performance bonds prior to any entry onto the Project site by such Seller; (e) in the event more than one Seller seeks to conduct such investigations, the City reserves the right to coordinate and schedule such investigations so as to minimize interference with the use of the Project site and other adjacent sites and any interference with other work at the Project site or adjacent to the Project site.

2. Failure of a Seller to notify the Department in writing of a Seller's desire to obtain such information shall operate as an absolute bar to any claim by a Seller that it had no reasonable means of making an independent subsurface investigation of the site.

c. If a Seller discovers or encounters any ambiguity or discrepancy in the Contract Documents in the course of preparing its Quote, the Seller shall promptly notify the Department of the ambiguity or discrepancy prior to the date and time for receipt and opening of Quotes. The City, so advised, may, at its sole discretion determine whether such ambiguity or discrepancy exists and whether any corrective action is necessary.

5. **Antibid-Rigging Act.** All Sellers, by submitting a Quote, certify that they have not committed or engaged in, or attempted to commit or engage in, a prohibited activity under the Antibid-Rigging Act, 62 Pa. C.S.A. § 4501, et seq., as amended, in connection with their Quote. In addition, all Sellers by submitting a Quote certify that the Seller has not been convicted or found liable for any act prohibited by any federal or state law in any jurisdiction involving conspiracy or collusion with respect to bidding on any public contract within the five (5) years prior to the date of the Quote; that the Seller acknowledges that a conviction or finding of liability for any act prohibited by federal or state law in any jurisdiction involving conspiracy or collusion with respect to submitting a Quote on any public contract within the three (3) years prior to the date of the Quote shall not prohibit the City from accepting a Quote from the Seller or awarding a Contract to the Seller, but may nonetheless serve as grounds for Seller's suspension or debarment at the sole discretion of the Procurement Commissioner, or may serve as grounds for a non-award of a Contract to the Seller on the basis of the Seller's lack of Responsibility.

6. **Multiple Quote Restriction.** No Seller shall be a party to more than one (1) Quote for the same Bid Solicitation. A violation of this condition may in the sole discretion of the Procurement Commissioner, result in rejection of any or all such Quotes in which the Seller is interested.

7. **Quote Submission.**

a. By submitting a Quote, the Seller certifies that it is familiar with the Project site and the conditions affecting the Project site, that it has thoroughly reviewed the Contract Documents, and that all work can be completed for the amount stated in the Quote and within the Contract time specified. No Quote may be considered if received after the date and time for opening of Quotes established by the Bid Solicitation, nor may any Quote be modified after that date and time, except as provided herein or by Applicable Law. The time of Quote opening shall be the time displayed in PHLContracts. In the event of any discrepancy between actual time and the time displayed in PHLContracts, the latter shall determine the time of Quote opening.

b. It is the sole responsibility of the Seller to ensure that it has received any and all addenda and the Procurement Commissioner may, in his or her discretion, reject any Quote for which all addenda have not been executed and returned in accordance with the instructions provided therein.

c. For purposes of determining the basis of a contract award, in the event of a discrepancy between a unit price and an extended price for a work or line item, the unit price shall govern, and the extended price shall be re-computed by the City. If the amount set forth as a unit price is ambiguous, unintelligible, or uncertain for any cause, or is omitted entirely, or is the same amount as the extended price for a work or line item, then the amount set forth as the extended price shall govern for purposes of determining the basis of a contract award. In such event, the extended price shall be divided by the estimated quantity for the work or line item to

arrive at a re-computed unit price which shall thereafter govern for purposes of payment under Paragraph 45.

d. Where a unit or other price (including a unit price extension or the aggregate or total price) contained in the Quote contains a mistake or error in computation, or is otherwise ambiguous as to computation, or there is a discrepancy between a unit price and an extended price for a work or line item, and where the mistake, ambiguity, or discrepancy is not discovered prior to contract award and results in the award of a contract to the Seller, which award is later determined to be mistaken or erroneous, or the Contract Amount is determined to be erroneous, based upon a re-computation of the unit prices and the total price, the Contractor shall bear the sole financial risk of such mistake or ambiguity, and such mistake or ambiguity shall be construed solely against the Contractor and in favor of the City. In all such cases of price mistake, ambiguity, or discrepancy, if work under the Contract has not yet commenced, the City shall have the discretion, at its sole option, to formally rescind the Contract, if the Contractor is deemed not to be the low Seller in accordance with the rule set forth in Paragraph 7(c) above, or to unilaterally reform the Contract and the prices therein in accordance with the rule set forth in Paragraph 7(c), if the Contractor would still be deemed to be the low Seller notwithstanding any mistake, ambiguity, or discrepancy. If work under the Contract has already commenced, the City shall have the discretion, at its sole option, to make payment at the unit price as recomputed in accordance with Paragraph 7(c) above or at the mistaken or ambiguous unit price, or to dispute payment at the mistaken or ambiguous price. In the event of a rescission or reformation of the contract under this Paragraph, the Contractor agrees and acknowledges that it shall have no claim against the City, including any claim for breach of contract or breach of any other legal duty, or for lost profits, costs, damages, or expenses of any kind, arising out of the rescission or reformation. In the event that the City disputes payment to the Contractor at a mistaken or ambiguous unit price, and the parties cannot mutually agree upon a price to be paid to the Contractor for the item of work in question, the payment to the Contractor for the item of work shall not exceed the payment which would be made pursuant to Paragraph 51, and the City's liability to the Contractor for such item of work shall not in any event exceed the Contract Amount as specified in Paragraph 44.

8. Quote Withdrawal. P.L. 9, No. 4, Act of January 23, 1974, 73 P.S. § 1601, et seq., as amended, shall govern the withdrawal of Quotes for clerical mistakes. A Seller must provide the Procurement Department written notice of a right to withdraw a Quote under 73 P.S. § 1601, et seq., within two (2) business days after the opening of Quotes.

9. Quote Responsiveness. Subject to the right of the Procurement Commissioner to waive irregularities and non-responsiveness as set forth below in this Paragraph 9, the Contract Documents are mandatory and must be strictly followed by all Sellers in the preparation and submission of their Quotes. After Quotes are opened, the Procurement Department, and other City departments or agencies where appropriate or specified, shall review all Quotes for responsiveness. Any Quote which is incomplete, obscure, conditional, unbalanced, which contains additions not called for, or irregularities of any kind, including alterations or erasures, or which fails to conform in any respect to the Contract Documents shall be deemed to be non-responsive and shall be rejected, except where the Procurement Commissioner, in his or her sole discretion, determines that the irregularity or non-responsiveness is not material or that a waiver of the irregularity or non-responsiveness is otherwise permitted by the Contract Documents or by Applicable Law. The Procurement Commissioner reserves the right to waive such irregularities or non-responsive matters in a Quote. The Procurement Department's determination of non-responsiveness shall be final and any Quote rejected as non-responsive shall not be eligible for Contract award. The Procurement Commissioner's determination of non-responsiveness is not appealable to the Court of Common Pleas.

10. Security for Execution of Contract. The Seller shall include with its Quote a bid bond in the amount of ten percent (10%) of the gross amount of the Quote. The gross amount of the Quote shall mean the sum of all items enumerated in the Quote, without reduction for "deduct" alternates. All Sellers must use the City's standard bid bond form, which is included in the Bid Solicitation or otherwise available at the City's Procurement Information Center (Rm. 170 Municipal Services Bldg.), in fulfilling the requirement of this Paragraph 10. The City shall not accept any other bid bond form. The Seller may not submit cash. Upon return of the duly executed Contract Documents by the lowest responsible Seller to the City's Law Department, the bid bonds of all Sellers shall be deemed released.

11. Bid Processing Fee.

a. In addition to bid security and any other fee or monies required, the Quote shall be accompanied by a non-refundable processing fee in the form of a separate check payable to the City or electronic payment as specified in the bid solicitation. The processing fee is based on the advertised cost estimate for the bid in accordance with the formula below. Cash is not acceptable.

\$0	when the advertised cost estimate does not exceed \$10,000
\$10	when the advertised cost estimate is or exceeds \$10,000 but does not exceed \$100,000
\$30	when the advertised cost estimate is or exceeds \$100,000 but does not exceed \$300,000
\$50	when the advertised cost estimate is or exceeds \$300,000 but does not exceed \$500,000
\$100	when the advertised cost estimate is or exceeds \$500,000 but does not exceed \$1,000,000
\$200	when the advertised cost estimate is or exceeds \$1,000,000 but does not exceed \$2,000,000
\$300	when the advertised cost estimate is or exceeds \$2,000,000 but does not exceed \$3,000,000
\$400	when the advertised cost estimate is or exceeds \$3,000,000 but does not exceed \$4,000,000
\$500	when the advertised cost estimate is or exceeds \$4,000,000 but does not exceed \$5,000,000
\$600	when the advertised cost estimate is or exceeds \$5,000,000.

b. For the purpose of estimating the amount of the bid processing fee the amount of work and labor or the quantities of materials or supplies to be furnished will be in accordance with the estimated quantities, but the City will not be bound by such estimates in regard to the actual quantities of work and labor or materials or supplies required to be furnished under the Contract.

c. Failure to submit the bid processing fee may result in the Seller's disqualification from submitting a Quote. In addition, if an award is made pursuant to the Bid Solicitation and Quote, any unpaid processing fees owed by the Seller to the City must be paid prior to the City's release of any payments to the Contractor under the Contract.

12. Business Tax Requirements. Any Contractor, or vendor of goods, wares and merchandise, or purveyor of services, who submits a Quote and is awarded a contract by the City or the School District of Philadelphia ("School District" or "SDP"), is subject to Philadelphia's business tax and applicable ordinances and regulations. Anyone who is awarded a contract by the City or the School District of Philadelphia pursuant to a formal bid solicitation, including a Bid Solicitation, shall be deemed to have entered into a contract within the City, and the subsequent delivery of goods into the City, or performance of services within the City constitutes "doing business" in the City and subjects the successful Seller to one or more of the following taxes: (a) Business Privilege Tax; (b) Net Profits Tax; and (c) City Wage Tax. The successful Seller, if not already paying the aforesaid taxes, is required to apply to the Department of Revenue for a tax identification number and to file appropriate business tax returns as provided by law.

13. Tax Indebtedness. The successful Seller shall represent, warrant and covenant that the Contractor and any entities controlling the Contractor, under common control with the Contractor, or controlled by the Contractor are not currently indebted to the City, and will not at any time during the term of the Contract be indebted to the City, and will not at any time during the term of this Contract (including any extensions or renewals thereof) be indebted to the City, for or on account of any delinquent taxes (including, but not limited to, taxes collected by the City on behalf of the School District of Philadelphia), liens, judgments, fees or other debts for which no written agreement or payment plan satisfactory to the City has been established. In addition to any other rights or remedies available to the City at law or in equity, the Contractor acknowledges that any breach or failure to conform to this representation, warranty and covenant may, at the option of the City, result in the withholding of payments otherwise due to the Contractor and, if such breach or failure is not resolved to the City's satisfaction within a reasonable time period specified by the City in writing, may result in the offset of any such indebtedness against said payments or the termination of this Contract for default (in which case the Contractor shall be liable for all excess costs and other damages resulting from the termination), or both.

14. Commercial Activity License. A Commercial Activity License ("CAL") is required for every Person desiring to engage in any business within the City, whether or not such Person maintains a place of business in the City. The successful Seller will be required to furnish a CAL number at the time of Contract

award, but no later than before the "Notice to Proceed" is issued. In the event the successful Seller has applied for, but not been issued, a CAL, a photocopy of the application will be acceptable. The CAL is a one-time license with no expiration date. Only one (1) license is needed for multiple locations or for multiple businesses for the same Person. If the Seller has never had a CAL assigned, the Seller may request one by filing a "Miscellaneous License Application". In order to be assigned a CAL, it is necessary to have a "Philadelphia Business Tax Account Number". This is a number assigned by the City's Department of Revenue to identify City tax accounts. If the Seller has never had a number assigned, the Seller may request one by filing an "Application for Philadelphia Business Tax Account Number". Any tax account previously opened for the Seller which is unsettled or delinquent will cause delay and may preclude the issuance of a new license. Applications may be obtained from the Department of Licenses and Inspection, License Issuance Unit.

15. **Comparison of Quotes.** Quotes will be compared on the basis of the aggregate of all the items of the Quote, unless otherwise specified in the General Bidding and Contract Requirements.

16. **Award of Contract.** The City shall make the Contract award to the lowest responsive, Responsible Seller. In the event of an absolute tie, the Procurement Commissioner shall make the Contract award in accordance with the best interests of the City. The Procurement Commissioner, in his or her sole discretion, may reject all Quotes, if deemed in the best interests of the City. The award of the Contract shall be governed in all respects by 62 Pa.C.S. §3911, as amended. However, the failure of the City to comply with the statutory requirement set forth in 62 Pa.C.S. §3911 shall not operate as a release of the Seller, unless the Seller shall first notify the City in writing, prior to the end of the deadline set forth in 62 Pa.C.S. §3911, of the Seller's intent to demand compliance of the City with such requirement.

17. **Binding Contract and Execution of the Contract.**

a. The award shall not become a contract binding upon the City until after written Notice of Contract Award is made by the Procurement Department to the lowest responsive, Responsible Seller and until after all of the following conditions have been satisfied:

1. Successful Seller posts a proper performance bond and a proper payment bond, as provided for in Paragraph 18 below, on the City's current bond forms, within the time set forth in the Notice of Contract Award;
2. Successful Seller provides proof of the requisite insurance;
3. The Contract is approved as to form by the City's Law Department;
4. The Director of Finance and the City Controller's Office certify the availability of funds for the Contract; and
5. The Procurement Commissioner executes the Contract.

The Procurement Commissioner may, in his or her sole discretion, cancel any contract award if any of the above conditions are not satisfied, or if the Procurement Commissioner, in his or her sole discretion, determines cancellation of the contract award to be in the best interests of the City. In the event of such cancellation, the successful Seller agrees and acknowledges that it shall have no claim against the City, including any claim for breach of contract or breach of any other legal duty, or for lost profits, costs, damages, or expenses of any kind.

b. The execution of the Contract shall be made within sixty (60) days of the date of the award of the Contract and shall in any event be governed in all respects by 62 Pa.C.S. §3912, as amended. Any Seller who is not lawfully released from its Quote and who fails, refuses, or is unable to furnish the required performance and payment bonds or insurance, shall be liable to the City for the actual loss or damage sustained by the City as a result of the failure of the Seller to enter into the Contract. This remedy against the Seller shall be in addition to, and not in lieu of, any remedy or claim which the City may have under the bid bond posted by the Seller.

c. In no event shall the Contract awarded to the Contractor be construed or deemed to include, as a term, covenant or condition, any exception, addition or other term which the Seller may have included or as part of its Quote, except as may be expressly approved by the Procurement Commissioner pursuant to Paragraph 9 above.

18. **Contract Surety.** As provided by the Act of 1967, December 20, P.L. 869 (8 P.S. § 193.1, *et seq.*, as amended), the successful Seller will be required at the time of execution of the Contract to give security for the faithful performance of the work and for compliance with the Contract in the form of a performance bond, with a surety company approved by the City, in a sum equal to 100% of the amount of the Contract (equal to the Quote amount plus any contingency amount). In addition, as provided by the Act of 1967, December 20, P.L. 869 (8 P.S. § 193.1, as amended), the Contractor will be required at the time of execution of the Contract to give a payment bond, with a surety company approved by the City, in a sum one hundred percent (100%) of the amount of the Contract (equal to the Quote amount plus any contingency amount), conditioned for the full payment of Subcontractors and others furnishing labor and materials in the performance of the Contract. Both the performance and payment bonds must be submitted by the Seller to the City on bond forms provided by the City.

C. GENERAL REQUIREMENTS OF THE CONTRACT

19. **Unauthorized Acts.** Any act of any City representative, official, agent, or employee, which is not within the scope of his or her authority as set forth in the Contract Documents or pursuant to the Philadelphia Home Rule Charter, shall not be binding on the City and shall not be deemed as a defense to the Contractor for the breach of any of the terms and conditions of the Contract.

20. **Cancellation of the Contract.** The Contractor will not be required to proceed with the work of the Contract, if:

- a. for any reason for which the Contractor it is not responsible, the Contractor cannot commence work within three (3) months from the date of execution of the Contract, except in the case of Contracts for street improvements, when six (6) months shall be the limiting period; or
- b. at any time prior to the issuance of the Notice to Proceed, the City, in its sole discretion, determines that it must reduce the scope of the work in an amount equal to or greater than twenty-five percent (25%) of the amount of the Quote. In such event, the City shall give notice thereof the Contractor.

In the event the Contractor cannot commence work, the Contractor shall give notice of cancellation within five (5) days after the date which is three (3) months from the date of execution of the Contract by the Contractor, except in the case of Contracts for street improvements, when the Contractor shall give such notice six (6) months from the date of execution of the Contract by the Contractor. In the event the City gives notice to the Contractor that the City has determined to reduce the scope of the work as provided in Paragraph 20(b) above, then the Contractor shall give notice of cancellation within five (5) days after the date the Contractor receives such notice from the City, otherwise the Contract shall remain valid.

This Paragraph 20 shall not apply to Contracts entered into for work the commencement of which is dependent upon progress of other contracts where this condition is plainly indicated by the character and location of such work at the time the City issues the Bid Solicitation and where Departmental constraints limit construction activities as described in the Technical Specifications. The City shall have no liability, by way of any penalty or otherwise, arising out of the cancellation of the Contract pursuant to this Paragraph 20.

21. **Termination for the Convenience of the City.** The City may terminate this Contract at any time during the term of the Contract, for any reason, including, without limitation, the City's own convenience. Written notice of termination shall be sent to the Contractor by the Procurement Commissioner and said notice shall set forth the effective date of the termination. Upon receipt of such notice of termination, the Contractor shall stop all work under the Contract. Upon termination under this Paragraph, the City shall be liable to the Contractor only for the cost and profit on the physical work then completed on the job site by the Contractor

and in place. The City shall have no additional liability or cost for termination of the Contract, including, but not limited to, any penalty, the Contractor's anticipated profits, the Contractor's estimating costs, or any loss on the work terminated. If termination of the Contract occurs prior to the issuance of the Notice to Proceed, the City shall not be liable to the Contractor for any cost or lost profits of the Contractor, regardless of whether the Contractor may have performed some physical work, except where the Project Manager has otherwise authorized in writing the commencement of work by the Contractor, in which case the City's liability to the Contractor shall be governed by the prior terms of this Paragraph. Termination of the Contract shall not affect any obligation or liabilities of either Party accruing prior to termination.

22. **Contractor's Obligations.** The work to be done under the Contract is set forth in detail in the Contract Documents. The Contractor shall furnish all labor, materials, plant, tools and appliances, and shall complete the work to the satisfaction of the Project Manager in the manner and within the time required in the Contract Documents at the prices set forth in the Contract. If at any time the Contractor's methods, workforce, or equipment appear to the Project Manager to be unsafe, insufficient, or inadequate for the proper performance of the provisions of the Contract, the Project Manager may order the Contractor to make such changes as the Project Manager may deem necessary, and the Contractor shall comply with such orders, but the failure of the Project Manager to make such demands shall not relieve the Contractor of its obligations under the Contract. The Contractor shall maintain an office on the Project site where orders and instructions may be delivered, and shall give personal attention to the faithful performance of the work of the Contract. The Contractor shall employ a competent representative or superintendent on the Project site who shall have full authority to receive and execute orders, and to supply such labor, tools, and materials as may be required for the proper performance of the work.

23. **Performance of Work by the Contractor.** The Contractor is required to perform, on the site and with its own work force, work with a value of at least twenty percent (20%) of the original total contract price, exclusive of profit, overhead and the costs of procuring insurance and bonds. The Contractor shall submit with its Quote a complete description of the work it will perform (e.g., earthwork, paving, brickwork, roofing, etc.), the percentage of the total work this represents, and the estimated dollar value thereof.

24. **Materials and Equipment Loaned or Rented by the City.** Any materials, or equipment loaned or rented by the City to the Contractor for use on the particular job must be returned by the Contractor in kind or in cash, or as a credit to the Contract as determined by the Department or the Contractor will be considered in default of the Contract. The use or operation of such material or equipment shall be at the Contractor's own risk. The material or equipment shall be taken in its "AS IS" condition and the Contractor shall maintain the material or equipment in the same condition as when received, less normal wear and tear. Should damage occur, repair or replacement shall be made by the Contractor at its own expense, at the election and to the satisfaction of the City, in accordance with specifications approved in writing by the City.

25. **Contract Time.**

a. Times set forth in the Contract Documents for the performance of the work or any portions thereof are essential elements of the Contract. The Contractor shall begin work within ten (10) days from the date of issuance of the Notice to Proceed from the Department directing the Contractor to proceed with the work, and shall complete all work covered by the Contract Documents within the time specified in the General Bidding and Contract Requirements. The Contract completion date shall be determined by reference to the date of the issuance to the Contractor of the Notice to Proceed. In submitting a Quote, the Contractor acknowledges and agrees that the Contract time, as specified in the General Bidding and Contract Requirements, is a reasonable period for performing the work.

b. Except as may otherwise be required by the General Bidding and Contract Requirements or the Technical Specifications, the Contractor shall prepare and submit to the Project Manager, before starting work, a written and detailed construction schedule which shall, at a minimum, indicate the milestone dates on which the Contractor intends to start and end each of the principal items of work under the Contract and which shall indicate generally how the Contractor intends to complete the work under the Contract within the Contract time specified. The Contractor's construction schedule shall include a schedule or timeline for submission of Shop Drawings or other submittals to the Department, which shall be coordinated with the overall construction schedule and which allows for a reasonable time for the Department or the Project Manager to review the

submittals or such time as the Department or the Project Manager may otherwise require pursuant to any of the Contract Documents. The Contractor's construction schedule shall in no event exceed the time allotted for completion of the Contract. From time to time, the Contractor shall revise and update its construction schedule to show changes to the schedule and any agreed revisions to the Contract time. The Contractor acknowledges that its failure to submit a written schedule to the Project Manager, as herein provided, shall preclude the assertion of any claims for delay or interference to Contractor's schedule or prosecution of the work and shall further preclude the assertion of any claim or request for an extension of the Contract time.

c. The Contractor shall be entitled to a reasonable extension of time for unavoidable delays or interference in completion of the Contract caused by:

1. Any acts or omissions of the City (but not PGW, or its contractors, or any other non-City utilities or authorities) which occur subsequent to the issuance of the Notice to Proceed and which cause delay in the completion of the Contract, by failure to give possession of the Project site, by changes in the Plans and Technical Specifications, or by requiring for any cause the suspension of the work under the Contract, except where such suspension is the result of a default or other act or omission by the Contractor. Any delay or postponement in the issuance of the Notice to Proceed shall not entitle the Contractor to an extension of the Contract time and shall not give rise to any claim for delay, disruption, or interference by the Contractor. The Contractor's remedies in the event of a delay or postponement in the issuance of the Notice to Proceed shall be governed solely by 62 Pa.C.S. §3913, as amended.

2. Causes not reasonably foreseeable by the Parties at the time of the complete execution of the Contract and which are entirely beyond the control and without the fault or negligence of the Contractor, including, but not limited to, acts of God, acts of the public enemy, acts of governmental authorities, quarantine restrictions, general strikes throughout the trade or freight embargoes not caused or participated in by the Contractor, fire, floods, pandemics and weather of unusual severity, such as hurricanes or tornadoes.

d. Delays caused by the Contractor's Subcontractors or materialmen shall not, in themselves, be cause for an extension of time by the City. To warrant an extension of time, such delays must be occasioned by the same causes specified in Paragraphs 25(c)(1) and (2) above.

e. Time extensions shall be handled as follows:

1. The Contractor, within five (5) days after the beginning of any delay or interference to its construction schedule, shall notify the Project Manager in writing of the occurrence of the delay or interference, stating with reasonable particularity the cause or causes of the delay or interference and the Contractor's intention to seek an extension of time.

2. Any claim by the Contractor for a time extension must be made in writing to the Project Manager within ten (10) days after the conclusion of the delay or interference for which a time extension is requested or the City will not consider such claim. The City shall not in any event grant a time extension for any delay or interference which was incurred more than five (5) days before the Contractor gave written notice as required in subparagraph (1) above.

3. Before the Project Manager reviews a claim for a time extension, the Contractor shall demonstrate in writing the effect of the delay or interference on the Contractor's construction schedule, including plotting such effect on the Contractor's critical path documents, showing graphically therein the effect on the Contract completion date, both in calendar days and Working Days. This depiction of the delay or interference must accompany the written claim for a time extension submitted in accordance with subparagraph (2) above. If the Contractor believes that it has been impacted beyond a mere time delay, the Contractor shall also provide the Project Manager with an estimate of the costs incurred by the Contractor as a result of the delay or interference. The failure of the Contractor to provide the Project Manager with this contemporaneous cost estimate shall bar any later claim by the Contractor for any costs incurred as a result of the delay or interference.

4. If the Project Manager determines that an extension of time is in order, the time allowed for any delay will be added to and will correspondingly extend the Contract time for completion and

adjust any Contract completion milestones set forth in the General Bidding and Contract Requirements or the Technical Specifications. The Contractor agrees that a time extension granted by the Project Manager shall be its sole remedy for a delay or interference and shall operate as a full and complete release of any claim by Contractor for any and all costs and expenses related to or arising out of the event giving rise to the delay or interference.

f. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, THE CONTRACTOR AGREES AND ACKNOWLEDGES THAT THERE SHALL BE NO PAYMENT OR COMPENSATION OF ANY KIND TO THE CONTRACTOR FOR DAMAGES OR COSTS ARISING FROM ANY DELAY OR INTERFERENCE WHETHER SUCH DELAY IS AVOIDABLE OR UNAVOIDABLE. CONTRACTOR FURTHER AGREES AND ACKNOWLEDGES THAT ITS SOLE REMEDY IN THE CASE OF DELAYS OR INTERFERENCES TO ITS CONSTRUCTION SCHEDULE WHICH ARE ATTRIBUTABLE TO THE CITY, SHALL BE A REASONABLE EXTENSION OF THE CONTRACT TIME.

g. On contracts on a calendar day basis (a specified number of days), no allowance will be made for Saturdays, Sundays or holidays. On contracts on a Working Day basis, allowances will be made for days or parts of days, in increments of one-quarter (1/4) day, for conditions entirely beyond the control of the Contractor; New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, or the Monday thereafter when these days occur on Sunday, and Saturdays and Sundays shall not be considered as Working Days. The Department shall keep a record of the Working Days and the Department shall make this record available to the Contractor on request. The Contract time shall start with the first Working Day after the date of the Notice to Proceed and the scheduled date of completion shall be that established by the specified number of Working Days plus the allowance.

h. If, for reasons other than those stated above, any portion of the work remains uncompleted after the Contract date specified for its completion, notwithstanding Substantial Completion of the work, the Project Manager shall deduct from payments due the Contractor, as liquidated damages an amount per diem, according to the following schedule:

<u>Contract Value</u>	<u>Agreed Delay Damages Per Diem</u>
\$0-\$100,000	\$ 250
\$100,001-\$500,000	\$ 500
\$500,001-\$1,000,000	\$ 750
Over \$1,000,000	\$1,000

These per diem delay damages are assessed as agreed liquidated damages because the Parties have considered the difficulty of determining the City's actual damages and agreed that computation of the City's actual damages is impossible. If a delay is due to causes which the Contractor considers extraordinary or beyond its control, the Contractor must give timely notice thereof in writing as specified in Paragraph 25(e) above. In the event that the General Bidding and Contract Requirements or the Technical Specifications contain a provision allowing for the imposition of liquidated damages for delays to the completion of the work, such provision shall take precedence over this subparagraph (h).

This subparagraph (h) shall not be construed to apply to claims, offsets, credit change orders, and/or chargebacks which the City may assert or assess against any Contractor for the reimbursement or recovery of any costs incurred by a different Contractor on the Project due to the fault or delay of the Contractor. In all such cases, the City shall not be limited to the per diem amounts listed above and shall be permitted to seek recovery or reimbursement of the full amounts incurred by any non-delaying Contractor.

26. **Independent Contractor.** The Contractor is an independent contractor and shall not in any way or for any purpose be deemed or intended to be an employee or agent of the City. Neither the Contractor nor its employees or Subcontractors shall in any way represent that they are acting as employees, officials or agents of the City.

27. **Risk of Loss.** The Contractor shall assume all risk and responsibility for casualties of every description in connection with its work. The Contractor shall have charge of the entire work until completion and acceptance, and shall alone be liable and responsible for any injuries to persons and any loss or damage to property, buildings, or adjacent work that may occur as a consequence of or during the progress of the work under this Contract, whether such damage or accident be due to the Contractor's own negligence or that of its servants, agents, employees, or whether such damage or accident be due to the inherent nature of the work, or whether such damage or accident be due to other causes.

28. **Indemnification.** The Contractor shall indemnify, defend and hold harmless the City, its officers, employees, and agents, from and against any and all losses, costs and expenses, including but not limited to litigation costs, settlement fees and expenses, and counsel fees and expenses, claims, suits, actions, damages, liability and expenses, arising out of or resulting in whole or in part from the performance of the work under the Contract, including, but not limited to, those in connection with loss of life, bodily injury, personal injury, damage to property, contamination or adverse effects on the environment, intentional acts, failure to maintain a drug-free work site and workforce and any other breach of the Contract, regardless of the inherent nature of the work and regardless of whether or not such loss, cost, claim, suit, action, damage, liability, or expense is caused in whole or in part by the negligent act or omission of a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a Party or Person described in this Paragraph. The Contractor shall further indemnify, defend and hold harmless the City from and against any and all claims, demands, liens, causes of action, liabilities and judgments of any kind asserted against the City by any Subcontractor or suppliers on account of or relating to the furnishing of services, work, labor, materials or equipment under the Contract for the Contractor.

In claims against any Person indemnified under this Paragraph 28 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 28 shall not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers compensation acts, disability benefit acts or other employee benefit acts.

29. **Assignment.** Except through a Subcontract, the Contractor shall not assign the Contract, or any part of the Contract, or delegate performance of the Contract (other than to its own work forces), without obtaining the prior written consent of the Procurement Commissioner and Operating Commissioner. The decision whether to consent to an assignment, the timing of consent (if any), and conditions to such consent, if any, shall each be at the City's sole discretion. Any consent to the assignment of any monies to be paid under the Contract shall not relieve the Contractor from the faithful performance of any of its obligations under the Contract or change any of the terms and conditions of the Contract. Any purported assignment in violation of this provision shall be void and of no effect. The City's consent to an assignment shall not release the assignor from any liability accrued or thereafter accruing under the Contract. Any assignment or purported assignment shall be in writing and shall contain an express assumption by the assignee of all liability accrued or thereafter accruing under the Contract. Consent by the City to any assignment shall not be deemed a course of conduct, dealing or performance with respect to any other assignment or proposed assignment. For purposes of this Paragraph 29, an assignment includes the transfer or acquisition of the Seller or the Contractor, or a controlling interest therein, through a corporate or other merger, and the appointment of a receiver or bankruptcy trustee, and the transfer of the Contract or the Contractor in any bankruptcy or other insolvency proceeding.

30. **Insurance.** Unless otherwise approved by the City's Risk Manager in writing, the Contractor shall, at its sole cost and expense, procure and maintain, or cause to be procured and maintained, in full force and effect until the Contractor completes the work under the Contract, the types and minimum limits of insurance specified below, covering the Contractor's performance of the work required under the Contract. The Contractor shall procure, or cause to be procured, all insurance from reputable insurers admitted to do business on a direct basis in the Commonwealth or otherwise acceptable to the City. All insurance herein, except Professional Liability insurance, shall be written on an "occurrence" basis and not a "claims-made" basis. In no event shall the Contractor perform any work under the Contract until the Contractor has delivered or caused to be delivered to the City's Office of Risk Management the required evidence of insurance coverages. If the Contractor fails to obtain or maintain the required insurance, the City shall have the right to treat such failure as a default under

the Contract and to exercise all appropriate rights and remedies. All insurance coverages shall provide for at least thirty (30) days prior written notice to be given to the City in the event coverage is materially changed, cancelled, or non-renewed. The City, its officers, employees, and agents, shall be named as additional insureds on the General Liability Insurance policy and, where applicable, the Builders Risk Insurance Policy. The Contractor shall also deliver or cause to be delivered to the City an endorsement stating that the coverage afforded the City and its officers, employees and agents, as additional insureds, will be primary to any other coverage available to them and that no act or omission of the City, its officers, employees or agents shall invalidate the coverage.

a. Workers' Compensation and Employers' Liability.

1. Workers' Compensation: Statutory limits
2. Employers' Liability: \$100,000 Each Accident – Bodily Injury by Accident; \$100,000 Each Employee – Bodily Injury by Disease; and \$500,000 Policy Limit – Bodily Injury by Disease.
3. Other states insurance including Pennsylvania.

b. Commercial General Liability Insurance.

1. Limit of liability: \$1,000,000 per occurrence combined single limit for bodily injury (including death) and property damage liability; \$1,000,000 advertising injury; \$2,000,000 general aggregate, and \$1,000,000 aggregate for products and completed operations. The City may require higher limits of liability if, in the City's sole discretion, the potential risk warrants.
2. Coverage: Premises operations; Blanket Contractual liability; Personal injury liability; Products and completed operations; Independent Contractors; Employees and volunteers as additional insureds; Cross liability; Broad form property damage (including completed operations); Explosion, collapse and underground hazards; and asbestos abatement liability Coverage (Note: Required for asbestos abatement projects only).

c. Automobile Liability.

1. Limit of Liability: \$1,000,000 per occurrence combined single limit for bodily injury (including death) and property damage liability.
2. Coverage: Owned, non-owned and hired vehicles.

d. Builders' Risk/Installation Floater Insurance.

1. When required: This insurance is required only when the total Contract price is \$500,000 or greater (Note: not for road and street work, unless required in the Supplementary Conditions, Technical Specifications, Standard Details and Specifications, and/or General Bidding and Contract Requirements).
2. Coverage: "All risks" in an amount equal to not less than the full replacement cost of the work under the Contract (meaning work in replacement which is of like kind and quality).
3. Period of Coverage: Anything herein to the contrary notwithstanding, the Builders' Risk Insurance shall be procured and maintained during the entire period of performance of the Contract until final acceptance of the work by the City.

Certificates of insurance evidencing the required coverages and additional insured endorsements must specifically reference the City contract Number for which they are being submitted. The original certificates of insurance shall be submitted to the Department and the Office of Risk Management at least ten (10) days before work is to commence and at least ten (10) days before each renewal date. The ten (10) day requirement for advance documentation of insurance coverage may be waived in situations where such waiver will benefit the City, but under no circumstances shall the Contractor actually begin work (or continue work, in the case of renewal) without providing the required proof of insurance and required endorsements. The City reserves the right to require the Contractor to furnish certified copies of the original policies of all insurance required under this Contract, including certified copies of all required endorsements, at any time upon ten (10) days prior written notice to the Contractor.

31. Proprietary Rights Indemnity. The Contractor shall indemnify, defend and hold harmless the City, and its officers, employees, and agents, from and against any and all losses, costs and expenses, including, but not limited to, litigation costs, settlement fees and expenses, and counsel fees and expenses, claims, suits, actions, damages, liability and expenses for or on account of the use of patented appliances, products, processes, constructions, designs, or methods, or the infringement of any patent, trademark, service mark, copyright, or trade secret rights of any third party, and the Contractor shall pay all royalties, charges and penalties which may become due or payable by reason of such use or infringement. Before the issuance of the Final Estimate, upon request by the Project Manager, the Operating Commissioner, or the Procurement Commissioner, the Contractor shall submit evidence of the full payment of such royalties, charges and penalties, or in lieu thereof, Contractor shall give such security, approved by the City Solicitor, as may in the opinion of the Project Manager, the Operating Commissioner, or the Procurement Commissioner, be necessary to indemnify, defend and hold harmless the City, its officers, employees, and agents, as aforesaid.

32. Default and Remedies.

a. It shall be a violation of the Contract for the Contractor to abandon the work under the Contract; to fail or refuse to prosecute the work with promptness and diligence; to unreasonably delay the work so that it may not be completed within the contract time; to fail or refuse to proceed with work under a Disputed Change Order; to fail or refuse to furnish suitable materials in place of any which may be rejected by the Project Manager as unsuitable as not being in accordance with the Contract Documents, or to refuse or neglect to furnish and supply a sufficient number of properly skilled workers and necessary equipment or either of them; to execute any of the work improperly, carelessly, or in bad faith; to fail or refuse to remove any of the work which, in the opinion of the Project Manager, is defective and unsuitable and not in accordance with the Contract Documents, and to replace it with work that is in accordance with the Contract Documents; to cause or permit to occur an Event of Insolvency with respect to the Contractor; or to otherwise violate any of the terms, conditions, and provisions of the Contract. In the event of a violation of Contract, the Operating Commissioner may notify the Contractor and its surety in writing to require that each remedy the Contractor's violation of the Contract and require the Contractor to comply with the terms, conditions, and provisions of the Contract which it has violated or is violating. The failure of the City to promptly notify the Contractor of a violation of Contract shall not constitute an acceptance by the City of work which is performed or installed in violation of the Contract.

b. If the Contractor shall fail to cure or remedy, or diligently commence to cure or remedy, the violation of the Contract, as described in the notice specified above, within five (5) days after the receipt of said notice, or within twenty four (24) hours after receipt of said notice when, in the opinion of the Operating Commissioner, immediate action is necessary to safeguard life or property, or within some other period of time specified in the notice, the Operating Commissioner shall thereupon notify the Procurement Commissioner, who shall have the right to declare the Contractor in default of the Contract, and to notify the Contractor to discontinue the work or any part thereof under the Contract, and to call upon the surety to carry out its obligations under the performance bond posted for the Contract.

c. If the surety fails to abide by the terms of the performance bond or if the surety shall deny liability to the City under the performance bond, the Procurement Commissioner shall have the right to declare the surety in default under the performance bond and, at his or her sole option, shall also have the right:

1. To terminate the work under the Contract, to maintain conditions, to obtain Quotes (if circumstances will allow) for all or any portion of the work, and to enter into a new contract to complete the work of the original Contract; or

2. In case of an emergency, including, but not limited to, danger to life or property, or serious interference with traffic, to terminate any and all of the work under the Contract, and to then and there secure in the open market, from any Person, at the then current market prices the materials of the quality and quantity required, the necessary workers and mechanics, and the required equipment to complete the Contract.

d. Upon default by the Contractor as herein set forth, all moneys due and owing to the Contractor upon estimates, retainage, or otherwise, materials delivered, materials built into the work, and the Contractor's plant (including tools, appliances, and equipment on the premises intended for use in the performance of the Contract), shall become the property of the City for use in the completion of the work under the Contract, and the City shall have resort thereto to the extent necessary to maintain and complete the work and reimburse the City for its outlays and expenditures.

e. In case of such default by the Contractor the remedies herein provided shall be in addition to and not in substitution of the rights and remedies which would otherwise be vested in the City by statute, at law or in equity, all of which rights and remedies are specifically reserved to the City. In addition, upon default by the Contractor, the Procurement Commissioner shall have the right to secure from any Person the materials, equipment, and labor necessary and required for the proper completion of the Contract. In such event, the Contractor shall pay the City, upon demand, the difference between the cost paid by the City for such materials, equipment and labor and the price or prices set forth in the Contract, together with all costs and expenses incident to the same and incurred by the City. Upon default by the Contractor, the Procurement Commissioner, in his or her sole discretion, shall also have the right, to terminate the Contract and to secure from any Person the materials, equipment, and labor necessary and required for the proper completion of the work. In such event, the Contractor shall pay the City, upon demand, the difference between the price or prices set forth in the Contract and the price or prices which may be paid upon such termination and completion of the work, together with all costs and expenses incident to such re-advertisement. In the exercise of either of these remedies, the City shall further have the right to a set-off against any monies which may be due or may thereafter become due the Contractor under the Contract or any other contract between the City and the Contractor. If the Procurement Commissioner shall secure materials, equipment, and labor to complete the work under the Contract, or if the Procurement Commissioner shall terminate this Contract, the Procurement Commissioner shall have the right to take possession, for the purpose of completing the work under the Contract, of all materials, tools, appliances, and equipment on the Project site, intended for use in the performance of the Contract. The Contractor hereby assigns to the City (and each Subcontract shall require each Subcontractor to assign) all right, title, and interest of the Contractor in and to such materials, tools, appliances, and equipment. The failure of the City to exercise any of the remedies herein provided shall not preclude the resort by the City to any other remedy available to the City arising out of the Contractor's default.

f. The use of any specific remedy herein provided shall not bar subsequent or concurrent resort to any other remedy available to the City at law or in equity, for the recovery of damages or otherwise, on account of such default, or in the event of any other default by the Contractor.

g. The Contractor and its surety shall pay to the City on demand, all loss, expense, cost or damage suffered or incurred by the City by reason of any default.

33. Subcontracts. Within fifteen (15) days after execution of the Contract, the Contractor shall submit in writing to the Project Manager the names of all Subcontractors who will perform any work on the Contract or who will supply any materials or equipment for the Contract. All proposed Subcontractors who have not been pre-approved by the Department may be approved by the Project Manager if in his or her opinion such proposed Subcontractor is reliable, Responsible and competent to perform the work in compliance with the Contract Documents. The City, acting in its sole discretion, reserves the right to reject any Subcontractor. The City shall have no liability to the Contractor for additional compensation under the Contract, or otherwise, in connection with the substitution of a Subcontractor for any proposed subcontractor rejected by the City pursuant to this Paragraph 33. The Contractor shall be as fully responsible to the City for the acts and omissions of its

Subcontractors and Persons either directly or indirectly employed by them, as it is for the acts and omissions of the Contractor and Persons directly or indirectly employed by the Contractor. The City and the Contractor specifically understand and intend, and acknowledge and agree that no Subcontractor utilized by the Contractor shall have any right or claim against the City or the Department to any monies due and owing to the Contractor for the performance of work under the Contract. Each Subcontract for any portion of the work is hereby assigned to the City provided that (a) such assignment is effective only after termination of the Contract by the City and only for a Subcontract which the City, acting in its sole discretion, accepts by issuing notice to such Subcontractor and to the Contractor; and (b) such assignment, if exercised, is subject to the prior rights of the surety, if any, obligated under a bond relating to this Contract. The exercise of the foregoing option for an assignment shall be in the City's sole discretion, the City having no duty or obligation to the Contractor, such Subcontractor or any surety, to exercise or decline to exercise the foregoing option for an assignment. The Contractor shall incorporate the foregoing option for an assignment into each Subcontract for any portion of the work.

34. Permits and Licenses. Unless otherwise noted elsewhere, the Contractor shall obtain all permits and licenses required by the City or pursuant to Applicable Law in connection with the performance of all or any part of the work under the Contract, unless otherwise specifically directed. The Contractor will be required to pay the current fee for such permits and licenses required in connection with all or any portion of the work under the Contract, including any permits and licenses required in connection with any equipment, system or component forming part of the work.

35. Co-operation and Coordination with other Contractors.

a. The Contractor shall have the duty to co-operate and coordinate with any other contractors on other work which is being performed concurrently on or adjacent to the Project site, including specifically PGW, or its contractors or any other non-City utilities or authorities, and shall afford reasonable facilities and access to them. The Project Manager will decide any matters in dispute as to the performance of the work, including access to the Project site and priority of performance on either side of any division line between contiguous sections of the Project site where the Contractor and another contractor each work.

b. Where the work or any portion thereof is performed by the Contractor as part of a "multiple-prime" project, or in conjunction or combination with other "prime" contractors, the Contractor shall have the duty to cooperate and coordinate its work with the work of each of the other prime contractors. The Contractor shall further have a duty not to delay, disrupt, interfere with, or otherwise retard the progress of the work of any of the other prime contractors.

c. It is expressly understood by the Contractor that, on "multiple-prime" projects, the City relies primarily, but not exclusively, upon the organization, management, skill, cooperation and efficiency of the "Contractor for general construction" (unless a different Contractor is otherwise designated in the General Bidding and Contract Requirements or the Technical Specifications) to oversee, coordinate, and plan the work of all the other prime contractors, including, but not limited to, the prime contractors for electrical, mechanical, HVAC, and plumbing work, so as to complete the work under all of the prime contracts in a timely and efficient manner. The Contractor therefore expressly recognizes that the "Contractor for general construction" shall be the coordinating Contractor for all aspects of the multiple-prime contract work, including the scheduling of all such work. The Contractor shall have an explicit duty on "multiple-prime" projects to rely primarily upon the organization, management, skill, cooperation and efficiency of the "Contractor for general construction" to oversee, coordinate, and plan its work with the work of all of the other prime contractors, so as to ensure completion of the work under all of the contracts, including the Contract, in a timely and efficient manner and without disruption and interference. It is expressly understood by the Contractor, however, that the City is also relying upon the organization, management, skill, cooperation and efficiency of the Contractor so as to ensure completion of the work under the Contract in a timely and efficient manner and without disruption and interference.

d. It is expressly understood by the Contractor that time is of the essence of this Contract. The Contractor agrees to diligently prosecute its work in coordination and cooperation with the work of the other prime contractors and under the coordination of the "Contractor for general construction," without delay,

interference, or disruption, so as to ensure the completion of the Contract work in a timely and efficient manner and in conformity with the schedule approved by the City under the Contract. In the event that the Contractor shall unnecessarily delay, disrupt, or interfere with the work of any of the other prime contractors, the Contractor shall be liable for the payment of all costs and expenses incurred by such prime contractor or prime contractors on account of such delay, disruption, or interference. The Contractor accordingly authorizes the City to deduct the amount of such costs and expenses from any monies due and owing to the Contractor under the Contract. The Contractor shall further assume all liability, financial or otherwise, in connection with its Contract and shall protect, defend, and hold harmless the City from and against any and all damages or claims that may arise because of inconvenience, delay, interference, disruption, or loss experienced by the Contractor because of the presence and operations of other prime contractors working within the limits of the same multiple-prime project.

e. The provisions of this Paragraph 35 shall be read in conjunction with any provisions in the Technical Specifications, the Proposal, and the Plans, and, notwithstanding Paragraph 95 of these Standard Contract Requirements, the provisions of this Paragraph 35 shall take precedence over any other provisions in the Technical Specifications respecting the "coordination and cooperation" among prime contractors on a "multiple-prime" project, except where such other provisions shall impose greater duties upon the Contractor for coordination and cooperation.

36. Clean-up of Project Site. The Contractor and its Subcontractors shall remove all rubbish or refuse and all unused materials and tools from the Project site daily, if required by the Project Manager, and as the work progresses the Contractor shall carefully clean and keep the Project site clean from such rubbish and refuse. The Contractor shall furnish to the Project Manager upon request all documentation regarding the proper disposal of all rubbish, soil, refuse, and other debris. Before the City will approve the completion of the work under the Contract, the Project site and any other place or places affected by the work shall be thoroughly cleared of all construction and other debris and dust, and left clean, free from debris, construction plant, buildings, and materials; fit for travel or other proper use; and in as good condition as existed before the work was begun. The Contractor shall resod or plant anew any grass plot or plots disturbed, and replace any shrubbery destroyed. Structures shall be broom clean, free from stains, spots or other blemishes, and ready for use, and all glass shall be washed. The clean-up work shall be governed by the record of existing conditions made and filed with the Department prior to the commencement of work.

37. Maintenance after Completion and Contractor's Guarantee.

a. The Contractor shall guarantee the work of the Contract against defects in materials and workmanship for a period of one (1) year from the date of completion and acceptance of the work by the City, unless a longer period is specified, and shall guarantee and warrant that all equipment shall perform in accordance with the specifications of the manufacturer and in accordance with the Technical Specifications. When individual items of the Contract, including equipment, are formally accepted in writing by the Project Manager and used or operated by the City prior to the completion of the total work under the Contract, the period of guarantee for such items shall be calculated from the date of final written acceptance of such items, provided, however, that the item of work and equipment is used or operated by the City for a period of ninety (90) consecutive days following the date of acceptance without the occurrence of any defects, breakdowns, or faulty operation. Paving, including curbs and footway, shall be similarly guaranteed for a period of five (5) years from the date of completion and acceptance of the work by the City.

b. If, within such one (1) year or five (5) year period of guarantee, any of the work shall prove to be defective either in materials or workmanship, or if damage occurs by settlement of the backfill placed under this Contract, or if any part or parts of any equipment furnished shall prove to be inadequate, insufficient, or defective, either in design, materials, or workmanship, the Contractor shall immediately, upon demand of the Project Manager (whose decision as to such inadequacy, insufficiency, or defectiveness shall be binding and conclusive upon the Parties hereto), repair and replace the same in accordance with the Plans and Technical Specifications, and shall repair and replace any damage to other parts or structures at the Contractor's sole cost and expense, without cost or expense to the City, to the approval and satisfaction of the Project Manager.

c. Should the Contractor or its sureties fail to comply with the orders of the Project Manager to replace or repair defective materials, workmanship, or equipment as aforesaid within the time specified in

subparagraph (a) above, the Operating Commissioner shall notify the Procurement Commissioner, who shall have the right to declare the Contractor or its surety, or both, in default and to proceed with the correction of the defect in accordance with the methods provided herein.

38. Access to Accounting Records. The Contractor shall certify that all materials, equipment, and labor charged to the City are accounted for and shall keep such full and detailed accounts as may be necessary for proper financial management under this Contract. The Contractor shall retain, and shall provide the City and its representatives access to, all records, books of account, correspondence, instructions, Shop Drawings, receipts, vouchers, memoranda, and similar data and documentation pertaining to the Contract for a period of five (5) years following final payment, or earlier termination of the Contract, or for such longer period as may be required by law; however, if any litigation, claim or audit is commenced prior to expiration of said five (5) year period, then the records shall be retained until all litigation, claims or audit findings have been completely terminated or resolved, without right of further appeal, or if Applicable Law requires a longer period, then the records shall be retained for such longer period. From time to time during the performance of the work under the Contract, and for a period of five (5) years after the completion of the work under the Contract, the City may audit any and all aspects of the Contractor's performance under the Contract, including but not limited to its billings and invoices. Representatives, agents or contractors of the City, including the Department, or other authorized City representatives including, without limitation, the City Controller may conduct audits. If requested by the City, the Contractor shall submit to the City all vouchers or invoices presented for payment pursuant to the Contract, all cancelled checks, work papers, books, records and accounts upon which the vouchers or invoices are based, and any and all documentation and justification in support of expenditures or fees incurred pursuant to the Contract. All books, invoices, vouchers, records, reports, cancelled checks and other materials shall be subject to periodic review or audit by the City. All work, equipment, materials, systems, subassemblies, tools appliances and plant shall be subject to inspection and review by City, federal and state representatives, as may be applicable, or their designees, at the offices of the Contractor in the City, or in another location with the City's consent. The Contractor shall cooperate with all City, state and federal inspections and reviews conducted in accordance with the provisions of the Contract. Such inspection and review of the Contractor's work hereunder shall be in the sole discretion of the inspecting or reviewing entity. Such inspection or review may include, without limitation, review of staffing ratios and job descriptions, and meetings with any of the Contractor's staff who are either directly or indirectly involved in providing all or any portion of the work hereunder. The Contractor shall make available, within the City at reasonable times during the performance of the work hereunder and for the period set forth above in this Paragraph 38, all records pertaining to the Contract for the purpose of inspection, audit or reproduction by any authorized representative (including any agent or contractor and the City Controller) of the City, the Commonwealth Auditor General, and any other federal or state auditors, as may be applicable, at no additional cost to the City.

39. Sales and Use Tax; Federal Excise Tax.

a. The City is not subject to federal, state or local sales or use tax or federal excise tax. Contractor hereby assigns to City all of its right, title and interest in any sales or use tax which may be refunded as a result or the purchase of any materials in connection with the Contract, and the Contractor, unless directed by the City, shall not file a claim for any sales or use tax refund subject to this assignment. The Contractor authorizes the City, or its agent, in its own name or in the name of the Contractor, to file a claim for a refund of any sales or use tax subject to this assignment. To the extent it may be applicable to the work under this Contract, the Contractor covenants and agrees that it shall not bill the City for or otherwise pass-through to the City for payment any Federal Excise Tax paid in connection with the work under this Contract; in consideration of the Contractor's foregoing covenant, the City hereby consents to any filing by the Contractor for a refund of any Federal Excise Tax paid in connection with the work under this Contract.

b. The Contractor agrees to include the above referenced Paragraph in any Subcontracts with Subcontractors.

D. ADMINISTRATION, MEASUREMENT, AND PAYMENT

40. Status and Authority of the Project Manager. The Project Manager shall be responsible for the general direction of the work to be performed under the Contract, the interpretation of the Plans and General Bidding and Contract Requirements, and the Technical Specifications, the ordering of additions to or deductions from the work, and the determination of procedure. The Project Manager shall give all orders and directions contemplated under the Contract. The Project Manager shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under the Contract, and shall have authority and sole discretion to reject all work and materials which in his or her opinion do not conform to the requirements of the Contract. The Project Manager shall determine all other questions that may arise in relation to the execution of the work and shall have the authority to halt the work whenever such action may be necessary to secure the safe and proper execution of the Contract. The Project Manager shall adjust and decide any differences or conflicts that may arise between the Contractor and other prime contractors for the performance of concurrent work. The provisions of this Paragraph are not intended to supersede or limit the provisions of Paragraph 35.

41. Plans and Technical Specifications. The Plans, with all notes thereon, and the Technical Specifications are intended to be consistent with one another and of equal force and effect, and in the event the Contractor should believe that an apparent discrepancy may exist between the Plans and the Technical Specifications, the Contractor shall bring such apparent discrepancy to the attention of the Project Manager, who will interpret their meaning. The Plans give general dimensions and sizes, and such details as are required to cover special features. Figures shall have preference over scale in reading dimensions. The Contractor shall maintain at the site of the work for use of the Project Manager or Inspector one record copy of the Plans and Technical Specifications, and Change Orders and other Contract modifications, and one record copy of all approved Shop Drawings and other submittals, including the construction schedule.

42. Shop Drawings and Working Drawings. The Contractor shall prepare and submit to the Department or the Project Manager, as specified in the Technical Specifications or as required by the Project Manager, all Shop Drawings and Working Drawings, which shall include all details required to carry out the City's Plans and Technical Specifications. By approving and preparing Shop Drawings and other similar submittals, the Contractor represents that it has determined and verified materials, field measurements, and field construction criteria related thereto and has checked and coordinated the information contained within such Shop Drawings and submittals with the requirements of the Contract Documents. The Contractor shall not proceed with any portion of the work until the Shop Drawings or other submittal which governs the work has been approved. The Shop or Working Drawings shall conform to standards specified by the Department. Upon correction, if found necessary, and after approval, the Contractor shall furnish three (3) or more prints of the Shop Drawings or Working Drawings for construction purposes. After the completion of the work, the documents shall be delivered to and become the sole property of the City for its unrestricted use. The approval of Shop Drawings shall not relieve the Contractor of responsibility for the proper fit of the work, nor for its completion pursuant the Contract.

43. Lines and Grades – City Datum. Vertical dimensions are given in United States standard feet and fractions thereof. Unless otherwise stated, elevations preceded by a plus (+) or a minus (-) sign refer respectively to distances above or below the established City Datum, which is two and one quarter (2.25) feet above mean high water in the Delaware River at Chestnut Street, Philadelphia. Dimensions locating buildings and structures shall be verified and checked in the field by the Contractor before proceeding with construction details affected thereby. Curb line and paving stakes giving the requisite basic data will be set by the City. The price for the setting of these lines shall be at the predetermined rate as set by the Board of Surveyors and made part of the public record or as stated in the Contract Documents. The Contractor will be held responsible for the proper and correct extensions of measurements from such data, and the correctness of work based thereon. The Contractor will be held responsible for the preservation of stakes, benchmarks, and survey monuments, until authorized to remove them. Should any stakes be disturbed, the cost of replacing them will be charged against the Contractor at the then current fee as determined by the City's district surveyor and regulator, to be deducted from the Final Estimate. All survey monuments or benchmarks moved, covered or uprooted in the course of performance of the work of this Contract will be reset by the City at the expense of the Contractor, at the then current fee per monument or benchmark, as determined by the City's district surveyor and regulator. Said cost shall be deducted

from the Final Estimate. The Contractor shall provide reasonable and necessary opportunities and facilities for setting points and taking measurements. The Contractor shall not proceed until it has made timely demand upon the District surveyor and regulator for, and has received from him or her, such points and from the resident engineer such instructions as may be necessary for the progress of the work. Any work improperly done without lines or levels or instructions shall be removed and replaced by the Contractor at its own expense. Failure to do so may be considered a default under the Contract.

44. Contract Amount. The total amount which is to be paid by the City to the Contractor for the work performed and materials supplied under the Contract shall in no event exceed the sum of the Contractor's Quote price, plus a contingency fund of approximately ten percent (10%) of the Contractor's Quote price (to be specified by the Procurement Department upon the award of the Contract), which fund is intended to cover additional compensation which may be due to the Contractor as a result of Change Orders issued pursuant to Paragraphs 48 and 49 below, as such sum may be increased or reduced pursuant to a Change Order or Change Orders, or pursuant to an Amendment. The City shall specify the contract amount in the Notice of Contract Award. The Contractor acknowledges that the City's liability under the Contract shall be limited by the amounts which shall have been or may be from time to time appropriated by City Council. The City reserves the right to authorize the Contractor to commence work prior to appropriation of the total amount of the Contract, in which case the City shall give the Contractor notice thereof, and the City shall not be liable hereunder in any amount greater than that appropriated therefor by City Council. Payments will only be made payable to the Contractor as shown on the purchase order; the invoice must reflect this same Contractor name as the entity to "pay to". For any bids awarded for work to begin on or after July 1, 2019, the City has instituted a policy of making all of its payments through electronic deposits into the awarded Contractor's designated bank account. Before any City payments are made, the Contractor will be required to supply the City with the information necessary for the City to initiate electronic payments by completing one of the electronic payment processing enrollment forms available on the City's vendor portal at <https://secure.phila.gov/finance/vendorpayments>. Applicants awarded a contract before July 1, 2019 are encouraged to complete one of the electronic payment processing enrollment forms before the conversion to electronic payments becomes mandatory. The City intends to stop issuing paper checks. The foregoing notwithstanding, nothing herein shall be construed to limit the City's ability to make payments by assessment bills as provided in paragraph 57, below.

45. Scope of Payments. Payment for the cost of all work, labor, materials, and services required to complete the work of the Contract as shown in the Plans, Technical Specifications, Standard Details and Specifications, or as otherwise specified (except where payment is otherwise specifically provided), will be made at the unit prices or lump sum prices contained in the Quote. The prices contained in the Quote shall each cover the supply and installation, in a good, sound, substantial and workmanlike manner, of everything required for and incidental to the full completion of the work of that item as called for by the Plans, Technical Specifications, Standard Details and Specifications, or as otherwise specified, including its proportionate share of the expense of all plants, tools, and equipment required; the cost of all bonds, fees, and permits; of all administration, superintendence, and insurance; and of any loss or damages arising out of the nature of the work, from the action of the elements, from any unforeseen difficulties encountered in the prosecution of the work, and from risks of all kinds connected with the work, except as otherwise specifically provided in the Contract Documents.

46. Quantities are Approximate. When quantities of the various classes or components of work and materials required under the Contract are stated in the Bid Solicitation or elsewhere, such quantities are estimated and approximate, except where otherwise stated to the contrary. When stated in the Bid Solicitation or a Seller's Proposal, they are given only for the purpose of comparing the Quotes on a uniform basis. The City does not guarantee that such estimated quantities will correspond to the actual quantities ultimately required to complete the work, and the City will not allow any claim for damages, for anticipated profit, or for loss of profit of the Contractor in the event that actual quantities used to complete the work under the Contract vary from the estimates in the Bid Solicitation. The Department reserves the right to increase or decrease the quantities or to entirely omit any of the items as contained in the Bid Solicitation to the extent found necessary by the Project Manager, provided that the aggregate cost of the work performed is within the limit of funds fixed in the Contract.

47. Changes.

a. If changes to any portion of the work or the requirements of the Plans, Technical Specifications or Standard Details and Specifications are deemed necessary by the Project Manager, in order to carry out and complete the work covered by the Contract Documents, the Project Manager may by notice to the Contractor order alterations to or changes in the work covered by the Contract Documents, and the Contractor shall promptly comply with such orders. No changes or alterations to the work shall be made or performed by the Contractor except upon prior written orders from the Project Manager authorizing the change and a Change Order fixing the additional compensation or deduction therefor, except where the order authorizing the change states that the method of compensation or deduction shall be determined at a later date.

b. Where the Project Manager pursuant to Paragraph 47(a) orders additions to or deductions from the amount of work called for by the Plans or Technical Specifications, or where changes are ordered in writing in the design of the work or the requirements of the Plans or Technical Specifications which increase or reduce the cost of the work to the Contractor, adjustment in compensation therefor shall be made to cover the additional work required or the work reduced, in accordance with a written order of the Project Manager, as follows:

1. For work for which applicable unit prices are bid in the Bid Solicitation, payment or deduction shall be made in accordance with the prices bid. When the final quantity of work performed on a unit price bid item differs substantially (twenty-five percent (25%) or more) from the Bid Solicitation quantity, the Project Manager will review the price contained in the Quote and the actual work performed by the Contractor and may, in his or her sole discretion, determine if an adjustment is appropriate. Where the Project Manager deems an adjustment appropriate, the Contractor shall:

i. substantiate that the Quote unit price remains fair and reasonable despite the substantial change in quantity; or

ii. in the case of substantial underrun compared to the previously estimated quantity, negotiate a revised unit price for all the work actually completed; or

iii. in the case of substantial overage compared to the previously estimated quantity, negotiate a revised unit price for that portion of the actual work completed in excess of one hundred twenty-five (125%) of the Quote quantity.

This provision shall not be deemed, however, to vest in the Contractor any rights to any adjustment.

2. For work not covered by the unit prices contained in the Quote, payment or deduction shall be made at the applicable contingent prices named for work.

3. For work for which neither the unit prices bid nor the prices for contingent work are applicable, payment or deduction shall be made in accordance with Paragraphs 48 and 49 below.

48. Change Orders by Agreement.

a. If alterations or changes increase the cost of the work to the Contractor, additional compensation will be allowed by the City, based upon unit prices, contingent prices, or by a detailed cost proposal submitted by the Contractor to the Project Manager, negotiated by the Department and agreed to by the Contractor, or by Force Account, in accordance with Paragraph 51 below. The cost proposal shall detail the costs of materials, labor, overhead and profit, as well as any proposed changes to the Contract time. If such alterations or changes reduce the cost of the work to the Contractor, the amount of such reduction may be deducted by the City, and any such reduction may be based upon unit prices contained in the Quote for the performance of the deleted items of work, upon any Subcontract already entered into by the Contractor for the performance of the deleted item of work, or upon a detailed cost proposal submitted by the Contractor to the Project Manager and negotiated by the Department. Credit Change Orders will include the same mark-ups as chargeable Change Orders. The Contractor shall submit its cost proposal for the change or alteration within twenty (20) days after the Project Manager gives notification to the Contractor of the intended change or

alteration. Thereafter, a formal Change Order will be executed and signed by the Department reflecting the change or alteration and the additional cost or reduction negotiated by both Parties.

b. A Change Order negotiated and agreed to by the Contractor and the City and then executed as a Change Order by the City and the Contractor shall be deemed to cover all of the Contractor's costs associated with the change or alteration to the work, as reflected in the Change Order, including all costs and expenses incurred by the Contractor for time, material, labor, and extended or field office or home office overhead. Any Contract time extension granted by the City for the Change Order shall be the sole time extension granted for the change or alteration and for which Contractor is entitled, and no other time extension shall be granted by the City in connection with the work reflected in such Change Order. No loss of profit on account of any changes or alterations to the work or on account of work not executed or performed by the Contractor will be allowed, except that the Contractor may be entitled to an extension of time on account of changes or alterations to the work, provided that the Contractor satisfies the requirements of Paragraph 25 above.

c. The Contractor agrees and acknowledges that after a Change Order is negotiated and agreed to by the Parties and then executed by the City, the Change Order shall operate as a full and complete waiver and release of any and all claims of the Contractor related to or arising out of such change or alteration, whether such change or alteration is considered individually or cumulatively, including, but not limited to, any claim by the Contractor for extended home office overhead, extended field office overhead, time-impact costs, schedule delay costs, acceleration costs, compression costs, loss of productivity costs, extra work, additional work, and interference costs, or any combination of such costs.

49. Disputed Change Orders. If, after submission of a cost proposal, the Department and the Contractor cannot agree upon a price within a reasonable amount of time, or if the Contractor disputes the applicability of unit prices or contingent prices, the Project Manager may direct the Contractor to perform or complete the extra or additional work notwithstanding that there is no agreement between the Parties as to price, and the Contractor shall proceed to perform the work so as to avoid any delay or interference to the progress of its work. In all such cases, the Contractor shall promptly comply and maintain proper force account time sheets and records, in accordance with Paragraph 51 below. The Project Manager shall also process a Change Order in an amount that he or she determines to be reasonable, necessary and appropriate. If the Contractor does not agree with the amount processed by this Disputed Change Order, the Contractor must notify the Project Manager within ten (10) days of issuance of the Disputed Change Order that it is proceeding under protest and that it reserves the right to a claim for the cost of the disputed work. In all cases of Disputed Change Orders which are protested by the Contractor, the Contractor shall submit to the Project Manager, within five (5) days after completion of the work, a detailed cost proposal which shall detail the costs of materials, labor, overhead and profit, actually expended by the Contractor for the work, as well as any changes to the Contract time.

50. Disputed Work. If the Contractor is of the opinion that any work required or ordered by the Project Manager violates the terms and provisions of the Contract or is not called for under the Contract Documents, the Contractor shall promptly notify the Project Manager, in writing, of its contentions with respect thereto and shall request a final determination thereof. If the Project Manager determines that the work in question is work required under the Contract Documents and is not "extra" work, or that the order complained of is proper, the Project Manager will direct the Contractor to proceed with the work in question. In all such cases, the Contractor shall promptly comply and maintain proper force account time sheets and records, in accordance with Paragraph 51 below. In order to preserve its right to claim compensation for such disputed work or damages resulting from compliance with such an order, the Contractor must notify the Project Manager in writing, within five (5) days of receiving notice from the Project Manager of this final determination, that the work is being performed or that the determination and direction is being complied with under protest. Furthermore, in order to claim an adjustment in the Contract price for work performed under protest, the Contractor must submit in writing to the Project Manager, within five (5) days after completion of the work in question, the nature and precise amount of compensation sought for the work, as well as copies of all force account time sheets and records compiled by the Contractor for the work. Failure of the Contractor to so notify the Project Manager of both its protest and its claim for compensation shall be deemed as a full and final release and waiver of any claim for extra compensation or damages therefor.

51. Force Account.

a. Payment under Force Account will be for the reasonable, actual and necessary direct cost of the work in accordance with the orders of the Project Manager, and in addition thereto the percentage of such cost hereafter stated. "Reasonable, actual and necessary direct cost" shall be deemed to include the following:

1. Wages of forepersons, equipment operators and skilled and semi-skilled and common laborers directly assigned to the specific operation at actual payroll rate of wages per hour and actual fringe benefits paid, labor taxes as established by law, and workers compensation and employers liability insurance, for each hour that such employees are actually engaged in the performance of the authorized work and, if directed, overtime, as provided by existing laws and regulations, as well as other insurance premium expenses, including but not limited to premiums for general liability insurance, where the such insurance premium expenses are a direct function of the foregoing wages, but only to the extent such insurance premium expenses derive solely from the foregoing wages.

2. The reasonable actual expenditure for materials (including sales tax paid, if applicable, and except as provided to the contrary in Paragraph 39 above), used up or incorporated in the work.

3. For any equipment, including machinery and trucks, mutually deemed as necessary for the performance of the work, the Project Manager shall allow the Contractor reasonable rental rates, computed as follows: (i) for all equipment rented, the Contractor will be reimbursed the reasonable actual costs based upon the receipts provided, plus an allowance for operating cost as provided in subparagraph (ii) of this subparagraph 51(a)(3).; (ii) for all equipment owned, including pumps and compressors, a reasonable hourly rate will be determined by using the reasonable monthly rental rates taken from the current edition (with updated supplements) of the Rental Rate Blue Book for Construction Equipment and dividing it by one hundred seventy-six (176); an allowance may be made for operating costs for each and every hour the machinery or equipment is actually operated in accordance with the rates listed in the aforesaid rental book; if the machinery or equipment is required to be at the work site, but is not operated, the Contractor may be compensated at the reasonable hourly rental rate, exclusive of operating costs. The Contractor will be allowed to add to the above rates the reasonable predominate areas adjustment percentage for the state as shown on the area adjustment map contained in the Rental Rate Blue Book for Construction equipment. In the case of any machinery or equipment not referred to in the Rental Rate Blue Book for Construction Equipment, a monthly rental rate shall be computed on the basis of an amount that is the equivalent of six percent (6%) of the manufacturer's list price for the sale (new) of such equipment; the hourly rate in such cases will be determined by dividing the monthly rate by one hundred sixty (160) when actually operating, and by one hundred seventy-six (176) when at the Project site, but not operating, to which no percentage shall be added. The above rates shall be for the time such equipment is required on the Project site for the performance of force account work exclusively.

b. To the reasonable, actual and necessary direct cost of the work done under Force Account as noted above, twenty percent (20%) will be added to the expenditure for labor and fifteen percent (15%) will be added to the expenditure for materials, excluding sales tax. No additions will be allowed for equipment costs, whether such equipment is rental or Contractor-owned. These percentages shall be deemed to cover the cost of heat, light, bond or bonds, use and up keep of small hand tools, administration, engineering, field and office superintendence, home office and site overhead, extended general conditions, non-payroll taxes, insurance (including general liability and non-payroll insurance), all loss, damage, risk and expenses incidental to the work and profit. The Contractor shall have no claim in excess of the above, such payments being in full compensation for the performance of such work and the furnishing of such materials and for all expense in connection therewith and incidental thereto.

c. Should the Contractor subcontract any portion of the work, with the prior written approval of the Project Manager, payment for that portion will be computed as the reasonable, actual and necessary costs defined above (exclusive of any profit to the Subcontractors), plus the percentages allowed, plus eight percent (8%) mark-up of the total paid to the Subcontractor. No additional percentage mark-up by or for any additional tiers of Subcontractors will be allowed.

d. The Contractor shall submit daily a statement in duplicate of work done on a Force Account

basis within twenty-four (24) hours of the time the work is done, and representatives of the Project Manager and the Contractor shall make daily comparison of the time and rates of labor, material used, etc., as shown therein. After correction, if necessary, this comparison shall be signed by each and filed with the Project Manager and the Contractor. The Contractor shall submit to the Project Manager monthly, prior to each Current Estimate, four (4) copies of an itemized statement of the amount and value of labor and materials furnished, accompanied by the original invoices for work performed under a Subcontract, and by an affidavit certifying the correctness of such statement. The Project Manager shall have access to any books, vouchers, time sheets, records, and memoranda showing the labor employed and the materials actually used on the specific operation and the actual net cost thereof, for the Contractor and any Subcontractor(s). Daily force account time sheets must include the name and job titles of employees, actual starting and quitting times, and the total number of hours worked each day by each employee.

e. Work done under Force Account shall be subject to all of the requirements of the Contract. It shall be prosecuted in an orderly, reasonable and economical way, and the prices paid for labor and material and the method of prosecuting the work shall be subject to the approval of the Project Manager. Neither work nor material will be paid for under Force Account unless it is ordered as such in writing.

52. Lump Sum Bid Breakdown; Applications for Payment. In order to assist the Project Manager in estimating approximate quantities and the value of the work performed, the Contractor shall furnish in writing to the Project Manager within thirty (30) days after the issuance of the Notice to Proceed, an apportionment of any lump sum Quote (the "Lump Sum Bid Breakdown") showing in detail its component parts. The Lump Sum Bid Breakdown shall be subject to the approval of the Project Manager. In addition, the Contractor shall furnish within sixty (60) days of the commencement of the work, and thereafter every thirty (30) days until Substantial Completion of the work, an application for payment (the "Application for Payment") which shall set forth in detail the approximate quantities and value of the work performed as of the date of the Application for Payment in conformity with the approved Lump Sum Bid Breakdown. The Contractor shall certify that the information set forth in the Application for Payment is true, correct and complete, and accurately and fairly represents the work performed to date by the Contractor in accordance with the Contract Documents.

53. Current Estimates.

a. The Project Manager, after receipt of an Application for Payment, shall prepare a current estimate (the "Current Estimate") of the approximate quantities and value of the work performed at intervals of about one (1) month during the progress of the work, except that the first Current Estimate may be prepared within sixty (60) days of the commencement of work under the Contract, provided at all times, however, that the Contractor is in compliance with all of the requirements of the Contract and the value of the work done during the time covered by the Current Estimate exceeds the amount of fifteen hundred dollars (\$1,500). The City shall make payments to the Contractor on the basis of the Current Estimates, when approved by the Project Manager. The City shall have no obligation to pay interest on the amount due under any Current Estimate, any provision of Applicable Law to the contrary notwithstanding. Payments on uncompleted items will be for the value of work done and materials furnished, as apportioned by the Project Manager. The Current Estimates are approximate only, and subject to correction in the Final Estimate. The payment of a Current Estimate shall not bind the City to the acceptance of any materials furnished or work performed by the Contractor. The City shall not be precluded from later contesting a Current Estimate and shall enjoy every legal defense, or other claim or counter-claim, in recoupment or otherwise, by reason of the character, quality, and quantity of the work and materials covered by a Current Estimate, notwithstanding payment of a Current Estimate.

b. The City may withhold payment for deficient items according to the terms of the Contract. The City shall pay the Contractor according to the provisions of 62 Pa. C.S.A. §§ 3931 et seq., as amended, Subchapter D, Prompt Payment Schedules, for all other items which appear on the Application for Payment and have been satisfactorily completed. If the City withholds payment from the Contractor for a deficient item, it shall notify the Contractor of the deficient item within sixty (60) calendar days of the date that the City received the Application for Payment.

c. Subject to the provisions of subparagraph (e) below, Current Estimates on Contracts which include the furnishing or installing of electrical, mechanical, plumbing, heating, and other equipment, systems or

components especially fabricated as part of the work under the Contract, which are subject to mechanical or electrical test, will include payment of invoice or invoices previously paid by the Contractor, not to exceed ninety percent (90%) of the amount shown on the Lump Sum Bid Breakdown approved by the Project Manager for such equipment, systems or components, when such equipment is delivered to the site, City property, or a bonded warehouse approved by the Project Manager. The City shall pay the balance of ten percent (10%) upon completion of successful testing of such equipment, systems or components, and acceptance thereof by the City. If no invoice is available, the City will pay the Contractor fifty percent (50%) of the cost of such specially fabricated equipment, systems or components, in conformity with the Lump Sum Bid Breakdown when delivered to the site, City property, or a bonded warehouse approved by the Project Manager, and an additional forty percent (40%) when such equipment, systems or components are installed and ready for test. The City shall pay the balance of ten percent (10%) upon completion of successful testing of such equipment, systems or components, and acceptance thereof by the City. The Current Estimates described in this subparagraph shall be reduced by the retainage required under Paragraph 54 below.

d. Subject to the provisions of subparagraph (e) below, Current Estimates may also include, when authorized by the Project Manager, an amount equal to the actual cost of specially fabricated materials and equipment not subject to electrical or mechanical test, furnished but not incorporated into the work, provided that the quantity allowed does not exceed the corresponding quantity estimated in the Contract Documents. The Current Estimates described in this subparagraph shall be reduced by the retainage called for in Paragraph 54 below.

e. Before including payments for equipment and materials described in subparagraphs (c) and (d) above in a Current Estimate, the Project Manager must be satisfied that:

1. the equipment and materials are properly stored, insured and protected through appropriate security measures;
2. paid invoices of suppliers support the Contractor's actual net cost for the equipment and materials;
3. the equipment and materials will be incorporated in the work under this Contract within a reasonable period; and
4. the Contractor assumes full responsibility for the safe storage and protection of the equipment and materials. If the equipment and materials paid for hereunder are damaged, stolen or prove to be unacceptable, the payment made therefor shall be deducted from subsequent estimates and payments unless the equipment and materials are promptly replaced to the satisfaction of the Project Manager and in conformity with the requirements of the Contract Documents. Equipment and materials shall be available for inspection and inventory at the storage site by the Project Manager or his or her authorized representative at all times. Upon payment, title to all such equipment and materials shall be vested in the City, free and clear of any and all debts, claims, liens, mortgages, taxes and encumbrances. The Contractor, at its own expense, shall execute such documents and take such other steps as reasonably required by the City to vest the aforesaid title in the City.

f. The Contractor for itself and any and all Subcontractors acknowledges and agrees that neither the Contractor nor any Subcontractor has any right to file a mechanics', materialman's or other lien against the Project site under the Pennsylvania Mechanics' Lien Law of 1963, Act of August 24, 1963, P.L. 1175, 49 P.S. § 1101 *et seq.*, as amended, or under any other law.

54. Retainage. Act 57 of 1998, 62 Pa.C.S. §3921, as amended, shall govern the withholding of retainage on the Contract. Provided that the Contractor is making satisfactory progress and is in compliance with all of the requirements of the Contract and there is no specific legal or other basis for the withholding of greater amounts, retainage under the Contract shall be ten percent (10%) of the amounts due the Contractor until fifty percent (50%) of the work under the Contract is completed, at which time one-half (½) of the amount then retained shall be returned to the Contractor, and thereafter five percent (5%) of the amounts due the Contractor until substantial completion of the Contract.

55. Semi-Final Estimate and Punchlist.

a. Upon substantial completion of the Contract, the Contractor shall submit an Application for Semi-Final Estimate (the "Application for Semi-Final Estimate"), which shall include a request for a semi-final inspection of the work under the Contract. The Project Manager shall make a semi-final inspection within thirty (30) days of the City's receipt of the Application for Semi-Final Estimate and request for inspection. If, based on said inspection, the City determines that the Contractor has Substantially Completed the work under the Contract, the Project Manager shall issue a certificate of Substantial Completion, which shall include the punchlist items required under subparagraph 55(b) below, and the Project Manager shall process the Semi-Final Estimate. The City shall, upon receipt of said Application for Semi-Final Estimate and upon receipt by the City of any guarantee bonds and other written warranties which may be required in accordance with the contract to ensure proper workmanship for a designated period of time, make payment on the Semi-Final Estimate within forty-five (45) days after issuance of the Certificate of Substantial Completion, except as provided in Paragraph 54 above, and less such additional sums as the City may withhold pursuant to this Paragraph 55. The City shall have the same right to withhold payment from the Semi-Final Estimate as is set forth in subparagraph 53(b) above with respect to Current Estimates. The City shall pay interest on the amount due under the Semi-Final Estimate to the extent provided by Applicable Law. Except as provided in Paragraph 54 above, the Semi-Final Estimate shall reduce the retainage withheld by the City to one and one-half (1½) times the amount required to complete any remaining uncompleted items of work, provided that the Contractor has made satisfactory progress towards completion of the Contract and is in compliance with all of the requirements of the Contract and provided there is no legal or other basis for the withholding of a greater amount. The City reserves the right to withhold additional retainage to the extent the same as is permitted under 62 Pa.C.S. § 3921, as amended.

b. Upon preparation of the Semi-Final Estimate, the Project Manager, with the assistance of the Contractor, shall list in detail and in comprehensive fashion the remaining uncompleted items of work, and a reasonable cost of completion for each item on said list, or such other basis for payment thereof as may be provided in the Contract (which ever method may apply pursuant to the Contract), in an official punchlist which shall thereafter be issued in writing to the Contractor. If the Contractor disputes any of the items on the official punchlist, the Contractor must notify the Project Manager in writing, detailing the items in dispute and the nature of its dispute, with all supporting documentation, within five (5) days after receipt of the official punchlist. The Contractor must commence work on the official punchlist within ten (10) Working Days after receipt of the official written punchlist. The Contractor shall thereafter proceed promptly and expeditiously to complete the official punchlist items, and shall give notice to the Project Manager in writing of the date on which the Contractor completes the official punchlist items. The Contractor shall perform and complete all work on the official punchlist at its sole cost and expense and at no additional cost or expense to the City, subject to payment of the Final Estimate under Paragraph 56 below. The Contractor's work in completion of the official punchlist items shall in all respects be governed by the requirements of the Contract Documents.

56. Final Estimate and Inspection. The Project Manager shall conduct final inspection of the work, including the completion of all punchlist items, after completion of all punchlist items to the Project Manager's satisfaction and within thirty days (30) of receipt of the Contractor's formal written request for such final inspection and application for Final Estimate (the "Application for Final Estimate") (which request the Contractor shall not make until completion of the punchlist items). After the punchlist inspection, and provided that all the requirements of the Contract Documents have been complied with to the satisfaction of the Project Manager, including completion of all official punchlist items, the Project Manager will prepare a final payment (the "Final Estimate") and, based upon the Final Estimate, the City will pay the balance due to the Contractor, after all allowable additions and deductions have been made, by checks drawn by the City Treasurer or assessment bills as provided in Paragraph 57 below, or a combination of these two methods of payment. The foregoing to the contrary notwithstanding, the City shall have the same right to withhold payment from the Final Estimate as is set forth in subparagraph 53(b) above with respect to Current Estimates.

57. Assessment Bills. Where required by ordinance of the City Council of the City, the Contractor shall receive, and accept as payment, assessment bills against abutting property, as compensation for furnishing materials, labor, tools, and equipment, and for doing the work set forth in the Contract Documents. The Contractor shall collect such assessment bills at its own cost, and employ all legal remedies or proceedings, whether by lien, civil action, or otherwise, including recourse to the appellate courts, to which the City may be entitled. The

Contractor acknowledges and understands that the City does not in any way guarantee either the value, or the collection, of any assessment bill or bills, and that in the event of neglect to properly file and collect the assessment bill or bills, no recourse shall be had to the City by reason thereof. The Contractor hereby accepts and assumes all risk of failure to collect any such assessment bill or bills.

58. Contractor Claims.

a. Except as otherwise provided in these Standard Contract Requirements, the Contractor must notify the Project Manager in writing of any and all claims whatsoever relating to or arising out of Contractor's performance of the work under the Contract within ten (10) days of the event or occurrence giving rise to the claim, except where a shorter time is specified by the Contract Documents. The written notice of claim to the Project Manager shall provide a detailed statement of and basis for the claim, with supporting documentation attached. For purposes of this Paragraph 58, a "claim" shall mean a demand or assertion by the Contractor seeking, as a matter of right, an adjustment or interpretation of the Contract, payment of money, extension of time or other specific relief with respect to the terms and conditions of the Contract. The Project Manager will review all claims submitted by the Contractor and shall approve or reject each claim in whole or part, or shall request additional documentation in support of the claim from the Contractor.

b. The City and the Contractor hereby release and waive any and all claims against each other for consequential damages arising out of or related to the Contract and the work performed thereunder. This mutual release and waiver includes damages incurred by the Contractor for principal home office expenses, including home office overhead and the compensation of personnel stationed there, for losses of financing, business, and reputation, and for loss of profit associated with any other work, except anticipated profit arising directly from the Contract and the work thereunder. Nothing hereunder shall preclude, however, the assessment by the City of liquidated direct damages, when applicable in accordance with the Technical Specifications, General Bidding and Contract Requirements, and other applicable locations in the Contract Documents, or damages pursuant to Paragraph 25(h) above.

c. After Substantial Completion of the work under the Contract, but prior to the Contractor's acceptance of the Final Estimate, the Contractor shall notify the Project Manager in writing of any and all unresolved and previously asserted claims relating to or arising out of the work. The Contractor's written notice of claims to the Project Manager shall list the claims by number, assign a dollar value to each claim, and provide a detailed statement of each claim, with supporting documentation attached, including a copy of the notice by which the Contractor first brought the claim to the attention of the Project Manager.

d. Failure of the Contractor to notify the Project Manager of any claims in accordance with subparagraphs (a) and (c) above, and the Contractor's acceptance of and negotiation of payment under the Final Estimate under Paragraph 55 above, shall constitute and operate as a full and final release and a waiver of all such claims by the Contractor.

59. Review by Project Manager of Contractor Claims and Compulsory Non-Binding Mediation of Contractor Claims.

a. Within thirty (30) days after receipt of the Contractor's notice to the Project Manager under Paragraph 58(c) above, the Project Manager shall review all identified claims of the Contractor and shall notify the Contractor whether the claims are approved or rejected, in whole or in part.

b. Any claim of the Contractor which shall have been rejected by the Project Manager, in whole or in part, shall be subject to non-binding mediation. Mediation of the claim shall be an irrevocable condition precedent to institution of legal proceedings by the Contractor against the City with respect to such claim.

c. The Contractor must submit its demand for mediation to the Project Manager and the City of Philadelphia Law Department, c/o Chief Deputy City Solicitor, Affirmative and General Litigation Unit not later than 30 days after the Project Manager's notice of rejection. Failure of the Contractor to submit such claim to mediation within this time period shall be an absolute bar to institution of legal proceedings by the Contractor.

d. The Contractor shall submit a written timely request for mediation to the Project Manager and the City of Philadelphia Law Department, c/o Chief Deputy City Solicitor, Affirmative and General Litigation Unit. Upon submission of the claim to mediation, the City and the Contractor shall endeavor to resolve the claim by mediation in accordance with such rules as may be mutually agreed upon by the City and the Contractor.

e. The fee of the mediator, who shall be selected jointly by the parties, and the common expenses and costs incurred in connection with conduct of the mediation, shall be borne equally by the City and the Contractor. The mediation shall be conducted in the City of Philadelphia. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

60. Contractor's Liability for Services and Materials.

a. Notwithstanding the acceptance and approval by the City of any work the Contractor shall continue to be responsible for the professional quality, technical accuracy and the coordination of all work under the Contract. The Contractor shall, without additional compensation, correct any defects, deficiencies or omissions in the work.

b. The City's review, approval, or acceptance of, or payment for, any of the work performed under the Contract shall not constitute any representation, warranty, or guaranty by the City as to the substance or quality of the work reviewed, approved, or accepted, and shall not be construed to operate as a waiver or estoppel of any of the City's rights or privileges under the Contract, nor of any cause of action arising out of the performance of the Contract. No Person shall rely in any way on such review, approval or acceptance by the City. The Contractor shall be and remain liable in accordance with the Contract and Applicable Law for all damages to the City caused by the Contractor or the work under the Contract. Review, approval or acceptance by the City or the Project Manager under the Contract shall not constitute approval otherwise required by any City department, board, commission, or other regulatory agency in the exercise of such department's, board's, commission's or agency's independent regulatory authority of police powers under applicable law.

61. False Claims. The Contractor covenants and agrees that it shall promptly reimburse the City for (a) all sums paid to the Contractor by the City as a result of any false, fictitious or fraudulent billings, invoices, contract overcharges, and the like, and (b) all other costs which are incurred by the City as a result of the false fictitious or fraudulent billings, invoices, contract overcharges and the like. The Contractor further covenants and agrees that it shall promptly reimburse the City for all expenses and costs, including but not limited to attorneys' fees and expenses, incurred by the City in recovering any such sums from the Contractor. This Paragraph shall survive termination of the Contract and completion of the work under the Contract.

E. MATERIALS, WORKMANSHIP, AND INSPECTION

62. Materials and Workmanship. The materials used in the work under the Contract shall conform to the requirements of the Plans, Technical Specifications and Standard Details and Specifications, as the same may be applicable. The workmanship shall be equal to the best standard practices. Work of reconstruction and restoration of privately-owned structures adjacent to the Project site shall be as set forth in the Plans and Technical Specifications or otherwise by written agreement with the owner or owners of such structures. Where no requirements are specified for materials or for the methods of testing materials or equipment, such materials or methods shall at least equal the latest standard or tentative specifications of nationally recognized standardizing agencies, such as the American Society of Mechanical Engineers, the latest codes of the National Board of Fire Underwriters or, as they apply, any regulations of the City.

63. Inspection. All of the work of the Contract shall be subject to general direction and inspection of the Project Manager or the Project Manager's designated representatives, and the Contractor shall afford every opportunity for the inspection of materials and workmanship. Authorized representatives of the City shall be permitted access at all reasonable times to all portions of the work, and to such portions of the place of manufacture of fabricated materials as may be necessary for complete inspection. Before beginning work the Contractor shall notify the Project Manager of the type and source of supply of the principal materials which the Contractor proposes to furnish, and, as soon as possible thereafter, shall furnish samples of materials, fixtures, and appliances for approval by the Project Manager. Before removal of any excess excavated material, waste, refuse,

or rubble, etc., from the site, the Contractor shall furnish to the Project Manager a list of certified dump site or landfill locations that are to be utilized for disposal of such waste materials and written verification that permission for the disposal of the waste materials has been obtained. Before beginning the fabrication of materials, equipment or systems, and before shipping materials, equipment or systems of a specified type, the Contractor shall notify the Project Manager in ample time to permit inspection at the place of manufacture or shipping, should the Project Manager so desire. Such materials, equipment or systems shall be delivered to the Project site properly marked for identification, and shall be subject to re-inspection and final acceptance or rejection at the Project site by the City. The Contractor shall deliver materials, equipment and systems to be inspected at the Project site in ample time for such inspection and testing. No materials, equipment or systems shall be incorporated into or used in connection with the work until accepted by the Project Manager, and all materials, equipment or systems rejected by the Project Manager as unsuitable or not in conformity with the Plans or Technical Specifications shall be immediately removed from the work. Unless otherwise specifically provided for, the City shall bear the cost of inspection and testing. All work shall be prosecuted in the presence of the City's Inspector ("Inspector"), and conformity with the requirements of the Contract Documents. The Contractor shall provide for inspection and testing to be carried out during regular working hours unless specifically authorized or directed otherwise by the Project Manager. The presence of the Inspector shall not affect in any way the duty of the Contractor to complete the work in accordance with the Contract Documents, nor be deemed a defense on the part of the Contractor for default or violation of the Contract. The Inspector is not authorized to waive, amend, revoke, alter, enlarge, relax, or release any of the requirements of the Contract Documents.

64. Investigation of Work. If the Project Manager at any time has reason to suspect that the Contractor may have delivered any unsuitable, unfit or otherwise defective work, the Project Manager may order an investigation thereof, and the Contractor shall furnish the necessary labor and equipment for such investigation. If the City finds that any part of the work is defective, the Contractor shall repair, replace or reconstruct such work to the satisfaction of the Project Manager, and the cost thereof and of such investigation shall be the sole responsibility of the Contractor. If the work is found to be in accordance with the Contract Documents, the City will reimburse the Contractor, in accordance with Paragraph 51 above, for the expense of the examination.

65. Defective Work or Material. The Contractor shall remove, at its own expense, any work or material rejected by the Project Manager as unsuitable, unfit, or otherwise defective and not in accordance with the Contract Documents, and shall repair, replace or reconstruct the same without additional compensation. Failure to do so shall be deemed a violation of Contract and shall be subject to the provisions of the Contract concerning violations and defaults. Any omission or failure on the part of the Project Manager to disapprove or reject any work or material shall not be construed to be an approval or acceptance of any such defective work or material. For any work or material that is determined to be defective and not in accordance with the Contract Documents, but which in the sole determination of the Project Manager cannot be remedied or does not require total replacement, the Project Manager shall determine an appropriate credit due the City from the Contractor.

F. CONSTRUCTION REQUIREMENTS

66. Prosecution and Performance of Work. The Contractor's methods for the performance of the work must be those best adapted for the safe, efficient, and expeditious prosecution of the work, with a minimum of interference to adjoining work sites, to adjoining properties, and to public traffic and convenience. The Contractor shall prosecute the work vigorously, without delay, and with such workforces and equipment as shall be satisfactory to the Project Manager. The Contractor shall furnish and supply all labor and materials, in the quantity and of the quality required for the proper and timely performance of the work under the Contract; all such materials shall be of the best kind and quality and subject to the inspection and approval of the Project Manager. The Contractor shall strictly conform to the orders, instructions and directions given by the Project Manager, it being expressly understood and agreed that the decision of the Project Manager on any questions arising in connection with the performance of the work under Contract shall be binding and conclusive upon the Contractor. The Contractor shall supervise and direct the work, and Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of its work under the Contract. Before commencing the work, the Contractor, when required by the Project Manager, shall submit for approval its proposed methods of prosecution of the work, including the maintenance

of both vehicular and pedestrian traffic; underpinning, bulk heading, shoring; sinking foundations; handling spoil; lighting; fencing; street surfaces; drainage; and all other branches of its work operation. Such approval is intended to safeguard the City's interest, but such approval will not be deemed to relieve the Contractor of its obligation or responsibility for the safe and proper conduct of the work. The Contractor shall at all times ensure that its work site, and its Subcontractors' personnel, while performing any part of the work under this Contract, are and remain free of the influence of alcohol or illegal drugs. The Contractor shall at all times enforce good discipline and order among its employees, and shall not employ any unfit Person or anyone not skilled in the task assigned. Any contact by the Contractor or its employees with adjacent property owners, passing motorists or pedestrians, and the general public shall at all times be professional, courteous, and respectful.

67. Right of Way. Where work is constructed on private property in the lines of an unopened street, the City guarantees the Contractor, for access and construction purposes, the area only within the lines of said street. Where work is constructed over private property, not within the lines of any street upon the City plan, the City guarantees the Contractor right-of-way between lines not more than twenty-five (25) feet, each side, beyond the outside lines of the structure to be built, unless otherwise provided for, with right of access only within the lines of this strip and subject to the limitations of existing structures. Where work is constructed within the lines of an open street, the City guarantees the Contractor use of the area only within the lines of the street, and subject to the requirements of the Standard Contract Requirements and Technical Specifications for maintenance of travel, existing structures, and access to abutting properties.

68. Maintenance of Traffic and Access to Property. Traffic of all kinds shall be maintained continuously and access to buildings shall be provided for at all times, except where otherwise specifically permitted by the Contract Documents, or where temporary interference is authorized by the Project Manager, in which case it shall be interrupted only for such time as is necessary to provide temporary substitutes for surfaces disturbed by the construction and to restore street and sidewalk surfaces after the completion of the work. Suitable bridges or other means of access shall be built and maintained to permit owners and occupants to reach their premises. Where necessary, the Contractor shall maintain proper and easy means for passengers to enter or exit public transportation. Where partial occupation of the street is allowed, materials and equipment shall be so placed as to ensure a minimum of interference with traffic; no materials shall be placed on the sidewalk within one foot of the curb line, and a clear sidewalk passage not less than four (4) feet in width shall be maintained at all times. The work shall be so conducted that annoyance to residents and interference with the normal use of the properties will be reduced to a minimum. The flow in gutters and inlets shall be maintained. When access to any adjacent property is temporarily cut off, owing to occupancy of the street by the Contractor, the Contractor shall render every assistance to the owner or occupant in handling materials of every description that must be delivered to or removed from such property, including recyclables, rubbish, and garbage, and such materials shall be taken to or from the nearest accessible point that, in the opinion of the Project Manager, is convenient for handling. No additional compensation will be allowed for the various items of expense noted above in this Paragraph 68.

69. Maintenance of Waterways. In navigable streams all work shall be carried on in full compliance with the requirements of the United States Department of the Army, the Commonwealth, the City and any other governmental or quasi-governmental agency, authority or commission having jurisdiction under Applicable Law. Movement of boats and vessels of all kinds shall be maintained unless the United States Department of the Army or any other governmental or quasi-governmental agency, authority or commission having jurisdiction under Applicable Law shall permit interference, and then only within the limits and times specified. Should the Contractor, during the progress of the work, sink, lose, or throw overboard any material, plant, equipment, machinery, etc., which may be dangerous to or obstruct navigation, the Contractor shall forthwith recover and remove the same. The Contractor shall give immediate notice to the proper authorities of such obstruction, and, if required, the Contractor shall, under the direction of such authorities mark or buoy such obstructions until the same are removed. Upon the completion of any work affecting waterways of any character, all equipment and materials deposited in such waterways shall be removed unless otherwise ordered or permitted, so as to leave an unobstructed channel of the same width and depth and with the banks, retaining structures, or wharves in a condition equal to that existing before the beginning of work.

70. Access to Fire Hydrants and Fire Alarm Boxes. Fire hydrants shall be left at all times clear of obstructions and readily accessible to fire apparatus. No material or other obstructions shall be placed within ten

(10) feet of a fire hydrant. Fire alarm boxes shall be supported and protected and maintained so as to be readily accessible and open to view. Excavation shall be decked or bridged, where necessary, to permit the safe passage of fire apparatus and to give access to fire hydrants and to adjacent buildings for the extinguishing of fires. Where necessary, branch pipes shall be extended from the nozzles of the fire hydrants to the mains. Fire hydrants and any branch pipes shall be protected from freezing, and the fire hydrants (particularly the high pressure type) shall, where necessary, be braced or tied to the connecting pipes to prevent movement under water pressure.

71. Temporary Buildings. Buildings, fences, trailers, and equipment erected or provided by the Contractor shall be neat in appearance. Except as provided in Paragraph 74 below, no advertising matter, other than Project information and the name and address of the Contractor, shall be displayed on the work or any such buildings, fences, trailer or equipment.

72. Danger Signals. The Contractor, at Contractor's own expense, shall erect and maintain all necessary barricades, and danger signs and signals. The Contractor shall keep adequate lights burning from sunset until sunrise, and shall provide security personnel as necessary for the safety of the public. The Contractor shall observe such rules relative to signals and safeguards as the police regulations, harbor regulations, and other Applicable Laws require.

73. Street Closings and Detour Signs. In the event that the work requires the closing of a street or roadway, the Contractor shall first obtain a permit from the City's Department of Streets. When the Department of Streets gives permission to close a street or roadway during Contract operations and to divert the traffic therefrom, the Contractor, at the Contractor's sole expense, shall erect and maintain appropriate traffic and highway barricades, detour signs, and any other necessary traffic signs in order to safely protect vehicular and pedestrian traffic. The Contractor shall notify the Department seven (7) days prior to the date of starting work and one (1) day prior to the date of completion. Copies of these notices shall be sent to the Traffic Engineer of the Department of Streets.

74. Contract Identification Signs. The Contractor shall, unless specified otherwise in the Technical Specifications, at Contractor's own expense, erect and maintain in a prominent position upon the Project site at a location approved by the Project Manager, a suitable sign, plainly lettered with the name and address of the Contractor, the character of the work and the name of the Department under which the Contract is being carried out. No advertising matter other than the signs above noted shall be displayed on the work.

75. Safety and Sanitary Provisions. The Contractor shall provide means and appliances and shall enforce suitable rules for the safe prosecution of the work and for the safety and health of the work force employed on it. The completed portions of the work shall be kept clean and in a sanitary condition. The Contractor shall provide and maintain properly secluded sanitary conveniences, in accordance with existing regulations of the Department of Public Health, for the use of Contractor's work force, and the Contractor shall strictly enforce the exclusive use of them by its work force.

76. Storage Space. Buildings, yards, or sidings that may be required for the delivery or storage of materials shall be provided by and at the cost of the Contractor. The Contractor may not use streets for storing materials unless otherwise specifically authorized in writing by a permit issued by the City's Department of Streets. Upon request of the Project Manager, the Contractor shall furnish a copy of any agreement for the use of a property or building for construction purposes, except where owned by the Contractor.

77. Night Work. Work during the night shall be carried on with due regard to the comfort of, and so as to minimize any disturbance to, nearby residents, and the methods to carry out such work shall be subject to the approval of the Project Manager, who may, if conditions so require, order that no night work be done in specific localities. The Contractor's work force shall refrain from loud noises, calls, whistles, and the operation of air compressors, rock drills, riveting machinery, and blasting between the hours of 7:00 p.m. and 7:00 a.m. unless specifically permitted by the Project Manager.

78. Power and Light. In developed portions of the City, and elsewhere when ordered by the Project Manager, the Contractor shall use either electric, compressed air or internal combustion engine power. When compressed internal combustion engines are used the exhaust shall be muffled. None but electric lights

shall be used in or under buildings or anywhere on the work below the surface of the street.

79. Use of Water. Permission for the use of City water shall be obtained directly from the Philadelphia Water Department. Water may be obtained through a hydrant attachment or as otherwise specified in the Technical Specifications. In all cases, the Contractor shall obtain and use such water in accordance with regulations of the Water Department. If the Contractor shall, at any time, waste water (as determined by the Project Manager) obtained from the Water Department, the Project Manager shall revoke permission for such use. No charge will be made for the use of water actually used for the construction work, unless specifically set forth elsewhere in the Technical Specifications.

80. Prevention of Dust and Smoke.

a. The Contractor shall keep the surface of the sidewalks and streets affected by its work, including decking and temporary paving, in a clean, neat condition. The Contractor shall sprinkle with water or otherwise treat the surface sufficiently to keep down any dust generated during the progress of work. Piles of dirt or other material shall not be left on the surface. The aforementioned requirements are not intended to take the place of the usual duties of the Department of Streets but to supplement them. No fires of any kind or burning of debris on the site or adjacent to it will be permitted; the debris shall be disposed of off the Project site.

b. The Contractor shall comply strictly with the provisions of the Air Pollution Code (Title 3 of The Philadelphia Code, as amended).

81. Explosives. If any blasting is involved in the performance of the Contract, the Contractor must obtain a blasting permit from the Department of Licenses and Inspections. Such permits will be issued only upon approval of the Fire Marshal and posting of bond or Certificate of Insurance covering personal injuries and property damage. Blasting may be done only by blasters duly licensed by the City. Storage of explosives and transportation of explosives to the site also require permits, which are issued by the Department of Licenses and Inspections, subject to prior approval of the Fire Marshal.

82. Work in Freezing Weather. Masonry of all kinds, pointing, grouting, plastering, and other work subject to the action of frost shall not be done when exposed to freezing weather, except under conditions where the Project Manager may specifically direct or permit such work, subject to the heating of materials, the protection of finished work and such other measures as may be deemed necessary. If operations are suspended on account of freezing weather, the entire work shall be properly protected until the resumption of work is permitted. If a suspension of the work on account of freezing weather or from any other cause is necessary, the site shall be cleaned up, left in good order, and continuously maintained by the Contractor during the period of such suspension.

G. SURFACE, SUBSURFACE, AND OVERHEAD STRUCTURES

83. Completeness of Data. The term "structures" used in these Standard Contract Requirements shall apply to all surface, underground, and above-ground structures of whatever character within the Project site or immediately adjacent thereto, including buildings situated in or adjacent to the excavation. Where these structures are shown or indicated on the Plans, the information provided is in accordance with the information in the possession of the Department, but is approximate only. Such data are not warranted or guaranteed by the Department to be either complete or correct, and the Contractor shall and must assume, and adjust its Quote to account for, all risks resulting from conditions in the field that differ from the approximation shown.

84. Support and Protection. All structures, unless specifically designated by the Project Manager to be abandoned or relocated, shall be supported and protected at all times from destruction or injury, including damage from freezing, and maintained continuously in service. Should any injury occur while the work is in progress and the structures are under the protection of the Contractor, the Contractor shall fully restore such structures to as good condition as existed before the injury was done. All such support and protection work, and also such alterations of any structures as the Contractor may carry out for the Contractor's own convenience in executing the work, shall be done without additional compensation, unless otherwise specifically provided for in the Contract Documents. The City makes no covenant, representation or warranty as to the right of the

City or the Contractor to carry out any such support or protection work, or any alterations of any structures for the Contractor's own convenience; all such work being in any and all events subject to the consent and approval of the owner or owners of such structures.

85. Structures Interfering with Construction. If, in the course of the work, the Contractor determines that any of the existing structures occupy space required by the structure or its appurtenances to be constructed under the Contract, or that such structures are so situated as to render it impracticable, in the opinion of the Project Manager, to do the work called for under the Contract in the manner specified, the Contractor shall excavate and uncover the portions of such structures in service and shall notify the Project Manager, who will, if reasonably practicable, arrange for the alteration, relocation or removal of the interfering structures or appurtenances within a reasonable time. The Contractor shall not move nor disturb such structures in any way without prior approval by the owners thereof, and the approval of the Project Manager. Any such action by the Contractor shall be at the Contractor's sole cost, risk and expense. Structures belonging to the public utility companies, which are ordered by the Project Manager to be removed or relocated, will be so removed or relocated and permanent supports placed, in general by their owners without cost to the Contractor. The Contractor, however, shall support and protect them up to the time of their removal, shall co-operate with such owners during the process of relocation, and shall maintain and protect such structures if and when such structures are relocated within the Project site or immediately adjacent thereto. Such work shall be done without additional compensation. Sewers, water pipes, electrical conduits, and other City-owned structures shall be altered, relocated, or reconstructed as shown on the Plans or as may be ordered in the course of the work. Payment for this work will be made at the applicable prices in the Contract unless otherwise specifically provided for. If the Project Manager approves a request by the Contractor to effect a temporary or permanent relocation of structures for Contractor's own convenience, and satisfactory arrangements can be made with the owners thereof, the Contractor may carry out such work at its own expense.

86. Abandonment of Structures. In the case of structures the service of which is permanently abandoned, the Project Manager will designate which such structures or portions of such structures the Contractor may salvage and which the Contractor may abandon in place on the Project site, including in the trench. The Contractor shall remove and deliver to a designated point of storage materials salvaged, and payment therefor will be made at the appropriate prices of the Contract, unless otherwise specifically provided. The Contractor shall allow owners of privately owned structures reasonable facilities for salvaging their property. Structures designated as abandoned shall become the property of the Contractor, and shall be removed from the work, unless the Project Manager has approved abandonment of such structures in place on the Project site.

87. Co-operating with Public Utility Companies and City Departments.

a. The Contractor shall at all times during the performance of the work fully comply with the Underground Utility Line Protection Law (Act 287 of 1974, as amended by Act 121 of 2008), 73 P.S. § 176 et seq., otherwise known as the PA One Call System.

b. The Contractor shall co-operate with other contractors and with the employees, officers, and agents of the City Departments or the various public utility companies which own, operate, or have supervision over the underground or above-ground structures encountered by the Contractor, and shall conform to the requirements of the owners of such structures in regard to their safe maintenance. The Contractor shall give to authorized representatives of the City Departments and public utility companies unrestricted access at all times to the excavation and site to inspect the condition and support of their structures at no additional cost to the City. Suitable arrangements shall be provided to facilitate access to valves and manholes if necessary. Ventilation openings shall be provided where gas is likely to accumulate. Where structures are to be constructed by the Contractor under the facilities of any public utility, the Contractor shall make suitable arrangements with the public utility company for the removal or support and maintenance of such facilities at no additional cost to the City.

88. Gas Pipes. Philadelphia Gas Works ("PGW") will make any necessary alterations to the gas mains or gas service pipes, without expense to the Contractor, unless specifically indicated elsewhere in the Contract Documents. PGW will by-pass the gas service in temporary pipes laid outside such excavation, in advance of the construction work. The mains and services that have been removed may be replaced in their permanent position

after the backfilling has been sufficiently compacted.

89. Traffic Control Apparatus. The Contractor acknowledges that the underground location of conduit and cables for traffic signals at intersecting streets is not ordinarily shown on the Plans for the work. Where traffic signals are indicated on the Plans, but the location of connecting conduit or cables for the signals is not shown, the Contractor shall nonetheless assume that there are underground conduits and cables that may affect or interfere with the performance of its work and the Contractor shall adjust its Quote accordingly. The Contractor shall support and maintain in their present locations, or in approved temporary locations, any existing traffic control masts, signals, apparatus, and their connecting underground or above-ground conduits and cables, in such condition as to permit the uninterrupted functioning of the signals during the progress of the work, on temporary poles if necessary, and in a manner satisfactory to the Department of Streets. If the existing signal apparatus is supported on poles and these poles are moved to a temporary location during the progress of the work, the Contractor shall either erect temporary signal poles in the approximate locations of the original poles and erect the signals thereon, or shall extend the electrical connection to the poles as relocated as may be ordered by the Project Manager. Upon the restoration of surface conditions, the Contractor shall restore the equipment, including underground or above-ground conduits and cables and electrical connections, to its original position and condition. This work, except new masonry, shall be done without additional compensation to the Contractor. Masonry piers will be paid for at the applicable unit prices.

90. Vaults. The City will secure the vacating of vaults interfering with the work without expense to the Contractor; but reasonable time shall be allowed the owners for the removal of materials and of any mechanical or other equipment that may be installed therein. These vaults will be vacated to the extent necessary, in the opinion of the Project Manager, to do the work called for under this Contract, including underpinning. The Contractor shall make arrangements with the owners of such vaults in regard to its occupation thereof and shall give the owners at least two (2) weeks' notice of Contractor's intention to remove or break into the walls.

91. Street Lighting Units. Whenever it is necessary to remove, relocate, or adjust street lighting units, or poles, the work shall be reviewed and approved by the City's Department of Streets – Street Lighting Division. All such street lighting work shall be performed at the sole expense of the Contractor and at no additional cost to the City, unless otherwise pre-approved in writing by the Project Manager and the Street Lighting Division.

H. MISCELLANEOUS PROVISIONS

92. Governing Law. The Contract shall be deemed to have been made in Philadelphia, Pennsylvania. The Contract and all disputes arising under the Contract shall be governed, interpreted, construed and determined in accordance with the laws of the Commonwealth, without giving effect to principles of Commonwealth law concerning conflicts of laws.

93. Binding Upon Contractor's Successors, etc. The Contract shall be binding upon the Contractor's heirs, executors, administrators, and successors and assigns and such successors and assigns shall be responsible for the faithful performance and completion of the Contract work.

94. Amendments; Waiver. The Contract may not be amended, supplemented, altered, modified or waived, in whole or in part, except by a written Amendment, or other writing, signed by the Parties, or as provided in Paragraphs 20 and 21 above concerning cancellation of the Contract by the Contractor and termination for convenience by the City, or as provided in Paragraphs 48 and 49 concerning Change Orders and Disputed Change Orders, respectively. Except to the extent that the Parties may have otherwise agreed in writing in an Amendment, or other writing, no waiver, whether express or implied, by either Party of any provision of the Contract shall be deemed: (a) to be a waiver by that Party of any other provision in the Contract; or (b) to be a waiver by that Party of any breach by the other Party of its obligations under the Contract. Any forbearance by a Party in seeking a remedy for any noncompliance or breach by the other Party shall not be deemed to be a waiver of rights and remedies with respect to such noncompliance or breach.

95. Interpretation and Order of Precedence. If the Technical Specifications, the Proposal, or the

Plans expressly modify any of the terms, conditions, or requirements of these Standard Contract Requirements, or of the Department's Standard Details and Specifications, such Technical Specifications, Proposal or Plans shall supersede the portions of these Standard Contract Requirements or the Department's Standard Details and Specifications with which they conflict. The foregoing to the contrary notwithstanding, the City and the Contractor expressly understand that in no event shall the provisions of Paragraph 4 of these Standard Contract Requirements (with respect to test borings, test piles, and existing underground and above- ground structure locations) be superseded by the Technical Specifications, the Proposal, or the Plans.

96. Integration. The Contract Documents, including these Standard Contract Requirements and the exhibits incorporated by reference therein, contain all the terms and conditions agreed upon by the Parties, constitute the entire agreement between the Parties pertaining to the subject matter of the Contract, and supersede all prior agreements, understandings, negotiations and discussions, whether oral or written, of the Parties (except to the extent specifically set forth therein). No other prior or contemporaneous agreements, covenants, representations or warranties, oral or otherwise, regarding the subject matter of the Contract shall be deemed to exist or to bind any Party or vary any of the terms contained in the Contract.

97. No Joint Venture. The Parties do not intend to create, and nothing contained in the Contract shall be construed as creating, a joint venture arrangement or partnership between the City and the Contractor with respect to the work performed by the Contractor under the Contract.

98. No Third Party Beneficiaries. Nothing in the Contract, express or implied, is intended or shall be construed to confer upon or give to any Person, other than the Parties, any rights, remedies, or other benefits, including, but not limited to, third-party beneficiary rights, under or by reason of the Contract. The Contract shall not provide any third party with any remedy, claim, liability, reimbursement, cause of action or other right other than any such remedy, claim, etc. existing without reference to the term of or the existence of the Contract.

99. Severability and Partial Invalidity. The provisions of the Contract shall be severable. If any provision of the Contract or the application thereof for any reason or in any circumstance shall to any extent be held to be invalid or unenforceable, the remaining provisions of the Contract and the application of such provision to Persons, or in circumstances, other than those to which it is held invalid or unenforceable, shall not be affected thereby, and each provision of the Contract shall be valid and enforceable to the fullest extent permitted by law.

100. Survival. Any and all provisions set forth in the Contract which, by its or their nature, would reasonably be expected to be performed after the termination of the Contract or after full performance of the work under the Contract shall survive and be enforceable after such termination. Any and all liabilities, actual or contingent, which shall have arisen in connection with the Contract shall survive the expiration or earlier termination of the Contract, along with the following: the Contractor's warranty of its work, the Contractor's obligation to indemnify, defend and hold harmless the City, its officers, employees and agents; and the Parties' rights and obligations set forth in Paragraph 31 (Proprietary Rights Indemnity).

101. Controlling and Pertinent Statutes. All statutory citations in the Contract shall refer to the pertinent statute as it may be amended hereafter from time to time.

102. Forum Selection Clause; Consent to Jurisdiction. The Parties irrevocably consent and agree that any lawsuit, action, claim, or legal proceeding involving, directly or indirectly, any matter arising out of or related to the Contract shall be brought exclusively in the United States District Court for the Eastern District of Pennsylvania or the Court of Common Pleas of Philadelphia County. It is the express intent of the Parties that jurisdiction over any lawsuit, action, claim, or legal proceeding shall lie exclusively in either of these two (2) forums. The Parties further irrevocably consent and agree not to raise any objection to any lawsuit, action, claim, or legal proceeding which is brought in either of these two (2) forums on grounds of venue or *forum non conveniens*, and the Parties expressly consent to the jurisdiction and venue of these two (2) forums. The Parties further agree that service of original process in any such lawsuit, action, claim or legal proceeding may be duly effected by mailing a copy thereof, by certified mail, postage prepaid, in the case of the Contractor, to the address specified in the Quote, and in the case of the City, to The City of Philadelphia Law Department, Attention:

City Solicitor at the then-current address of the Law Department.

103. Waiver of Jury Trial. The Contractor hereby waives trial by jury in any legal proceeding in which the City is a party and which involves, directly or indirectly, any matter (whether sounding in tort, Contract or otherwise) in any way arising out of or related to the Contract or the relationship created or evidenced thereby. This provision is a material consideration upon which the City relied in entering into the Contract.

104. Headings. The titles, captions or headings of Paragraphs, sections, exhibits or schedules in or to the Contract are inserted for convenience of reference only, and do not in any way define, limit, describe or amplify the provisions of the Contract or the scope or intent of the provisions, and are not a part of the Contract.

105. Days. Any references to a number of days in the Contract shall mean calendar days, unless the Contract specifies Working Days or business days.

106. Notice. All notices, demands, requests, waivers, consents, approvals or other communications which are required or may be given under the Contract shall be in writing and shall be deemed to have been duly made (a) when received or refused if delivered by hand with receipt given or refused; (b) on the next business day if delivered by a nationally recognized overnight courier service (e.g., Federal Express or United Parcel Service); (c) on the date confirmed for receipt by facsimile if delivered by facsimile; and (d) upon receipt or refusal of delivery if sent by certified or registered United States mail, return receipt requested. In each case notices shall be sent, in the case of notices to the Contractor, to the address or addresses set forth in the Contractor's Quote, and in the case of the City, to the address set forth in the City's Notice to Proceed, to the attention of the Project Manager, or to such other address as either Party may specify to the other by a notice complying with the terms of this Paragraph 106.

I. SPECIFIC LAWS

The following provisions are not intended to limit the applicability of any of the other provisions of the Contract:

107. Labor-Management Relationships; Prevailing Wages. The Contract is subject to Section 17-107, as amended, of The Philadelphia Code, "Contractors: Labor-Management Relationships", and all regulations and procedures adopted thereunder.

a. As required by Section 17-107 of The Philadelphia Code all employees performing work under the Contract shall be paid at least the applicable prevailing wages for the respective occupational classifications designated, as set forth in the minimum wage schedule attached as part of the General Bidding and Contract Requirements, and shall be given at least the applicable presently prevailing working conditions during the entire period of work under the Contract. Such working conditions are those which are given to employees pursuant to a bona fide collective bargaining agreement for the applicable craft, trade or industry in the Philadelphia area on the date the General Bidding and Contract Requirements are issued. The occupational classifications for all employees under the Contract shall be only the specific categories of jobs within a given craft, trade or industry for which a separate hourly wage rate for the Philadelphia area is determined by the Secretary of Labor of the United States, in accordance with the provisions of the Davis-Bacon Act, and which are set forth in the applicable schedule attached to the General Bidding and Contract Requirements. In the event that any Contractor believes that work under the Contract should be performed by employees in occupational classifications omitted from the schedule attached to the General Bidding and Contract Requirements, it shall so advise the Managing Director's Office (the "MDO"), Labor Standards Division, which shall remedy the omission if it agrees.

b. The City may withhold from any sums due to the Contractor under the Contract so much as may be necessary to pay the employees the difference between the wages required to be paid under this Paragraph 107 and the wages actually paid to such employees, and the City may make such payments directly to the appropriate employees.

c. Each Contractor shall require all Subcontractors to comply with and be bound by all of the

provisions of this Paragraph of the Contract and of Section 17-107 of The Philadelphia Code, and the Contractor shall insert the requirements of Section 17-107 in all Subcontracts.

d. Every Contractor and Subcontractor shall keep an accurate record preserved on employee time sheets or time cards showing the name, address, social security number, occupational classification, wages and other benefits paid or provided and number of hours worked for each employee assigned to city-work (as "city work" is defined in Section 17-107(1)(b) of The Philadelphia Code), and such record shall be preserved at the current place of business of the employing Contractor or Subcontractor for two (2) years from the date of the Final Estimate on the Contract. The Contractor shall maintain and make his or her accounting and employment records and records relating thereto available for inspection by authorized representatives of the City, at all reasonable hours, and shall permit such representatives to interview employees during the hours on the job, all without prior notice. Neither the Contractor nor any Subcontractor shall allow any employee or other person to interfere with any such inspection or interview.

e. All Contractors and Subcontractors performing city-work shall, upon request of the City, file with the MDO, Labor Standards Division a certified statement setting forth the name, address, occupational classification, wages and other benefits paid or provided and number of hours worked with respect to each employee performing city work. Such statement shall be made weekly for each preceding weekly period. The certification shall affirm that the statement is correct and complete, that the wages set forth therein are not less than those required by the Contract for city-work and that the occupational classification set forth for each employee conforms with the work performed.

f. Nothing herein shall preclude the payment by the Contractor of wages at rates higher than those specified as the minimum in the applicable schedule attached to the General Bidding and Contract Requirements. However, no increase in any Contract price shall be allowed or authorized on account of the payment of wages in excess of those so specified, or on account of wage increases granted hereafter. No increases above the amounts specified in the applicable schedule attached to the General Bidding and Contract Requirements will be required by any Contract during the term thereof except in the case of an error or omission in such schedule. Such an error or omission shall be called to the attention of the MDO, Labor Standards Division as promptly as possible; but the remedying thereof by the Department shall not constitute grounds for withdrawal of a Quote or cancellation of a Contract, nor for an increase in the Contract price or other claim or recovery against the City, nor a ground for failure or refusal to pay the applicable proper minimum to all employees.

g. The minimum wages required hereby shall be paid unconditionally without any subsequent deduction or rebate of any kind except in accordance with Applicable Law governing payroll deductions for taxes, benefits and collective bargaining charges. Any assignment of wages by an employee for the direct or indirect benefit of the Contractor shall constitute a violation of this Paragraph; and any purported release of rights under Section 17-107 of The Philadelphia Code by an employee shall be void and of no effect.

h. The Parties shall refer to Section 17-107 of The Philadelphia Code, and to the regulations to be issued from time to time by the MDO, Labor Standards Division, for further information concerning the administration of the foregoing requirements of this Paragraph 107. In addition, it shall be the responsibility of all Sellers and Contractors to inform themselves as to all prevailing working conditions, including, without limitation, length of work day and work week, overtime compensation, and holiday and vacation rights.

108. Non-Discrimination; Fair Practices.

a. The Parties acknowledge that they have entered into and perform the Contract under the terms of the Philadelphia Home Rule Charter, as it may be amended from time to time, and in performing the Contract, the Contractor shall not discriminate or permit discrimination against any individual because of race, color, religion or national origin. In addition, the Contractor shall, in performing the Contract, comply with the provisions of the Fair Practices Ordinance of The Philadelphia Code (Chapter 9-1100, as amended) and the Mayor's Executive Order No. 4-86, as each may be amended from time to time, both of which prohibit, among other things, discrimination against individuals because of race, color, sex, sexual orientation, religion, national origin, ancestry, age, handicap (including but not limited to Human Immunodeficiency Virus infection), marital

status, presence of children or source of income, in employment, housing and services in places of public accommodation. In the event of any breach of this Paragraph 108, the City may, in addition to any other rights or remedies available under the Contract, at law or in equity, suspend or terminate the Contract forthwith.

b. In accordance with Act 57 of 1998, 62 Pa.C.S. §3701, as amended, in the hiring of employees for the performance of work under the Contract or any Subcontract, neither the Contractor, nor any of its Subcontractors, nor any Person acting in their behalf shall discriminate, by reason of gender, race, creed, or color, against any citizen of the Commonwealth who is qualified and available to perform the work to which the employment relates. In addition, neither the Contractor, nor any of its Subcontractors, nor any Person acting in their behalf shall in any manner discriminate against or intimidate any employee hired for the performance of work under the Contract on account of gender, race, creed, or color. In addition to any other remedies available to the City, the Contract may be cancelled or terminated by the City and all money due on or to become due under the Contract may be forfeited for a violation of the terms or conditions of this Paragraph 108(b).

109. Employment of Low - and Moderate - Income Persons. The Contract is subject to Section 17-1000, as amended, of The Philadelphia Code, "Employment of Low- and Moderate-Income Persons by City Contractors", and all regulations and procedures adopted thereunder.

a. As required by Section 17-1000 of The Philadelphia Code, for all construction and demolition contracts entered into by the City with a total value in excess of \$150,000 (a "Covered Construction Contract"), the Contractor must certify to the Procurement Department that at least forty percent (40%) of the workers who work on a Covered Construction Contract are low- or moderate-income persons. Apprentices and those working in on-the-job training positions shall be considered workers for the purpose of meeting the requirements of Section 17-1000.

b. A low- or moderate-income person is defined under Section 17-1000 as a person whose income does not exceed more than eighty percent (80%) of the median income for the Philadelphia metropolitan area, as determined or adjusted by the Secretary of Housing and Urban Development pursuant to 42 U.S.C. §5302(a)(20), as amended. A person who no longer meets the income eligibility criteria set forth in Section 17-1000 because of employment by a party to a Covered Construction Contract, but who met the criteria on his or her date of hire, shall be deemed a low- or moderate-income person for three years from the date of hire.

c. Each Contractor shall require all Subcontractors to comply with and be bound by all of the provisions of this Paragraph of the Contract and of Section 17-1000 of The Philadelphia Code, and the Contractor shall insert the requirements of Section 17-1000 in all Subcontracts.

110. Ethics Requirements. To preserve the integrity of City employees and maintain public confidence in the competitive bidding system, the City intends to vigorously enforce the various ethics laws as they relate to City employees in the bidding and execution of contracts to which the City is a party. Such laws are in three categories:

a. Executive Order No. 02-04, which prohibits City employees from soliciting or accepting anything of value from any Person seeking to initiate or maintain a business relationship with the City, including but not limited to any of its departments, boards, commissions or agencies. All City employees presented with gifts or gratuities as indicated in Executive Order 02-04 have been instructed to report these actions to the appropriate authorities. All Sellers, agents or intermediaries who are solicited for gifts or gratuities by City employees are urged to report these actions to the appropriate authorities, including but not limited to the Inspector General.

b. Section 10-102, as amended, of the Philadelphia Home Rule Charter, which prohibits any Quote from being accepted from, or contract awarded to any City employee or official, or any firm in which a City employee or official has a direct or indirect financial interest. All Sellers are required to disclose any current City employees or officials who are employees or officials of the Seller's firm, or who otherwise would have a financial interest in the Contract.

c. The State Ethics Act and the City Ethics Code, which prohibit a public employee from using

his or her public office or any confidential information gained thereby to obtain financial gain for himself or herself, a member of his or her immediate family, or a business with which he or she or a member of his or her immediate family is associated. "Use of public office" is avoided by the employee or official publicly disclosing the conflict and disqualifying himself or herself from official action in the matter, as provided in The Philadelphia Code §20-608, as amended.

111. The Philadelphia Code, Chapter 17-400.

a. In accordance with Chapter 17-400 of The Philadelphia Code, as it may be amended from time to time, Contractor agrees that its payment or reimbursement of membership fees or other expenses associated with participation by its employees in an exclusionary private organization, insofar as such participation confers an employment advantage or constitutes or results in discrimination with regard to hiring, tenure of employment, promotions, terms, privileges or conditions of employment on the basis of race, color, sex, sexual orientation, religion, national origin or ancestry, constitutes, without limiting the generality of Paragraph 32 (Default and Remedies), a substantial breach of the Contract entitling the City to all rights and remedies provided herein or otherwise available at law or in equity.

b. The Contractor agrees to include the immediately preceding subparagraph, with appropriate adjustments for the identity of the parties, in all Subcontracts which are entered into for work to be performed pursuant to the Contract.

c. The Contractor agrees to cooperate with the City's Commission on Human Relations in any manner which the Commission deems reasonable and necessary for the Commission to carry out its responsibilities under Chapter 17-400 of The Philadelphia Code. The Contractor's failure to so cooperate shall constitute, without limiting the applicability of Paragraph 32 (default and remedies), a substantial breach of the Contract entitling the City to all rights and remedies provided herein or otherwise available at law or in equity.

112. Federal Laws. The Contractor shall comply with the provisions of Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d – 2000d7), section 504 of the Federal Rehabilitation Act of 1973 (29 U.S.C. § 794), The Age Discrimination Act of 1975, (42 U.S.C. §§ 6101 – 6107), Title IX of the Education Amendments of 1972 (20 U.S.C. § 1681), and 45 C.F.R. Part 92, as they may be amended from time to time, which together prohibit discrimination on the basis of race, color, national origin, sex, handicap, age and religion.

113. Americans With Disabilities Act. Contractor understands and agrees that no individual with a disability shall, on the basis of the disability, be excluded from participation in the Contract or from activities or services provided under the Contract. As a condition of accepting and executing the Contract, Contractor shall comply with all provisions of the Americans With Disabilities Act (the "ADA"), 42 U.S.C. §§ 12101 – 12213, as amended, and all regulations promulgated thereunder, as the ADA and regulations may be amended from time to time, which are applicable (a) to Contractor, (b) to the benefits, services, activities, facilities and programs provided in connection with the Contract, (c) to the City, or the Commonwealth, and (d) to the benefits, services, activities, facilities and programs of the City or of the Commonwealth, and, if any funds for payments by the City or otherwise under the Contract are provided by the federal government, which are applicable to the federal government and its benefits, services, activities, facilities and programs. Without limiting the applicability of the preceding sentence, Contractor shall comply with the "General Prohibitions Against Discrimination," 28 C.F.R. Part 35.130, and all other regulations promulgated under Title II of the ADA, as they may be amended from time to time, which are applicable to the benefits, services, programs and activities provided by the City through Contracts with outside contractors.

114. The Philadelphia Code, Section 17-104. In accordance with Section 17-104, as amended, of The Philadelphia Code, the Contractor, by execution of this Contract, certifies and represents that (1) the Contractor (including any parent company, subsidiary, exclusive distributor or company affiliated with Contractor) does not have, and will not have at any time during the term of the Contract (including any extensions thereof), any investments, licenses, franchises, management agreements or operations in Northern Ireland and (2) no product to be provided to the City under the Contract will originate in Northern Ireland, unless the Contractor has implemented the fair employment principles embodied in the MacBride Principles.

a. In the performance of the Contract, the Contractor agrees that it will not utilize any suppliers, Subcontractors or subconsultants at any tier (1) who have (or whose parent, subsidiary, exclusive distributor or company affiliate have) any investments, licenses, franchises, management agreements or operations in Northern Ireland or (2) who will provide products originating in Northern Ireland unless said supplier, subconsultant or Subcontractor has implemented the fair employment principles embodied in the MacBride Principles.

b. The Contractor agrees to cooperate with the City's Director of Finance in any manner which the said Director deems reasonable and necessary to carry out the Director's responsibilities under Section 17- 104 of The Philadelphia Code. The Contractor expressly understands and agrees that any false certification or representation in connection with this Paragraph and any failure to comply with the provisions of this Paragraph shall constitute a substantial breach of the Contract entitling the City to all rights and remedies provided in the Contract or otherwise available at law (including, but not limited to, Section 17-104 of The Philadelphia Code) or in equity. In addition, the Contractor acknowledges and understands that false certification or representation is subject to prosecution under Title 18 Pa.C.S. §4904, as amended, concerning unsworn falsification to authorities.

115. Steel Products Procurement Act. The Steel Products Procurement Act, 73 P.S. § 1881, et seq., as amended, shall govern payments to the Contractor under the Contract. In seeking payment under the Contract, the Contractor represents, warrants and covenants that only steel products made in the United States as defined by the Steel Products Procurement Act have been used or supplied in the performance of the Contract and all Subcontracts thereunder. Where unidentified steel products are supplied or used under the Contract, the City will not authorize, provide for, or make any payments to the Contractor for such steel products, unless and until the Contractor shall first provide to the Project Manager documentation, including, but not limited to, invoices, bills of lading, and mill certification, attesting that the steel was melted and manufactured in the United States. Where a steel product is identifiable from its face, the City will authorize, provide for, and make payments to the Contractor for such steel products, only after the Contractor shall have submitted a certification, in a form satisfactory to the Project Manager, that the Contractor has fully complied with the requirements of the Steel Products Procurement Act. Where the Project Manager has determined, in writing that a particular steel product is not produced in the United States in sufficient quantities to satisfy the requirements of the Contract, then this Paragraph shall not apply to payments for that steel product. Failure of the Contractor to comply with the Steel Products Procurement Act shall constitute a violation of the Contract which shall entitle the City to exercise all rights and remedies provided to it by the Steel Products Procurement Act and provided to it under the Contract, either at law or in equity.

116. Business, Corporate and Slavery Era Insurance Disclosure. In accordance with Section 17-104, as amended, of The Philadelphia Code, the Seller, after execution of the Contract, will complete an affidavit certifying and representing that the Seller (including any parent company, subsidiary, exclusive distributor or company affiliated with Seller) has searched any and all records of the Seller or any predecessor business entity regarding records of investments or profits from slavery or slaveholder insurance policies during the slavery era. The names of any slaves or slaveholders described in those records must be disclosed in the affidavit.

The Seller expressly understands and agrees that any false certification or representation in connection with this Paragraph and/or any failure to comply with the provisions of this Paragraph shall constitute a substantial breach of this Contract entitling the City to all rights and remedies provided in this Contract or otherwise available in law (including, but not limited to, Section 17-104 of The Philadelphia Code) or equity and the contract will be deemed voidable. In addition, it is understood that false certification or representation is subject to prosecution under Title 18 Pa.C.S.A. Section 4904, as amended, concerning unsworn falsification to authorities.

117. Transparency in Business Act. If this Contract is valued over \$100,000, the following requirements shall apply:

a. After Contractor has been notified of its selection for the contract award and prior to formal written agreement to the Contract, Contractor shall disclose the following information:

1. The Contractor's and each anticipated Subcontractor's prior years of experience performing on City contracts in any capacity during the five calendar years prior to the date the application must be filed.

2. Demographic Data on all individuals employed by the Contractor and each anticipated Subcontractor on the Report Date.

3. Demographic Data on all individuals serving as board members of the Contractor on the Report Date.

4. Demographic Data on all individuals employed for each Labor Source from which workers are likely to be drawn in performance of the Contract. Submission to the Department of Labor of Demographic Data on a Labor Source by any contractor during the previous 6 months shall satisfy the disclosure requirements with respect to such Labor Sources. The Department of Labor shall provides notice no later than one week prior to the time of the opening of bids for each contract of all Labor Sources for which Demographic data has been provided during the previous 6 months.

5. Demographic Data of all employees who will perform work under the Contract.

b. At each renewal term or additional performance period, the Contractor shall submit updated Demographic Data of the individuals performing work on the Contract in the form of a supplemental disclosure. Submission of certified payroll records shall satisfy this disclosure requirement.

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SECTION C - SPECIAL PROVISIONS

C-1.1 GENERAL

- A. Work under this contract shall be governed and done in accordance with the Standard Contract Requirements of the City of Philadelphia and these Specifications.
- B. Contractors will be placed on the official plan holder's list by requesting the electronic bid package documents from the City of Philadelphia – Procurement Department at www.phlcontracts.phila.gov. Only contractors on the official plan holders list will be sent notices of pre-bid meetings, amendments and any other changes or additions to the bid package.

Obtaining partial sets of drawings and specifications will not be permitted. Any oversight, confusion, or lack of knowledge that may result from the Contractor's use of partial sets of documents is not the responsibility of the City. Prior to submission and/or receipt of quotes, each prime contract seller (e.g., General, Electrical, Mechanical, Plumbing) is responsible for ensuring that all parties or subcontractors are aware of all issued as-bid and amendment items/changes.

- C. These specifications have been written keeping brevity in mind and where possible, the use of such expressions as "in such a manner to", "which will be", "so as to", "shall be", as well as articles, prepositions and other parts of speech, have been omitted. However, in any interpretation of these specifications, eliminations are to be supplied by inference.
- D. "Provide" means furnish, fabricate, complete, deliver, install, erect, including labor, materials, equipment, apparatus, appurtenances, expense necessary to complete in place, ready for operations or use under terms of contract documents.
- E. "As shown", "as indicated", "as detailed", "as noted", or similar phrases, refer to contract drawings accompanying specifications.

C-1.2 CHANGE IN AND REFERENCE TO STANDARD CONTRACT REQUIREMENTS

Clause 3 – Qualifications of Seller - Add the following paragraph:

- c. The Airport Engineering Manager shall represent the Operating Commissioner for this quote.

Clause 30 - Insurance – Add the following:

NOTE: Should the required insurance expire or otherwise be terminated, all construction activity shall immediately cease. No work shall be performed on this contract unless such work is covered by the listed insurance. The City shall not pay or otherwise compensate the contractor for any work executed without required insurance. The Project Manager may withhold payment from

the Contractor until the Contractor presents proof that the insurance was enforced during the entire billing period.

Clause 33 - Subcontracts – Insert the following between the first and second sentences:

Contractor shall also submit to the Project Manager copies of all subcontract agreements for all Subcontractors who will perform any work on the Contract or who will supply any materials or equipment for the Contract.

Clause 34 - Permits and Licenses - Delete this paragraph and insert the following 4 paragraphs:

- a. The Contractor is required to obtain all permits and licenses required for this project by the City of Philadelphia, and no waiver of licenses and permit fees will be granted.
- b. The Contractor shall obtain all permits, licenses, certifications and pay all fees required by the Federal, State, County or Municipal entities having jurisdiction over any aspect of this project. The Contractor shall make due allowances in his bid for any cost incurred and shall obtain all permits, licenses, certifications and pay all fees in a timely manner. There shall be no contract time extension granted for any contractor omission in this regard.
- c. The Contractor is directed to pay special attention to an Ordinance of the Township of Tinicum, Delaware County, Pa., which is "Ordinance No. 379" entitled "Regulating Drainage and Drainage Permits, Bonds, Fixing Fees; Penalties; Repeals." The Contractor shall inform himself as to the content and terms of the ordinance and comply with all provisions of same and shall make due allowance in his bid for any cost incurred.
- d. The Contractor is directed to pay special attention to Ordinances of the Township of Tinicum, Delaware County, Pa., which are "Ordinance No. 528" entitled "To Govern and Regulate the Grading of Land and Maintenance of Drainage Necessary to Control Soil Erosion: Requiring the Securing of Grading Permits and Providing for the Enforcement Thereof" and "Ordinance 2003-765" entitled "Amending Ordinance No.528, By Changing Article IV, Section 3 to Section 3A, Pertaining to Permit Fees, Adding Section 3B, Establishing Time Limitations for the Expiration of Permits, and Adding Section XI, Repealer." The Contractor shall inform himself as to the content and terms of the ordinances and comply with all provisions of same and shall make due allowances in his bid for any cost incurred.

Clause 53 – Current Estimates – Add the following paragraph:

- g. The Contractor shall prepare an Application for Payment and submit it monthly to the Project Manager. The Application shall be the basis for the current estimate. If an Application is not submitted to the Department of Aviation, the Project Manager may at his discretion prepare a current estimate. The following information shall be provided with each payment application:

1. Copies of certified payrolls for the entire billing period. NOTE: Certified payrolls shall still be submitted weekly to the City's Labor Standards Division.
2. A revised list of current subcontractors and suppliers. If the list has not changed, it must be stated in writing.
3. Copies of payment summaries to M/W/DSBE subcontractors and suppliers per Chapter 17-1600.
4. An updated Master Project Schedule detailing the current status of the project.
5. Copies of daily construction reports during the billing period.

Payment will not be processed until all information listed above is submitted. Failure to provide all the information will result in delaying the payment process.

Clause 74 - Contract Identification Signs - Delete entire paragraph: A job identification sign will not be required.

C-1.3 DRAWINGS

The following drawings accompany these specifications (in the rear of the manual) and are included as part of the contract documents:

-See Drawing No. G-002 for full list of Contract Drawings.

C-1.4 CORRELATION AND INTENT OF DOCUMENTS

The Contract Documents are complementary and what is called for by one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment, supplies, storage and transportation necessary for the proper execution of the work. Material or work described in words that have a well-known technical or trade meaning shall be held to refer to such recognized standards. Interpretation of all contract documents shall lie solely with the Project Manager.

C-1.5 DEFINITION

- A. Project Manager – The Project Manager in charge of the work as defined in the Standard Contract Requirements, paragraph 40, shall be the Airport Engineering Manager. The Project Manager shall have complete charge and management of the contract; may assign assistants and delegate authority to others as necessary. Wherever the term "Project Manager" is used in these specifications, it shall mean the Project Manager as described above or such assistants as may be assigned.
- B. Engineer – The term Engineer as used in these documents shall be a duly authorized representative of the Project Manager as defined under Project Manager. The extent of the Engineer's authority is entirely at the discretion of the Project Manager.
- C. Architect - The term Architect as used in these documents shall be a duly authorized representative of the Project Manager as defined under Project

Manager. The extent of the Architect's authority is entirely at the discretion of the Project Manager.

- D. City - Wherever the term "City" is used in the Contract Documents, it shall mean the City of Philadelphia.
- E. Written Notice - Written notice shall be considered to have been duly served if delivered in person to the individual member of the firm for whom it is intended, or to an officer of the corporation, or sent by registered mail, or other recognized delivery services, to the last business address known to him who serves the notice.
- F. Trades - Mechanics and workmen engaged in the work according to their special skills, or firms that hire them for that portion of the work, which requires such skills.
- G. Airport – Wherever the term "Airport" is used in the Contract Documents, it shall mean either the Philadelphia International Airport (PHL) or the Northeast Philadelphia Airport (PNE) as additional detailed in the Contract Documents.

C-1.6 CONSTRUCTION PROCEDURE AND SCHEDULE

- A. The Contractor shall prepare and submit an importable Primavera P6 file, or approved equal, to the Project Manager, a bar chart schedule showing allotment of time for work, which shall be arranged for minimum interference with airport operations within thirty (30) days from Notice to Proceed. This Project Schedule, or a subsequent revision thereof, shall be approved by the Project Manager. The approved schedule shall be updated monthly by the Contractor.
- B. At a minimum, the bar chart Project Schedule shall meet the following requirements:
 - 1. It must be sufficiently detailed to identify all significant activities in a format and at a level of detail that is acceptable to the Owner/Engineer. Activities shall have a maximum duration of fifteen (15) working days, except for non-construction related activities such as procurement and delivery of materials and equipment, or unless otherwise approved by the Owner/Engineer.
 - 2. Activities shall include submittal and review of shop drawings.
 - 3. It shall clearly identify all contractual milestones. The construction duration for any milestone or the entire project shall not exceed the specified contract times.
 - 4. It must be fully coordinated with all Prime Contractors if applicable.
 - 5. It must show any phasing required by contract documents.
 - 6. It must identify the trade responsible for each task.

7. It must contain any necessary constraints dealing with the operations of the Airport.
 8. Each activity on the schedule shall be identified with a description and a time for performance of the activity and shall be preceded by all work that must be accomplished prior to that activity.
 9. Provide a narrative to discuss progress to date, anticipated progress for the upcoming update periods and potential problem areas. The narrative should include a list of all contract milestones showing planned and currently schedule dates.
 10. Provide an importable Primavera P6 file format, or approved equal, electronic copy.
- C. The Contractor shall provide monthly schedule updates to the Project Manager in an importable Primavera P6 file, or approved equal. If the Work is behind the scheduled dates or work is not progressing toward these dates, the Engineer/Owner may require the contractor to take immediate and appropriate action to make up lost time.
- D. The Contractor shall provide a two (2) week “look ahead” schedule, every week as required by the DOA. Each two-week look ahead needs to identify work from the past week of construction, current week of construction and the succeeding week of construction. Each task on the two-week look ahead needs to be identified as shown on bar chart Project Schedule.
- E. It is possible that on certain days or portions of days, due to air traffic conditions, construction will not be permitted in certain areas. The Contractor shall, upon instructions from the Engineer, immediately stop or relocate his operations. No additional payment will be made for these interruptions in the work. Additional extension of work time may be granted as deemed necessary by the Engineer.
- F. Certain demolition or construction operations as defined on the contract documents will not be permitted during normal working hours. It is possible that other operations or portions of the work performed during normal hours may be determined by the Engineer to be detrimental to the normal airport operations. The Contractor shall, upon instructions from the Engineer, immediately stop such operation or work and complete the operation during night time and/or weekend work hours approved by the Engineer. No additional payment or extension of time will be granted for these interruptions or rescheduling of the work.
- G. It is possible that on certain days or portions of days all work may be stopped and all personnel removed from work areas, as directed by federal authorities, due to visits from domestic and/or foreign dignitaries. Visits occur an average of six times a year but may vary due to current events etc. The Contractor shall, upon instructions from the Engineer or Law enforcement personnel, immediately stop or relocate his operations. No additional payment will be made for these interruptions in the work.

Additional extension of work time may be granted as deemed necessary by the Project Manager.

- H. Each Prime Contractor shall utilize approved document management solutions such as e-Builder to the full extent of the Engineer/Owner's discretion. Typical requirements include: submittal packages, RFIs, daily reports, meeting minutes, correspondence, transmittals, drawings, insurance, reports, and logs. Limited training and assistance will be provided by the Project Manager to utilize the approved document management solution.

C-1.7 CONSTRUCTION MANAGEMENT

- A. The Contractor shall submit to the Engineer as directed: manpower breakdowns (daily and by trade including subcontractors), progress reports (daily including the activities of all subcontractors) and any other reports as may be required by the City, State or Federal agencies. Such submissions to the Engineer by the individual Contractors are not necessarily limited to those described, but other certifications shall be submitted, as directed, to the Engineer such as: supplier material delivery certifications and material testing certifications.
- B. The Engineer will supervise all testing provided by others as required by the technical sections of the specifications, and required by authorities having jurisdiction. The Engineer will witness all such tests, record findings and interpret test reports, keep an accurate record of all tests, inspections conducted, findings and test reports. The Engineer will receive, review, investigate and approve all items submitted by the Contractors, such as unit schedule breakdowns, requests for approval of subcontractors, delivery schedules, material lists and the like.
- C. Upon request of the Engineer, at the end of each normal workweek, the Contractor shall furnish for approval, his proposed operating schedule for the following week. This schedule shall indicate the proposed working hours, the types and locations of operations, and types of equipment to be used. After this schedule has been approved, the Contractor shall not deviate from it without receiving prior permission from the Engineer.
- D. All Prime Contractors shall provide supervision and coordination of their respective subcontractors, vendors and suppliers. Prime Contractors shall provide on-site qualified management staff at all times during all shifts while subcontractors are working on site.

C-1.8 CONSTRUCTION SEQUENCE

Listed are several major operations to complete this project within the time specified. While most of these operations should be followed in the order enumerated, several may be implemented simultaneously.

- A. First Order of Work - Submit insurance, shop drawings, subcontractors, project schedules, emergency contacts, name of job superintendent,

emergency electrical contractor, detailed cost breakdown, etc. as required by specifications.

- B. Second Order of Work – Obtain all building and/or construction permits as required and attend preconstruction meeting to review plan of operations and obtain starting date.
- C. Third Order of Work - Contractor shall move all personal tools, equipment, etc. on the site at the location designated by Engineer and begin to perform the installation work in accordance with all applicable codes and regulations.
- D. Fourth Order of Work - Contractor shall complete the reconstruction in accordance with the contract documents including punchlist items.

C-1.9 COORDINATION WITH OTHER WORK

- A. The Contractor shall cooperate fully with other contractors performing work under related contracts, identified in C-1.9D below, and with the Engineer. The Contractor shall carefully adapt scheduling and performance of the work under this contract to accommodate the work under related contracts, heeding any direction that may be provided by the Engineer. The Contractor shall not commit or permit any action that will interfere with the performance of work by any other contractor. The necessary level of coordination may require, but not be limited to, review of related plans and specifications and meetings with other contractors to plan schedule and coordinate the work.
- B. Any installations being made by others, which necessarily should be made prior to any phase of this work, shall be in place before the Contractor proceeds with the work under his contract, and the Contractor shall coordinate his work schedule to allow for the completion of such installations.
- C. No additional compensation shall be made for any normal delays precipitated by the necessary coordination.
- D. The following is a list of construction projects now under construction and/or will be under construction within the limits of the contract and during the period of this contract. The City has made every effort to include all work scheduled in the area of this contract, however, the City does not guarantee that this list is all inclusive and the Contractor shall cooperate with all other construction in his contract area:

N/A

C-1.10 AIRPORT SECURITY BOUNDARIES

- A. The Airport security boundaries shall not be modified or altered without the prior approval of the Airport Security Manager. Security boundaries for this project include: (1) any fence around or inside the Airport, (2) any wall or barrier between the terminal and the aircraft parking apron, and (3) any door that is access-controlled, i.e., possesses a card reader. The

Contractor must submit in writing all requests to modify or alter these boundaries or to make an opening in a security boundary, whether on a temporary or permanent basis, at least 60 days in advance to the Airport Security Manager via the Project Manager for approval. The request must include the objective, the phasing plan for accomplishing the objective, temporary barrier plans, and the plan for security during demolition and/or construction. While the boundary is being modified or altered such that the original physical barrier is no longer intact, the Contractor must provide an Airport-approved security guard on-site to monitor and control access, 24 hours per day, 7 days per week. Temporary barriers to secure openings in the security boundaries may be acceptable in lieu of an on site security guard as long as the temporary barriers provide an equivalent level of protection as the original boundary and have been approved for use by the Airport Security Manager.

- B. Refer to Section 7 of the PHL Security Rules and Regulations for additional security requirements.

C-1.11 ACCESS TO THE SITE

- A. In the event scope items lie within the secure perimeter, primary access to the site shall be through Gate 1 on the Cargo City access road (adjacent to Cargo City Building C-2), Security Checkpoint, or gates/doors shown on the drawings and/or approved by the Engineer. All Contractor employees must be Airport-badged or properly escorted to enter through these areas. Only Contractor-owned, insured, and properly labeled vehicles (see paragraph C-1.12C and D) may pass through Gate 1; no privately owned vehicles are permitted.
- B. Secondary site specific access may be granted under a gate agreement. With an approved gate agreement, the Contractor shall be required to supply full time uniformed security for all construction gates or fence openings used by the Contractor for this project for access to restricted areas of the Airport and the Aircraft Operating Area (AOA). He/she shall be responsible for the unlocking and locking of the construction gate, adhere to the Vehicle Inspection Guidelines, and remain on duty until the last person leaves the construction site at the end of the day.
- C. No temporary construction gates in the security boundary fence will be permitted.
- D. Refer to Section 7 of the PHL Security Rules and Regulations for badging regulations and additional security requirements.

C-1.12 VEHICULAR AND EQUIPMENT TRAVEL ON THE AIRPORT

- A. Any Contractor requiring unescorted, vehicular access onto the Airfield Operations Area (AOA) shall be required to first obtain a valid Airport-issued Photo Identification Badge with airside access privileges and successfully pass the Department of Aviation's AOA driving certificate program.

- B. Vehicles not complying with the above are subject to escort by an authorized Airport-badged Contractor employee and vehicle. The ratio for escorting vehicles onto the airfield via Gate 1 is 1:1, which means that one Airport-badged Contractor employee with escort authorization ('E' sticker) can only escort one non-badged employee. The escorted vehicle must follow and stay with the vehicle providing escort at all times. All escorted vehicles must display an "Escort Required" identification sign on both sides of the vehicle. The Contractor shall provide these "Escort Required" signs. See paragraph D.6 of the PHL Rules and Regulations, Section 7.
- C. Any Contractor requiring access to the Movement Area must pass the Airport's Movement Area Driver Training program. No Contractors shall be allowed unescorted access to the Movement Area.
- D. Because of the complexity of Airport operations, it shall be necessary for all Contractors' vehicles to travel over a predetermined route on airport property. Each vehicle operating in aircraft movement areas shall display in full view a three (3) foot square flag attached to a staff. The flag shall be a checkered pattern of one-foot squares of International Orange and White. If night travel is required for the work, vehicles shall be equipped with roof-mounted, yellow light, rotating beacons.
- E. Contractor vehicles must be painted in company colors, which will coincide with other owned equipment.
- F. Contractor vehicles shall display the company's name and/or logo and an identification number on each side. Numbers or letters shall be at least 3" high and plainly visible. Outline numbers and letters are not permitted. Magnetic and temporary identification panels are not permitted.
- G. All Contractors must submit proof of automobile liability insurance with the appropriate minimums to the Engineer prior to any vehicle entering the AOA.
- H. The Contractor shall be responsible that all his personnel, subcontractors, suppliers, and related personnel adhere to the instructions issued by the Project Manager. All vehicles and equipment shall receive authorization prior to movements on the field at crossings. Flagmen, furnished by the Contractor, shall be located at critical aircraft or vehicle crossings, where directed by the Engineer.

C-1.13 AIRPORT SECURITY

- A. This project is located at Philadelphia International Airport (PHL). The Contractor must be fully cognizant of the work site and its relation to Airport operations, Airport security boundaries, and Airport security rules. Any failure to comply with the security rules and/or direction from the Project Manager, Airport Security Manager, and/or the Airport Operations Superintendent regarding security shall be cause for immediate dismissal from the Airport and/or shutdown of the entire project. In the event of such

an incident, the Contractor shall receive no compensation for outstanding work and may be liable for damages and additional claims from the City.

- B. The Airport consists of three security areas: public, sterile, and secure. Each area has its own security requirements. Maintaining the integrity of the boundaries between these areas is critical. The public area is commonly referred to as “landside”, the sterile area is commonly referred to as “terminal complex”, and the secure area is commonly referred to as “airside”. The sterile and secure areas are designated as Security Identification Display Areas (SIDA), and access to these areas requires an Airport-issued Photo Identification Badge or escort by an Airport-approved escort. See paragraph C of PHL Rules and Regulations, Section 7.
- C. Contractor personnel requiring access to non-SIDA areas only will be required to display a Contractor-provided identification badge. In addition, each Visitor being escorted through SIDA or AOA areas must display a Contractor-provided identification badge. The badge shall meet the following requirements:
 - 1. Wallet size (2-1/8" x 3-3/8")
 - 2. Laminated plastic
 - 3. Green background with black letters
 - 4. Fastening device for attachment to shirt collar or pocket or chain for hanging around the neck
 - 5. The Department of Aviation will supply lettering detail. These badges will not be valid outside of the project work site.
- D. The Airport Security Department regulates issuance of all Airport-issued Photo Identification Badges. Contractors who require access on a frequent basis to the project work site must apply for SIDA badges. Upon completion of a successful background check and training program, and approval by the Airport Security Manager, an Airport-issued Photo Identification Badge will be issued. Applications for badges can be obtained from the Project Manager. See PHL Rules and Regulations, Section 7 for requirements.
- E. A portion of the Contractor's employees may be granted escort privileges. The Contractor must request a special application for this escort designation to the Airport Security Manager via the Project Manager. Upon approval by the Airport Security Manager, an 'E' sticker will be issued. The Airport Security Department will provide rules for escorting and penalties for failure to comply with these rules (see paragraph D.6 of the PHL Rules and Regulations, Section 7).
- F. The Contractor shall be responsible for monitoring all personnel requiring access to the work site, which shall include his personnel, subcontractors' personnel, other Contractors working in the same construction area, material delivery trucks, authorized visitors to the site, etc. The Contractor

shall be held responsible for the admission of any unauthorized personnel into his work area. Anyone found on the work site without the proper identification is subject to arrest by the Airport Police and payment of Federally imposed fine(s).

- G. The cost of each photo identification badge is \$33, which will be paid by the Contractor with a money order payable to the City of Philadelphia. The cost for the fingerprinting is \$32, also made payable to the City of Philadelphia.
- H. All Contractors and subcontractors must certify in writing that they have performed background checks on all of their employees to the extent necessary to ensure the safety and security of the traveling public. This includes non-badged personnel. The Contractor is required to pay all fees for obtaining background checks.
- I. Philadelphia International Airport Escorting Rules and Responsibilities are summarized below:
 - 1. All non-badged "Visitors" such as Union Business agents, materials and equipment salesmen, suppliers, etc. must be escorted by properly badged and authorized personnel. Escorting of a "Visitor" is allowed to take place by escort authorized Blue Badged personnel for short term, legitimate, and business-related reasons only. Each Visitor must wear a Green Contractor badge described in paragraph C-1.13C.
 - 2. There is a three-week limit on escorting an individual into the SIDA areas of the Airport. Those who have an operational need to access the SIDA areas repeatedly for more than three weeks must submit to the badge application process and obtain a PHL Identification Badge
 - 3. Employees who lose or forget their ID Badges are NOT considered 'Visitors' and cannot be escorted.
- J. N/A
- K. Construction work in a Customs and Border Protection controlled area requires an additional 'seal' on the Airport-issued Photo Identification Badge prior to work commencement. To obtain this 'seal', an application must be made through the Customs and Border Protection Badge and Identification Office on the 3rd Floor of Terminal A-West.

C-1.14 SAFETY GEAR & PLAN

Contractor shall provide "safety" orange retro-reflective or lighted (required for all work performed during the hours of darkness) safety vests for personnel working on/or near roadways and airfield. Contractor shall also equip personnel with working flashlights equipped with a "safety" orange/red wand when working in above stated area. The above is to be provided in addition to the standard OSHA required construction safety gear. Contractor shall also provide and maintain a site specific safety plan for all phases of work.

C-1.15 SPECIAL RULES AND REGULATIONS

The Contractor shall coordinate all his activities with the Engineer, except for emergency situations when he shall follow the instructions of the Engineer or the Airport Operations officials. Work on the airfield shall be carefully scheduled or commence only upon prior approval from the Engineer.

C-1.16 REFERENCE SPECIFICATIONS

Where reference is made to acceptable standards or specifications of workmanship, methods or materials by the use of Federal Government, City of Philadelphia, Commonwealth of Pennsylvania or technical societies, the current edition, together with amendment revisions of supplements adopted and in effect on the date of invitation for bids shall apply.

C-1.17 MATERIAL AND EQUIPMENT APPROVALS

- A. Where manufacturer's name, brand or trademark is referenced to, it has been selected to establish a standard of quality for the materials required. Materials of different manufacture considered to be equal to the materials specified will receive full consideration and shall be subject to approval of the Engineer before being incorporated in the work. The contract price shall in all instances be based only upon materials specified. A list of material suppliers shall be submitted to the Engineer for approval.
- B. It is the Contractor's responsibility to furnish all literature, test results, calculations, etc. for review of substituted material or equipment. Any redesign necessary in order to accommodate an "approved equal" will be paid by the Contractor or deducted from his payment estimate.

C-1.18 PROCUREMENT OF CRITICAL MATERIALS

If the Contractor anticipates that there may be delays in the procurement of certain materials he shall notify the Engineer upon receipt of the Award Notice. In order to expedite the delivery of these materials, the Engineer may issue a Notice to Order Critical Materials to the Contractor after execution of the contract and before a Notice to Proceed is given to start work.

C-1.19 STOCKPILE

All stockpiled material shall not be stored closer than 75 feet from the edge of any active taxiway or 250 feet from the centerline of an active runway and may not penetrate an imaginary surface off each runway end on a slope of 34 to 1. Material shall be sufficiently constrained to prevent any wind erosion.

C-1.20 AIR POLLUTION CONTROL

- A. No burning will be permitted on the site.
- B. It will be the Contractor's responsibility to control dust by an approved means. No separate payment will be made and the Contractor shall make due allowance in his bid to cover these non-productive costs.

C-1.21 TEMPORARY DRAINAGE

- A. The Contractor will be required to ensure at all times adequate drainage from his area of operations include dewatering runoff. The Contractor shall also provide water pollution and erosion control in accordance with Pennsylvania Department of Transportation Form 408, Sections 845.1, 845.2 and 845.3.
- B. All drainage ditches and culverts draining Airport and adjacent property shall be maintained and kept unobstructed at all times. If, in the opinion of the Engineer, the drainage of any area in the vicinity of the site is obstructed or retarded due to the Contractor's performance or negligence, the Contractor shall immediately remedy the cause of such obstruction or retardation at no additional cost to the City.

C-1.22 BARRICADES AND WARNING LIGHTS OR SIGNS

- A. The Contractor shall furnish, place and maintain barricades, direction and warning signs, red flags, battery powered red lights, and flagmen to adequately protect the work under construction from damage to protect the traveling public from accident and/or unnecessary inconvenience.
- B. Red lights shall continuously flash and have a minimum intensity of four (4) candles and a flash rate of 55 to 75 flashes per minute with a 10% flash duration.
- C. All construction areas shall be separated from air operations areas by portable, water-filled plastic low profile / jersey type barricades with alternating orange and white stripes as shown on the plans. Barricades shall be a minimum of eight (8) feet in length and shall be placed with no separation between the next barricade. Each barricade shall have two (2) red flashing lights as described above.
- D. All booms on cranes shall be identified by painting the top twenty (20) feet white and international orange in five (5) foot sections. Flags and 12-volt red flashing lights will also be required. All booms shall be lowered when not in operation.
- E. Steel plates, if required by the Engineer, shall be 3/4" thick minimum, adequately sized to safely span open excavations and secured in place.
- F. The Contractor will not be paid separately for furnishing, placing or relocating, and maintaining barricades, lights, danger signals, etc. and he shall make due allowance in his bid, in the applicable items of work, to cover these non-productive costs.

C-1.23 PROTECTION OF UTILITIES

- A. The Contractor shall exercise special care when working near existing utility installations such as lights, ducts, structures, underground trench laid cables, cable marker pads, water lines, underground oil lines, railroads and other installation, to ensure that no damage is done to them and that the

underground wiring to such utilities is not damaged or rooted out, or pipelines broken or punctured.

If the Contractor damages any installation, he shall repair the damaged item to the Engineer's satisfaction at the Contractor's expense. At the Engineer's discretion, repairs will be done continuously on a 24-hour a day basis until completed. The Contractor shall submit for approval the name of an electrical contractor who shall be available on a 24-hour a day basis to affect any repairs as may be necessary due to Contractor error.

- B. Prior to any excavation or demolition work, the Contractor must contact the PA One-Call System, Inc. (1-800-242-1776) and comply with the provisions of PA Act 287 of 1974, as amended by Act 187 of 1996. The Contractor shall also identify all overhead lines, notify and comply with the applicable utility company's clearance requirements. The Contractor shall contact the Pennsylvania One-Call System (1-800-242-1776) no less than 3 working days and no more than 10 working days prior to starting any excavation and shall provide written notice to the Engineer that contact has been made.

All costs associated with protection of utilities, including compliance with the provisions of PA Act 287 of 1974 as amended by Act 187 of 1996 shall be included in the price bid for each item as shown on the bid proposal. No separate payment will be made.

C-1.24 FENCES, OFFICE, SHEDS AND STORAGE AREA

- A. The Contractor shall provide enclosures, fences, barricades, or other devices where necessary, or as directed, to prevent access to the site or danger to the public, as approved by the Engineer.
- B. The Contractor shall erect and maintain offices, tools, and storage sheds and other temporary structures required for his work as approved by the Engineer. All electrical power consumption will be metered and paid for by the Contractor.
- C. The Contractor shall be responsible for the care and protection of his materials, equipment and work. The Contractor shall provide 8 ft. high (minimum) temporary fencing around any designated staging area for the enclosure of field offices, equipment and stored materials. Fencing and gates at restricted areas of the Airport shall conform to TSAR 1542.
- D. Upon completion of his work, the Contractor shall remove all temporary construction from the site.
- E. A plan showing the entire plot and area designated for use of the Contractor shall be prepared by the Contractor and approved by the Engineer. At a minimum the plan shall include the following: fence layout and gate locations, material storage area, access roads including type of surfacing, drainage methods and restoration requirements upon completion of permanent construction.

C-1.25 RODENT CONTROL

The Contractor shall take precautions against the influx of rats, mice, and other pests. He shall engage a reputable exterminating firm to give regular service. Such extermination shall comply with the regulations of the Department of Public Health.

C-1.26 PARKING VEHICLES

Parking for the Contractor's personnel will be the responsibility of the contractor.

C-1.27 PROGRESS PHOTOGRAPHS

As the work progresses, the contractor shall take record photographs. The record photographs shall be submitted on a weekly basis and submitted with contractor construction report using e-Builder, or other approved document management solution. Record photographs must be labelled with specific project name, name of photo location, date and item being photographed, IE. PHL-1703.14.Existing-Walkway-06-01-26. Contractors shall cooperate with the project team who may photograph the construction area as required.

C-1.28 SANITARY FACILITIES

The Contractor shall provide and maintain in proper working order and in clean and sanitary condition adequate sanitary facilities which shall include but not be limited to privacy enclosures, toilet tissue, paper towels, waste receptacles and daily janitorial services for these facilities. The Contractor shall enforce use of these facilities by all personnel. Evidence to the contrary will require removal, disinfecting and reconstruction of work defaced. Use of existing Airport facilities is not allowed.

C-1.29 CONSTRUCTION CONFERENCES

Job conferences will be held on a regular weekly basis or as otherwise instructed by the Project Manager. Attendance by the Contractor's project manager or responsible representative is mandatory. Minutes will be recorded and distributed. Any corrections or comments to the minutes shall be made within one (1) week.

C-1.30 ERRORS OR OMISSIONS

- A. Should any bidder find discrepancies, duplications or omissions in the documents or have doubt as to the meaning expressed by the documents, he shall make inquiry in writing at once to the Engineer prior to bid date.
- B. Should there be any changes, corrections or clarifications to the Bid Documents, deemed necessary by the Engineer, written addenda will be issued accordingly. Addenda thus issued by the Engineer will be a part of the Contract Documents. No oral, telephone or letter instructions will be considered as having effect upon the Contract Documents; addenda only shall constitute change to them.

Bidders are urged to make early examination of Bid Documents and make inquiries about them if necessary to allow Engineer ample time to analyze such inquiries and to issue addenda when necessary, even though prices may not be determined until late in the bidding period.

- C. Contractor shall notify Engineer in writing regarding any necessary items that may have been omitted from the specifications or drawings or both, and any irregularities, discrepancies or duplications between drawings and specifications according to the evident intent. In case of such errors or omissions, the Contractor shall not proceed with the work in uncertainty, but shall consult Engineer regarding proper intent and revise it if necessary.
- D. Where conflicts exist in the plans or specifications, the most stringent will be expected from the contractor. Bid accordingly.

C-1.31 LIMIT OF WORK

Limit of work is as shown on the drawings or as set by the Project Manager.

C-1.32 START OF WORK

The Contractor will be issued a written "Notice to Proceed".

C-1.33 TIME TO COMPLETE

Work required to be performed under this contract shall be completed in **90 Calendar Days** from the date of the Notice to Proceed. Liquidated damages will be assessed if the work is not completed as noted. A winter shutdown is not anticipated for this work.

PROJECT DESCRIPTION

The work to be done under this Contract includes furnishing all materials, labor, equipment, tools, and incidentals needed for the construction of all items shown in the Contract documents. This work is comprised of, but not limited to, the following general items:

- Installation of Temporary Safety Devices
- Site clearing including Tree Trimming and Removal
- Demolition of Existing Footway, Pavement, Curb, Guide Rail and Utilities
- Adjustments to Existing Utilities
- Installation of New Drainage, Electrical and Telecom Facilities
- Site earthwork/grading
- Installation of New Footway, Pavement, Curb and Guide Rail
- Installation of Signage and Pavement Markings
- Placement of Erosion & Sedimentation Control
- Site stabilization

The plan described in this section is not all-inclusive. The Contractor is required to submit a fully detailed schedule for the entire project prior to beginning major construction activities in accordance with Section C-1.6 Construction Procedure and Schedule. This schedule shall include time periods, anticipated night work, and other information necessary to clearly describe the prosecution and progress of the work. Temporary barricades and/or flags or stakes or other material deemed suitable by the Owner's Representative are to be placed where they decide are necessary.

A summary of the Phases with consecutive calendar day durations for each item are indicated in Table 1 below. Items with lead times exceeding mobilization durations must be coordinated separately with the Owner's Representative.

Table 1: Construction Phase Duration Summary (Calendar Days)

Phase	Task	Duration (Milestone/Calendar Day)
Mobilization	Submittals and Long Lead Item Ordering	30 Days (Day 1)
Construction NTP	Notice to Proceed	0 Days (Day 31)
Construction	---	45 Days (Day 31)
Phase 1	See Traffic Control Plan – Phase 1	
Phase 2	See Traffic Control Plan – Phase 2	
Phase 3	See Traffic Control Plan – Phase 3	
Close out	Final Stabilization and Punch List Items	15 Days (Day 76)
Total*		90 Days

CONSTRUCTION PHASING REQUIREMENTS

The Traffic Control Plans within the Contract Drawings show general items of work and phase limits along with the acceptable impacts to airport operations. For details related to the items depicted on the plans, the Contractor shall utilize the appropriate general, civil, and/or electrical plans and details for actual layout and construction. Bidders shall carefully consider the resources necessary to comply with the phasing, sequence of work, and durations included in the contract documents.

LIQUIDATED DAMAGES

The Contractor shall be aware of all liquidated damages for development of the construction schedules. Liquidated damages utilized for the development of the contract documents are as follows:

Table 2: Liquidated Damages

Restrictions	Liquidated Damages Amount*	Every
Beyond Contract Completion	\$1,000	Per calendar day or part of day

*Note that Liquidated damages are cumulative.

MOBILIZATION (30 days)

Mobilization shall include but is not limited to:

- Submittals (not limited to: QC Plan, Electrical, Schedule, Safety Plans, Manholes)
- Safety Area Review and Stakeout (Marked via flags/paint)
- Requests for Information (RFIs)
- Required materials ordered
- Any required meetings and coordination with the Owner's Representative
- Coordination with adjacent projects (See Project Manual Section C-1.9)
- Trailer/Temporary Construction setup (if required by Contractor)
- Submit Construction Schedules to Owner's Representative for approval
- Investigation and verification of existing conditions (entire project may be available upon coordination with Owner's Representative)
- Permit acquisition

COMPLETION REQUIREMENTS:

Contractor must have the following items completed at the end of Mobilization:

- Approved QC Plan
- Approved Safety Plan
- All long lead items approved by the Owner's Representative and confirmed ordered to the Owner's Representative's satisfaction
- Verification of existing conditions completed
- Permits acquired
- Approved baseline schedule and first two-week look-ahead schedule

CONSTRUCTION (45 days)

Refer to the Traffic Control Plans and other Contract Drawings for Major Work Items, Duration/Work Hour Restrictions, and Special Considerations (if present). The work area is considered complete when the major work items have been completed, and the installed products are suitable for airport use. Delays in procurement will not extend the contract schedule.

COMPLETION REQUIREMENTS:

Contractor must have the following items completed at the end of Construction:

- All major work items as identified on Contract Drawings apart from final site stabilization and punch list items.

CLOSEOUT (15 days)

This phase shall include all work required of the contract documents to complete project closeout activities. This will be considered complete once the following items are complete:

- Final site stabilization
- Punch list items
- Turn over project records including redlines, pre-construction survey, post-construction survey, QC test results and summary, permit closeout, final pay requests, and OEO information.

PHASING PLAN REVISIONS:

The DOA reserves the right to adjust availability of work areas based on the time of year and current operations of the airport.

The phasing plan is intended to provide a workable sequence of construction for the Contractor with some flexibility for the airport to be able to make changes if the airport experiences changes in operations. The Contractor shall base their bid and complete their CPM schedule with the required resources to complete the project within the primary work area durations and sequence provided. Should the Contractor wish to revise the phasing plan due to their equipment or manpower abilities, the plan shall be submitted to the Owner's Representative for their review and approval.

A revised plan shall include a revised schedule with all milestone dates and projected production rates. If an alternate schedule is submitted, the completion date and all other restrictions, durations, and milestones must be maintained or bettered.

C-1.34 OFFICE FOR ENGINEER

A field office will not be required for the Engineer.

C-1.35 LINE AND GRADE

The City will provide horizontal control points and benchmarks for vertical control. From these basic points, the Contractor shall supply all survey work necessary to perform the work to the line and grades shown on the drawings.

C-1.36 WATER SUPPLY

No water supply to be provided for this project.

C-1.37 RUBBISH

The Contractor shall provide covered metal cans in sufficient quantity for accumulation of rubbish and garbage from lunch cans and the like of all employees of all Contractors at the site. The Contractor shall instruct his employees to deposit their garbage and trash in these containers and not elsewhere about the site; and also not to use the containers for construction scraps, rubbish, trash and surplus materials. The Contractor shall empty these containers daily and haul the rubbish to a legal disposal site off Airport property.

C-1.38 CLEAN-UP

- A. The Contractor shall intermittently remove waste and rubble so that at no time shall there be undue accumulations. Upon completion, the Contractor shall dress up all areas affected by his work.

The Contractor shall provide dumpsters or other containers for the removal of construction trash and debris. The Contractor is responsible for ensuring that dumpsters or other containers are properly covered at all times to contain trash and debris in windy conditions.

- B. Spillage of earth or other materials on all existing paved surfaces shall be cleaned up immediately by all Prime Contractors.

Each Prime Contractor shall be responsible for their trash and the removal of same on a daily basis.

C-1.39 FINAL ACCEPTANCE

The Contractor shall perform and complete his work accordingly to the Contract Documents without fault or defect of any kind. When this condition of completion exists, the Contractor shall request final inspection and the Engineer will make the inspection promptly thereafter, recording any incomplete or defective work that he may discover on a punchlist. The Contractor shall then remedy each punchlist item and make the work conform to the Contract Documents in every instance. The Contractor shall then request inspection of all punchlist items.

C-1.40 PENNSYLVANIA SALES TAX

Unless an exemption is available under applicable law, materials, equipment and supplies to be furnished under this contract may be subject to the Pennsylvania and Philadelphia sales and use tax. THE BIDDER/CONTRACTOR IS SOLELY RESPONSIBLE FOR: (i) CONDUCTING AN INVESTIGATION TO DETERMINE BIDDER'S/ CONTRACTOR'S TAX LIABILITY AND (ii) THE PAYMENT OF ALL TAXES REQUIRED BY LAW.

**C-1.41 TAX IDENTIFICATION NUMBER FOR CONTRACTORS,
SUBCONTRACTORS AND SUPPLIERS**

All prime contractors and subcontractors employed to perform work on this project, and all suppliers doing business in the City of Philadelphia who furnish any equipment, supplies or other materials in connection with this project, must possess a City of Philadelphia Business Tax Number. All such Tax Numbers must be submitted to the Project Manager with the subcontractor/supplier approval request. No subcontractor or supplier will be considered for approval without a City Business Tax Number. City Business Tax Numbers can be obtained in Revenue Dept., 1401 JFK Blvd., Municipal Services Building, Concourse Level, Philadelphia, PA 19102.

The City Controller's Office is mandated to review vendor payments prior to issuance and withhold said payments if non-compliance exists.

A CITY OF PHILADELPHIA TAX ACCOUNT NUMBER IS REQUIRED FOR ALL CONTRACTORS AND SUBCONTRACTORS. PLEASE INSERT IN THE SPACE PROVIDED ON THE BID INVITATION.

C-1.42 CUTTING, WELDING, OPEN FLAME AND SPARK PRODUCING EQUIPMENT

Before approval of any burn permit at the Philadelphia International airport by the Department of Aviation, the job superintendent shall inspect the work area and confirm that the necessary precautions have been taken to prevent fire in accordance with NFPA 51B and the Fire Code of Philadelphia.

General Precautions

- Sprinklers, where provided, in service (verified by Department of Aviation)
- Cutting and welding equipment in good repair and cylinders properly secured
- Protect gas hoses from physical damage and clear of the public area
- Extinguishing equipment on site shall have current inspection tags issued by a certified Fire Extinguishing Inspection Company
- Cutting and welding area shall be well ventilated and by-product gases shall be vented to unoccupied areas
- Electric arc welding, resistance welding and other similar welding equipment shall comply with Article No. 630 of the 1993 NEC
- Only one day's supply of acetylene on site

- City permit required to use acetylene cylinders exceeding 200 cubic feet net gas capacity

Within 35 Feet of Work

- Floors swept clean of combustibles
- Combustible floors wet down, covered with damp sand, metal or other shields
- All wall and floor openings covered with non-combustible covers
- Non-combustible covers suspended beneath work to collect sparks
- Remove combustibles or provide non-combustible protective shields for combustibles

Work on Enclosed Equipment - (Tanks, containers, ducts, dust collectors, etc.)

- Equipment cleaned of all combustibles
- Containers purged of all flammable vapors

Fire Watch

- Provide a responsible person(s) solely assigned the duties of constantly watching for accidental fires in the areas affected by the operation
- To be provided during, and 3 hours after, operation
- To include adjoining floors, rooms and spaces affected by the operation
- Supplied with the following extinguishing equipment:
 - a. One portable pressurized water extinguisher at 2A minimum
 - b. One portable dry chemical extinguisher rated at 30BC minimum (No ABC rated extinguishers allowed) or:
 - c. One portable CO2 extinguisher rated at 10BC minimum
- Notification to Airport Communications Center (3111 on any airport phone) of any fire at the site, whether controlled or not. Airport Fire Department will respond and investigate to determine severity of hazard.

The Contractor is to obtain the approval and signature of the Project Manager prior to the issuance of a burn permit. The burn permit shall be distributed to the Airport Fire Department, Communications Center and Operations Office at least 24 hours prior to any operation.

Penalties shall be assessed according to the Philadelphia Fire Code; \$300.00 fine and/or 90 days imprisonment for each violation or failure to comply.

C-1.43 OEO Compliance

The Contractor is required to report all payments to Minority, Woman, Disabled, and Disadvantaged Owned Business Enterprises subcontractors monthly to the Office of Economic Opportunity (OEO). If you have any questions, please contact OEO at 215-683-2000.

The OEO Monthly Summary Report is immediately following the Burn Permit located on the next page.

C-1.44 DELETION OF WORK

The Engineer shall reserve the right to delete any or all portions of the contract work, as deemed necessary for the best interest of the City without compensation to the Contractor.

C-1.45 INFORMATION

Information regarding any portion of this bid package can be obtained by submitting a request for information on www.phlcontracts.phila.gov. All questions must be received in writing. All questions will be answered by Amendment and issued to all approved sellers. Sellers asking questions via telephone will not receive direct responses.

C-1.46 PRE-BID MEETING

The time and date of the non-mandatory, virtual Pre-Bid Meeting will be distributed to all plan holders and conducted via Microsoft Teams.

BURN PERMIT

PHILADELPHIA INTERNATIONAL AIRPORT NOTICE OF FLAME CUTTING/WELDING

LOCATION: _____

CONTRACTOR: _____

HOURS: _____

DATE: _____

NAME OF FIRE WATCHER: _____

NOTE: All burn activity is to be supervised 3 hours after termination of operation.

Operations, Communications Center, Fire Department, Engineering, Job Control and FM Global are to be notified of all burn activity.

Operations fax #: (215) 937-6873

Communications Center fax #: (215) 937-6882

Fire Department fax #: (215) 492-1258

Engineering fax#: (215) 937-6734

Job Control fax #: (215) 937-6898

FM Global fax #: (888) 201-9263

Sent By: _____

Received By: _____

FAILURE TO COMPLY WITH THESE REGULATIONS WILL RESULT IN A \$300.00 FINE AND/OR 90 DAYS IMPRISONMENT.

City of Philadelphia
Office of Economic Opportunity

POST AWARD COMPLIANCE REVIEW FOR M/W/DSBEs			
DATE:	BID#	BID OPENING DATE:	REPORT NO. _____ (i.e. 1,2 or 3)
PROJECT NAME:		CONTRACT#	CONTRACT AMOUNT
COMMITMENT TO MBE	COMMITMENT TO WBE	COMMITMENT TO DSBE	DATE WORK BEGINS
PRIME CONTRACTOR NAME:			
ADDRESS:			
CONTACT:		PHONE#	FAX #:
SUBCONTRACTOR NAME:			
MBE _____		WBE _____	DSBE _____
ADDRESS:			
CONTACT:		PHONE#	FAX #:
SCOPE OF WORK:			
MONTH/YEAR	PAYMENTS TO FIRM	% OF TOTAL PAYMENT	YEAR TO DATE AMT PAID
JAN	\$	%	
FEB	\$	%	
MAR	\$	%	
APR	\$	%	
MAY	\$	%	
JUN	\$	%	
JUL	\$	%	
AUG	\$	%	
SEP	\$	%	
OCT	\$	%	
NOV	\$	%	
DEC	\$	%	

TOTAL (SERVICE OR PURCHASE) SUBCONTRACT VALUE IS: \$ _____

*ATTACH COPIES OF CANCELLED CHECKS, SUBCONTRACTS AND INVOICES FROM SUBS

SIGNATURE

DATE

C-1.47 SUBMITTALS, SHOP DRAWINGS AND APPLICATIONS FOR PAYMENT

Trimble Unity Construct, a web-based software program, will be used to track all submittals, shop drawings and applications for payment. Contractor will be provided login information. Contractor will be required to upload PDF documents that shall contain a Submittal Data Form. Each Submittal Data Form shall indicate the bid item number, specification section, paragraph, drawing reference and submittal identification number. Submittal identification numbers shall be assigned sequentially by specification section. The Project Manager will review and provide approval status on Trimble Unity Construct, or other approved document management solution. Contractor agrees to execute field directives, change orders or other project/contract related documents, via DocuSign for electronic signature and/or approval as transmitted by Project Manager.

C-1.48 RECORD DRAWINGS

The Contractor shall submit two (2) complete copies of the contract drawings with changes indicated in red along with a full set of AutoCAD drawings reflecting any and all changes/revisions to the original bid/contract set of plans.

C-1.49 PARTIAL CERTIFICATION OF PROJECT FUNDING

It should be understood and agreed by this bidder that funding for this project will be partially certified. It should be further understood that additional funding is subject to councilmatic appropriation of funds. Should the City fail to appropriate the necessary additional funds for this project, the Contract for that portion of the work not funded shall terminate automatically, without penalty, cost or liability to the City.

C-1.50 SPILL NOTIFICATION PROCEDURE

Airport regulations require immediate notification to the Airport when any amount of fuel or regulated substance* is spilled or released on Airport property. In addition, any spill (regardless of quantity) that enters a storm drain must also be reported to the Pennsylvania Department of Environmental Protection (PADEP) and the National Response Center. The Airport will make the notification to PADEP and the National Response Center after being notified of the release by the contractor.

*The following substances are regulated under Pennsylvania environmental regulations and require notification:

- All petroleum hydrocarbon products used at the Airport including jet fuels, gasoline, and diesel fuels, heating oil, hydraulic fluid, transmission fluid, etc.
- Ethylene glycol-based anti-freeze and deicing fluids
- Releases of placarded non-petroleum substances.

To report a spill or release of any quantity fuel or regulated substance, call the Airport Communications Center at 215-937-3111.

All spills of any size shall be promptly and properly cleaned up.

PLEASE POST "THE SPILL NOTIFICATION PROCEDURE" ON-SITE. It is located on the following page.

SPILL NOTIFICATION PROCEDURE FOR ALL TENANTS
PHILADELPHIA INTERNATIONAL AIRPORT
UPDATED AS OF JULY 2013

Airport regulations require the immediate notification of Airport Operations when any amount of fuel or regulated substance is spilled or released anywhere on Airport property

The following substances are regulated under environmental regulations and require Airport Operations notification:

- All petroleum hydrocarbon products used at the Airport, including jet fuels, gasoline and diesel fuels, heating oil, hydraulic fluid, transmission fluid, etc.
- Ethylene glycol-based anti-freeze and deicing fluids.
- Releases of placarded non-petroleum substances.

In addition, any spill (regardless of quantity) that enters a storm drain must also be reported to the Pennsylvania Department of Environmental Protection (PADEP) and the National Response Center. The Airport will make the notification to PADEP and the National Response Center after being notified of the release by the airline, aircraft fueller, or Airport tenant.

To report a spill or release of any quantity of fuel or regulated substance call the Airport Communications Center at:

215-937-3111

All spills regardless of quantity shall be promptly and properly cleaned up.

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SECTION 7 - AIRPORT SECURITY

A. PURPOSE

PHL has adopted, maintains and enforces an Airport Security Plan ("ASP"), as mandated by the U.S. Department of Homeland Security by and through its Transportation Security Administration ("TSA"). These security Rules and Regulations are adopted in support of the ASP for the safety and security of all those who enter and utilize PHL and those who violate these Rules and Regulations or applicable federal regulations will be subject to the appropriate penalty indicated herein.

B. COMPLIANCE REQUIREMENTS

1. All persons using the Airport (as defined in Section 1 of these Rules and Regulations) are subject to the security program and these security rules and regulations, as amended from time to time.
2. No one may, or cause another person to, tamper or interfere with, compromise, modify, or attempt to circumvent any security system, measure or procedure implemented pursuant to, or in association with, the ASP.
3. **Penalty for Noncompliance.** Persons who violate security regulations and procedures, including those set forth herein may:
 - i. Be denied future access to the Secured, Air Operations, SIDA or Sterile Areas;
 - ii. Have their access or driving privileges and/or Airport Identification Badge (PHL ID Badge or PHL Security Badge) suspended for up to 30 days;
 - iii. Have their access or driving privileges and/or PHL ID Badge permanently revoked; and/or
 - iv. Be fined or otherwise penalized in accordance with applicable regulatory measures.

C. DESCRIPTION OF AIRPORT AREAS

1. **Public Areas** (sometimes referred to as "Landside") are normally accessible to the General Public. They include public portions of all Terminal Buildings, parking lots, and Airport roadways. See Exhibit 7-1.
2. **The Security Identification Display Area ("SIDA")** is that portion of the Airport in which each person is required by the Airport Operator to

continuously and prominently display Airport issued or Airport approved identification between the neck and waist on the outermost garment unless that person is under an Airport approved escort. See Exhibit 7-1.

3. **Restricted Areas** are those parts of the Airport not open to the public and include, but are not limited to, baggage make up areas, passenger and cargo loading ramps, hangar areas, runways and taxiways. Restricted areas are a part of the SIDA. See Exhibit 7-1.
4. **The Air Operations Area** ("AOA") is the portion of the Airport designed and used for landing, taking off or surface maneuvering of Aircraft. The AOA is that area contained within the security boundary established by buildings and chain link fencing along the perimeter of the Airport. It includes all aircraft movement areas i.e. runways, taxiways etc., aircraft parking areas, loading ramps and safety areas used by commercial aircraft and any adjacent areas that are bounded by the outer service road. The Air Operations Area is a part of the SIDA. See Exhibit 7-1.
5. **The Secured Area** (sometimes referred to as "Airside" and including the Restricted, SIDA and AOA areas) is that area of the Airport where access is controlled by a system, method, or procedure to control authorized access and deny access to unauthorized persons. At PHL, the Secured Area is comprised of that portion of the Air Operations Area bordered on the north by the perimeter fence line and Terminal and cargo buildings (as well as associated cargo facility ramps), on the east by the grass area adjacent to the "F" Ramp, on the South by the Outer Service Road, and on the west at the intersection of the Deicing Apron and the Outer Service Road. The Secured Area therefore includes all the baggage tunnels, the east and west aprons, as well as the fuel loading and truck parking apron. See Exhibit 7-1. The boundary of the Secured Area may be changed, from time to time, either temporarily or permanently.
6. **The Sterile Area** (sometimes referred to as "Terminal") is the portion of the Airport that provides passengers access to board aircraft and to which access is controlled through the screening of persons and property. It includes the area past Security Screening at Terminals/Concourse A West, A East, B, C, D, E and F. See Exhibit 7-1.

D. PROCEDURES FOR ACCESS TO RESTRICTED AREAS

1. Security Screening

- a. **Who Must be Screened.** Persons desiring to enter the Secured Area, AOA, SIDA or Sterile Area are subject to, and consent to, security screening, questioning, inspection and search of their persons and accessible property as required by law and must comply with the

system, measures or procedures being applied to control access as defined in these rules.

- b. **Random Screening of Badgeholders.** Badgeholders may be subject to random screening and searches by the TSA or other appointed authority at any time while attempting to access, or in, restricted areas.
- c. **Inspection of Badges.** Anytime an individual with a PHL ID Badge attempts to pass through a federally regulated checkpoint or a staffed perimeter security checkpoint, the individual responsible for checking PHL ID Badges will stop the individual; verify/compare the photograph on the badge to the person; and check the badge's expiration date.
- d. **Handling Invalid Badges.** If the person attempting to pass the checkpoint does not match the photograph on his/her PHL ID Badge, or if the PHL ID Badge is expired, altered, or counterfeit, the person responsible for checking the PHL ID Badge will:
 - 1. Deny that person access to the restricted area;
 - 2. Confiscate the PHL ID Badge; and
 - 3. Immediately report the incident to the Airport Police at (215) 937-6711 or the Airport Security Department at (215) 937-5452.

2. General Requirements for Access

- a. The only persons authorized to enter restricted areas are:
 - i. Authorized and properly identified PHL personnel, tenants, tenant employees, and airline employees assigned a duty or aviation activity or who have an operational need to be in a particular area;
 - ii. Passengers, who under appropriate supervision, are entering to enplane or deplane an aircraft;
 - iii. Persons under appropriate supervision or escort as discussed in Section D.6. below;
 - iv. Those having prior written PHL authorization; and
 - v. Properly identified FAA, TSA, or DHS employees or representatives.

- b. **Removal of Unidentified and Unauthorized Persons.** Unidentified and unauthorized persons in the Secured, Sterile, SIDA or Air Operations Areas may be detained or removed by the Airport Director or his duly authorized representative, Airport Police or the TSA.

3. Approved Identification for Unescorted Access to Restricted Areas:

- a. Valid Airport ID indicating that individual has unescorted access privileges to that area; or
- b. In the case of aircraft crewmembers, dressed in the full uniform of his/her company, a photo ID issued by an authorizing airline; or
- c. In the case of an FAA Aviation Safety Inspector conducting his/her assigned duties, an FAA Form 110 A in his/her possession; or
- d. TSA identification badges worn by authorized TSA agents.

4. Airport Badge Description/Authorization

- a. PHL issues four (4) different colored PHL ID Badges to identify personnel and designate their access privileges based on their need to be at a given work station (See Exhibit 7-2):

Color	Access Authorization	Escort Privileges	Expiration
BLUE	Unescorted access to areas of the Sterile, Secured, SIDA and Air Operations Areas where badgeholder has an operational need to be	-Indicated by PHL issued escort designation -Authorized to escort in Sterile Area, Secured Area, SIDA and AOA	Expires in two (2) years
RED	Access to Sterile Area only, i.e. Non-SIDA/Non-Secured Areas; no access to AOA	None	Expires in two (2) years
YELLOW	Temporary unescorted access badge issued to contractors giving them access to areas of the Sterile, Secured, AOA and SIDA areas where they will be working	-Authorized to escort individuals within AOA work area only -May not escort vehicles through a gate or within the AOA	Expires in one (1) year
WHITE	Access to Airport Employee Parking Lot only	None	Expires in one (1) year

b. **Specialized Media Access Identifiers**

1. PHL has developed and implemented the following special badge media access identifiers to improve recognition of individuals who have an operational need to enter or leave areas of operation in a quick and efficient manner in order to uphold the safety and security of the airport environment:

- i. **Law Enforcement Officer (“LEO”) Identification**

- Issued to local Airport and Federal Law Enforcement Personnel who have been authorized to carry a firearm into the AOA, SIDA, Secured and Sterile areas;

- Distinguished by a solid red line at the top of the badge and a red box below the expiration date.

- ii. **Aircraft Rescue and Firefighting (“ARFF”) Personnel**

- Issued to ARFF personnel who must access the AOA, SIDA, Secured and Sterile areas in the event of an emergency;

- Distinguished by solid orange line at the top of the badge and an orange box below the expiration date.

- iii. **Emergency Response Personnel**

- Issued to Airport employees, law enforcement and emergency response personnel who must access the AOA, SIDA, Secured and Sterile areas in the event of an emergency.

- Distinguished by yellow/gold box on the Airport Expiration Date.

2. **FAA Aviation Safety Inspector Identification**

- FAA Aviation Safety Inspectors possessing FAA Form 110A have unescorted access to those portions of the SIDA in which it is necessary for them to conduct their assigned duties of inspection.

- FAA Aviation Safety Inspectors must have Form 110A in their possession at all times.

- Restriction on Use of Form 110A.** While Form 110A is considered an official identification medium while in secured areas, it does not provide an inspector access to areas that are not being inspected. Access to other secured areas must be gained through local airport procedures.

3. **Airline Carrier Identification Media**

- (a) Flight crewmembers who are in uniform and wearing their air carrier issued identification medium readily visible at waist level or above may access the following portions of the Secured Area:
 - i. The immediate vicinity of the aircraft to which the flight crew is assigned;
 - ii. The flight crew operations/flight office, or its equivalent; and
 - iii. Points in between as authorized by PHL.
- (b) If there is an operational need for cabin crew members to have unescorted access to the area within the immediate vicinity of the aircraft to which the crew is assigned, the flight crew operations/flight office or points in between, the ASC or his/her designee may approve such access.

4. **TSA Inspection Authority**

The TSA may enter and be present within Secured areas, the AOA and SIDA without access media or identification media issued or approved by an airport operator or aircraft operator in order to inspect or test compliance or perform other such duties as TSA may direct pursuant to applicable federal law.

5. **Prohibited Items in Restricted Areas of the Airport**

- a. Those persons entering or who are within the Restricted Area may not possess or carry any items, (except liquids and gels that are allowed through employee access points), that the TSA prohibits from carriage through Screening Checkpoints or in carry-on luggage unless those items are required for job-related activities.
- b. A list of items prohibited by the TSA, including, but not limited to, sharp objects; sporting goods; guns and firearms; martial arts and self defense items; tools; explosive materials, flammable items and disabling chemicals or other dangerous items, is available on the TSA website at www.tsa.gov. The TSA will update the prohibited items list from time to time as necessary.
- c. Those who possess or carry items otherwise prohibited by the TSA into or within the Restricted Area for job related purposes, particularly tools relating to authorized construction projects, are prohibited from leaving

said items unattended unless they are secured in a room or storage area inaccessible to screened passengers.

- d. Violators will be fined a minimum of \$100.00 and their access privileges may be suspended or permanently revoked depending on the severity of the incident.

6. Badgeholders' Responsibilities

a. PHL Identification Badge Display

1. All individuals requiring unescorted access to the secured area of the Airport must wear their PHL ID Badges at waist level or above, prominently displayed and readily visible on their outer clothing.
2. The PHL ID Badge is the sole property of the Airport and badgeholders may not alter the appearance of the PHL Identification Badge by covering up the picture or applying or wearing tenant ID badges, objects, stickers other than those authorized by the Airport, or other encumbrance over the PHL ID Badge.
3. Badgeholders must immediately have the PHL ID Badge replaced if it is damaged in any way i.e. the badgeholder's name, badgeholder's picture, company name, or badge expiration date becomes indistinguishable or the badge is torn or split in any way.

b. Proper Use of PHL Identification or Access Medium

1. **Badge Must be Used for Purpose Issued.** No person may use, allow to be used or cause to be used, any airport-issued or airport-approved access medium or identification medium that authorizes the access, presence or movement of persons or vehicles in Secured, Air Operations or SIDA Areas in a manner other than that for which it was issued by the Airport;
2. **Use of Another Person's Badge Prohibited.** PHL ID Badgeholders are prohibited from using another person's PHL Identification Badge or providing their PHL ID badge to any other person for the purpose of unescorted access to a restricted or secured area;
3. **Badge Must be Valid.** Badgeholders are responsible for renewing their badges before they expire and may not use or attempt to use an expired or otherwise invalid badges to access the restricted area;
4. **Badge for Use during Designated Work Hours for Job-Related Purposes.** Off-duty badgeholders traveling on commercial airline

flights may not use PHL Identification badges or access media to bypass or escort others around the TSA security screening checkpoint process;

5. **“Piggybacking” or “Tailgating” Prohibited.** Badgeholders must ensure that door or gates that they open are securely closed behind them and must not allow anyone else to enter behind them without that person utilizing his/her own PHL issued identification or access media. Propping open or leaving a direct access point unattended will result in an alarm and subsequent response by the Philadelphia Police and/or the Airport Operations Department. **Penalty:** Any person who gains or allows another person unauthorized access into the Secured Area and Air Operations Areas by “piggybacking” or “tailgating,” which involves holding a gate or door open for someone to allow him or her to enter a secured or restricted area without using his or her PHL ID Badge, as described in the TSA approved SIDA training program, will be subject to the penalties in Section B herein and/or a monetary fine in accordance with the schedule in Appendix G and may be denied future access to the Secured, Air Operations or Sterile Areas;
6. **Swiping of Badges in Elevators.** Badgeholders who gain access to a restricted area via an elevator must ensure that each unescorted person on the elevator swipes his/her own PHL Identification Badge and gets a green light on the card reader before proceeding.

c. **Challenge Responsibilities**

1. **Badge Challenge Requirement**

- a. **When to challenge.** Any PHL badgeholder who has unescorted access to the AOA, SIDA and Secured Areas that identifies a person who is not visibly or properly displaying a PHL ID badge must challenge that individual in order to ascertain his/her identity.
- b. If a badgeholder feels that challenging someone would endanger his/her safety, he/she must immediately contact Airport Police at (215) 937-6711 or the Airport Security Department at (215) 937-5452, observe the person while on the phone, if possible, and provide a description of the person and his/her location.

2. **Badge Challenge Procedure**

- a. The challenger should proceed as follows:

- i. Approach the individual in question and request to verify his/her ID Badge;
 - ii. Do not touch, grab, or threaten the individual in question;
 - iii. If the individual is unable to produce a PHL ID Badge, immediately contact the Airport Security Department by radio or by phone at (215) 937-5452 or the Airport Police by radio, or by phone at (215) 937-6711;
 - iv. The Airport Security Department or Airport Police will take appropriate action to identify the violator;
 - v. Violators will be immediately escorted out of the secured area by the responding enforcement personnel.
- b. PHL will maintain a record of each violation for a minimum of 180 days.

3. Badge Challenge Compliance

Badgeholders must cooperate and immediately present their identification badges when challenged.

d. Responsibility for Reporting Suspicious Activity

- i. All badgeholders, including airport personnel, tenants, vendors, contractors and their employees must immediately report any suspicious activity to Airport Police at (215) 937-6711.
- ii. **Suspicious activities include:** surveillance of the airport, including videotaping, photographing and note taking; persons exhibiting unusual behaviors; persons asking unusual questions or questions about airport security; persons or vehicles in the same location for an extended period of time; persons wearing improper clothing for their job or the weather; unattended bags, etc.

7. Procedures for Escorting Individuals through Restricted Areas

- a. **Who May be Escorted.** (1) Persons who do not have unescorted access authorization to the SIDA, Secured, Restricted, Sterile or Air Operations Areas who have been fully vetted through the airport process and have a

short term operational need to be in those areas, including but not limited to contractors, subcontractors etc.; and (2) New employees that have a PHL badge appointment slip or an "in process" authorization slip in their possession and a valid, government-issued picture identification.

- b. **Restriction on Escorting those with Lost or Stolen Badges.** An individual who has reported his/her PHL ID Badge lost or stolen may be escorted **only if** the individual: (i) has scheduled an appointment to have the badge replaced; and (ii) has a PHL badge appointment slip in conjunction with a photo ID in his/her possession while under escort.
- c. **Those Who May Not Be Escorted.** (1) Individuals who have been denied a PHL ID badge because of a disqualifying crime; (2) individuals who have failed the Airport's vetting process; or (3) individuals whose badges are no longer valid, i.e. their badges are expired or have been confiscated, or whose access privileges have been suspended due to a violation.
- d. **Who May Escort.** (1) Those possessing a blue PHL ID Badge with a proper airport-issued escort designation or a law enforcement officer badge are permitted to escort individuals or vehicles in the Sterile, Secured, Air Operations and/or SIDA areas; and (2) those possessing yellow badges may escort individuals in the AOA work area only.
- e. **Escorting Rules and Responsibilities.** Prior to being authorized to escort others, potential escorts must sign the "Escorting Rules and Responsibilities" section of the PHL Security Badge Application stating that they understand the escort policy rules, responsibilities and consequences for noncompliance and will be held responsible in accordance with the penalties listed therein. See Exhibit 7-3. **Escorting shall be for business purposes only.**
- f. **Control of Escortee.**
 - 1. Authorized individuals being escorted must remain under the immediate sight and control of the person performing the escort at all times while in a Secured or Sterile Area. Controlled escort access is established through: (i) the escort having direct eye contact or being no greater than 10 feet away from the individual(s) being escorted while he or she is within the Sterile Area, and/or Secured Area; and (ii) the escort being able to monitor the person being escorted in a manner sufficient to identify whether the escorted individual is engaged in actions other than those for which escorted access was granted.
 - 2. Prior to escorting anyone into a Secured or Sterile area, the escort shall inform the escortee that he/she must remain in direct eye contact with or be no greater than ten (10) feet away from the escort and that

should they get separated, escortee must stop, locate a white courtesy phone, call the operator at 3111 or the police dispatch at (215) 937-6711, and advise the operator or dispatcher of his/her name, location, and the name of his/his designated escort.

- g. **Escortee Responsibilities.** If an escortee gets separated from his/her escort, the escortee shall immediately stop, locate a white courtesy phone, call the operator at 3111 or contact Airport Police dispatch at (215) 937-6711, advise the operator or dispatcher of his/her name, location and the name of his/her designated escort and wait until his/her escort or a law enforcement officer is able to locate him or her.
- h. **Loss of Control of Escortee.** If an escort loses control of the individual(s) he or she is escorting or those being escorted engage in activities other than those for which access was granted, that escort must contact the Airport Operator at 3111 or Airport Police at (215) 937-6711 immediately.
- i. **Points through which Escorting may be initiated.** All authorized escorting in the main terminal facility must take place through Gate V01 (or other authorized, access controlled gate) or through a security-screening checkpoint.
- j. **Number that May Be Escorted.** Authorized escorts may only escort one (1) person at one time through Gate VO1 (or other authorized, access controlled gate) or up to three (3) individuals at one time through a security screening checkpoint into a Secured or Sterile area, unless otherwise authorized by the ASC.
- k. **Escorting in Cargo Areas.** All escorting in the airport's cargo facilities or in Cargo City is at the discretion of the Airport Security Coordinator ("ASC") and must be based on an operational need. Up to three (3) individuals may be escorted at one time in cargo areas.
- l. **Escort Authorization Limits.** Each tenant must determine which of its employees should be granted escort authorization. Currently, PHL will grant up to 25% of each tenant's blue badge population escort authority. PHL may elect to grant escort authority to more than the allotted 25% limit if the tenant has a justifiable operational requirement to exceed the 25% limit. Escort authorization limits are subject to change at any time.
- m. **Maintenance of Escort List.** Each tenant must keep its escort list current and available for review and notify the ASC or his/her authorized designee immediately, at (215) 937-5452, if an employee's escort authorization has been revoked. If an employee's escort authorization is revoked, the employer or employee must return that badge to PHL so that the escort

designation may be removed from the badge. A tenant's failure to properly maintain its escort list may result in the revocation of escort authority for the entire company.

- n. **Tenant Responsibility for Ensuring Escorts Know Procedures.** Each tenant must ensure that its escorts know the actions that they or other authorized individuals are required to take if the individuals being escorted engage in activities other than those for which access is granted.

8. Vendor/Contractor Access to Restricted Areas

Vendors or contractors requiring access to a Restricted, Sterile or Secured area must: (i) be sponsored by the Division of Aviation ("DOA"), an air carrier or a tenant that will certify that the vendor or contractor has legitimate business at PHL; and (ii) comply with PHL security Rules and Regulations in order to retain airport security privileges.

E. TENANT RESPONSIBILITIES

1. **Security, Safety and Passenger Handling Program.** Aircraft operators/Air Carrier Tenants must have a written, TSA approved, security, safety and passenger handling program.
2. **Dissemination of Information to Employees.** Each air carrier, tenant, vendor or contractor is responsible for disseminating airport security rules, regulations and procedures and any changes made to them and ensuring their employees' compliance with those rules, regulations and procedures and will certify, upon request, to PHL that all employees have received the same.
3. **Security Doors.** Tenants shall be responsible for security doors located in their leased areas. Tenants who fail to control unauthorized access into the Secured Area or AOA through doors located in tenant leased space may be subject to monetary fines in accordance with the schedule in Appendix G and may be subject to TSA civil penalties.
4. **Seeking Prior Written Approval Before Making Modifications.** Tenants must seek written approval and authorization before making modifications including making changes to security boundaries, fencing, access control systems or any audio/visual media/surveillance equipment. The Tenant seeking that approval must agree to share the feeds of that equipment, in a format that is acceptable to the DOA, with the Airport.

5. Fines and Penalties.

- a. Airport Tenants, Air Carriers or Airport Users could potentially be subject to a monetary fine for their employees' failure to comply with federal and airport Rules and Regulations.
 - b. Fines or monetary penalties assessed against PHL by the TSA or other regulatory agency, after all appeals have been exhausted, for infractions or violations of applicable TSA regulations, may be passed on to the airline/tenant involved or equally assessed between the airline/tenant and PHL. PHL has the sole responsibility, in its discretion, to contest or not contest fines.
 - c. All tenants agree to cooperate fully with PHL in any investigation into a possible security violation.
6. **Reporting Suspicious Activity.** All Airport personnel, tenants, vendors or contractors and their employees must immediately report any suspicious activity to Airport Police at (215) 937-6711.

F. PHL ID BADGE PROCEDURES

1. Determination of Eligibility for Issuance of a PHL Identification Badge

- a. **TSA Authorization.** Before PHL can issue a PHL identification badge to a new employee, the TSA must complete a Security Threat Assessment ("STA") and authorize the issuance of an identification badge to that individual. If approved, PHL will issue a PHL ID Badge to the individual allowing access to those portions of the Airport where the employee has an operational need and is authorized to be.
- b. **ASC Determination.** The ASC, or his/her designee will evaluate each request for a PHL ID Badge to determine if there is an operational need for the applicant to have access to a restricted or secured area on a regular basis.
- c. **Government Employees.** Employees of federal, state and local government agencies who as a condition of their employment have been subjected to an employment investigation that includes a criminal history background check and who have a need for regular access to restricted areas of the Airport will be issued a PHL ID Badge which authorizes access to the restricted area. Their governmental agency identification badges will be accepted as verification that a prior employment check has been completed.

- d. **Requests for Change of Access.** Once an access request has been approved, all subsequent access requests (change of access) must be submitted to the ASC or his/her designee in writing.

2. Applicant Responsibilities

- a. Submit to a Security Threat Assessment;
- b. Submit to a fingerprint-based Criminal History Records Check (CHRC);
- c. Complete a PHL Security Badge Application and submit it to the PHL Badging Office;
- d. Complete SIDA training prior to obtaining and when renewing a PHL Security Badge;
- e. Complete airfield driver's training course for the operation of vehicles on the airfield in accordance with FAR 139, if required to operate a vehicle on the airfield; and
- f. Complete airport customer service training prior to obtaining and when renewing a PHL Security Badge; and
- g. Comply with any other PHL and/or TSA requests and/or requirements.

3. Employer or Sponsoring Company Responsibilities

- a. **Ensure Compliance with Application Process.** Air Carriers are required to ensure that their employees (including flight crew members) and other airport tenants sponsored by air carriers submit to the Airport application process, which includes a STA and a CHRC.
- b. **Background Checks.** PHL reserves the right to require that Airlines or Tenants perform the required employment background checks for their contractors or agents, and not to delegate this authority to their contractors or agents. The Airline or Tenant will be held responsible for ensuring these checks are completed in accordance with federal regulations.
- c. **Designation of Authorized Signers.** Each Air Carrier, Tenant, Vendor, Contractor or Sponsoring Agent must designate an authorized signer who will serve as the primary point of contact for Airport Security and is responsible for signing for fingerprints, CHRC, PHL ID Badges, vehicle permits, access changes, access control reporting and any other business relating to Airport Security. PHL reserves the right to determine the number of authorized signers each company may have.

- d. **Requirements for Authorized Signer Designation.** All authorized signers must: (i) be fingerprinted and cleared via the STA process and CHRC; (ii) attend SIDA training; (iii) attend PHL authorized signer's training and are subject to comparison against TSA watch lists.
- e. **CHRC Certified Signature and Sponsorship Letters.** Each authorizing company or sponsor must submit a signed Fingerprint-based CHRC Certified Signature Letter and/or CHRC Company Sponsorship letter that: (i) authorizes a direct employee or a sponsored company employee to proceed with the fingerprint process; and (ii) certifies that there is an operational need for the applicant to have unescorted access. All Authorizing Signers signatures must be authentic. Stamped, photocopied or facsimile signatures will not be accepted.

4. Security Threat Assessment

- a. **Purpose.** The TSA checks each applicant against its databases to determine whether there are any outstanding immigration, terrorist or federal open wants or warrants pending against a potential employee.
- b. **Application.** The PHL Security Badge Application must be signed by the applicant and include: (1) applicant's legal name, including first, middle and last; any applicable suffix and any other names used previously; (2) current mailing address, including residential address if different from the current mailing address and all other residential addresses for the previous five years; (3) date and place of birth; (4) social security number; (5) gender; (6) country of citizenship and if naturalized in the United States, date of naturalization and certificate number; (7) alien registration number, if applicable; and (8) Privacy Act Notice.
- c. **PHL's Responsibility.** PHL must submit each applicant's background information to the American Association of Airport Executives (AAAE) Transportation Security Clearinghouse, which acts as a conduit between the airport and the TSA.

5. Authentication of Applicant's Identity

Prior to fingerprinting an applicant PHL must authenticate the identity of the applicant by reviewing two (2) forms of identification, one of which must be a government-issued picture identification. The TSA has determined that the documents listed in Exhibit 7-4 may be used to establish identity.

6. Criminal History Records Check

- a. **Requirement.** The Airport must ensure that no individual is granted unescorted access authority unless the individual has undergone a fingerprint based Criminal History Records Check (CHRC) that does not disclose that he or she has a disqualifying criminal offense listed in Exhibit 7-5.
- b. **Subsequent Recurrent CHRC.** The Airport may perform subsequent recurrent CHRCs on badgeholders with access to secured areas who are required to complete a CHRC by federal regulations.
- c. **Fingerprint Application**
 - 1. Prior to being fingerprinted, each applicant will be required to complete and sign a PHL Security Badge application that includes the following:
 - i. A statement that the individual signing the application does not have a disqualifying criminal offense;
 - ii. A statement informing the individual that Federal Regulations under 49 C.F.R. § 1542.209 (1) impose a continuing obligation to disclose to the Airport within 24 hours if that individual is convicted of any disqualifying criminal offense that occurs while he/she has unescorted access authority; and
 - iii. A statement confirming that the information the applicant has provided is true, complete and correct and is provided in good faith and that a knowing and willful false statement on the application can be punished by fine, imprisonment or both.
- d. **Disqualifying Criminal Offenses**

An individual has a disqualifying criminal offense if the individual has been convicted or found not guilty of by reason of insanity, of any of the disqualifying crimes listed in Exhibit 7-5 in any jurisdiction during the 10 years before the date of the individual's application for unescorted access authority, or while the individual has unescorted access authority.

e. Determination of Arrest Status

When a CHRC reveals that an individual seeking unescorted access authority, who is not covered by a certification from an Air Carrier, has been arrested for any disqualifying criminal offense listed above without indicating a disposition the following must occur:

1. The ASC or his/her designee must investigate the arrest to determine whether it involves a disqualifying offense;
2. If there is no disposition, or if the disposition did not result in a conviction or a finding of not guilty by reason of insanity of one of the offenses listed in Exhibit 7-5, unescorted access may be authorized;
3. PHL maintains the discretion to restrict, terminate or deny unescorted access authority when necessary to maintain the integrity of the Airport Security Plan.

f. Notification of Disqualification

The ASC will do the following prior to making a final decision to deny unescorted access to an individual because of a disqualifying offense:

1. Inform the applicant in writing with a Disqualifying Crime Letter that the FBI criminal record revealed information that would disqualify him/her from receiving a PHL ID Badge or restrict his/her unescorted access authority;
2. Provide the applicant with a copy of the FBI record, if he/she requests it in writing;
3. Will deny unescorted access authority if an applicant does not notify the Airport of his/her intent to correct the information revealed in the CHRC or provide documentation to refute or correct the information within 30 days of receipt of the Disqualifying Crime Letter.

g. Corrective Action by Applicant

1. An applicant has thirty (30) days from receipt of the letter to notify the Airport in writing of his/her intention to correct or provide case disposition information to assist the Airport in making a final decision;
2. An applicant must provide a revised/corrected FBI Criminal Investigation Record or a certified true copy of the disposition information from the appropriate municipal or government court;

3. The ASC or designee will review the information provided prior to making a final decision regarding the applicant's unescorted access.

h. Limitations on Dissemination of Results of CHRC

The ASC or designee will not disseminate the results of the CHRC to anyone other than:

- i. The individual to whom the results pertain or that individual's authorized representative;
- ii. Authorized officials of other Airport Operators who are determining whether to grant unescorted access to the individual under this part;
- iii. Aircraft operators who are determining whether to grant unescorted access to the individual or authorize the individual to perform screening functions; and/or
- iv. Others designated or authorized by the TSA.

i. Procedure for Obtaining Copies of CHRC Results

1. Requests for copies of the results of a Criminal History Records Check must be submitted in writing to:

PHL Fingerprint Copy Request
Attention: Safety and Airport Security Coordinator
Airport Security Department
Philadelphia International Airport, Terminal D/E Philadelphia,
PA 19153;

2. Employees must include a legible photocopy of one government issued photo-identification with their request; and
3. Copies of records requested by an employee will be sent to the address on file at PHL for that employee.

j. Continuing Responsibility to Report Disqualifying Criminal Offenses.

1. Each individual with unescorted access authority who is convicted or found guilty by reason of insanity for a disqualifying criminal offense must:
 - i. Report the offense to the Airport Security Department at (215) 937-5452 or ASC at (215) 937-5462; and

- ii. Surrender the SIDA access medium to the issuer within 24 hours of the conviction or the finding of not guilty by reason of insanity.
- 2. If information becomes available to PHL, Air Carrier, Tenant or Contractor indicating that an individual with unescorted access has a disqualifying criminal offense:
 - i. The Air Carrier, Tenant or Contractor must report the offense to the Airport Security Department at (215) 937-5452 or ASC at (215) 937-5462 within twenty-four (24) hours of the conviction or finding of not guilty by reason of insanity;
 - ii. The ASC must determine the status of the conviction; and
 - iii. If a disqualifying offense is confirmed, the ASC shall immediately revoke any unescorted access authority.

k. Certification by Aircraft Operators

PHL will accept CHRC Certification from an Aircraft Operator for its employees and contractors seeking access authority. If PHL accepts a certification from an Aircraft Operator, the ASC may not require the Aircraft Operator to provide a copy of the criminal history record check completed by the Aircraft Operator.

7. Fees

- a. The ASC or designee must ensure payment for all fingerprints in a form and manner currently approved by the TSA and PHL;
- b. The TSA currently requires a fee to conduct a CHRC for each individual. Fee amounts are available through the Airport Security Department and are subject to change.

8. Recordkeeping

- a. The ASC or his/her designee will maintain and control the following information until 180 days after the termination of an individual's unescorted access authority.
 - i. Employment history investigation files, including the criminal history results portion or appropriate certifications for investigations conducted before December 6, 2001;
 - ii. Certifications provided by Air Carriers on or after December 6, 2001;

- iii. Badging information including social security number; date of birth; description/physical characteristics including height, weight, color of hair and eyes, sex and ethnic origin; home address; driver's license number (if applicable); badge issue date; criminal history record information;
 - iv. Signed STA application and any communications with the TSA regarding the individual's application.
- b. **Confidentiality.** PHL will maintain all records in a manner that protects the confidentiality of the individual.

9. **Accountability Procedures**

a. **General Accountability Procedures**

- i. **PHL's Responsibilities.** PHL is responsible for control, accountability and issuance of PHL ID Badges.
- ii. **Tenant Accountability.** Each tenant or company is required to: (1) provide the PHL ID Badging Office with an authorized/certified signature letter to be kept on file at the PHL ID Badging Office; (2) keep a record of its active authorized badgeholders and the corresponding expiration date for each badge; (3) immediately notify the Airport Security Department at (215) 937-5452 of a change in an employees status, i.e. extended sick leave, reassignment, suspension, termination, abandonment of position, etc.; (4) immediately notify the Airport Security Department at (215) 937-5452 when an employee reports a PHL ID Badge as being damaged, lost, stolen or otherwise invalidated; (5) retrieve and return expired or invalid PHL ID Badges from employees who are resigning or terminated.
- iii. **PHL Reservation of Right to Audit Tenants' Badge Records.** PHL reserves the right to audit tenants' badge records at any time, without prior authorization or notification.

b. **Badge Reconciliation Audit**

- 1. **Frequency.** The ASC or his/her designee will conduct an audit of all active badges that allow access to the AOA, Sterile and/or Secure Areas annually or whenever there is a reason to suspect that the PHL Badge Identification System has been compromised;
- 2. **Process.** (i) The ASC or designee will send an active badge list to each tenant with employees who have unescorted access for reconciliation purposes; and (ii) Each tenant must review the list and return a completed

reconciled list to the Airport Security Department with all relevant updated information regarding an employee's employment and access status;

3. **Determination of the Need for New or Revalidated Identification.** If the ASC or designee determines that 5% or more of issued media are unaccounted for (lost, stolen or destroyed) the badge system is deemed to have been compromised and new or revalidated identification must be issued within a year of that determination. Only PHL ID Badges that have been issued and are not expired, and which are available for use by anyone in possession of the media are to be counted toward the base number against which the lost, stolen or unaccounted for percentage will be taken. The base number of auditable ID media does not include previously issued media or those that have been destroyed by PHL.

c. **Lost, Stolen or Destroyed ID Media**

- i. **Reporting Responsibility.** If a PHL ID Badge is lost, stolen, or destroyed, the badgeholder must immediately notify the Airport Security Department at (215) 937-5452. Lost, stolen or destroyed PHL ID Badge reports may be made by telephone, seven days a week, 24-hours a day.
- ii. **Lost or Stolen Badge Limitation.** Lost or stolen PHL ID badges can only be reported for active and current employees, not for employees that resigned, transferred, terminated or otherwise left employment at the Airport and failed to return the PHL ID Badge. Badges belonging to former employees must be reported as terminated or unaccounted for.
- iii. **Termination of Access.** Upon notification of a lost, stolen, destroyed or unaccounted for card PHL will terminate all access associated with that badge and note the badge record accordingly.
- iv. **Reapplication for PHL ID Badge.** A badgeholder whose card has been lost, stolen, or destroyed must:
 - a. Submit a fully completed application for reissuance;
 - b. Schedule an appointment with the PHL Badging Office for reissuance; and
 - c. Pay up to a \$100 replacement fee as determined by the ASC or his/her designee. The replacement fee will be increased in \$50 increments with each subsequent occurrence. The penalty cannot be billed to the employer without the express written authorization of the Employer's Authorized Signer.

d. **Confiscation of Badges**

1. **PHL Ownership of Identification Badge.** The PHL Identification Badge is the sole property of the Airport and must be returned upon expiration, an employee's separation from employment or upon demand.
2. **Penalty for Violation of Rules and Regulations.** PHL may restrict access privileges and confiscate Airport Identification Badges of badgeholders who violate Airport Rules and Regulations. Violators may also receive a monetary fine and be required to re-attend the SIDA Training Class.
3. **Penalty for Inappropriate Conduct on Airport Premises.** PHL reserves the right to restrict access privileges and confiscate Airport Identification Badges of badgeholders who engage in inappropriate conduct, which includes but is not limited to, using offensive or threatening language and/or gestures; insubordination; refusing to cooperate with law enforcement; tampering or interfering with the Airport's access control system; interrupting or disrupting airport operations; or damaging airport property.
4. **Confiscation of Badge for Conviction of Crimes Committed on Airport Property.** PHL will permanently revoke the PHL identification badge and all access privileges of any badgeholder who is convicted of a misdemeanor or felony committed on airport property.
5. **Confiscation of Badge for Conviction of Disqualifying Crime.** Badgeholders are obligated to report to the ASC or his/her designee within 24 hours if they have been convicted, plead no contest, or found not guilty by reason of insanity of any of the disqualifying crimes listed in Exhibit 7-5. Their PHL Identification Badges will be deactivated and confiscated immediately.
6. **Reinstatement.** The ASC or his/her Designee will determine reauthorization of the individual's access privileges pending the violator's completion of SIDA training, reissuance of Employer/Company justification for clearance and timely payment of any fines incurred by PHL.

e. **Employment Termination and Expired ID Media**

- i. **Mandatory Return of Expired Badges.** Whenever employment status is terminated or the badgeholder transfers to another station, or there is no longer an operational need for a badgeholder to have access to the AOA, SIDA, Secured or Sterile Areas, the PHL Identification Badge must be returned to the PHL ID Badging Office.

ii. **Penalty for Failure to Return Badges.**

1. Both the employer and employee will each be charged \$100 for any employee PHL ID Badge not returned to the DOA within 10 days of expiration or the employee's separation;
2. PHL will not reissue an identification badge to an employee who has not accounted for a previously issued badge and is hired by another tenant at PHL;
3. No additional badges will be issued to any employees of companies that have reached their total allotment of unaccounted for media. The allotments are as follows:

COMPANY BADGE TOTAL	UNACCOUNTED FOR LIMIT
100 plus	3% of badge total
51-100	5 badges
16-50	3 badges
1-15	1 badge

G. **VEHICLE ACCESS REQUIREMENTS**

1. **Liability Insurance and Registration Requirement**

- a. Every organization requiring vehicular access to the AOA is required to:
 1. Have, and provide proof of, automobile liability insurance covering liability arising from the maintenance and use of all owned, non-owned, hired, leased and rented trucks, automobiles, with a minimum combined single limit of Five Million Dollars (\$5,000,000.00);
 2. List the City of Philadelphia Division of Aviation as an additional insured in its automobile insurance policy; and
 3. Be registered with the Airport Operations Department.
- b. Organizations may contact the Airport Operations Department at (215) 937-6914 for the appropriate forms and specific requirements.
- c. An updated insurance list of authorized operators and vehicles will be maintained at Gate VO1 and other authorized access controlled gates.

2. **Issuance of Permits for Access to the Airfield**

The CEO reserves the right to issue Motor Vehicle Operating Permits for the Airfield.

3. **Vehicle Access Procedures**

a. **Proper Identification and Authorized Driver Required.** All vehicles seeking to access the AOA must be properly identified, i.e. painted in company colors that coincide with other owned equipment with the company's name and/or logo and an identification number in 3" high, plainly visible, letters and/or numbers on the vehicle's sides or preapproved by DOA Operations and operated by an individual authorized by PHL to access the AOA.

b. **Vehicles Subject to Inspection.** Vehicles seeking to access the AOA may be subject to inspection of the interior of the vehicle including the area under the seats and glove compartments; truck bed/cargo areas; and the undercarriage of the vehicle. Any large open containers, including large trash bags and trash cans found in the vehicle will also be inspected. Vehicles may also be subject to search while in the AOA.

c. **Screening of Vehicle Operators and Passengers.** The driver and all occupants attempting to access the AOA are subject to screening and must have valid identification in their possession.

- i. If a vehicle operator is attempting to access the AOA through Gate VO1 or other authorized access controlled gate, **the driver and each badged occupant in the vehicle must swipe his/her PHL ID Badge at the access reader.**

-If the badge reader displays a green light, the gate arm and gate will open;

-If the badge reader displays a red light for the driver's PHL ID Badge, the attendant will reference the stop list to determine if the PHL ID Badge has been reported lost or stolen. If the PHL ID Badge does not appear on the list, the attendant will contact the Airport Security Department at (215) 937-5452 and establish the status of the PHL ID Badge.

- If the Airport Security Department advises that the PHL ID Badge is valid: (a) the Badge will be returned; (b) access will be granted; and (c) the attendant will direct

the holder of the defective Badge to go to the PHL ID Badging Office to determine the problem and/or receive a new Badge.

- If Airport Security Department advises that the PHL ID Badge is invalid, the attendant shall confiscate the PHL ID Badge and deny access to that individual.
- ii. If the gate is not equipped with a card reader the driver and occupants must present their PHL ID Badges to the guard for inspection.

4. **Vehicle Escort Requirements and Procedures**

- i. Vehicle Escorting shall be for business purposes only.
- ii. Motor Vehicles that provide an escort into the Secured Area, must be authorized to operate in that Area;
- iii. Persons driving the escorting motor vehicle must: (1) have a blue badge with escort authorization; (2) have completed the airport's driver's training program; and (3) must have a driving privilege identifier on his/her PHL ID Badge;
- iv. Drivers who are only authorized to drive in non-movement areas, as indicated by a "D" designation on a green background on their PHL ID Badges, may only escort vehicles that will remain in the non-movement areas;
- v. Drivers possessing movement area driver's authorization, identified with a "D" designation on an orange background on their PHL ID Badges, may escort vehicles in both the movement and non movement areas;
- vi. All vehicles must be escorted through Gate VO1 or other authorized access controlled gates that may be installed in the future or through the security screening checkpoint;
- vii. Drivers providing escort are required to exit the airfield and register at Gate VO1 or whichever other authorized, access controlled gate through which they entered by swiping their PHL ID Badge at the reader;
- viii. The driver of the vehicle that is under escort must provide the guard with his/her driver's license and vehicle information.

- ix. Only one (1) motor vehicle containing one (1) person can be escorted at one time, unless otherwise authorized by the ASC.
- x. Drivers of motor vehicles being escorted must stay with the motor vehicle until it leaves the Secured Area.
- xi. The escorted vehicle must follow and stay with the vehicle providing escort at all times while under escort.
- xii. A written record of escorted vehicles is maintained at Gate VO1 or other authorized, access controlled gate.
- xiii. Prior to escorting a vehicle into the AOA, an escort shall inform his/her escortee that, should they get separated, escortee must immediately stop the vehicle; call Airport Police dispatch at (215) 937-6711; advise the dispatcher of his/her name, location and the name of his/her designated escort; and wait until his/her escort or a law enforcement officer is able to locate him or her.
- xiv. If an escortee gets separated from his/her escort, the escortee shall immediately stop the vehicle and contact Airport Police dispatch at (215) 937-6711, advise the dispatcher of his/her name, location and the name of his/her designated escort and wait until his/her escort or a law enforcement officer is able to locate him or her.

5. **Contractor Vehicular Access and Insurance Requirements**

- i. Unless otherwise authorized by the DOA, all contractor's Motor Vehicles requiring access to the AOA will be required to utilize Gate VO1, other authorized, access controlled gate, or a gate designated by the DOA that is controlled by a DOA lock and key.
- ii. All contractor Motor Vehicles shall be escorted by an individual possessing a blue PHL ID Badge.
- iii. Gate VO1 and other authorized access controlled gates will be staffed by a security guard who will deny any unauthorized access and notify PHL Systems Control of any such attempt.
- iv. Gate VO1 and other authorized, access controlled gates are for vehicular traffic only and no pedestrian access will be allowed.
- v. Any (i) contractor, construction manager or other party engaged by the Airline or (ii) subcontractor or other party engaged by a contractor, construction manager or other party that is engaged by Airline, in either case, to perform any construction, renovations or

repairs at the Airport shall obtain and maintain in full force and effect during any construction period:

- a. A commercial general liability insurance policy in minimum limits, unless otherwise specified, of \$1,000,000.00 per occurrence for bodily injury and \$1,000,000.00 per occurrence for property damage.
- b. An automobile liability insurance policy covering owned, non-owned and hired vehicles in minimum limits, unless otherwise specified, for \$1,000,000.00 per person, \$1,000,000.00 per occurrence for bodily injury and \$1,000,000.00 per occurrence for property damage liability \$5,000,000.00 if in Airfield Area.
- c. A worker's compensation policy affording statutory coverage and containing statutory limits and employer's liability insurance at limits of \$100,000.00 per accident/\$100,000.00 each employee/\$500,000.00 policy limit.
- d. Professional liability insurance shall be maintained when any architect or engineer performs directly or indirectly, work for or on behalf of Airline at Airport or involving Airline's operations and/or the Total Airline Lease Premises with a \$1,000,000.00 policy limit.

H. AIRPORT SECURITY PERIMETER FENCE

1. PHL has established a perimeter around the secured areas of the airport and is formed by various facilities and non-scalable structures connected with a chain-linked fence.
2. A clear zone, designated by signage, is established and maintained on each side of the perimeter fence.
3. The clear zone area is to be kept free and clear of any vehicles, equipment, dollies, etc., to ensure that they are not to be used for improper purposes.
4. The CEO or his authorized representative may remove unidentified or unauthorized vehicles parked in the "no parking zones" along the perimeter fence at the owner's expense. Violators may be subject to a monetary fine in accordance with the schedule in Appendix G.
5. The CEO or his authorized representative may remove and/or dispose of stored materials and unattended equipment left in the clear zone at the

owner's expense. Violators may be subject to a monetary fine in accordance with the schedule in Appendix G.

DIAGRAM SHOWING DESIGNATION OF AIRPORT AREAS

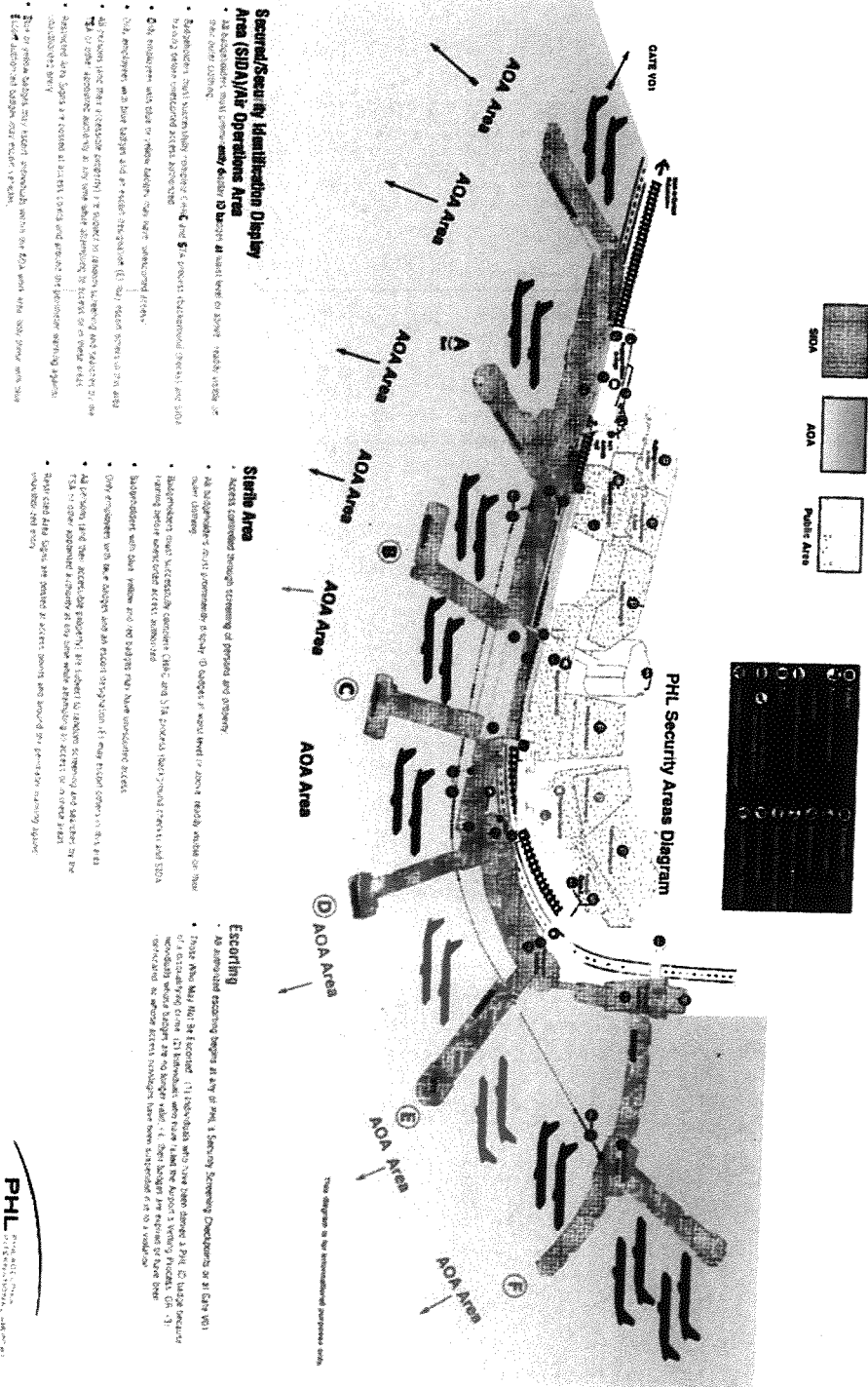


EXHIBIT 7-2

PHL ID BADGE

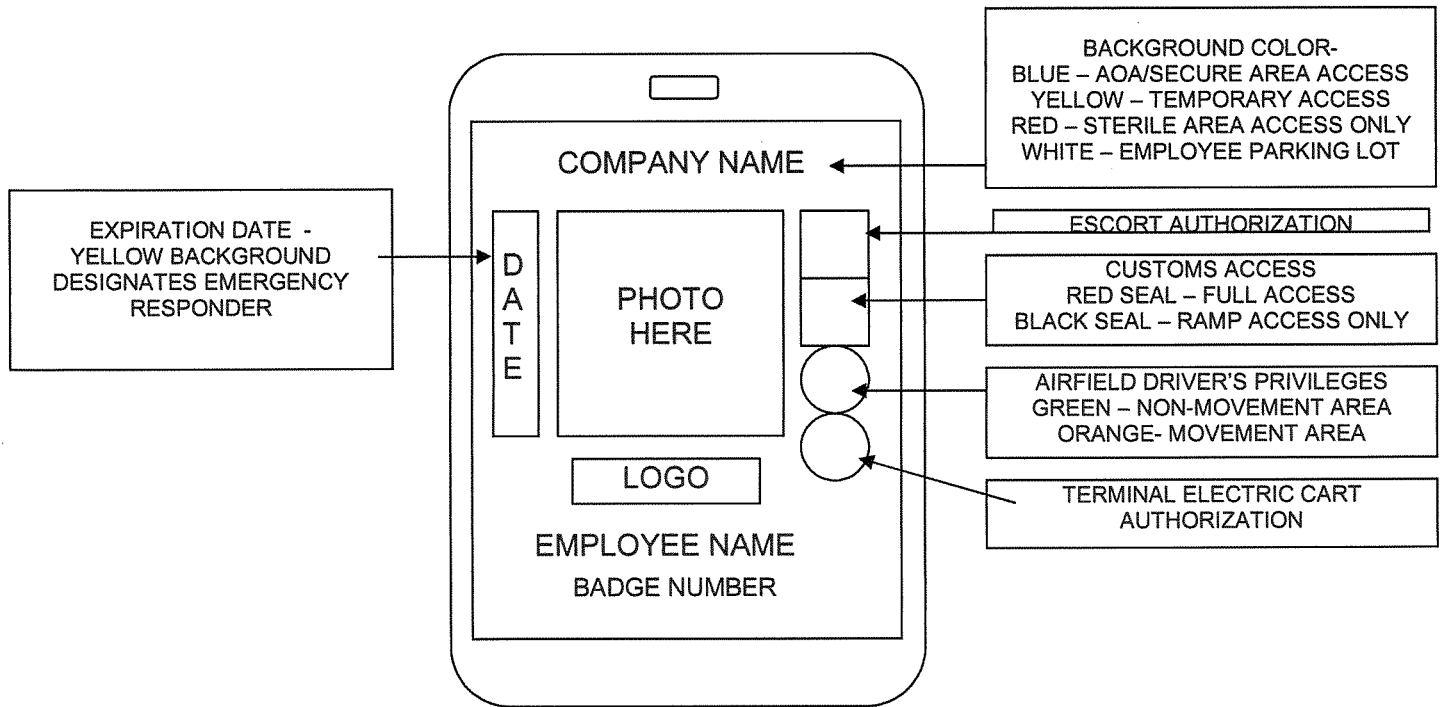


EXHIBIT 7-3

ESCORTING RULES AND RESPONSIBILITIES SECTION OF THE PHL SECURITY BADGE APPLICATION

17. Escorting Rules and Responsibilities

1. All non badged "Visitors" must be escorted at PHL.
2. Escorting of a "Visitor" is allowed to take place by authorized Blue Badged Personnel for short term, legitimate, business related reasons only.
3. Employees who lose or forget their ID Badges are not considered "Visitors" and cannot be escorted.
4. A limited number of BLUE badged employees, who demonstrate a routine operational need, will be granted ESCORT privileges.
5. ONLY Blue Badge Escort Authorized personnel may escort individuals into the Secure, Sterile and Restricted areas of the airport.
6. Red and Yellow badges MAY NOT ESCORT in the SECURE, STERILE, or SIDA areas of the airport.
7. Yellow badges may escort unbadged individuals in the non-secure section of the AOA area of the airport.
8. Authorized Escorting can only begin at Security Screening Checkpoints of Gate V01.
9. ESCORT Authorized Blue Badge Holders are designated with an Airport applied "E" sticker on the face of their Badges, or with a Solid Red Line that identifies a Law Enforcement Officer.
10. ESCORT Authorized Blue badge holders may only ESCORT Three (3) people at any given time. Vehicle Escorts may only ESCORT One (1) person at a time. The ESCORT must take full responsibility for the Visitor(s) and must explain Airport and Escorting Rules to the Visitor(s).
11. Visitors under escort must be under direct control of the authorized escort at all times. This means they must remain within 10 feet and in the direct line of sight of their escort at all times.
12. Authorized escorts must notify Airport Police if they lose control of their "Visitor(s)."
13. Authorized Escorts are responsible to report any suspicious activity to airport police immediately.

FAILURE TO FOLLOW ALL AIRPORT ESCORTING RULES WILL RESULT IN VIOLATION PENALTIES, AS LISTED BELOW:

- 1st offense: minimum of \$100 monetary fine, removal from the secured and restricted area and loss of Escort Privileges until successful SIDA and Escort retraining is completed.
- 2nd offense: a minimum of \$100 monetary fine, removal from the secured/restricted area and loss of Escort Privileges. SIDA retraining will be required.
- 3rd offense: will result in complete loss of access privileges at PHL.

I hereby affirm that I understand the rules and responsibilities with regard to the PHL escort policy. I understand that if I violate any of these rules, I will be held responsible in accordance with the violation penalties listed above.

Name: _____ Date: ____/____/____

DOA Approval: _____ Date: ____/____/____

EXHIBIT 7-4

TSA APPROVED LIST OF DOCUMENTS THAT MAY BE USED TO VERIFY IDENTITY

-Valid driver's license or ID card issued by a State or outlying possession of the United States provided it contains a photograph or information such as name, date of birth, gender, height, eye color, and address; -Driver's license issued by a Canadian government authority. -ID card issued by Federal, State, or local government agency or entity provided it contains a photograph or information such as name, date of birth, gender, height, eye color, and address; -U.S. Passport (unexpired or expired); -School ID card with photograph; -Voter's registration card; -U.S. Military card or draft record; -Military dependent's ID card; -U.S. Coast Guard Merchant Mariner Card; -Native American tribal document; -Certificate of Naturalization (USCIS Form N-550 or N-570);	-Certificate of U.S. Citizenship (USCIS Form N-560 or N-561); -Permanent Resident Card or Alien Registration Receipt Card with photograph (USCIS Form I-151 or I-551); -Unexpired Refugee Travel Document (USCIS Form I-571); -Unexpired foreign passport, with I-551 stamp or attached Form I-94 indicating unexpired employment authorization; -Unexpired Temporary Resident Card (USCIS Form I-688); -Unexpired Employment Authorization Card (USCIS Form I-688A); -Unexpired Employment Authorization Document issued by USCIS that contains a photograph (USCIS Form I-688B); -Unexpired Reentry Permit (USCIS Form I-327); -School record or report card; clinic, doctor or hospital record; or day-care or nursery school record for persons under the age of 18 who are unable to present a document listed above.

EXHIBIT 7-5

DISQUALIFYING CRIMINAL OFFENSES

-Forgery of certificates, false making of aircraft and other aircraft registration violation pursuant to 49 U.S.C. 46306; -Interference with air navigation pursuant to 49 U.S.C. 46308; -Improper transportation of a hazardous material pursuant to 49 U.S.C. 46312; -Aircraft piracy pursuant to 49 U.S.C. 46502; -Interference with flight crewmembers or flight attendants pursuant to 49 U.S.C. 46504; -Commission of certain crimes aboard aircraft in flight pursuant to 49 U.S.C. 46506; -Carrying a weapon or explosive aboard aircraft pursuant to 49 U.S.C. 46505; -Conveying false information and threats pursuant to 49 U.S.C. 46507; -Aircraft piracy outside the special aircraft jurisdiction of the United States pursuant 49 U.S.C. 46502 (b); -Lighting violations involving transporting controlled substances pursuant to 40 U.S.C. 46315; -Unlawful entry into an aircraft or airport area that serves air carriers or foreign air carriers contrary to established security requirements pursuant to 49 U.S.C. 46314; -Destruction of an aircraft or aircraft facility pursuant to 18 U.S.C. 32; -Murder;	-Assault with intent to murder; -Espionage; -Sedition; -Kidnapping or hostage taking; -Treason; -Rape or aggravated sexual abuse; -Unlawful possession, use, sale, distribution or manufacture of an explosive or weapon; -Extortion; -Armed or felony armed robbery; -Distribution of, or intent to distribute, a controlled substance; -Felony arson; -Felony involving a threat; -Felony involving: (1) willful destruction of property; (2) importation or manufacture of controlled substance; (3) burglary; (4) theft; (5) dishonesty, fraud or misrepresentation; (6) possession or distribution of stolen property; (7) aggravated assault; (8) bribery; or (9) illegal possession of a controlled substance punishable by a maximum term of imprisonment for more than 1 year; -Violence at international airports pursuant to 18 U.S.C. 37; or -Conspiracy or attempt to commit any of the criminal acts listed here.

The TSA may update the Disqualifying Criminal Offenses List from time to time. The most current list is available on the TSA website at www.tsa.gov.

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PHL Changed Conditions Affecting Security Guidelines

Purpose:

The Security and Systems Technology Department has developed guidelines in an effort to educate and assist stakeholders on the importance of regulatory compliance with the Airport Security Program (ASP) in conjunction with the Transportation Security Administration (TSA) Regulations. The PHL ASP is the standard operating procedure document that describes in detail all PHL security boundaries, doors, gates, activities, policies and procedures. These guidelines will provide a better understanding of the mandated process and regulatory requirements.

The Security and Systems Technology Department strongly recommends their involvement and encourages the use of these guidelines during the initial design review phase of all PHL projects to determine the impact or involvement of Security related issues at PHL. Our involvement in the initial review will assist you in taking a proactive approach to ensure that your project is not impacted or delayed by regulatory or security system issues.

Explanation:

TSA Regulation 49 CFR 1542.107 requires a written proposal or formal notification from the Airport Security Coordinator (ACS); referred to as a Changed Condition Affecting Security, anytime changes affect boundaries between levels of security at PHL, either temporarily or permanently.

- Public area to Sterile Area (concourses)
- Public area to Secured Area
- Sterile Area to Secured Area
- Public area outside perimeter security fence to AOA (Air Operations Area)
- AOA (Air Operations Area) to Secured Area

The regulation reads: PHL must notify the TSA when changes occur to the *“Layout or physical structure of any area under the control of the airport operator, airport tenant, aircraft operator, or foreign air carrier used to support the screening process, access, presence, or movement control functions required under part 1542, 1544, or 1546.”*

A Changed Condition Affecting Security request must be submitted to TSA and approved by TSA in advance if:

The change being made may affect the physical security or current security conditions or processes at PHL. Examples of these changes are as follows (this is not an exclusive list):

- Changes or modifications to any and all terminal doors or airfield vehicle or pedestrian gates that enter the Sterile Area, Secured Area, or AOA that could be accessed by the public
 - o Includes adding new doors/gates or modifications to or closing existing doors/gates (even if the change is temporary).
- Changes or modifications that affect the Access Control System, such as adding, moving, or removing card readers on Security Doors
 - o Includes removing power to readers/doors/gates for any length of time to facilitate other construction or maintenance issues, such as moving of conduit, change of wiring, HVAC etc.
- Adding or removing openings that lead to the Restricted Area
 - o Adding a new roll up door in a cargo building that directly accesses the AOA or cutting an opening in a wall that could provide public access to the Restricted Area. As with the doors, this includes any openings made on the Concourses leading to the Secured Area or public area, as well as openings to the Secured Area from public or Sterile Area)
 - o Adding, altering, or removing sections in the perimeter security fence.
- Changes that affect the Security Screening Checkpoint in the Terminal or Midfield Checkpoints on the Airfield
 - o Construction projects or events that may, at any time, impact the normal operation of checkpoints.

Time lines:

Construction, Engineering and Maintenance Planners play a significant and vital role, assisting the Security and Systems Technology Department to provide adequate information to TSA in order to proceed with a proposal that will result in timely approval for projects.

The time frame required to develop and submit Changed Conditions Affecting Security or amendments is dependant on what the project involves, new construction or modifications to existing items, length of the project, what security items/areas are impacted by the project, emergency repairs or preventative measures. The following are some of the general time lines that you should be aware of and should be calculated into your project planning:

Temporary Changes

- Once information is received by the Airport Security Coordinator (ASC) most Changed Conditions Affecting Security submissions can be developed and submitted to TSA within 2 to 5 business days, this is in addition to the 30 days required by TSA. This is dependent on the complexity of the project.
- Approval from TSA is dependant on their workload; it is suggested that you allow 30 days for submission, review and approval.
- In order to develop a clear proposal for TSA, we request clear drawings indicating changes to be made (before and after drawings) that include:
 - o A clear and concise plan for the project, such as appropriate drawings or written descriptions of security-related items. These include but are not limited to:
 - Authorized and accurate permanent door/gate number(s)
 - Location of access control devices, including but not limited to; card readers, emergency door release pull-boxes and silver door release buttons
 - Clearly marked construction/temporary walls
 - Security measures that will be in place during construction
 - Overview of project schedule including dates/times of changes and duration of process.
- In some instances, a minimal amount of information is all that is required to develop the proposal and drawings may not be necessary.

Failure to adhere to any of the required notification periods or processing times may result in a violation of the regulations, non-compliance of the ASP, or delay the start or completion of a project.

Permanent Changes

- Permanent changes that alter the Airport Security Program (ASP) must be submitted in the form of an amendment to the TSA no less than 45 days in advance of the effective date of expected substantial completion. This does not include the 5 to 7 days, as noted below, for the ASC to develop the submission.
- Once all information is received by the Airport Security Coordinator (ASC) most amendment submissions can be developed and submitted to TSA within 5 to 7 business days. This is dependent on the complexity of the project. If all prudent project information is not received it will delay the submission of the amendment to TSA, which may delay the start of your project.

- An amendment is a submission process that is more involved than developing a Changed Condition Affecting Security and will involve extensive detailed project information, schedules, and/or drawings. The Aviation Security Department can assist you in defining what will be required for submission purposes.

Failure to adhere to any of the required notification periods or processing times may result in a violation of the regulations, non-compliance of the ASP, or delay the start or completion of a project.

Maintenance Repairs and/or Preventative Maintenance

Emergency Repairs:

- TSA understands the urgency for immediate emergency repairs for security purposes due to malfunctioning or broken equipment within our airfield and terminal, however, notification is still required.
- Specific details of the door or gate number and a summary of the problem is required in addition to:
 - Security measures that will be in place during construction or repair
 - Time estimates for duration of corrective repairs.

Preventative Maintenance:

If performing preventative maintenance that will impair or impact any security related door, gate, or security equipment, or use of, you must do the following:

Provide a written request with specifics of the project. Your request must include the following:

- Specific details of the door or gate
- A summary of the work to be completed
- Security measures that will be in place during construction or repair
- Time estimates for duration of corrective repairs.

For Maintenance projects that are planned in advance:

A project plan with the following must be submitted 30 days in advance of the expected start date of the project. You must include the following details:

- A clear and concise plan for the project, including appropriate drawings or written description of security-related items including but not limited to:
 - Authorized and accurate permanent door/gate number(s)
 - Location of access control devices, including but not limited to: card readers, emergency door release pull-boxes and silver door release buttons
 - Clearly marked construction/temporary walls
 - Security measures that will be in place during construction
 - Overview of project schedule including dates/times of changes and duration of process.
- In some instances, a minimal amount of information is all that is required to develop the proposal and drawings may not be necessary.

Failure to adhere to any of the required notification periods or processing times may result in a violation of the regulations, non-compliance of the ASP, or delay the start or completion of a project.

Conclusion:

Please notify the Security and Systems Technology Department immediately if a Changed Condition Affecting Security is identified, or contact them in advance to review the project design so they can assist your department in determining the possible impacts to security or security systems that may be included in your project design. They will be able to identify what will be required for submission to TSA for review.

The contacts for Changed Conditions Affecting Security are as follows:

1. Jason Sankey, Airport Security Manager, 215-937-1842 or jason.sankey@phl.org
2. Joseph Bullock, Alternate Airport Security Coordinator, 215-937-5452 or joseph.bullock@phl.org
3. Jason Clagg, Alternate Airport Security Coordinator, 215-937-5452 or jason.clagg@phl.org

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SECTION 015526 – TRAFFIC CONTROL

PART 1 – GENERAL

1.1 SUMMARY

- A. The Contractor shall be required to carry out his operations in a manner that will cause a minimum of interference with vehicular traffic, and shall be required to cooperate with the Airport, tenants, and contractors involved in work on any adjacent projects.
- B. The Contractor shall be required to supply all necessary equipment and materials to provide a maintenance and protection of traffic plan in accordance with the contract documents and PennDOT requirements such as, but not limited to, barrels and barricades, traffic cones, and temporary striping or signage, and shall place, maintain, move, and store barricades, cones, signage, flags, flagmen and other items as appropriate. No distinction is made for phasing, sequencing or changes to roadway or landside operations and traffic.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; Special Provision Section 101453; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 901 – Maintenance and Protection of Traffic During Construction; apply to this Section.

1.3 SUBMITTALS

- A. Any deviation from the traffic control plans shall be submitted by the Contractor to the Owner's Representative for approval. Additional submittals to Tinicum Township may be required. Additional submittals will be at no cost to the Owner.
- B. The Contractor shall submit to the Owner's Representative in writing a plan for controlling construction equipment and vehicular movements in the work areas. This plan shall be submitted before notice to proceed is given and shall consist of both plans and written descriptions describing the traffic controls for temporary (short term and long term) controls on the roadways or daily controls on the roadways.

PART 2 – PRODUCTS

2.1 CONTROL AND WARNING DEVICES

- A. During construction operations the Contractor shall furnish, install and maintain orange barrels with yellow warning lights to warn the traffic of construction activities. The barrels shall be placed at intervals meeting PennDOT requirements for maintenance and protection of traffic. The Contractor shall maintain the warning lights for night operations around or on all equipment, or other construction work

areas as directed by the Owner's Representative.

- B. Yellow warning lights for landside traffic control shall be flashing lights of at least 10 foot-candles meeting the requirements of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), 2003 and PennDOT Specifications Type A or Type B flashers.
- C. Any temporary pavement marking required on the roadways shall be placed in accordance with Specification Section 321723 – Pavement Markings 3.8.
- D. All barricades, barrels, drums, cones, pavement delineators and markings, channelizing devices and safety devices shall be placed and constructed as shown on the plans and conforming to the requirements of the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD), PennDOT Publication 212 (Official Traffic Control Devices), Publication 213 (Temporary Traffic Control Guidelines), Publication 111M (Traffic Control, Pavement Markings, and Signing Standards), Publication 236M (Handbook of Approved Signs). Drop-offs created by construction shall be managed in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 901.3(j).
- E. Vertical panels shall be mounted on posts conforming to the requirements of AASHTO's Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals.

2.2 CONCRETE BARRIER

- A. Temporary concrete barrier for maintenance of traffic shall be installed in locations the contractor finds it necessary due to safety concerns. The minimum location of barrier is shown on the plans but will be identified by the Contractor in conjunction with the Owner's Representative during construction. Drop-offs created by construction shall be managed in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 901.3(j). Water filled barriers may be substituted for concrete barriers; Contractor shall submit for approval to the Owner's Representative for this substitution. Water filled barriers shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 627.

2.3 FLAGGERS

- A. Flaggers shall be provided as necessary to stop or slow traffic during construction. Flaggers shall be provided during construction on the site and at any other location as required in accordance with PennDOT Publication 213.

2.4 ROADWAY STRIPING AND MARKING

- A. Roadway striping and marking shall be installed at the locations shown on the plans and in accordance with Section 321723 - Pavement Markings.

2.5 TEMPORARY AND PERMANENT SIGNS

- A. Temporary or permanent signs shall be installed at the locations shown on the

plans and shall meet the requirements of the Manual for Uniform Traffic Control Devices for Streets and Highways (MUTCD), PennDOT Publication 236M, and Special Provision Section 101453.

2.6 TEMPORARY PAVING

- A. Temporary paving used for paving of existing shoulders or transitioning from existing to proposed pavements shall conform to the requirements of Specification Section 320116.71 – Cold Milling Asphalt Paving.

2.7 STEEL PLATES FOR DECKING OVER EXCAVATIONS

- A. Each steel plate used for temporary decking over excavations shall have clearly marked on the center of the plate the following information: Contractor's Name.
- B. Each letter shall be four inches high, in a space four inches wide, and each stroke forming each character shall be $\frac{3}{4}$ inch wide. The lettering shall always be clear and legible.
- C. Should the letters be painted, paint used shall be white, of good quality and durability for paint on steel. The paint lettering shall be promptly repainted should it become obliterated during the contract period.

2.8 TEMPORARY CONSTRUCTION FENCE

- A. Temporary construction fence shall be chain link fence and may be erected without concrete footings, pull posts, corner posts, etc. The location of the fence(s) may be altered at the direction of the Owner's Representative. All work shall comply with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 1016.

PART 3 – EXECUTION

3.1 MAINTENANCE AND PROTECTION OF TRAFFIC REQUIREMENTS

- A. All work shall comply with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 901 and PennDOT Publication 213 (Temporary Traffic Control Guidelines). The Contractor shall comply with requirements indicated in maintenance of traffic plans provided for specific phasing. The Contractor is responsible for coordinating maintenance of traffic requirements with the Owner's Representative. The Contractor shall obtain the Owner's Representative's written approval prior to implementing any deviations from the approved plan.

No separate payment will be made for changes due to the Contractor developing a different Traffic Control Plan than as shown in the plans. Additional submittals to Tincum Township may be required. Additional submittals will be at no cost to the Owner.

- B. The Contractor's responsibility for work areas and marking equipment is as follows:

1. Nothing shall be placed upon the roadways or ramps without authority of the Owner's Representative.
 2. Barrels, cones, panels, traffic control signs, flagmen, and all other maintenance and protection of traffic materials shall be installed as shown on the plans, or as necessary for the safe travel of passenger vehicles around the site on the roadways during all phases of construction. All maintenance and protection of traffic measures shall be provided and erected by the Contractor as shown on the plans or as directed by the Owner's Representative.
 3. Through the duration of the job any practice or situation that the Owner's Representative determines to be unsafe or a hindrance to regular vehicular traffic shall be immediately rectified.
 4. The Contractor shall be held responsible for the controlling of his employees, subcontractors and their employees with regard to traffic movement.
 5. The Contractor shall rebuild, repair, restore and make good at his own expense all injuries or damages to any portion of the work occasioned by his use of these facilities before completion and acceptance of his work.
 6. The Contractor shall submit to the Owner's Representative in writing a plan for controlling construction equipment and vehicular movements in the work areas. This plan shall be submitted before notice to proceed is given and shall consist of both plans and written descriptions describing the traffic controls for temporary (short term and long term) controls on the roadways or daily controls on the roadways.
 7. The Contractor shall provide a responsible Traffic Manager whose duty it shall be to direct all traffic on or near the active work area, ramps and roadways. Paved surfaces shall be kept clear at all times.
 8. The Contractor shall remove any sheet aluminum signs located within the work area and place them in a storage area or relocate as directed by the Owner's Representative. New permanent or temporary sheet aluminum signs, if required, shall conform to the requirements of the MUTCD, 2003, the Federal Highway Administration and PennDOT Specifications.
- C. Maintenance of traffic shall be scheduled and performed so as to provide minimum interference with and maximum protection to traffic. The Contractor's personnel, equipment, machinery, tools, and supplies shall be kept clear of active traffic lanes except as necessary for prosecuting active work. Material that is spilled or tracked onto the traveled pavement during prosecution of the work shall be promptly removed.
- D. The structural integrity and alignment of barricades and safety devices shall be maintained at all times. Reflectorized surfaces and warning lights shall be maintained in a clean and visible condition at all times. Barricades, barriers, and other safety devices shall be inspected at least daily, and deficiencies shall be immedi-

ately corrected. Safety and protective devices furnished by the Contractor will remain the property of the Contractor and shall be removed from the project site upon completion of the work or as directed by the Owner's Representative.

- E. The Contractor shall continuously maintain adequate vehicular traffic flow and safety along the service roads, sidewalks, and public roadways within or adjacent to the project site. In addition, this requirement applies to crossroads, approaches, and entrances affected by or made necessary by the work.
- F. The Contractor shall provide and maintain temporary signage, barriers, pavement marking, barricades, channelizing devices and such other traffic control devices or personnel as required to comply with the approved Traffic Control Plan. The Contractor shall inspect devices each day and make appropriate adjustments.
- G. The Contractor shall maintain the work from the beginning of construction operations until final acceptance of the work. The maintenance shall constitute continuous and effective work prosecuted day by day with adequate equipment and forces to the end that the roadways and structures are maintained in satisfactory condition at all times, including barricades, warning signs, and temporary pavement.
- H. The Contractor shall employ watchmen to maintain and service all warning lights, barrels, cones, and other traffic controls. All warning lights, barrels, cones and other maintenance and protection of traffic devices shall be in operation at all times. The Contractor is required to repair or replace defective control and warning devices within 8 hours of notice by the Owner's Representative of their inoperable or non-working condition.
- I. When the Contract specifies the placing of a temporary paving course upon another temporary paving course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.
- J. The Contractor shall keep the roads being used by the public free from irregularities and obstructions of any character which might present a hazard or annoyance to traffic and in such condition that traffic will be adequately accommodated. Holes in hard surface pavements shall be filled with approved bituminous patching material.
 - 1. Maintenance of Traffic During Suspension of Work--During any suspension of work, the Contractor shall open to traffic such portions of the project and temporary roadways or portion thereof as may be agreed upon between the Contractor and the Owner's Representative for the temporary accommodation of necessary traffic during the anticipated period of suspension.
 - 2. Steel Plates For Temporary Decking Over Excavations—During any suspension of work that leaves an open excavation or depression in a pavement surface, the Contractor shall place a steel plate over the excavation or depression to allow traffic to pass over top. The Contractor shall ade-

quately secure the plate to the surface to prevent lateral movement and avoiding an unsafe condition.

3. Flagging Traffic--Competent, courteous and neat flaggers shall be provided in sufficient number to orderly control and, if necessary, stop traffic, advise the public concerning the delays and the manner in which they should proceed, and keep traffic in their respective lanes along the project. The flaggers shall use sign paddles to regulate traffic in accordance with the MUTCD. Flaggers are to be provided as required by the MUTCD and PennDOT Publication 213.
 4. Delays--Traffic shall be maintained in accordance with the Contract Drawings at all times, unless otherwise approved by the Owner's Representative. The Contractor shall not stop traffic without permission of the Owner's Representative, except during emergencies.
 5. Patching Operations--When Patching Operations are required, saw cut the existing pavement, at the point of sound pavement structure, to a neat straight edge.
 6. Failure to Maintain Roadway or Structure--Failure on the part of the Contractor at any time to comply with these provisions will result in the Owner's Representative notifying the Contractor to comply with the required maintenance provisions. In the event the Contractor fails to remedy unsatisfactory maintenance immediately after receipt of such notice, the Owner's Representative may take such action as it deems appropriate to bring the Contractor into compliance.
- K. The Contractor shall contact the Owner's Representative each day before he begins work to coordinate the status and nature of work to be done that day. The Contractor shall also report to the Owner's Representative at the end of each day to schedule the work he plans to do on the following day.
- L. The Contractor shall install all necessary temporary and construction signs prior to the beginning of work or the initiation of traffic control on the roadway. Covering of existing signs shall be included in the work in addition to temporary directional signs to alert passenger vehicles of changed roadway conditions or exits.
- M. The Contractor shall remove all equipment and all materials that would constitute a hazard to traffic whenever work is not in progress.
- N. Violations of these regulations shall be considered a violation of the Contract itself and shall be sufficient cause for halting the work without extending the time limit of the job.
- 3.2 CONCRETE BARRIER
- A. Temporary Concrete Barrier shall be of sufficient length to protect traffic and personnel in construction areas.
- B. Neither workers nor equipment shall traverse areas confined by the temporary

concrete barrier and travel lanes except as approved by the Owner's Representative and then only with adequate flagger service to safeguard workers and traffic in advance of and at the point the temporary concrete barrier is opened. Temporary concrete barrier openings for construction access may be provided only along tangent sections or along the inside of curved sections and shall be limited to the minimum length required for equipment access. The normal pavement alignment at the temporary concrete barrier opening shall be maintained with removable pavement marking. At ingress openings, the exposed end of the temporary concrete barrier shall be provided with a temporary impact attenuator as approved by the Owner's Representative. At egress openings, the exposed end shall be transitioned as dependent on the posted speed for traffic. The transition flare rate shall be 6:1 at 25 miles per hour. An impact attenuator will not be required at the exposed end of egress openings in temporary concrete barrier provided the deflection angle between the pavement edge and ends of the temporary concrete barrier openings is 20 degrees or more.

- C. Delineators shall be installed on the barrier.
- D. The Contractor shall maintain the structural integrity of the barrier and its alignment while it is in use and shall maintain delineators and other devices in a clean and visible condition at all times.
- E. Temporary concrete barrier shall be installed in accordance with the plans or as directed by the Owner's Representative.
- F. Water filled barriers may be substituted for concrete barriers; Contractor shall submit for approval to the Owner's Representative for this substitution. Water filled barriers shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 627.

3.3 PAVEMENT MARKINGS

- A. Construction pavement markings shall be installed at locations shown on the plans. Temporary pavement markings shall conform to PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 901, for use in Maintenance of Traffic.
- B. Markings that conflict with desired traffic movement, as determined by the Owner's Representative, shall be eradicated as soon as is practicable: either immediately prior to the shifting of traffic or immediately thereafter and prior to the conclusion of the workday during which the shift is made.
- C. Eradication shall be performed by blacking out the existing marking with black paint or other methods that will obliterate markings to the extent that the resulting finish will not delineate the previous markings under any lighting or weather conditions. The method used shall not materially damage the surface or texture of the pavement. Any damage to the pavement resulting from marking removal is to be repaired to the Owner's Representative's satisfaction at the sole expense of the Contractor.

3.4 STANDARDS

- A. All work shall be done in conformance with the MUTCD, PennDOT Publication 213 (Temporary Traffic Control Guidelines), PennDOT Publication 236M (Handbook of Approved Signs), and PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Specifications, Section 901.

3.5 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Comply with all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item 015526-1 Maintenance and Protection of Traffic. Lump Sum.

4.2 BASIS OF PAYMENT

- A. This work shall be included in the lump sum bid price. No additional payment will be made for this work.

END OF SECTION 015526

SECTION 017113 – MOBILIZATION

PART 1 – GENERAL

1.1 SUMMARY

- A. The work covered by this section shall include costs for mobilization and demobilization of all equipment and tools, necessary insurance, bonds, permits, erection of any temporary fencing for the Contractor's purposes, water, electrical or sanitary service for the Contractor's purposes, and any coordination or phasing necessary to complete the work.
- B. No space will be provided on the construction site to the contractor for lay-down area; parking for the contractor or its employees; storage areas; contractor's offices, shops, plants; and other facilities. Contractor may request space on airport property as needed through coordination with Philadelphia International Airport.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 608 – Mobilization; apply to this Section.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item 017113-1 – Mobilization. Lump Sum.

4.2 BASIS OF PAYMENT

- A. This work shall be included in the lump sum bid price. No additional payment will be made for this work.

END OF SECTION 017113

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SECTION 017123.16 – CONSTRUCTION SURVEYING

PART 1 – GENERAL

1.1 SUMMARY

- A. The Contractor shall provide construction stakeout sufficient to construct the proposed improvements in accordance with the approved construction plans.
- B. All stakeout services shall be completed under the direct supervision of a Professional Land Surveyor licensed in Pennsylvania.
- C. The contractor shall contact the Pennsylvania One Call System no less than three (3) working days and no more than ten (10) working days prior to the start of any excavation.
- D. The contractor shall verify the locations of all subsurface utility lines and structures. The contractor shall employ a utility locator service to locate all existing utilities within the limits of work prior to start of work. The contractor shall record and submit to the Owner's Representative record plans with accurate field locations of all underground utilities prior to the beginning of work. The contractor shall submit revised plans at the completion of the project to include utilities installed and discovered during the course of the work.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 686 – Construction Surveying; apply to this Section.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. The Contractor/surveyor shall supply all stakeout materials.

2.2 EQUIPMENT

- A. The Contractor/Surveyor shall supply all equipment necessary to accomplish the work.

PART 3 – EXECUTION

3.1 PERFORMANCE STANDARDS

A. Curb Layout

1. Stakes shall be located at a minimum of 25 feet and a maximum of 50 feet intervals, and at points of curvature, points of tangency, radius points, and transitions, high and low points, and deflections. Offsets to be provided 4 feet from face of curb and shall indicate top of curb elevation.

B. Storm and Sanitary Manholes

1. 15 feet and 25 feet offset stakes in the same direction will be set from the centerline opening of structure lath. One offset stake will have an elevation to top of rim and inverts. Intermediate grade stakes to pipe invert elevation will be provided if needed. (Note: These stakes are not to conflict with piping.)

C. Catch Basins

1. Set a centerline of structure lath with 10-foot offset hub along the face of curb on either side of the lath at face of curb. One offset stake will have an elevation to top of grate and inverts. (Note: These stakes are not to conflict with piping.)

E. Utility Layout

1. Water – Stakes shall be located at 50-foot intervals along centerline of pipe and at deflections with no offsets. One 10-foot offset stake to the center of hydrant with a grade ring elevation will be provided;
2. Lighting – Centerline of lighting structure with a 5-foot offset will be staked. Offset stake elevation will be to finished grade; and,
3. Centerline of pipes will be staked with no offset.

F. Walkway Layout

1. Grade stakes shall be located at centerline of walkway at 50-foot intervals, including point of curvature, point on curve, point of tangency, and points of vertical curves. Grades shall be at finished grade.

G. Wall Layout

1. Stakes with 10 feet offset shall be provided at 50 feet intervals, deflections, beginning and end of wall. Additional stakes may be required, depending on wall height and conditions.

H. Limits of Disturbance

1. Clearing limits shall be staked at 100 feet $\pm$ intervals and at all critical areas.

I. Grade Stakes

1. Stakes will be provided at a 50-foot grid. Grade elevations shall be to finished grade.

3.2 CONTRACTOR VERIFICATION

- A. Contractor shall contact the Pennsylvania One Call System (1-800-242-1776) no less than three (3) working days and no more than ten (10) working days prior to the start of any excavation and shall provide written notice to the Owner's Representative that contact has been made. Utilities located within the project may be private and may not be located by the One Call Services.
- B. Contractor will field verify the utility location, size and invert elevations at points of connection in area of conflict, prior to construction and protect them from damage.
 1. Finished subgrades shall be verified by the Contractor to ensure proper elevation and conditions for construction above subgrade;
 2. Protect subgrade from excessive construction traffic and wheel loading including concrete and dump trucks; and,
 3. Remove areas of finished subgrade judged to be unsatisfactory to the depth necessary and replace in a manner that will comply with compaction requirements by use of material equal to or better than the best subgrade material on site. Surface of subgrade after compaction shall be hard, uniform, smooth, stable, and true to grade and cross-section.
- C. Advise Owner's Representative of any discrepancies between plans and field layout.

3.3 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Comply with all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.
- B. The survey crew shall discuss all layout procedures with the Contractor's supervisor prior to commencing work.
- C. A survey crew daily report detailing that day's work shall be completed and signed by the Contractor's supervisor at the end of that day's layout.

- D. Copies of sketches, cut sheets, etc. shall be provided to the Contractor by the beginning of the next workday.
- E. All costs related to re-staking due to construction or Contractors' work resulting in destruction or movement of stakes shall be paid for by the Contractor and at no additional expense to the Owner.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item 017123.16-1 – Construction Surveying. Lump Sum.

4.2 BASIS OF PAYMENT

- A. This work shall be included in the lump sum bid price. No additional payment will be made for this work.

END OF SECTION 017123.16

SECTION 017419 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 – GENERAL

1.1 SUMMARY

- A. According to the Department of Aviation Design Standards (found at www.phl.org/business/design-code), all capital projects must recycle construction and demolition waste produced during the project to meet the following targets:
 - 1. All other capital projects must recycle or reuse a minimum of 50% of construction and demolition waste.
- B. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; Special Provision Section 101453; PennDOT Publication 408, Standard Specifications 2020, Change No. 10; apply to this Section.

1.3 DEFINITIONS

- A. Alternative Daily Cover (ADC): material (other than earthen material) that is placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter and scavenging. Generally, these materials must be processed so they do not allow gaps in the exposed landfill face. This is not an acceptable diversion method.
- B. Commingled Waste Recycling: building waste streams are combined on the project site into one dumpster. Dumpster is hauled to an off-site commingled recycling facility and sorted into various material streams. Each material stream is properly collected, stored, and hauled to a dedicated recycling facility. Also known as single-stream recycling. Commingled waste facilities must comply with one of the following options:
 - 1. The waste-sorting facility provides a waste diversion percentage specific to the project's waste based on measurement of each component waste material. Visual inspection is not an acceptable method of evaluation for documenting this percentage.

2. The project team uses the facility's average diversion rate, which must be regulated by the local or state authority and must exclude alternative daily cover (ADC). This system must be a closed system; shipping waste to another municipality to manage, thus burdening another system, does not count as diverting the waste.
- C. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction Waste includes packaging.
- D. Demolition Waste: Building, structure, and site improvement materials resulting from demolition or selective operations.
- E. Disposal: Removal off-site of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction.
- F. Land Clearing Debris and Soil: materials that are natural (e.g., rock, soil, stone, vegetation).
- G. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- H. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- I. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.
- J. Source Separation On-Site Recycling: recyclable waste is separated on-site from other waste materials, trash, and debris. Recyclable waste is collected, labeled, and stored on-site. Each separated waste stream is eventually hauled to a dedicated recycling facility. Multiple recycling bins are required.
- K. Waste Stream: individual material that is separated and diverted in a specific way; or a mixture of several material categories that are diverted in a specific way. Example of a material stream is metal waste sent to a metal recycling facility. A material stream should constitute at least 5% by weight of total diverted materials. One stream is counted for each material that is source separated for recycling. Commingled waste is counted as one material stream.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 ACTION SUBMITTALS

- A. Construction Waste Management Plan: Prepare and submit an electronic copy of the project's Waste Management Plan within 15 days of date established for the Notice to Proceed. A proposed list of materials to be recycled and quantities therein will be included in the design plans. Provide one Plan from each waste hauler. At a minimum, Plan must indicate the following:
 1. Goals: Indicate goal of percentage waste diversion by weight and identify at least five materials targeted for diversion.
 2. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
 3. On-Site Diversion Strategies: Describe the source separation recycling strategies planned for the site. Specify the means and methods of diversion for each of the five material streams. If on-site source separation recycling is not feasible, explain why.
 4. Waste Facilities: Include list of recycling and landfill facilities and type of material that each facility will accept. Describe how the recycling facility will process the material.
 5. Responsible Parties: Identify team members responsible for developing, implementing and communicating the waste management plan.
 6. Handling and Documentation: Describe proper handling and documentation procedures.
 - a. Hazardous material, excavated soil, and land-clearing debris are excluded from waste totals.
 - b. Alternative daily cover (ADC) is included in waste totals but is not considered diverted.
 - c. If using a commingled waste facility, indicate if diversion rate shall be documented via project-specific diversion provided by the processing facility or the average annual recycling rate for the sorting facility established by the regulating local or state government authority.

1.6 INFORMATION SUBMITTALS

- A. Progress Reports: Concurrent with each Application for Payment, submit 100% of receipts from recycling and landfill facilities for that time period. Complete the

DOA Construction and Demolition Waste Recycling Tracking Form, including the following information for that time period. A separate form must be submitted with each Application for Payment, identifying the waste produced during that period:

1. Total quantity of waste in tons.
2. Total quantity of diverted waste in tons with break down by material.
3. Total material streams
4. Calculated diversion rate.
5. Receipts, weigh tickets, manifests, invoices for period covered should be attached to submitted form.

The **DOA Construction and Demolition Waste Recycling Tracking Form** can be found at the following link, under PHL Design Standards, in the menu on the top left: www.phl.org/business/design-code

- B. Final Construction Waste Management Report: Within 15 business days after the last dumpster is pulled from the site, submit an electronic copy of the **final** Construction and Demolition Waste Recycling Tracking Form that includes number of diverted material streams and the calculated end-of-Project diversion rate as a percentage of total waste generated by the Work. This percentage must meet the construction and waste demolition target of at least 75% for flatwork / horizontal infrastructure projects and 50% for all other capital projects.
- C. Qualification Data: For waste management coordinator.

1.7 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements. Superintendent may serve as Waste Management Coordinator.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction. Comply with transportation and disposal regulations of authorities having jurisdiction.
- C. Waste Management Education: Conduct meeting(s) at Project site to review methods and procedures related to waste management including, but not limited to, the following:
 1. Review and discuss waste management plan including responsibilities of each contractor and Waste Management Coordinator.
 2. Review requirements for documenting quantities of each type of waste and its disposition.

3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

PART 2 – PRODUCTS

2.1 RECYCLING RECEIVERS AND PROCESSORS

- A. Processors include, but are not limited to, the following:
 1. See the DOA Construction and Demolition Waste Recycling Tracking Form for a list of waste management facilities and haulers in the region. The contractor may utilize any waste management facility or hauler that can meet the construction and demolition waste recycling policy. The DOA list is not a recommendation or endorsement of any of these firms.

2.2 PERFORMANCE REQUIREMENTS

- A. General: Develop and implement source separation recycling program on-site (e.g., waste is separated into multiple dumpsters, totes, or bins on-site) to achieve end-of-Project rates for salvage/recycling of a minimum 75% diversion rate for airside and landside infrastructure and a minimum 50% diversion rate for all other capital projects. All projects must have at least five individual material streams by weight of total nonhazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators.
- B. Exclude hazardous material, excavated soil, and land-clearing debris from waste totals.
- C. Alternative daily cover (ADC) is not an acceptable diversion method. ADC quantities must be excluded from diverted waste calculations but included in total waste calculations.
- D. Waste disposal must be recorded via receipt or ticket that indicates date, project name, facility, type of material, and weight in pounds or tons. Estimated weights based on previous project performance not permitted.
- E. Facilitate recycling and salvage of materials, including, but not limited to, the following:
 1. Demolition Waste
 - a. Asphalt paving.

- b. Concrete.
- c. Concrete reinforcing steel.
- d. Brick.
- e. Concrete masonry units.
- f. Wood studs.
- g. Wood joists.
- h. Plywood and oriented strand board.
- i. Wood paneling.
- j. Wood trim.
- k. Structural and miscellaneous steel.
- l. Rough hardware.
- m. Roofing.
- n. Insulation.
- o. Doors and frames.
- p. Door hardware.
- q. Windows.
- r. Glazing.
- s. Metal studs.
- t. Gypsum board.
- u. Acoustical tile and panels.
- v. Carpet.
- w. Carpet pad.
- x. Demountable partitions.
- y. Equipment.
- z. Cabinets.

- aa. Plumbing fixtures.
 - bb. Piping.
 - cc. Supports and hangers.
 - dd. Valves.
 - ee. Sprinklers.
 - ff. Mechanical equipment.
 - gg. Refrigerants.
 - hh. Electrical conduit.
 - ii. Copper wiring.
 - jj. Lighting fixtures.
 - kk. Lamps.
 - ll. Ballasts.
 - mm. Electrical devices.
 - nn. Switchgear and panelboards.
 - oo. Transformers.
2. Construction Waste:
- a. Masonry and CMU.
 - b. Lumber.
 - c. Wood sheet materials.
 - d. Wood trim.
 - e. Metals.
 - f. Roofing.
 - g. Insulation.
 - h. Carpet and pad.
 - i. Gypsum board.

- j. Piping.
- k. Electrical conduit.
- l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1. Paper.
 - 2. Cardboard.
 - 3. Boxes.
 - 4. Plastic sheet and film.
 - 5. Polystyrene packaging.
 - 6. Wood crates.
 - 7. Wood pallets.
 - 8. Plastic pails.
- m. Construction Office Waste: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following construction office waste materials:
 - 1. Paper.
 - 2. Aluminum cans.
 - 3. Glass containers.

PART 3 – EXECUTION

3.1 PLAN IMPLEMENTATION

General: At the start of the project, the contractor must inform the DOA construction project manager of the construction and demolition waste recycling hauler that they will utilize. The invoices and weight tickets must be submitted monthly during monthly payouts. The last PHL Construction, Demolition, and Landclearing Waste Management Tracking Forms Summary and Waste Tracking forms submitted should contain a total of all waste types summed together to show the percentage of C&D waste recycled. See 3.5 DOA Construction & Demolition Waste & Recycling Tracking for explanation and 3.6 Construction, Demolition and Landclearing Waste Management forms.

The **DOA Construction and Demolition Waste Recycling Tracking Form** can be found at the following link, under PHL Design Standards, in the menu on the top left: www.phl.org/business/design-code

- A. Implementation: Implement approved waste management plan as approved by Architect, Owner and Construction Manager. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements in "Temporary Facilities and Controls" specification section, as applicable.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.

3.2 SALVAGING DEMOLITION WASTE

- A. Comply with requirements in Specification Section 311000 – Site Clearing for salvaging demolition waste.
- B. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until installation.

4. Protect items from damage during transport and storage.
 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- C. Salvaged Items for Sale and/or Donation: Not permitted on Project site.
- D. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner's Representative.
 5. Protect items from damage during transport and storage.
- E. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
- F. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- G. Plumbing Fixtures: Separate by type and size.
- H. Lighting Fixtures: Separate lamps by type and protect from breakage.
- I. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. General: Waste can be stored and organized on site in two ways; commingled or source separated. Note that it is acceptable to use both methods on a single jobsite. See below for additional information and procedures involved with both.
- C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

D. Commingled Recycling Procedures:

1. Waste is collected as single stream on-site and separated off-site, meaning all materials are collected in the same dumpster and hauled to a commingled recycling facility.
2. 100% of waste is accepted and processed at a commingled recycling facility. The facility must have in place a legitimate and transparent method of tracking incoming and outgoing materials, or internally processed, with outlets for their reuse, recycling, and disposal rates.
3. Visual inspection is not an acceptable method of evaluating the project-specific diversion rate. The waste-sorting facility must provide a waste diversion percentage specific to the project's waste based on measurement of each component waste material.
4. An alternative to measurement of waste, the facility's average diversion rate can be used. The facility's average diversion rate must be regulated by the local or state authority and must exclude alternative daily cover (ADC). This system must be a closed system; shipping waste to another municipality to manage does not count as diverting the waste.
5. Back-up documentation of each dumpster haul and associated material streams and diversion rates must be available upon request.
6. Contractor must comply with all requirements outlined by the commingled recycling facility for a successful waste management program.

E. Source Separation Recycling Procedures:

1. Recyclable waste is separated on-site from other waste materials, trash, and debris according to approved Construction Waste Management plan. Recyclable waste is hauled to various recycling facilities. The Contractor must maintain a legitimate and transparent method of tracking incoming and outgoing materials.
2. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
3. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
4. Stockpile materials away from construction area. Do not store within drip line of remaining trees.

5. Store components off the ground and protect from the weather.
6. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

3.4 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. No separate measurement of work, all work associated with this specification shall be considered incidental to other bid items.

4.2 BASIS OF PAYMENT

- A. No separate payment will be made for this work. All work associated with this specification shall be considered incidental to other bid items.

END OF SECTION 017419

SECTION 101453 – TRAFFIC SIGNAGE

PART 1 – GENERAL

1.1 SUMMARY

- A. This item consists of furnishing all materials, labor and equipment and performing all operations in connection with the installation of traffic signs on breakaway steel posts, mounted on structures, or on proposed fence as shown on the drawings and in accordance with these specifications and/or as directed by the Owner's Representative.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 931 – Post Mounted Signs, Type B and Section 971 – Remove Post Mounted Signs, Type B; apply to this Section.

1.3 SUBMITTALS

- A. The Contractor shall submit dated certification from the manufacturer, fabricator, or producer that flat sheet sign panels and steel posts furnished meet specifications, all in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 931.2.
- B. Prior to fabrication, submit shop drawings for approval for the following items of work, in accordance with the conditions of the contract.
- C. Submit shop drawings for each typical sign type as shown on the drawings. Details of the sign panels, anchorage details, footings, and other pertinent details shall be indicated on the shop drawings. Also, submit shop drawings for method of connection of sign to post, fence, or other.
- D. Submit shop drawings showing message layout, letter style, and copying spacing to scale.

PART 2 – PRODUCTS

2.1 TRAFFIC SIGNS

- A. The aluminum sign blanks shall conform to ASTM Specification B-209 Alloy 5052-H38.
- B. The sign faces shall be fabricated from materials conforming to Section 1103 of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, including the high intensity and diamond grade.
- C. Yellow-green sheeting shall be used in accordance with PennDOT

Pub 236.

- D. The traffic signs shall be fabricated by a PennDOT approved manufacturer.
- E. The sign mounting brackets, buckles, and hardware shall be stainless steel. The banding shall be 0.75" x 0.020" stainless steel. The brackets and banding shall remain the natural color.
- F. Sign legends shall conform to PennDOT Pub 236 unless otherwise noted on the plan.
- G. All regulatory signs shall be installed with anti-theft hardware.
- H. All signs shall be manufactured in accordance with latest retro-reflectivity requirements of PennDOT.

2.2 POSTS

- A. The post shall be a 2" x 2" square pole, 14 gauge hot-dipped galvanized, with 7/16" holes punched on all 4 sides, 1" on center.
- B. The anchor shall be a 2 1/4" x 2 1/4" x 39 1/2" square penetrator anchor post, 12 gauge hot-dipped galvanized, with 7/16" holes punched on all 4 sides, 1" on center.
- C. The yield and tolerance shall conform to PennDOT Publication 408, Standard Specifications 2020, Change No. 10 for breakaway capability.
- D. The color shall be the natural galvanized steel.

2.3 HARDWARE

- A. 5/16" steel corner bolts.

PART 3 – EXECUTION

3.1 GENERAL

- A. All sign panel and steel post materials shall be installed as identified in PennDOT Publication 408, Specifications, Section 931.2 and as modified herein.

3.2 TRAFFIC SIGNS

- A. Each traffic sign shall be mounted at a minimum height of 8' above the sidewalk or ground unless otherwise directed by the Owner's Representative.
- B. All parking signs shall be placed at a 45° angle with the curb and facing oncom-

ing traffic, unless otherwise indicated on the plan or directed by the Owner's Representative.

- C. All regulatory signs shall be placed perpendicular to the curb and facing oncoming traffic, unless otherwise indicated on the plan or directed by the Owner's Representative.
- D. All bolted signs shall conform to the following:
 - 1. Any bolted sign of a length of 23" or less shall be secured with two (2) bolts.
 - 2. Any bolted sign of a length of 24" or greater shall be secured with three (3) bolts.
 - 3. Each bolt shall have a washer.
- E. All sign faces shall be thoroughly wiped after installation.

3.3 POSTS

- A. The anchor shall be embedded in the ground and extend a maximum of 2 holes above the surface.
- B. The anchor shall be connected to the post with 5/16" steel corner bolts.
- C. The adjacent pavement shall be restored to its original condition.
- D. Excessive damage to the existing pavement caused by the Contractor, as determined by the Owner's Representative, shall be corrected at the Contractor's expense.

3.4 REMOVAL

- A. All hardware shall be removed from the existing post. Post shall be removed if all signs are removed and no new signs are to be installed.
- B. Signs, and posts if applicable, shall be delivered to the owner of the sign. If the owner does not want the sign or structure, it shall become the property of the Contractor.
 - 1. Signs owned by the City of Philadelphia, Department of Aviation, shall be delivered as directed by the Owner's Representative.
 - 2. Signs owned by Tinicum Township shall be delivered to the Tinicum Township Municipal Building. The Contractor shall notify the Tinicum Township Engineer 24 hours prior to delivery.
 - 3. Signs owned by PennDOT shall be delivered as indicated in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section

931.3.

- C. Care must be exercised during removal, transport, and storage of the signs, and post of applicable. The Contractor shall be responsible for any damage to sign or pole during these operations.
- D. The poles and sleeves, if applicable, are to be removed to their full depth. If the Owner's Representative determines that the pole cannot be removed with reasonable methods, the Contractor shall excavate 12" below grade and cut the pole.
- E. The restoration of the affected areas shall be consistent with the surrounding area and constructed in accordance with the appropriate PennDOT specifications.
- F. Excessive damage to the existing pavement caused by the Contractor, as determined by the Owner's Representative, shall be corrected at the Contractor's expense.
- G. Remove post mounted signs, Type B, per PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 971.3.

3.5 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.
- B. Contractor Quality Control shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Sections 105 and 106, except as otherwise provided by the contract requirements. Where the language refers to the contracting agency or its representatives, it shall mean the City of Philadelphia.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item 101453-1 Remove Post Mounted Signs, Type B. Each.
- B. Item 101453-2 Post Mounted Signs, Type B. Square Feet.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 101453

SECTION 265600 – EXTERIOR LIGHTING

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes exterior luminaires with lamps and ballasts, and Luminaire-mounted photoelectric relays.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 1101 – Highway Lighting; apply to this Section.

1.3 DEFINITIONS

- A. Luminaire: Complete lighting fixture, including ballast housing if provided.

1.4 SUBMITTALS

- A. Shop Drawings: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
 - 2. Details of attaching luminaires and accessories.
 - 3. Details of installation and construction.
 - 4. Luminaire materials.
 - 5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.
 - a. For indicated luminaires, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
 - b. Photometric data shall be certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
 - 6. Photoelectric relays.
 - 7. Ballasts, including energy-efficiency data.
 - 8. Lamps, including life, output, and energy-efficiency data.
 - 9. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
 - 10. Solar panel, battery life (Ah) and operation time.

- B. Samples for Verification: For products designated for sample submission in Exterior Lighting Device Schedule. Each sample shall include lamps and ballasts.
- C. Qualification Data: For agencies providing photometric data for lighting fixtures.
- D. Field quality-control test reports.
- E. Operation and Maintenance Data: For luminaries and poles to include in emergency, operation, and maintenance manuals.
- F. Warranty: Special warranty specified in this Section.

1.5 SUBSTITUTIONS

- A. The lighting equipment specified herein has been chosen to replace existing fixtures or alert oncoming traffic to the existence of a pedestrian crossing. Calculations (LUMEN-Point and LUMEN- Micro) may be performed to determine luminances, luminance ratios, and horizontal and vertical illuminances.

Substitutions submittals shall consist of a physical description, dimensioned drawing and complete photometric and electric data of the proposed lamp and luminaire. All substitutions must be identified at time of bid.
- B. Shop Drawings shall clearly indicate the Contract Drawing Number of luminaire details used as a reference in the development of the shop drawings and the names of the Job and Lighting Designer. Shop drawings shall be complete submissions for approval and maintenance and, where applicable, shall include scale plans, and details showing the method of installation of lampholders, lamps, reflectors, transformers/ballasts, light fixtures, bollards, aluminum posts, solar panel and angling as well as complete bill of materials. Where applicable, verify field dimensions and include them on shop drawings showing exact locations of lampholders, and lamp shades and lengths. Provide at least one (1) quality reproducible copy of all approved shop drawings for Owner's use in maintenance and lamp replacement.
- C. The contractor shall coordinate all luminaire drawings with the drawings and details of the electrical and other related trades to assure a perfect and efficient installation.
- D. No variation from the general arrangement and details indicated on the engineering drawings shall be made on the shop drawings unless required to suit the actual conditions on the premises, and then only with written acceptance of the Owner's Representative. All variations must be clearly marked as such on drawings submitted for approval.
- E. Catalog cuts lacking sufficient detail to indicate compliance with contract documents will not be acceptable.

- F. Review of shop drawings or samples does not waive contract requirements.
- G. The Contractor shall be responsible for obtaining from his supplying lighting manufacturers, for each luminaire, a recommended maintenance manual including:
 - 1. Tools required.
 - 2. Types of cleaners to be used.
 - 3. Replacement parts identification lists.
 - 4. Final, as built shop drawings (quality, reproducible copies).
 - 5. Warranty
- H. Contractor shall be responsible for coordinating calibration of solar lighting according to the manufacturer's requirements and providing any necessary calibration tools.

1.6 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with IEEE C2, "National Electrical Safety Code."
- E. Comply with NFPA 70.
- F. Package items for shipping according to ASTM B 660.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period.
 - 1. Warranty Period for Luminaires: Five years from date of Substantial Completion.
 - 2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
 - 3. Warranty Period for Color Retention: Five years from date of Substantial Completion.

4. Warranty Period for Lamps: Replace lamps and mounting assembly that fail within 12 months from date of Substantial Completion; furnish replacement lamps and mounting assembly that fail within the second 12 months from date of Substantial Completion.

1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Lamps: Four (4) spares for each type and rating of lamp installed.
 2. Solar Panels: Four (4) spares for each type and rating of panel installed.
 3. Assemblies: Four (4) spares for each type and rating of assembly installed.
 4. Batteries: Four (4) spares for each type and rating of battery installed.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection.
- B. In Exterior Lighting Device Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
 2. Basis of Design Product: The design of each item of exterior luminaire and its support is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified. Acceptable manufacturers shall be Ligma Lighting Co. and approved equals.

2.2 LUMINAIRES, GENERAL REQUIREMENTS

- A. Luminaires shall comply with UL 1598, IESNA LM-79-08, IESNA LM-80-08 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
- B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.
- D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

- E. Housings: Rigidly formed, weather-and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- G. Exposed Hardware and Anchoring Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.
- J. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- K. Lenses and Refractors Gaskets: Use heat-and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- M. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPCSP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
 - 2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
 - a. Color: As selected from manufacturer's standard catalog of colors.
- N. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by "AA" comply with the system established by the Aluminum Association for designating aluminum finishes.
2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

2.3 LIGHT EMITTING DIODE – LED

- A. Luminaire Efficiency – allow for thermal and optical losses
 1. Initial delivered lumens – thermal losses should be less than 10% when operated at a steady state at an average ambient operating temperature of 25°C, and optical losses should be less than 15%.
- B. Average delivered lumens over 50,000 hours should be minimum of 85% of initial delivered lumens.
- C. Light Distribution – Specify light distribution required and IESNA luminaire classification (LCS). Luminaire to have independent photometric test reports.
- D. Warranty – See manufacturer details for warranty information.
- E. Driver Specification.
 1. Electronic.
 - a. Voltage range(120-277) +/-10% 12V DC
 - b. Current .35 Add (+/-5%).
 - c. Frequency 50/60 Hz.
 - d. Power Factor >90% at full load.
 - e. THD <20% at full load.
 - f. Load regulation: +/-1% from no load to full load.
 - g. Output ripple <10%.
 - h. Output should be isolated.
 - i. Case temperature: rated for -40° through +80 °.
 - j. Overheat protection, self-limited short circuit protection and overload protected.
 - k. Primary fused.
 - l. Life rating not less than 50,000 hours.

2.4 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

2.5 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
 - 1. Verify operation of photoelectric controls.
 - 2. Battery Life
- C. Illumination Tests:
 - 1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):
 - a. IESNA LM-50, "Photometric Measurements of Roadway Lighting Installations."
 - b. IESNA LM-52, "Photometric Measurements of Roadway Sign Installations."
 - c. IESNA LM-64, "Photometric Measurements of Parking Areas."
 - d. IESNA LM-72, "Directional Positioning of Photometric Data."
- D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

PART 3 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

3.1 METHOD OF MEASUREMENT

- A. Item 265600-1 Solar Lighting Bollard. Each.
- B. Item 265600-2 Solar Flashing Beacon. Each.

3.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 265600

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SECTION 310000 – EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY

- A. This item covers excavation, disposal, stockpiling, placement, and compaction of all materials within the limits of the work required to construct the proposed paved and turf areas in accordance with these specifications and in conformity to the dimensions and sections shown the plans.
- B. Selective grading and backfilling will be required for minor slope reconstruction and backfilling of holes and excavations due to demolition.
- C. The Contractor shall dispose of all excess excavated material off of Airport property or at the direction of the Airport. The Contractor shall include all costs for hauling and disposal of the excavated material.
- D. The Contractor shall keep the grade well drained at all times.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 200 – Earthwork; apply to this Section.

1.3 QUALITY ASSURANCE

- A. Codes and Regulations: Comply with local, state, and Federal laws, codes, and regulations applicable to the work specified in this Section including, but not limited to, the Federal Occupational Safety and Health Act and the Construction Safety Act.
- B. Owner's Representative Approval: The Owner's Representative will approve subgrades and fills based on Testing Laboratory reports and field observations.
 - 1. Do not construct any work on indicated subgrades and fills before required work has been approved by the Owner's Representative.
 - 2. Work constructed in violation of this requirement will be rejected, and shall be removed and replaced at no additional cost to the Owner.
- C. Applicable Publications: The publications listed below form a part of this Specification to the extent referenced:
 - 1. American Society for Testing and Materials (ASTM) Publications:
 - i. C 33 Concrete Aggregates
 - ii. C 136 Sieve Analysis of Fine and Coarse Aggregates
 - iii. D 422 Method for Particle-Size Analysis of Soils

- iv. D 698 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb (2.49-kg) Rammer and 12-in. (304.8-mm) Drop
 - v. D 1140 Test Method for Amount of Material in Soils finer than the No. 200 (75-mm) Sieve
 - vi. D 1556 Test Method for Density of Soil In-Place by the Sand-Cone Method
 - vii. D 2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate
 - viii. D 2487 Classification of Soils for Engineering Purposes D 2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - ix. D 3017 Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - x. D 4253 Maximum index Density of Soils Using a Vibratory Table
 - xi. D 4254 Minimum Index Density of Soils and Calculation of Relative Density
 - xii. D 4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
2. Pennsylvania Department of Transportation (PennDOT) Publication 408, Standard Specifications 2020, Change No. 10.

1.4 PROJECT CONDITIONS

- A. Examination of Site Records: Examine the Project Site, records of existing utilities and construction, records of test borings, the subsurface exploration reports and the soil samples which are available from the Airport to determine conditions under which the work will be performed.
- B. Other Construction: Other construction, of which no records are available, may be encountered. Formulate conclusions as to the extent of such construction and remove all material of any nature to the design subgrades indicated or specified and as directed and approved by the Owner's Representative.
- C. Existing Utilities: Locate existing underground utilities in areas of excavation work. Provide adequate means of support and protection during earthwork operations. Existing utilities remaining in service, including those remaining in service until after relocation, and related utilities are shown on the Drawings. Before excavating near any existing utilities, notify the Owner's Representative, coordinate protective work and comply with the Owner's Representative's requirements. Contact the Owner's Representative at least 72 hours before starting any planned work operation that includes excavating, boring, or digging. Safeguard and protect from damage or movement any existing services, utilities, and utility structures uncovered or encountered which are to remain in service.
 - 1. Field verify the location of utilities prior to construction. Before excavating near existing utilities, notify the Owner's Representative and the utility owner, coordinate protective work and comply with the Owner's Representative and utility owners' requirements.
- D. Uncharted Utilities: Should uncharted, or incorrectly charted, piping or other utili-

ties be encountered during excavation, consult utility owner immediately for directions. Cooperate with the Owner's Representative and utility companies in keeping respective services and facilities in operation.

1. Immediately consult the Owner's Representative for direction regarding uncharted or incorrectly charted piping or utilities. Any damage to the utilities due to construction operations shall be located and repaired to the satisfaction of the utility owner, without additional compensation.
- E. Interruption of Existing Utilities: Do not interrupt existing utilities serving Airport facilities except when permitted in writing by the Owner's Representative and then only after acceptable temporary utility services have been provided.
1. Provide minimum of 72-hour notice to Owner's Representative and receive written notice to proceed before interrupting any utility. Coordinate with utility companies for shutoff of services if lines are active.
- F. Pumping and Drainage: Excavate areas so as to afford adequate drainage. Control grading to prevent water running into the excavated areas. Until the work is completed, remove water that may interfere with the proper performance of the work or cause ponding. Dewatering or similar systems shall not be installed or operated without prior consent by the Owner's Representative.
- G. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as required by authorities having jurisdiction. Protect structures, utilities, sidewalks, pavements, and other facilities from damage and hazards created by earthwork operations. Perform excavation by hand where necessary to protect adjacent structures and Airport facilities from damage.
1. Guard and protect open and unattended excavations and other potentially hazardous locations in and adjacent to areas lawfully frequented by any person during all phases of Contract construction. Such guarding and protection shall conform to the applicable provisions of the Federal Occupational Safety and Health Act (OSHA), the Pennsylvania Code, and with all pertinent requirements and regulations promulgated there under and enforced by any state agency, federal agency, or any authorities having jurisdiction and charged with the enforcement of such act or acts.

1.5 STORAGE AND HANDLING

- A. Storage and Handling: Materials shall be stored and handled in a manner so as to ensure the preservation of their quality and fitness for the work. Materials shall be stored and located so as to facilitate their prompt inspection.
1. Gravel fill and subbase material which is suitable for use as fill under exterior slabs, under paving, and for backfill shall be separated from material which is only suitable for general grading.
- B. Unacceptable Materials: Materials that do not conform to the Specifications shall be considered unacceptable. All such materials, whether in place or not, will be

rejected and shall be removed from the Project Site and replaced with acceptable materials or their deficiencies shall be corrected.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Unclassified Excavation.

1. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature.

B. Borrow Excavation.

1. Borrow excavation shall consist of approved material required for the construction of embankment, backfilling, or for other portions of the work from excavations on the site, or from Airport stockpiles if available and permitted by Owner's Representative.
2. Satisfactory Soils: ASTM D2487 soil classification groups GW, GP, GM, SW, SP, and SM, or a combination of these group symbols; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter. The contractor shall perform up to 5 tests of existing soil bank materials proposed for use as borrow excavation.
3. The Contractor shall submit test data for proposed borrow excavation materials.

C. Unsuitable Subgrade Undercut Excavation

1. Unsuitable subgrade undercut excavation shall be reserved for the removal of soft, yielding clayey material below the proposed subgrade elevation and shall consist of silts, clays and clayey material. Unsuitable subgrade undercut excavation shall only be used when authorized by the Owner's Representative. Unsuitable subgrade undercut excavation shall be completed as shown on the details.

D. Unsuitable Excavation

1. Any material containing vegetable or organic matter such as muck, peat, organic silt or sod shall be considered unsuitable for use in embankment construction. Excavated unsuitable material may be used as topsoil, when approved by the Owner's Representative. All clay or soft and yielding material shall be considered unsuitable for use in embankment construction.

PART 3 – EXECUTION

3.1 PRE-CONSTRUCTION, GENERAL

- A. A pre-construction meeting addressing the excavation and backfill shall be held as required below in Section 3.13 - "CONTRACTOR'S QUALITY CONTROL PROGRAM".

3.2 PREPARATION

- A. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of the surface for earthwork operations, including removal of vegetation, top soil, debris, obstructions, and deleterious materials from the ground surface is specified in Specification Section 311000 – Site Clearing.
- C. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- D. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways in accordance with the requirements of Specification Section 312514 – Stabilization Measures for Erosion and Sedimentation Control.

3.3 DEWATERING

- A. Dewatering shall be provided to remove surface and groundwater inflow for safe and proper prosecution of the work that will result in a stable, substantially dry base for the prosecution of subsequent work.

3.4 EXCAVATION

- A. No excavation shall be started until the Contractor has staked out the work and the Contractor has submitted elevations and measurements of the ground surface to the Owner's Representative for verification and acceptance. All suitable excavated material may be used in the formation of embankment, subgrade, or for other purposes shown on the plans. All excess excavation shall be disposed of at the soil bank site. All unsuitable material and topsoil shall be legally disposed of off Airport property as permitted. Combustible debris shall be removed from the site daily.
- B. The Contractor shall be required to process and compact the existing subgrade as required in this section. The properties of the existing subgrade can be improved by compaction at proper moisture content.
- C. The Contractor shall immediately notify the local fire department(s) and the Owner's Representative if a release of a hazardous material occurs or if a hazardous material is detected in the presence of any soil.
- D. The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the work. Pumping shall also be

used to maintain the subgrade in a dry condition if the use of temporary ditches or drains does not adequately drain the subgrade.

- E. The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by the Contractor. All existing foundations shall be excavated for at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed. All foundations thus excavated shall be backfilled with suitable excavated or borrow material and compacted as specified herein.
- F. All excavations shall be backfilled and compacted by the end of the same work-day or shall be covered with steel decking until backfill and compaction are satisfactorily completed. Steel decking shall be minimum $\frac{3}{4}$ inch thick, secured in place, and adequately sized to safely span the open excavations.
- G. Selective grading will be required. Suitable material shall be used for structural fill in constructing the embankments or in constructing the pavement subgrade. Structural fill shall be placed under areas to be paved plus five feet beyond the edge of pavements. Structural fill shall consist of soil materials complying with ASTM D2487 soil classifications groups GW, GP, GM, SM and SP, and have a plasticity index less than 10. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas for rehandling as specified.
- H. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for taxiway safety areas, subgrades, roads, shoulders, or any areas intended for turfing shall be excavated to a minimum depth of 12 inches below subgrade, or to the depth specified by the Owner's Representative.
 - 1. The excavated areas for rock undercut excavation shall be refilled with embankment material, and compacted to 100% ASTM D1557.
- I. Muck, peat, matted roots, silts, clays, clayey soils or other yielding material, unsatisfactory for subgrade foundation, shall be undercut to at least two feet below subgrade, or to the depth specified by the Owner's Representative, within the site. The exact limits of unsuitable subgrade undercut excavation shall be approved by the Owner's Representative prior to removal. Satisfactory, but wet material shall be dried in accordance with this specification when directed by the Owner's Representative. Unsuitable subgrade undercut excavation materials shall be legally disposed of off the Airport property.
- J. Satisfactory, but wet material shall be dried and compacted to the density specified in "Compaction Requirements". The following effort is required to dry the material.
 - 1. Air dry the top 8 inches of material. This procedure shall include processing the top 8 inches of material utilizing discs or tillers at least twice each day for three consecutive good drying days.
 - 2. Recompect the layer processed in Step 1 to achieve not less than the density specified in "Compaction Requirements" or until at least nine

passes of a roller which has demonstrated ability to obtain the density on adjacent earthwork have been made.

3. When the work listed above has been accomplished and a satisfactory dry material has not been obtained, the Owner's Representative will make a determination as to whether additional drying and recompaction will be needed to obtain stable dry material or whether undercutting in accordance with "Undercutting" is required.
- K. Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the Owner's Representative. The Owner's Representative shall determine if the displacement of such material was unavoidable and his/her decision shall be final. All overbreak shall be graded or removed by the Contractor and disposed of as directed; however, payment will not be made for the removal and disposal of overbreak which the Owner's Representative determines as avoidable. Unavoidable overbreak will be classified as "Unclassified Excavation".
- L. The removal of existing structures and utilities is required to permit the orderly progress of work will be accomplished by the Contractor. All existing foundations shall be excavated for at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed. All foundations thus excavated shall be backfilled with suitable material and compacted as specified herein.
- M. After the stripping and overexcavation operations have been completed, the subgrade shall be compacted as required. Rolling operations shall continue until the maximum density attainable has been reached. If the maximum density is less than the specified percent of maximum density, the Contractor shall either dry the soil or sprinkle the soil with water, as necessary to reach the required moisture content. The Contractor shall then continue recompacting the soil until the maximum density attainable has been reached. If this is less than the specified percent of maximum density, this process shall be repeated until the Contractor has made at least three attempts to compact the soil to the specified percent of maximum density. If after three attempts the specified percent of maximum density cannot be obtained, the Contractor shall undercut as required.
- N. After initial compaction operations have been completed, the subgrade shall be proofrolled utilizing a heavily-loaded dump truck or other pneumatic-tired vehicle of similar size and weight with at least a 12-KIP single axle load. The purpose of the proofrolling is to locate any isolated areas of soft or loose soils requiring improvement or replacement. Proofrolling shall not be attempted during and following wet weather conditions. Soil or Loose Soil areas identified by proofrolling, which can not be compacted to specified percent of maximum density or which, due to excess moisture in underlying soils, cannot be compacted to the specified percentage of maximum density, shall be brought to the attention of the Owner's Representative. The Contractor shall place undercut in these areas as directed by the Owner's Representative and in accordance with the specifications.
- O. Where required, all subgrade shall be compacted to the following depths and densities. In cut areas, the subgrade shall be compacted to a minimum depth of 6 inches and to a density of not less than 95% for cohesive soils, and 100% for

noncohesive soils, of the maximum density at optimum moisture as determined by ASTM D 1557. Any unsuitable materials encountered shall be removed, re-filled and compacted. Laboratory densities and supporting test data shall be provided by the Contractor to the Owner's Representative.

1. The in-place field density shall be determined in accordance with ASTM D1556, ASTM D2167 or ASTM D2922. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade. The finished grading operations, conforming to the typical cross section, shall be completed and maintained at least 1,000 feet ahead of the paving operations or as directed by the Owner's Representative.
2. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the plans or as directed by the Owner's Representative.

3.4 UTILITIES AND TRENCHING

- A. If the Contractor encounters existing surface drainage, sewers or underdrainage, conduits, utilities, or similar underground structures, or parts thereof, the Contractor shall be responsible for and shall take all necessary precautions to protect and preserve or provide temporary services. When such facilities are encountered, the Contractor shall notify the Owner's Representative. The Contractor shall, at his own expense, satisfactorily repair all damage to such facilities or structures which may result from any of his operations during the period of the contract.
- B. Excavation shall be kept free of water during installation of electrical raceways.
- C. Trenches may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be vertical so that a minimum of shoulder surface is disturbed. The bottom surface shall be smooth and free from coarse aggregate and excavated to a minimum depth of 24 inches below grade. The bottom of trenches shall be tamped solid below conduit and leveled to provide proper support of new conduits prior to backfilling.
- D. In areas where other underground circuiting is in the proximity of new circuiting work, the Contractor shall use a cable-finder to locate the cables and then proceed with hand digging only. Any damage done to these cables shall be the Contractor's responsibility.
- E. To avoid damage, locate ends of existing conduit and duct terminations by hand digging prior to using trenching equipment.
- F. All existing duct and cable markers shall be returned to their proper location and orientation. Provide new markers with inscription as directed.

3.5 UTILITY BACKFILL AND COMPACTION

- A. Excavated material to be used as fill shall be approved for that purpose prior to backfilling. Excess excavated material and unsatisfactory fill materials shall be disposed of in waste areas off of the Airport property.
- B. Backfill shall be placed in maximum 6 inch layers and each layer shall be tamped separately. Backfilling shall return the area to its original grade or as directed by the Owner's Representative to maintain surface drainage in the area. Any subsequent settlement shall be corrected by the Contractor.
- C. Excavation shall not be excessively wet and shall not contain pools of water during backfilling operations. The excavation shall be completely backfilled and tamped level with the adjacent surface.
- D. Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the trenching, storing of dirt, concrete pad construction and other work shall be restored to its original condition. The restoration shall include any necessary topsoiling, fertilizing, liming, seeding, sprigging, or mulching. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance.
- E. Compaction shall be accomplished with vibratory compactors. The compaction shall continue until the material is thoroughly set and stable. The material shall be compacted as determined by ASTM Designation D-1557, Method C or D to a 100% density. Compaction shall be tested a minimum of one test every 100 feet for each lift placed, testing shall be by the Contractor. It is recommended that all compaction be accomplished at or slightly above optimum moisture in order to achieve the required degree of compaction. The Contractor will not receive any additional compensation for compacting the bottom of any excavation and any such costs should be included in the appropriate item.

3.5 PREPARATION OF EMBANKMENT AREA

- A. Where an embankment is to be constructed, all sod, vegetable matter, and topsoil shall be removed from the surface upon which the embankment is to be placed, and the cleared surface shall be completely broken up by plowing or scarifying to a minimum depth of 6 inches.
- B. Where embankments are to be placed on natural slopes steeper than 3 to 1, horizontal benches shall be constructed as shown on the plans or as directed by the Owner's Representative.

3.6 FORMATION OF EMBANKMENTS.

- A. This project consists primarily of excavation, but embankment construction or backfilling of excavations may be required to bring isolated areas of subgrade to grade.
- B. Embankments shall be formed in successive horizontal layers of not more than 8

inches in loose depth for the full width of the cross section, unless otherwise approved by the Owner's Representative.

- C. The grading operations shall be conducted, and the various soil strata shall be placed, to produce a soil structure as shown on the typical cross section or as directed. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.
- D. Operations on earthwork shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, or other unsatisfactory conditions of the field. The Contractor shall drag, blade, or slope the embankment to provide proper surface drainage.
- E. The material in the layer shall be within ± 2 percent of optimum moisture content before rolling to obtain the prescribed compaction. In order to achieve uniform moisture content throughout the layer, wetting or drying of the material and manipulation shall be required when necessary. Should the material be too wet to permit proper compaction or rolling, all work on all of the affected portions of the embankment shall be delayed until the material has dried to the required moisture content. Sprinkling of dry material to obtain the proper moisture content shall be done with approved equipment that will sufficiently distribute the water. Sufficient equipment to furnish the required water shall be available at all times. Samples of all embankment materials for testing, both before and after placement and compaction, will be taken for each 1000 cubic yards of material placed. Based on these tests, the Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content in order to achieve the correct embankment density.
- F. Under all areas, the embankment shall be compacted to a minimum depth of 9 inches and to a density of not less than 95% for cohesive soils, and 100% for noncohesive soils, of the maximum density at optimum moisture as determined by ASTM D 1557. Any unsuitable materials encountered shall be removed and paid for as specified. Laboratory densities and supporting test data shall be provided by the Contractor to the Owner's Representative.
- G. On all areas outside of areas to be paved, no compaction is required in the top 4 inches.
- H. The in-place field density shall be determined in accordance with ASTM D 1556, ASTM D 2167, or ASTM D 2922.
- I. Compaction areas shall be kept separate, and no layer shall be covered by another until the proper density is obtained.
- J. During construction of the embankment, the Contractor shall route his/her equipment at all times, both when loaded and when empty, over the layers as they are placed and shall distribute the travel evenly over the entire width of the embankment. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay, or other chunky soil material will be broken up into small particles and become incorporated with the other material in the layer.

- K. In the construction of embankments, layer placement shall begin in the deepest portion of the fill; as placement progresses, layers shall be constructed approximately parallel to the finished pavement grade line.
- L. When rock and other embankment material are excavated at approximately the same time, the rock shall be incorporated into the outer portion of the embankment and the other material shall be incorporated under the future paved areas. P.C. Concrete pavement removed as part of the construction of work shall not be incorporated into the embankment. Stones or fragmentary rock larger than 3 inches in their greatest dimensions will not be allowed in the top 12 inches of the subgrade. Rockfill shall be brought up in layers as specified or as directed and every effort shall be exerted to fill the voids with the finer material forming a dense, compact mass. Rock or boulders not meeting the requirements of the materials permitted at the soil bank site shall be legally disposed of off Airport property by the Contractor.
- M. When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in layers of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material not meeting the requirements of the materials permitted at the soil bank site shall be legally disposed of by the Contractor off Airport Property.
- N. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material.
- O. No separate measurement of payment for compacted embankment and all costs incidental to placing layers, compacting, disking, watering, mixing, sloping and other necessary operations for construction of embankments to proper density and moisture content shall be included in the contract price for unclassified excavation.

3.7 FINISHING AND PROTECTION OF SUBGRADE.

- A. After the subgrade has been substantially completed the full width shall be conditioned by removing any soft or other unstable material which will not compact properly. The resulting areas and all other low areas, holes or depressions shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans.
- B. Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the subgrade from damage. The Contractor shall limit hauling over the finished subgrade to that which is essential for construction purposes.
- C. All ruts or rough places that develop in a completed subgrade shall be smoothed and recompacted.
- D. No subbase or surface course shall be placed on the subgrade until the subgrade has been approved by the Owner's Representative.

3.8 HAUL

- A. All hauling will be considered a necessary and incidental part of the work. Its cost shall be considered by the Contractor and included in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

3.9 DISPOSAL OF EXCESS EXCAVATION MATERIAL

- A. All excess excavation materials must be legally disposed of off Airport property.
- B. The Contractor is responsible for hauling and dumping for all earthwork.

3.10 TOLERANCES

- A. In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that, when tested with a 16-foot straightedge applied parallel and at right angles to the centerline, it shall not show any deviation in excess of 1/2-inch, or shall not be more than 0.05-foot from true grade as established by grade hubs or pins. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and recompacting by sprinkling and rolling.
- B. In turf areas, grading shall provide for the placement of a minimum of 2 inches of topsoil such that the surface of the topsoil shall conform to the final elevations.
- C. On turf areas, the surface shall be of such smoothness that it will not vary more than 0.10 foot from true grade as established by grade hubs. Any deviation in excess of this amount shall be corrected by the Contractor.
- D. In the below grade levels of excavation and deep excavation areas, the surface shall not vary by more than 0.20 feet from true grade, as shown on the plans.
- E. The location of the vertical face for the excavation shall not extend into the excavation by any distance from the limits of excavation defined on the plans. The location of the vertical face for the excavation shall not extend away from the excavation by more than 0.25 feet from the limits of excavation defined on the plans. Vertical faces of excavation shall not vary by more than 0.25 feet from the top of excavation or vertical face to the bottom of excavation or vertical face. Over excavation (excavation of vertical faces away from the limits of excavation defined) is not permitted and shall be corrected by placement of shotcrete to the limits of excavation defined on the plans, at no additional cost to the Airport.

3.11 TOPSOIL

- A. Excavation and stockpiling of topsoil for later distribution shall not be measured for payment.

3.12 EROSION CONTROL

- A. Minimization of Soil Erosion: Provide erosion control methods in accordance with the plans and specifications. Erosion and sedimentation controls shall be placed as specified in Specification Section 312514 – Stabilization Measures for Erosion and Sedimentation Control.

3.13 CONTRACTOR'S QUALITY CONTROL PROGRAM

- A. Field Quality Control - Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 310000-1 – Class 1 Excavation. Cubic Yard.
- B. Item No. 310000-2 – Foreign Borrow Excavation. Cubic Yard.
- C. Item No. 310000-3 – Placement and Compaction of Embankment and Fill. Cubic Yard.
- D. Earthwork, including any borrow material, shall be considered incidental to the task or work item for which the earthwork is performed. No direct measurement of Earthwork, including any borrow material, shall be made.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 310000

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SECTION 311000 – SITE CLEARING

PART 1 – GENERAL

1.1 SUMMARY

- A. Site clearing shall include clearing and grubbing, selective demolition of existing structures and foundations or facilities, utility removals, and pavement demolition. All site clearing shall be in accordance with local, state and federal codes, regulatory agencies and standards. All permits for demolition shall be obtained from the proper sources prior to any work on the site.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 201 – Clearing and Grubbing, Section 490 – Removal of Existing Surface Course, and Section 810 – Tree Trimming and Selective Tree Removal; apply to this Section.

1.3 SELECTIVE DEMOLITION

- A. Selective demolition includes the removal and demolition of existing structures, concrete pads, concrete or steel foundations and piles, retaining or barrier walls, and other miscellaneous facilities within the project site not covered by utility removals.
- B. Selective demolition also includes miscellaneous removals of items such as bollards, fences and guide rails, curb, sidewalk, signs, gates, light poles, and any demolition which interferes with new work.

1.4 UTILITY REMOVALS

- A. Utility removal includes the removal and demolition of existing and abandoned utilities including but not limited to stormwater, telephone, communications, electrical, natural gas, and water and all appurtenances, including connections, fixtures and structures thereof within the limits indicated on the plans.
- B. Utility removals also include miscellaneous removals, and demolition which interferes with new work.

1.5 PAVEMENT REMOVALS

- A. Pavement removal includes the removal and demolition of existing concrete and bituminous pavement including but not limited to roadways, parking lots, curbs, sidewalks, and stairs as indicated on the plans.

- B. Pavement removal also includes miscellaneous removals, and demolition which interferes with new work.
- C. Pavement milling is covered in Specification Section 320116.71 – Cold Milling Asphalt Paving.

1.6 SITE CLEARING

- A. Site clearing includes the removal and demolition of existing trees, stumps, down timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, broken concrete, rubble, trash, debris, and rubbish of any nature, natural and manmade obstructions or such material which in the opinion of the Owner's Representative is unsuitable to remain on the site, including the grubbing of stumps, roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing by burning or otherwise.

1.7 SALVAGE

- A. The owner reserves the right to select any items on-site that will remain the property of the Airport and those items shall be delivered to a location on the airport as directed by the Owner's Representative. These items may include trench drain grates, manhole frames and grates, signs, valves, communication equipment, or other items.

1.8 SITE VISIT

- A. The Contractor may visit the site prior to bid to familiarize themselves with all required demolition items and identify items which are not necessarily shown on the drawings, but are required to be removed to perform new work. The site is on public access roadways and areas on the landside of the airport, however, all site visits are to be coordinated with the Owner's Representative.

1.9 PRE-DEMOLITION CONFERENCE

- A. Prior to the start of the work, on any specific demolition item, a meeting will be coordinated at the Project site to review methods and sequence of demolition operations, special details and conditions, standards of workmanship, quality control requirements, job organization, coordination with other trades, and other pertinent topics related to the Work. The meeting shall include the Airport, the Owner's Representative, appropriate Design Consultant(s), the Contractor's superintendent, and any other subcontractors whose work requires coordination with this work.

1.10 SUBMITTALS

- A. Schedule: Submit a schedule indicating proposed sequence of operations for demolition work to the Owner's Representative for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection. A detailed sequence of demolition of the building will be submitted to the Owner's Representative 14 days prior to the beginning of demolition.

- B. Procedures: Submit proposed selective demolition and removal procedures to the Owner's Representative for approval before work is started. Procedures shall provide for careful removal and disposition of materials, coordination with other work, roadway traffic, and a detailed sequence of operations.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 DEMOLITION

- A. Demolition and Removal: The work includes demolition or removal of all items indicated or specified. Do not begin demolition until authorization is received from the Owner's Representative. Remove rubbish and debris daily, unless otherwise directed; do not allow accumulations on airport roads, facilities, and operational rights-of-way. Store materials that cannot be removed daily in areas specified by the Owner's Representative.
 - 1. Perform selective demolition work in a systematic manner. Remove selective trees per PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 810.3.
 - 2. Use such methods as required to complete work indicated on plans in accordance with demolition schedule and governing regulations.
 - 3. Locate demolition equipment, shovels, and the like safely so that no part thereof will endanger normal Airport operations, general public and others, power, utility, lighting, and communication lines.

3.2 GENERAL REQUIREMENTS

- A. Transport demolished items from site as they are removed.
- B. Storage or sale of removed items on site will not be permitted.
- C. Promptly repair damage caused to adjacent facilities by selective demolition work.
- D. Conduct selective demolition operations and debris removal to ensure minimum interference with airport operations, and roadway traffic.
- E. All utility demolition and removals must be sequenced with new construction as shown on plans.
- F. Blasting will not be permitted.

3.3 PREPARATION

- A. Shoring, Bracing, and Support: Provide shoring, bracing, or support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.
- B. Cease operations and notify the Owner's Representative immediately if safety of any structure, facility, utility, work in place, etc., appears to be endangered. Take precautions to support endangered work until determination is made for continuing operations.
- C. Protection: Provide construction and security fencing and other forms of protection to protect the general public, and others from injury due to selective demolition work. Protect existing work that is to remain in place, that is to be used, or which is to remain the property of the Airport by temporary covers, shoring, bracing, and supports. Repair items which are to remain and/or be salvaged which are damaged during performance of the work to their original condition or replaced with new. Do not overload structural elements. Provide supports and reinforcement for existing construction weakened by demolition or removal work.
- D. Do not close, block, or otherwise obstruct streets, walks, rights-of-way, and other occupied or used facilities without written permission from the Owner's Representative.
- E. Provide vehicular access to driveways and access roads in accordance with phasing plans as required by the Owner's Representative. Provide temporary signs and construction signs as required.
- F. Utility Services: Maintain existing services that are not identified to be removed.
- G. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection. Do not water when it may create hazardous or objectionable conditions such as ice, flooding, mud flows and pollution.
- H. Existing Utilities: The locations of utilities shown on the drawings are approximate. The location of all utilities and structures shall be verified by the Contractor who shall be solely responsible for their maintenance, support or removal as required. The Contractor shall employ a utility locator service to locate all utilities within the limits of work.

3.4 SELECTIVE DEMOLITION

- A. Structure demolition shall consist of removing all structures, foundations, piles, pads and other structure or building facilities as shown on the drawings, and or directed by the Owner's Representative.
- B. Structure demolition shall be separated from vehicle service roads by concrete barriers. Structure demolition shall be performed without interruption of adjacent vehicle operations.

3.5 UTILITY REMOVALS

- A. Utility removal shall consist of removing all drainage, electric, communications, water, sanitary, gas, and other utility pipes, ducts, conduits and structures as

shown on the drawings, and or directed by the Owner's Representative, including pipes and structures installed for temporary drainage or maintenance of utility continuity. Manholes, end walls, footings, inlets, valves, hydrants and other structures are included in the removal. Utility poles shall be pulled, not cut. See PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 605 for further information.

- B. Objects, surfaces and items including the underground utilities designated to remain shall be carefully avoided and left undisturbed. Any damage to these items shall be immediately corrected by the Contractor to the satisfaction of the Owner's Representative at no additional cost to the Airport.
- C. Equipment used in conjunction with this work shall be in first class working condition and shall be capable of removing the material in an efficient manner.
- D. Existing electric lines shall be safely de-energized and disconnected in manholes or at the transformer on utility poles located adjacent to or on the project site as shown on the plans. Transformers and other electric lines on the poles or in the manholes that serve facilities outside the work area must remain active at all times.
- E. Removal shall be carefully coordinated, with the appropriate coordination of the utility company and airport operations and sequenced as shown on the drawings.
- F. Plug or cap, in an approved manner, all remaining utility pipes at the point of abandonment as shown on the drawings.

3.6 SITE CLEARING AND MISCELLANEOUS REMOVALS

- A. This item consists of removing all surface features and site utilities, including manholes and other structures. The removal of fence, guiderail, concrete barrier, posts, poles, site fixtures, bollards and other site features are included as well as all trees, brush and debris. All features extending into the ground shall be pulled or excavated out, and not cut at the surface.
- B. Trim trees and bushes that overhang the pedestrian pathway to provide an unobstructed path to a clearance height of 20' above finished grade.

3.7 ELECTRICAL DISCONNECTIONS

- A. All work shall be in accordance with the latest editions of the National Electrical Safety Code (ANSI/IEEE C-2) and the National Electrical Code (NFPA 70).

3.8 SALVAGED MATERIALS

- A. Carefully dismantle items to be salvaged, so as not to create any damage to them. Immediately deliver them to the location directed by the Owner's Representative and obtain a receipt from the Owner's Representative. If it is determined that through the Contractor's operations of removing and handling, these

items are being damaged, the Owner's Representative reserves the right to withhold payment from the Contractor for the Owner's Representative's estimated value of the items.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

- A. All demolished materials shall be removed from Airport site, including all debris, rubbish, and other materials resulting from demolition operations. Demolition materials shall be transported and legally disposed of off site.
- B. The contractor shall obtain written permission from the property owner on whose property the demolished materials are to be placed and shall submit copy of the agreements to the Owner's Representative.
- C. Except where indicated otherwise, materials to be salvaged, or as specifically specified otherwise in other sections, all materials and equipment removed shall become the property of the Contractor and shall be removed from Airport property. Title to all materials resulting from demolition, and all materials and equipment to be removed, is vested in the Contractor upon approval by the Owner's Representative of the Contractor's demolition and removal procedures, and authorization by the Owner's Representative to begin demolition.
- D. Any containers which will be used to store the materials resulting from the removal operations shall bear the contractor's name and phone number and be surrounded by flashing barricades.

3.10 CLEANUP AND REPAIR

- A. Debris, Rubbish, Tools, and Protection: Upon completion of selective demolition work, remove tools, equipment, and demolished materials from site. Remove protection and leave areas broom clean.
 - 1. Remove and transport debris and rubbish in a manner that will prevent spillage.
 - 2. Clean up spillage from adjacent areas.
- B. Repair: Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start of operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

3.11 BACKFILL AND COMPACTION

- A. All excavations, trenches and areas where pavements or structures have been removed shall be backfilled and compacted as specified in Specification Section 310000 – Earthwork. No separate payment will be made for backfilling and compaction of excavated material due to demolition.

3.12 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item 311000-1 Clearing and Grubbing. Lump Sum.
- B. Item 311000-2 Tree Trimming To A Height Of 20'. Lump Sum.
- C. Item 311000-3 Selective Tree Removal. Each.
- D. Item 311000-4 Remove Lighting Bollards. Each.
- E. Item 311000-5 Remove Inlet Frame and Grate. Each.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 311000

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SECTION 312350 – SAWCUTTING

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes the saw-cutting of existing concrete and bituminous pavement and footway at the locations indicated on the plans.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 516 – Concrete Pavement Patching; apply to this Section.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 GENERAL

- A. In accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 516.3(b) and 516.3(c).

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 312350-1 Sawcutting. Linear Feet.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 312350

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**SECTION 312514 –STABILIZATION MEASURES FOR EROSION AND SEDIMENTATION
CONTROL**

PART 1 – GENERAL

1.1 SUMMARY

- A. This item shall consist of temporary control measures as shown on the plans or as ordered by the Owner's Representative during the life of a contract to control water pollution, soil erosion, and siltation through the use of erosion controls shown on the plans and details.
- B. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.
- C. Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.
- D. All erosion control measures shall be constructed and installed in accordance with the latest versions of the Erosion and Sediment Pollution Control Program Manual, PADEP, and PennDOT Publication 408, Standard Specifications 2020, Change No. 10.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 806 – Rolled Erosion Control Products, Section 860 – Storm Inlet Protection, and Section 867 – Compost Filter Sock; Pennsylvania Department of Environmental Protection Erosion and Sediment Pollution Control Program Manual, March 2012; Pennsylvania Stormwater Best Management Practices Manual, December 2006; apply to this Section.

1.3 QUALITY ASSURANCE.

- A. Reference Standards: Meet requirements of the referenced standards except to the extent more detailed or stringent requirements are indicated by the Contract Documents, including requirements of this Section and of governing codes and regulations.
- B. Compliance with Laws, Codes, Rules, and Regulations: Comply with all local, State, and Federal laws, rules, and regulations applicable to this Section.

1.4 SUBMITTALS

- A. The Contractor is required to prepare and submit for approval a stormwater pollution prevention plan, SPPP, in accordance with the outline provided below, if it differs from the original erosion and sediment control plan approved for this contract. The SPPP is required to be submitted and must be approved by the Owner's Representative prior to any earth disturbance on the site within the project limits.
- B. The SPPP shall be prepared in accordance with the following outline:
 - 1. Site Description
 - a. A description of the nature of the construction activity.
 - b. A description of the intended sequence of major activities which disturb soils for major portions of the site, for each phase of work.
 - c. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other land disturbing activities.
 - d. A site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, location of structural and nonstructural controls identified in the plan, location of areas where stabilization practices are expected to occur, and locations of points of discharge to existing storm runoff conveyance systems.
 - 2. Pollution Sources -The plan shall identify all potential sources of stormwater pollution in addition to land disturbing activities, such as:
 - a. Temporary fuel storage and handling.
 - b. Material storage and hazardous material storage.
 - c. Equipment maintenance areas.
 - d. Solid waste and hazardous waste disposal activities.
 - 3. Controls -The plan shall include a description and timing of appropriate controls and measures that will be implemented for each major activity and for each potential pollution source identified above.
 - a. Stabilization Practices -Seeding, mulching, installation of geotextile fabric, etc. on areas where construction activities have temporarily or permanently ceased.
 - b. Structural Practices -Construction of berms, dikes, sediment traps, sediment basins, inlet protection, flow attenuation and velocity dissipation devices, covered material and waste storage areas,

and other such devices to limit runoff and minimize the discharge of pollutants. Appropriate practices shall be incorporated for both surface drainage and for discharges from dewatering activities.

- c. Operational Practices -Dust control, wash-down of construction vehicles at controlled locations, house keeping, regular waste collection and disposal, control of equipment fluids and lubricants, and similar practices to minimize pollutant generation.
 - d. Maintenance -A description of procedures to maintain protective measures in good and effective operating condition.
 - e. Inspection -A description of inspection procedures and schedules, to include, at a minimum, inspections of all structural and non-structural pollution control measures at least once a week and within 24 hours of precipitation events of 0.5 inches or greater.
 - f. Contractor Identification and Certification -Clearly identify the contractor(s) or subcontractor(s) responsible for implementation of each control measure.
- C. The SPPP may utilize plans, details, notes and other information provided in the construction documents, however, such information shall not, in itself, be construed to meet the requirements of this section. The Contractor must provide additional detail to ensure that the SPPP accurately reflects the Contractor's means and methods for construction, to include: construction sequencing, site layout, construction access, temporary facilities, specific structural and nonstructural controls and project organization.
- D. The Contractor shall furnish shop drawings, manufacturers' data, test reports and material certification for:
- 1. Compost filter sock
 - 2. Inlet Protection
 - 3. Sump Dewatering Facilities
 - 4. Erosion Control Mat
 - 5. Temporary Seeding (in accordance with Specifications Section 329119.13 – Topsoil Placement and Grading)

PART 2 – PRODUCTS

2.1 GEOTEXTILE FABRIC (FILTER FABRIC)

- A. Geotextile fabric for filter fabric fence shall meet the requirements of Class 3 (B) Geotextile as defined by PennDOT Publication 408, Standard Specifications

2020, Change No. 10, Section 735. Geotextile fabric for sediment control shall meet the requirements of Class 2 (B) Geotextile as defined by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 735.

2.2 COMPOST FILTER SOCK

- A. Compost and filter sock shall meet the requirements as defined by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 867.

2.3 INLET PROTECTION

- A. Filter bag inlet protection to meet the requirements as defined by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 860.

2.4 EROSION AND SEDIMENTATION CONTROLS

- A. The erosion and sedimentation controls shall be constructed with the materials shown on the details and plans.
- B. Ultra-short-term, short-term, extended-term, and long-term temporary Rolled Erosion Control Products (RECPs) shall meet the requirements of Tables A, B, C, and D in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 806.2, and have a functional longevity of sufficient duration to allow establishment of permanent vegetation before RECP degradation. Contractor shall provide manufacturer's RECP specifications, product data sheets, and drawings to the Owner's Representative.

PART 3 – EXECUTION

3.1 GENERAL

- A. Erosion and sedimentation control measures must be in place prior to any earthwork activities. Drawings provide specific details for each phase of construction.
- B. Place erosion and sedimentation control devices as shown on Erosion and Sediment Control Plans, Earth Disturbance Permit, SPPP, and as required by the Owner's Representative.
- C. An approved set of NPDES plans and a copy of the Certification from the Soil Conservation District must be available on site prior to beginning any earthwork activities.
- D. The Contractor shall exercise every reasonable precaution, including temporary and permanent measures, throughout the duration of the project to control erosion and prevent or minimize pollution of rivers, streams, lakes, and other receiving waters. Siltation control measures shall be applied to erodible material exposed by any activity associated with construction including but not limited to local material sources, stockpiles, disposal areas, and haul roads.

- E. Temporary measures shall be coordinated with contract work to the extent practicable to ensure economical, effective, and continuous erosion and siltation control and pollution prevention. Permanent pollution control measures and facilities shall be installed as the work progresses.
- F. The Contractor shall inspect erosion and siltation control devices and measures for deficiencies on a weekly basis, immediately after each rainfall and at least daily during prolonged rainfall. The Contractor shall provide a weekly inspection report noting deficiencies observed and corrective action taken. Deficiencies shall be corrected immediately. Failure on the part of the Contractor to maintain erosion and siltation control devices in a functioning condition may result in the Owner's Representative notifying the Contractor in writing of specific deficiencies. If the Contractor fails to correct or take appropriate actions to remedy the specified deficiencies within 24 hours after receipt of such notification, the Owner's Representative may require the Contractor to discontinue work in other areas and concentrate efforts toward rectifying the specified deficiencies or the Owner's Representative may proceed to remedy specified deficiencies and deduct the entire cost of such work from monies due the Contractor.
- G. The Contractor shall restore all areas washed out by rainfall events. The restoration shall include, but not be limited to: grading, seeding and mulching. Any required restoration shall be at no additional cost to the Owner.
- H. The removal of inlet protection shall be sequenced and coordinated with completion of drainage features and embankment slopes on the site, as well as the completion of top soiling, seeding and mulching.

3.2 COMPOST FILTER SOCK

- A. Compost filter sock shall be installed at the locations and to the limits shown on the plans and as directed by the Owner's Representative, in accordance with the PADEP and PennDOT Publication 408, Standard Specifications 2020, Change No. 10.
- B. The Contractor shall maintain the alignment and condition of the compost filter sock, as necessary, throughout its use on the project. Upon completion and/or as directed, the contractor shall remove the compost filter sock from the project, at no additional cost to the Owner.
- C. If required by construction operations and as approved by the Owner's Representative, existing compost filter sock shall be maintained and new compost filter sock shall be added or relocated as necessary, at no additional cost.

3.3 DUST CONTROL

- A. The Contractor shall employ construction methods and means that will keep flying dust to the minimum. The Contractor shall provide a vacuum type street sweeper operating continuously during all hauling operations, and at least twice a day at all other times. The Contractor shall not lay water on the project and other areas immediately adjacent to the project limits which will create muddy or icy

conditions on the site. The cost of carrying out the foregoing provisions shall be included in the bid price for this item.

- B. The Contractor shall provide for prompt and proper removal from existing roadways of all dirt and other materials that have been spilled, washed, tracked or otherwise deposited thereon by his hauling and other operations.

3.4 MAINTENANCE OF EXISTING STORMWATER AND EROSION CONTROL FACILITIES.

- A. The Contractor shall maintain all existing erosion control facilities and existing stormwater facilities at the beginning of construction on the site. The removal or relocation of existing E & S controls and existing stormwater facilities shall be done in accordance with the phasing shown.
- B. The Contractor shall clean and flush all existing and proposed pipes to point one manhole downstream of the stormwater tie-in for this project.

3.5 INLET PROTECTION

- A. Filter box inlet protection shall be installed as indicated on drawings and/or directed by the Owner's Representative. Inlet protection shall remain in place until completion of the proposed stormwater system, stabilization of the slopes on the site in infield areas, and until completion of all paving activities in all other areas.

3.6 SUMP DEWATERING FACILITIES AND SUMP PUMPING OPERATIONS

- A. Sump dewatering facilities shall be installed as indicated on drawings and/or directed by the Owner's Representative. Sump dewatering facilities shall remain active until completion of the proposed stormwater system and pavement on the site.
- B. The Contractor shall discharge pumped water onto a stabilized area adjacent to an inlet with inlet protection such that the pumped effluent is filtered prior to entering the storm drainage system as shown on the plans. The Contractor shall monitor the discharge water for evidence of downstream discoloration. There has been some history at the airport of discoloration of pumped ground water due to excessive iron or other elements. In those instances where the problem was observed, the initial discharge was discolored after a day or more in an open channel. If the discharge water begins to discolor, the contractor shall secure the proper permits from Tinicum Township and the Delaware County Conservation District to discharge into the sanitary sewer system.

3.7 TEMPORARY SEEDING AND MULCHING

- A. All stockpiles, inactive and disturbed areas shall be seeded and mulched in accordance with Specifications Section 329119.13 – Topsoil Placement and Grading.

3.8 CLEANING OF STORMWATER PIPES AND STRUCTURES

- A. The Contractor shall clean all proposed pipes and structures after stabilization of the drainage area for the structure is complete. The Contractor shall also clean downstream existing pipes to a point 250 feet or the nearest manhole beyond 200 feet in from the point where the proposed system ties into the existing system.

3.9 EROSION CONTROL MATTING

- A. Contractor shall install erosion control matting in accordance with PennDOT Publication 408, Specifications 2020, Change No. 10, Section 806 – Rolled Erosion Control Products.

3.9 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.
- B. The Contractor shall provide and maintain all pollution prevention, erosion and sediment control measures in accordance with the approved SPPP. At a minimum, all erosion and sediment control measures shall be inspected weekly, with daily inspections during and after rainfall events. The Contractor will ensure that all controls are maintained in effective working condition. The results of the SPPP inspections shall be documented as part of the CQC reporting procedures.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 312514-1 Inlet Filter Bag for Type M Inlet. Each.
- B. Item No. 312514-2 Inlet Filter Bag for Type C Inlet. Each.
- C. Item No. 312514-3 Compost Filter Sock, 12" Diameter. Linear Foot.
- D. Item No. 312514-4 Compost Filter Sock, 24" Diameter. Linear Foot.
- E. Item No. 312514-5 Temporary Short-Term, Rolled Erosion Control Product, Type 2A. Square Yard.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 312514

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SECTION 320116.71 – COLD MILLING ASPHALT PAVING

PART 1 – GENERAL

1.1 SUMMARY

- A. The work shall consist of milling and cleaning bituminous and/or Portland cement concrete to provide for placement of sufficient thickness of bituminous concrete overlay and for tie-in of new pavement to existing pavements.
- B. All milled material shall be immediately removed from airport property. Removed material shall satisfactorily and legally retained by the Contractor or disposed of in accordance with the local regulations applicable to the disposal site.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 491 – Milling of Asphalt Pavement Surface; apply to this Section.

PART 2 – PRODUCTS

2.1 EQUIPMENT

- A. The milling equipment shall be a power-driven, self-propelled machine that is specifically designed to smooth and texture bituminous and Portland cement concrete pavement.
- B. The equipment shall be of a size that will cut or plane at least 5 feet wide. The equipment shall be capable of milling the surface without causing spalls at cracks, joints, or other locations.
- C. The equipment for pick-up of milled material and debris shall include a vacuum truck of adequate capacity to positively remove all such materials, leaving the milled or other paved surfaces in a clean, particle-free condition. Other equipment may be used for clean-up operations but shall not be accepted as substitutes for the vacuum truck equipment. Other equipment may be as specified herein.
- D. Rotary pick-up sweepers shall be power driven, self-propelled machines specifically designed to sweep and pick up debris. Vehicular mounted sweepers shall combine rotating brooms with conveyers or vacuums to pick up loosened material and transport the material into a storage hopper. Sweepers shall be equipped to wet down the loosened material to prevent dust.
- E. Construction sweepers shall be sweepers with stiff bristles, towed by a tractor or similar machine. Towed sweepers shall have 3-point hitches and constant velocity driveshafts.

- F. Air compressors with wands shall be self-propelled or towed air compressors, to which wands are attached. The nozzles of the wands shall be capable of blowing dust and other debris off the pavement surface and away from the cleaning operation. The water tanker shall be a tank mounted on or towed behind a truck. The tanker shall be equipped with an outflow pipe.

PART 3 – EXECUTION

3.1 GENERAL

- A. The plans designate the areas of pavement surfaces to be milled. The construction operation shall be scheduled and proceed in a manner that produces a uniformly finished milled surface with a neat uniform right angle cut at the ends and sides of the milled section.
- B. Areas designated to be milled as shown on the contract drawings shall be milled until the pavement surfaces result in pavement that conforms to the typical section and cross section requirements specified.
- C. The Contractor shall establish positive means for removal of milled residue. Solid residue shall be removed from pavement surfaces before it is blown by traffic action or wind. Residue shall not be permitted to flow into drainage facilities. All material obtained in the milling operation shall be removed from airport property and disposed of by the Contractor.

3.2 CLEANUP

- A. The equipment for use in the pavement cleaning operation shall consist of a vacuum truck and may also include a rotary pick-up sweeper, a construction sweeper and an air compressor with wands as supplemental equipment.
- B. At locations where milling will precede paving by more than 24 hours, optional equipment to be used in the cleaning operation shall consist of a rotary pick-up sweeper, a construction sweeper, a water tanker and a second construction sweeper.
- C. After the pavement surface has been milled to the depth shown in the plans, and the milling debris has been removed, the pavement surface shall be cleaned of all dust and debris by the vacuum truck only or by use of other permitted equipment followed by the vacuum truck.
- D. Each piece of equipment shall make as many passes as necessary to clean the pavement to a dust and particle free state, as approved by the Owner's Representative. Immediately prior to placing the tack coat, the pavement shall be cleaned with the vacuum truck if deemed necessary by the Owner's Representative.
- E. Cleaning operations shall be conducted in such a manner as not to blow dust and debris towards vehicles or other working personnel.

3.3 MILLING REQUIREMENTS

- A. The milling process shall produce a pavement surface that is true to grade with a uniform texture. The transverse slope of the pavement shall be uniform to a degree that no depressions or misalignment of slope greater than 1/4 inch in 16 feet are present when tested with a straightedge. Straightedge requirements do not apply across longitudinal joints or outside of areas milled.

3.4 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 320116.71-1 Milling of Asphalt Paving Surface, 1.5" Depth, Milled Material Retained by Contractor. Square Yard.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 320116.71

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SECTION 321116 – SUBBASE COURSES

PART 1 – GENERAL

1.1 SUMMARY

- A. This item consists of a base course composed of crushed aggregates constructed on a prepared course for roadway or sidewalk pavements and curbs in accordance with these specifications and in conformity to the dimensions and typical cross sections shown on the plans.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 210 – Subgrade, Section 350 – Subbase, and Section 703 – Aggregate; apply to this Section.

1.3 TESTING REQUIREMENTS

- A. ASTM C 29 Unit Weight of Aggregate
- B. ASTM C 88 Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
- C. ASTM C 117 Materials Finer than 75um (No. 200) Sieve in Mineral Aggregates by Washing
- D. ASTM C 131 Resistance to Abrasion of Small Size Coarse Aggregate by Use of the Los Angeles Machine
- E. ASTM C 136 Sieve or Screen Analysis of Fine and Coarse Aggregate
- F. ASTM D 75 Sampling Aggregate
- G. ASTM D 693 Crushed Stone, Crushed Slag, and Crushed Gravel for Dry-or Water-Bound Macadam Base Courses and Bituminous Macadam Base and Surface Courses of Pavements.
- H. ASTM D 1556 Density of Soil in Place by the Sand -Cone Method
- I. ASTM D 1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.5kg) Rammer and 18 in (457 mm) Drop
- J. ASTM D 2419 Sand Equivalent Value of Soils and Fine Aggregate
- K. ASTM D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods
- L. ASTM D 3017 Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods

- M. ASTM D 3665 Random Sampling of Paving Materials
- N. ASTM D 4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils

PART 2 – PRODUCTS

2.1 AGGREGATE

- A. Aggregate shall meet the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 703 – Aggregate. Aggregates for base courses shall be PennDOT 2A material. All material requirements and testing shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 703 for the applicable materials.
- B. Slag of any type including slag derivatives will not be permitted to be used as crushed aggregate base course.
- C. Materials for subbase shall be No. 2A.

PART 3 – EXECUTION

3.1 PREPARING UNDERLYING COURSE

- A. The underlying course shall be checked and accepted by the Owner's Representative before placing and spreading operations are started. Any ruts or soft yielding places caused by improper drainage conditions, hauling, or any other cause shall be corrected at the Contractor's expense before the base course is placed thereon. Material shall not be placed on frozen subgrade.
- B. The underlying course shall be prepared in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 210 – Subgrade.

3.2 MIXING

- A. The aggregate shall be uniformly blended during crushing operations or mixed in a plant. The plant shall blend and mix the materials to meet the specifications and to secure the proper moisture content for compaction.
- B. Mixing of the aggregate or subbase course shall be performed in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 350 – Subbase.

3.3 PLACING

- A. Placement of the aggregate or subbase course shall be performed in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 350 – Subbase.

- B. The maximum thickness of a compacted layer shall be 6 inches. If the total thickness of the compacted material is more than 6 inches, it shall be constructed in two or more layers. In multi-layer construction, the base course shall be placed in approximately equal-thickness layers.
- C. The previously constructed layer shall be cleaned of loose and foreign material prior to placing the next layer. The surface of the compacted material shall be kept moist until covered with the next layer.

3.4 COMPACTION

- A. Compaction and density of the aggregate or subbase course shall meet the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 350 – Subbase.

3.5 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY

- A. Aggregate base course shall be accepted for density on a lot basis. A lot will consist of one day's production where it is not expected to exceed 90 square yards. A lot will consist of one-half day's production where a day's production is expected to consist of between 10 and 90 square yards.
- B. Each lot shall be divided into two equal sublots. One test shall be made for each subplot. Sampling locations will be determined by the Owner's Representative on a random basis in accordance with statistical procedures contained in ASTM D 3665.
- C. Each lot will be accepted for density when the field density is at least 98 percent of the maximum density of laboratory specimens prepared from samples of the base course material delivered to the job site. The specimens shall be compacted and tested in accordance with ASTM D 1557. The in-place field density shall be determined in accordance with ASTM D 1556 or D 2922. If the specified density is not attained, the entire lot shall be reworked and/or recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached.
- D. In lieu of the core method of field density determination, acceptance testing may be accomplished using a nuclear gage in accordance with ASTM D 2922. The gage should be field calibrated in accordance with paragraph 4 of ASTM D 2922. Calibration tests shall be conducted on the first lot of material placed that meets the density requirements.
- E. Use of ASTM D 2922 results in a wet unit weight, and when using this method, ASTM D 3017 shall be used to determine the moisture content of the material. The calibration curve furnished with the moisture gages shall be checked as described in paragraph 7 of ASTM D 3017. The calibration checks of both the density and moisture gages shall be made at the beginning of a job and at intervals as determined by the Owner's Representative.
- F. If a nuclear gage is used for density determination, two random readings shall be made for each subplot.

3.6 FINISHING

- A. The finishing of the aggregate or subbase course shall be performed in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 350 – Subbase.
- B. In no case will the addition of thin layers of material be added to the top layer of base course to meet grade. If the elevation of the top layer is 1/2 inch or more below grade, the top layer of base shall be scarified to a depth of at least 3 inches, new material added, and the layer shall be blended and recompact to bring it to grade. If the finished surface is above plan grade, it shall be cut back to grade and rerolled.

3.7 SURFACE TOLERANCES

- A. The surface tolerances of the aggregate or subbase course shall meet the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 210 – Subgrade.

3.8 THICKNESS CONTROL

- A. Tests for depth shall be performed as identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 350 – Subbase.

3.9 MAINTENANCE

- A. The maintenance of the subgrade shall be protected as identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 350 – Subbase.

3.10 QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 321116-1 – Subbase No. 2A, 8" Depth. Square Yard.

5.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 321116

SECTION 321219 – ASPHALT PAVING WEARING COURSES

PART 1 – GENERAL

1.1 SUMMARY

- A. This Work is the Standard construction of a plant-mixed, dense-graded, asphalt pavement course on a prepared surface using a volumetric asphalt mixture design developed with the Superpave Gyratory Compactor (SGC), using prescribed manufactured additives or modifiers, or plant process modifications or both. Acceptance of the work is based as indicated on the plans.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 400 – Flexible Pavements.

1.3 QUALITY ASSURANCE

- A. Reference Standards: Meet requirements of the referenced standards except to the extent more detailed or stringent requirements are indicated by the Contract Documents, including requirements of this Section and of governing codes and regulations.
- B. Compliance with Laws, Codes, Rules, and Regulations: Comply with all local, State, and Federal laws, rules, and regulations applicable to this Section.

1.4 SUBMITTALS

- A. Furnish shop drawings, manufacturer's data, test reports and materials certifications as required in the referenced section, including:
 - 1. Aggregate test data and certifications
 - a. Flat and elongated pieces
 - b. Fractured face
 - c. Abrasion
 - d. Sulfate soundness
 - e. Gradation
 - f. Sand equivalent value of fine aggregate
 - g. Atterberg limits of minus 40 sieve material

- h. Source of supply
- i. Job Mix Formulas.
- j. Field Density Reports.
- k. Depth Test Reports.
- l. Straightedge Test Report.
- m. Material delivery weight slips.
- n. PennDOT Certificates for aggregate and bituminous material suppliers

1.5 MATERIAL REQUIREMENTS

- A. ASTM D 242 Mineral Filler for Bituminous Paving Mixtures
- B. ASTM D 946 Asphalt Cement for Use in Pavement Construction
- C. ASTM D 3381 Viscosity-Graded Asphalt Cement for Use in Pavement Construction
- D. ASTM D 4552 Classifying Hot-Mix Recycling Agents

PART 2 – PRODUCTS

2.1 AGGREGATE

- A. Fine Aggregate. Fine aggregate shall meet the requirements of Section 703.1, except Table A gradation does not apply and as follows:
 - 1. Determine the uncompacted void content according to AASHTO T 304, Method A, or use the value listed in Bulletin 14, and conform to AASHTO M 323, Table 4. Determine the sand-equivalent value according to AASHTO T 176 and conform to AASHTO M 323, Table 4.
- B. Coarse Aggregate. Coarse Aggregate shall meet the requirements of PennDOT Type A, Section 703.2, except Table C gradation does not apply and revise the following quality requirements of Table B:
 - 1. Abrasion, Maximum Percent as specified in Bulletin 27, Chapter 2A, Table 5A
 - 2. Thin and Elongated Pieces, Maximum Percent as specified in AASHTO M 323, Table 5, for Flat and Elongated
 - 3. Crushed Fragments, Minimum Percent, as specified in AASHTO M 323, Table 5, for fractured Faces, Coarse Aggregate

2.2 BITUMINOUS SURFACE COURSE

- A. The bituminous surface course shall be PennDOT HMA wearing course mix, 9.5 mm, meeting the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.

2.3 BITUMINOUS BINDER COURSE

- A. The bituminous binder course shall be PennDOT HMA binder course mix, 12.5 mm, which meets the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.

2.4 BITUMINOUS BASE COURSE

- A. The bituminous base course shall be PennDOT HMA base course mix, 12.5 mm, which meets the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.

2.5 BITUMINOUS MATERIAL

- A. Furnish material conforming to the requirements of Standard Specifications for Performance-Graded Asphalt Binder, AASHTO M 320, except as revised in Bulletin 25. Obtain material from a source listed in Bulletin 15 for the specified grade. Provide QC testing and certification as specified in Sections 106.03(b) and 702.1(b)1.
- B. The bituminous material shall be asphalt cement, PG 64S-22.

2.6 BITUMINOUS TACK COAT

- A. The bituminous tack coat shall be bituminous bonding material which meets the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 460. The cost of tack coat is incidental to the work.

2.7 EQUIPMENT

- A. Hauling Equipment: Trucks used for hauling bituminous mixtures shall have tight, clean, smooth metal bodies equipped with a positive locking metal tailgate. Metal surfaces in contact with bituminous mixtures shall be given a thin coat of an aliphatic hydrocarbon invert emulsion release agent (nonpuddling), a lime solution, or other material approved by the Owner's Representative. Except where a nonpuddling release agent is used, the beds of dump trucks shall be raised to remove excess agent prior to loading. Only a nonpuddling agent shall be used in truck beds that do not dump. Each truck shall be equipped with a tarpaulin or other cover that will protect the mixture from moisture and foreign matter and prevent the rapid loss of heat during transportation. Hauling equipment used for transporting bituminous mixtures shall conform to the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(d).

- B. Asphalt Pavers: The asphalt paver shall be designed and recommended by the manufacturer for the type of asphalt to be placed and shall be operated in accordance with the manufacturer's recommendations. Written recommendations pertaining to handling and placing of the mix shall be made readily available on the project site to the Owner's Representative. In the absence of manufacturer's recommendations, the recommendations of the National Asphalt Pavement Association shall be followed. The paver (including when screed extensions are used) shall be capable of producing a smooth uniform texture, dense joints and a smooth riding surface. Bituminous pavers used for the placement of bituminous mixtures shall conform to the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(e).
- C. Rollers: Rollers shall be steel wheel, static or vibratory, or pneumatic tire rollers and shall be capable of reversing without backflash. Rollers shall be operated at speeds slow enough to avoid displacement of the mixture. The number and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in workable condition. The use of equipment that results in excessive crushing of aggregate or marring of the pavement surface will not be permitted. Rollers shall conform to PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(f).
- D. Rotary Saw: A gasoline-powered rotary saw with a carbide blade shall be furnished for cutting test samples from the pavement. The Contractor shall furnish gasoline, oil, additional carbide blades, and maintenance for the rotary saw. The Contractor shall cool the pavement prior to sawing the sample. In lieu of a rotary saw, the Contractor may furnish the necessary equipment for coring and testing 4-inch core samples.
- E. Infrared Measuring Instrument: The Contractor shall furnish a properly calibrated infrared instrument for the purpose of measuring the surface temperature and shall measure the surface temperature.
- F. This project requires an asphalt paver. Use of material transfer vehicle (MTV) is optional.

2.8 PLACEMENT LIMITATIONS

- A. Bituminous concrete mixtures shall not be placed when weather or surface conditions would prevent proper handling, finishing, or compacting of the mixture. The surface upon which bituminous mixtures are to be placed shall be reasonably free from standing water at the time materials are spread.
- B. The bituminous mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified. The temperature requirements may be waived by the Owner's Representative, if requested; however, all other requirements including compaction shall be met.

TABLE 1. BASE TEMPERATURE LIMITATIONS

Mat Thickness	Base Temperature (Minimum)
3 in. (7.5 cm) or greater	40 deg F (4 deg. C)
Greater than 1 in. (2.5 cm) but Less than 3 in. (7.5 cm)	45 deg. F (7 deg. C)
1 in. (2.5 cm) or less	50 deg F (10 deg. C)

2.9 MIXTURE COMPOSITION FOR STANDARD AND RPS CONSTRUCTION

- A. Contractor must be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.2(e).
- B. Superpave asphalt mixtures shall be designed for less than 0.3 million ESALs using a PG 64S-22 asphalt binder for the nominal aggregate sizes indicated in the typical section.

2.10 MIXTURE ACCEPTANCE

- A. Contractor must be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.2(i).
- B. For this project, mixture acceptance shall be by Certification Acceptance and PWL will not be applicable.

PART 3 – EXECUTION

3.1 CONDITIONING EXISTING SURFACE

- A. When the surface of the existing pavement or base is irregular, it shall be brought to a uniform grade and cross section as directed by the Owner's Representative. The surface on which the bituminous concrete is to be applied shall be prepared in accordance with Specification Section 320116.71 – Cold Milling Asphalt Paving.
- B. When specified, prior to placement of bituminous concrete, longitudinal and transverse joints and cracks in hydraulic cement concrete shall be sealed by the application of an approved joint sealing compound.
- C. Contact surfaces of curbing, gutters, manholes, and other structures projecting into or abutting the pavement and cold joints of bituminous shall be painted with a thick, uniform coating of bituminous tack coat material prior to bituminous placement. Application of tack at joints, adjacent to curbs, gutters, or other appurtenances shall be applied with a hand wand at the rate of 0.2 gallons per square yard. At joints, the hand wand applied tack shall be 2 feet in width with 4 to 6 inches protruding beyond the joint for the first pass. Tack for the adjacent pass shall completely cover the vertical face of the mat edge, so that slight puddling of asphalt occurs at the joint, and extends a minimum of 1 foot into the lane to be paved. Milled faces that are to remain in place shall be tacked as above for the

adjacent pass. Use of tack at longitudinal joint vertical faces will not be required when paving in echelon.

- D. Bituminous materials classified as cutbacks or emulsions shall be applied ahead of the paving operations, and the time interval between applying and placing the paving mixture shall be sufficient to ensure a tacky residue providing maximum adhesion of the paving mixture to the base.
- E. Where irregularities in the existing surface would result in a course more than 3 inches in thickness after compaction, the surface shall be brought to a uniform profile by patching with bituminous concrete and thoroughly tamping or rolling until it conforms with the surrounding surface. The mixture used shall be the same as that specified for the course to be placed.
- F. When the Contractor elects to conduct operations to eliminate depressions, elevate curves, and place the surface course simultaneously, he shall furnish such additional spreading and compacting equipment as required to maintain the proper interval between the operations.

3.2 PLACING AND FINISHING

- A. Bituminous concrete shall not be placed until the surface upon which it is to be placed has been approved by the Owner's Representative. The existing surface shall be prepared as required by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(g).
- B. The edge of the pavement shall be marked by means of a continuous line placed and maintained a sufficient distance ahead of the paving operation to provide proper control of the pavement width and horizontal alignment.
- C. A bituminous paver shall be used to distribute bituminous concrete over the widest pavement width practicable. Crossovers, as well as areas containing manholes or other obstacles that prohibit the practical use of mechanical spreading and finishing equipment, may be constructed using hand tools. However, care shall be taken to obtain the required thickness, jointing, compaction, and surface smoothness.
- D. Offsetting layers will not be required when adjoining lanes are paved in echelon and the rolling of both lanes occurs within 15 minutes after laydown.
- E. The Contractor shall have a certified Bituminous Concrete Paving Technician present during paving operations. Immediately after placement and screeding, the surface and edges of each layer shall be inspected and straightedged by the technician and necessary corrections performed prior to compaction. The finished pavement shall be uniform and smooth.
- F. The placement of bituminous concrete shall be as continuous as possible and shall be scheduled such that the interruption occurring at the completion of each day's work will not detrimentally affect the partially completed work. Material that cannot be spread and finished in daylight shall not be dispatched from the plant

unless the use of artificial lighting has been approved. When paving is performed at night, sufficient light shall be provided to properly perform and thoroughly inspect every phase of the operation.

- G. During compaction of bituminous concrete, the roller shall not pass over the end of freshly placed material except when a construction joint is to be formed. Edges shall be finished true and uniform.
- H. The bituminous mixture shall be placed and compacted to the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(h).

3.3 COMPACTING

- A. Immediately after the bituminous mixture is placed and struck off and surface irregularities are corrected, the mixture shall be thoroughly and uniformly compacted by rolling.
- B. The surface shall be rolled when the mixture is in the proper condition. Rolling shall not cause undue displacement, cracking, or shoving.
- C. The number, weight, and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. The sequence of rolling operations and the selection of roller types shall provide the specified pavement density.
- D. Immediately after the hot mixture is placed, it shall be sealed with rollers. Thereafter, rolling shall be a continuous process, insofar as practicable, and all parts of the pavement shall receive uniform compaction.
- E. On shoulders, rolling shall begin at the low side and progress to the high side by overlapping by at least 1/2 the roller width of longitudinal trips parallel to the center line. When abutting a previously placed lane, the longitudinal joint shall be rolled first, followed by the regular rolling procedure.
- F. Displacements occurring as a result of reversing the direction of a roller, or from other causes, shall be corrected at once by the use of rakes or lutes and addition of fresh mixture when required. Care shall be taken in rolling not to displace the line and grade of the edges of the bituminous mixture.
- G. To prevent adhesion of the mixture to the rollers, the wheels shall be kept properly moistened with water or water mixed with a very small quantity of detergent or other approved material. Excess liquid will not be permitted.
- H. Along forms, curbs, headers, walls, and other places not accessible to rollers, the mixture shall be thoroughly compacted with hot hand tampers, smoothing irons, or mechanical tampers.
- I. Edges of bituminous pavement surfaces shall be true curves or tangents. Irregularities shall be corrected.

- J. The surface of the compacted course shall be protected until the material has cooled sufficiently to support normal traffic without marring.
- K. Compaction of the bituminous pavement shall be performed as required by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(i).

3.4 DENSITY

- A. Density shall be determined by the use of a thin-lift nuclear density gage, with printer, using the backscatter method of testing and shall be furnished and operated by the Contractor. The nuclear density gage shall be calibrated in accordance with AASHTO test method T238-86. Submit certification of annual calibration of gages and documentation of licensed operator's training to the Owner's Representative.
- B. The required density of the compacted surface and intermediate courses shall be at least 94.0 but not more than 98.0 percent of the compacted unit weight of the mixture, at the job-mix asphalt content and design voids, as established by the SUPERPAVE design gyrations for the mixture.
- C. For the purpose of acceptance (density and depth), each paving area shall be tested for acceptance.
- D. Each paving area shall be checked for density by taking a nuclear density reading from three random locations selected by the Owner's Representative within each area and for each lift. Reading shall not be taken within 2 feet of the edge of any application width. For areas with narrow widths and trenches, position the density gauge in the center of the two edges. The average of the area nuclear density readings will be compared to the target nuclear theoretical density, as a guide, to determine the integrity of the area. Once the average nuclear density of the area has been determined, the Contractor will not be permitted to provide additional compaction to raise the average. If the area produces nuclear density results less than 94.0 or greater than 98.0 percent of the target nuclear density, the Contractor shall immediately notify the Owner's Representative and institute corrective action. By the end of each day, the Contractor shall furnish the test data developed during the day's paving to the Owner's Representative.

3.5 JOINTS

- A. Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course. A coat of bituminous material shall be applied to contact surfaces of transverse joints just before additional mixture is placed against the previously rolled material.
- B. Joints adjacent to curbs, gutters, or adjoining pavement shall be formed by hand placing sufficient mixture to fill any space left uncovered by the paver. The joint shall then be set up with rakes or lutes to a height sufficient to receive full compression under the rollers.

- C. Form joints as required by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(k).

3.6 PAVEMENT TOLERANCES

- A. Surface Tolerances: Surface tolerances for the bituminous material shall be provided as required by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(l). No skin patching shall be permitted. High points may be ground to meet the required tolerances.
- B. Corrective actions shall be performed at the Contractor's expense and shall be completed prior to determining the pavement thickness. Corrections shall consist of cold milling/grinding, overlaying, or removing and replacing. Cold milling and grinding shall be performed until the required surface tolerance is achieved and shall produce a uniform cross section. Milled areas shall be neat and of uniform surface appearance. Overlays shall be subject to the testing requirements of this section and the minimum overlay thickness will be two inches (2"). Only one overlay will be permitted.
- C. Thickness Tolerance: Tests for depth shall be performed as required by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(m).
- D. The Owner's Representative will measure the depth of extracted cores. Pavement more than 1/4 inch deficient in depth and which cannot be satisfactorily corrected, will be considered defective.
- E. When tests show that the pavement is uniformly deficient by more than 1/8-inch depth in three or more adjoining sections and the deficiency cannot be satisfactorily corrected, the affected area will be considered defective work.
- F. Backfill, compact, and seal test holes with acceptable material after depth measurements have been completed. Additional test holes may be required to determine the extent of the deficient areas.
- G. Areas which are found to be defective shall be corrected by means of overlays or removal and replacement in accordance with these specifications.
- H. Start the immediate correction of sections which are deficient in depth at the point of the determined deficiency and proceed longitudinally and transversely until the depth meets the requirements.
- I. Depths which exceed the indicated tolerances will be corrected as approved by the Owner's Representative.
- J. Defective work shall be repaired or replaced in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(o).

3.7 GRADING TOLERANCE

- A. The finished surface of all courses shall not vary from design grade more than 1/2 inch for level runs not exceeding 50 feet longitudinally or transversely for lot sizes of 2,000 square yards. Not more than 15% of the measurements per lot shall exceed the tolerance otherwise pavement shall be removed and replaced as specified above.

3.8 PROTECTION OF PAVEMENTS

- A. Protection of the completed paving courses shall be performed as required by PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 413.3(n).

3.9 BATCH WEIGHT TICKETS

- A. Asphalt shall be measured by the number of tons of asphalt used in the accepted work. Batch weights or truck scale weights tickets will be used to determine the basis for the tonnage. The ticket must contain the following information:

- Engineering and Construction Management System (ECMS) Number
- Asphalt Plant Bulletin 41 Supplier Code
- PennDOT Material Type (ex. Asphalt)
- eCAMMS JMF Year
- eCAMMS JMF/Mix Design Number
- Plant Ticket Identification (ID)
- Date and Time Ticketed
- Unique Truck ID
- Gross Weight
- Gross Weight Unit of Measure (UoM)
- Tare Weight
- Tare Weight UoM
- Net Weight
- Net Weight UoM
- Running Daily Total in Tons of the JMF material being transported
- Running Daily Total UoM
- Name of Licensed Public Weighmaster
- License Number of Licensed Public Weighmaster
- Load Count

3.10 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.
- B. The following describes the minimum inspection and testing required in the Contractor's Quality Control (CQC) Plan and Program for the work of this section and is for CQC only. The implementation of the Quality Requirements does not relieve the Contractor from the responsibility to provide the work in accordance with the Contract Documents, applicable codes, regulations and governing authorities. The CQC plan and program shall include, but not be limited to, the testing

and inspection elements specified herein. These elements are provided only as a minimum starting point for the contractor to use to generate his complete CQC Program. The contractor shall engage an independent testing agency to perform specified sampling, testing, and inspections, meeting all requirements specified herein.

- C. Provide the following tests.
 - a. Field Density.
 - b. Depth Tests.
 - c. Straightedge Tests.

PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 321219-1 1.5" PennDOT 413 9.5MM Wearing Course. Square Yard.
- B. Item No. 321219-2 2.5" PennDOT 413 12.5MM Wearing Course. Square Yard.
- C. Item No. 321219-3 4.5" PennDOT 413 12.5MM Wearing Course. Square Yard.
- D. Item No. 321219-4 Asphalt Tack Coat. Square Yard.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 321219

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SECTION 321343 – PERVIOUS CONCRETE PAVING

PART 1 – GENERAL

1.1 SUMMARY

- A. This work is the construction of plant-mixed pervious concrete pavement on a prepared surface designed to allow the infiltration of storm water into the subsoil. The pervious concrete surface layer is a horizontal plane that is permeable to water and air. The second layer of the storm water system is an open graded, angular stone layer used for temporary storm water detention.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; Special Provision Section 101453; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 520 – Pervious Concrete Pavement System; apply to this Section.

PART 2 – PRODUCTS AND SUBMITTALS

2.1 CEMENT

- A. Cement material shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 701.

2.2 SUPPLEMENTARY CEMENTITIOUS MATERIALS

- A. Supplementary cementitious materials shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 724.

2.3 AGGREGATE

- A. Aggregate materials shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 703.
- B. Coarse aggregate for use in concrete shall be AASHTO No. 8, Type A.
- C. Coarse aggregate for use in detention basin shall be AASHTO No. 57 as the primary detention coarse aggregate topped with AASHTO No. 1 as a leveling course.
- D. Contractor shall not use fine aggregate for the pervious concrete aggregate.

2.4 WATER

- A. Water materials shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 720.1.

2.5 CONCRETE ADMIXTURES

- A. Concrete admixture materials shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 711.3.
- B. Hydration stabilizing admixture shall be ASTM C494, Type D.

2.6 GEOTEXTILE, CLASS 4, TYPE A

- A. Geotextile, Class 4, Type A shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 735.

2.7 CONCRETE MIX DESIGN

- A. Design the pervious concrete mixture proportions according to ASTM C 1688. Design the mixture to have a plastic unit weight between 115 pounds to 130 pounds and water cement ratio of 0.29 to 0.35. Adjust the mix water, if necessary, during production if the mixture has a dull or dry appearance to produce a wet metallic sheen without causing the paste to flow from the aggregate. Additional mix water may be added at the project, if necessary, to achieve this condition provided the plastic unit weight is within 5 pounds per cubic foot of the target design unit weight. If reactive aggregates are used in the mixture, remediate for Alkali-Silica Reaction as specified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 704.1(g). Furnish the proposed mix design identifying all mixture components and weights or dosage amounts to the DME/DMM at least 3 weeks before the scheduled start of producing the mixture for the project. Include the target in-situ void content and 28-day unit weight values on the mix design form.

2.8 CONCRETE CURING MATERIAL

- A. Concrete curing materials shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 711.1(a) or 711.1(b).

2.9 QC PLAN

- A. Contractor shall test and inspect concrete materials and operations as Work progresses as specified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 520.3(a) and 520.3(m).
- B. Unless otherwise specified, employ at least one National Ready Mixed Concrete Association (NRMCA) Certified Pervious Concrete Craftsman, or equivalent, who shall be on site overseeing each placement crew during all concrete placement, or employ at least three NRMCA Certified Pervious Concrete. Installers, or equivalent, shall be on site working as members of each placement crew during all concrete placement. The minimum number of certified individuals must be present on each pervious concrete placement, including test panel placements, and a certified individual must be in charge of the placement crew and procedures.

- C. Instead of employment, Contractor shall contract the services of a certified NRMCA Pervious Concrete Craftsman or equivalent consultant who meets requirements in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 502.2 (i) 1.1. The consultant must be present on each pervious concrete placement, including test panel placements, and must be knowledgeable of the specific methods and procedures being used by Contractor performing Work.
- D. Contractor shall submit curing plan for pervious concrete pavement. Unless otherwise specified, this plan shall include all curing methods and minimum amount of time for curing of the concrete.
- E. Contractor shall include provisions to protect pervious concrete from freezing throughout the 7-day curing period according to ACI 306.1.
- C. Contractor shall include detailed plans indicating the amount of hydration stabilizing admixture to be added in 5F increments to provide time for placing and finishing the pervious concrete before initial set.

PART 3 – EXECUTION

3.1 TEST SECTIONS

- A. Contractor shall produce two test sections using the approved mix design and placement and finishing operations to be used in production and construct at the project site on a prepared subgrade and base using the material and construction requirements used in production. Each section must have an area of at least 225 square feet. Perform infiltration on both test sections according to ASTM C 1701. The average of both infiltration values must exceed 200 inches per hour.
- B. Contractor shall submit the following information for each test section to the Owner's Representative:
 - 1. Test section thickness per PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 501.3(s). Thickness shall not be more than ¼-inch less than the design thickness.
 - 2. Void content per ASTM C 1754. Void structure of 20% ± 5%.
 - 3. Hardened density per ASTM C 1754 (The average hardened densities of the two test sections will be the hardened density used as the basis of acceptance for the remainder of the project with a tolerance of ± 5 pounds per cubic foot and not to exceed 130 pounds per cubic foot.
- C. Test sections may, with approval from the Owner's Representative, be incorporated into the project.
- D. The finished surface of test panel shall be evaluated for raveling by the Owner's Representative at a time of not less than 7 days after placement of test panel.

3.2 EQUIPMENT

- A. Contractor shall provide equipment to strike off pervious concrete that provides an acceptable final finish using either a form-riding paving machine, roller screed, vibrating screed, or an asphalt paver. The final surface finish may be applied with steel finishing equipment or a motorized pan finisher provided the surface voids are not sealed.
- B. Contractor shall use smooth steel-wheeled rollers in the static mode seating with one to four passes. Contractor shall not use pneumatic tire rollers.

3.3 SUBGRADE PREPARATION

- A. Contractor shall excavate subgrade to undisturbed soil without compaction, allowing the subgrade to be left as permeable as possible. If erosion of subgrade has caused accumulation of fine materials or surface ponding or both, remove the accumulated material using light equipment and scarify the underlying soil to a minimum depth of 6 inches using a spring tooth rake or equivalent and a light tractor. Contractor shall avoid driving concrete mixers or other equipment through the installation area. Contractor shall correct and repair damaged or compacted areas to the satisfaction of Owner's Representative. Contractor shall notify the Owner's Representative upon completion of subgrade work for final inspection and acceptance before proceeding with basin and choker course installation.

3.4 DETENTION BASIN

- A. Contractor shall prevent sediment from washing into beds during site development. Contractor shall cover the bottom of the detention basin with a minimum of 2 inches of fine aggregate to prevent soils from migrating into the storm water storage area. Contractor shall wrap basin sides with a non-woven geotextile fabric. Contractor shall install detention basin coarse aggregate in 8 inch maximum lifts. Contractor shall compact the course as specified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 360.3. Contractor shall install aggregates to grades as indicated. Contractor shall place the specified depth(s) of coarse aggregate on top of the fine aggregate and roll as specified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 520.3(b)1. Contractor shall remove temporary sediment control materials when the site is fully stabilized.

3.5 SETTING FORMWORK

- A. Contractor shall set, align, and brace forms so the cured concrete meets the tolerances and specified elevations. Contractor shall apply form-release agent to all formed faces in contact with the concrete immediately before placement. Undamaged vertical faces of previously placed concrete may be used for subsequent placement.

3.6 MIXING AND HAULING

- A. Contractor shall operate truck mixers at the speed designated by the manufacturer for a minimum of 70 to 100 revolutions of the drum. Unless otherwise ap-

proved, contractor shall place pervious concrete within 90 minutes after final introduction of any mix water.

3.7 PLACING AND FINISHING FIXED FORM PAVEMENT

- A. Contractor shall wet the subgrade or subbase with water before concrete placement so the material is saturated but without standing water. Contractor shall deposit the concrete either directly from the transporting equipment or by conveyor onto the subgrade. Contractor shall not place pervious concrete on frozen material. Contractor shall deposit concrete between forms to an approximate uniform height. Contractor shall spread the concrete using mechanized equipment or hand tools without segregation.
- B. Where trucks or buses may access the concrete, Contractor shall utilize a paver equipped with compaction tampers.
- C. For other areas, a roller screed or vibrating screed may be used by Contractor.

3.8 FINAL SURFACE FINISH

- A. Final finish for paver placed concrete is to be achieved with a maximum 2-ton roller to eliminate seams. Contractor shall not allow rollers to bridge previously placed and cured concrete for 7 days or before the Owner's Representative is satisfied the concrete has achieved sufficient strength to prevent damage.
- B. Steel troweling may be used by the Contractor provided the surface voids remain open and the average density requirement and permeability values are met.

3.9 EDGING

- A. Contractor shall edge exterior formed surfaces to a radius of not less than ¼-inch.

3.10 CURING

- A. Contractor shall begin curing within 20 minutes of concrete discharge. Contractor shall completely cover the pavement surface with polyethylene sheeting. Contractor shall thoroughly secure the curing sheet at all exterior edges and interior laps to prevent removal from wind. Contractor shall maintain curing for a minimum of 7 days.

3.11 CONSTRUCTION JOINTS

- A. Contractor shall construct joints in the locations specified by either tooling into the pervious concrete immediately upon final finishing to approximately ¼ slab thickness using a pervious concrete cross rolling tool or saw cut after the concrete has achieved sufficient compressive strength to prevent aggregate from being dislodged. If joints are saw cut, Contractor shall remove fines produced from the operation by vacuum to avoid clogging. If curing is interrupted, Contractor shall control the operation so the polyethylene sheeting and curing is reinstituted within 60 minutes of the initial removal.

3.12 WEATHER

- A. Contractor shall not place pervious concrete if air temperatures are projected to fall below 40F or lower any time during the 24-hour period following concrete placement or if rain is forecasted to occur before final finishing and curing. In the event a rainfall event occurs, Contractor shall immediately stop production, form a construction joint, and apply the polyethylene sheeting. With approval from the Owner's Representative, a construction joint may be saw cut by the Contractor before resuming placement. Pervious concrete subjected to rainfall will be evaluated after curing for loss of mortar at the surface and repaired or removed and replaced by the Contractor at the discretion of the Owner's Representative.

3.13 TESTING AND ACCEPTANCE

- A. Contractor shall perform unit weight testing for plastic concrete on every truck according to ASTM C 1688. Acceptance will be ± 5 lb per cubic feet of accepted fresh density for submitted mixture proportions.
- B. Contractor shall identify and remove three 4-inch diameter cores for each 5,000 square feet of in-place hardened concrete according to PTM No. 1. Contractor shall transport the cores to the laboratory for testing, indicating the required concrete thickness, density, and void content from the test sections.
- C. Project core lengths will be considered acceptable if meeting the following:
 - 1. Average core length: $-3/8$ -inch + $3/4$ -inch
 - 2. Length of any individual $-1/2$ -inch
- D. Density of cores shall be determined in accordance to ASTM C 1754. Average hardened density shall be within ± 5 lb per cubic feet of accepted hardened density established from the test section.
- E. Core void content acceptance will be $\pm 5\%$ of the average voids in the cores of the accepted test section.

3.14 INFILTRATION TESTING

- A. Contractor shall perform infiltration on three areas selected according to PTM No. 1 for every 10,000 square feet of pervious concrete placed according to ASTM C 1701. Contractor shall remove and replace pervious concrete not meeting or exceeding a minimum average infiltration rate of 200 inches per hour. Contractor shall document the average infiltration value from testing for use in future maintenance activities.

3.15 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Comply with all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item 321343-1 4" PennDOT 520 Pervious concrete. Square Yards.
- B. Item 321343-2 14" PennDOT 520 No. 57 Coarse Aggregate. Cubic Yards.
- C. Item 321343-3 PennDOT 520 Geotextile, Class 4, Type A. Square Yards.
- D. Item 321343-4 4" PennDOT 520 No. 1 Coarse Aggregate. Cubic Yards.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 321343

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SECTION 321600 – CONCRETE CURBS AND SIDEWALKS

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes exterior cement concrete pavement for the following:
 - 1. Concrete Curbs
 - 2. Concrete Sidewalks
 - 3. Concrete Island
 - 4. Concrete Curb Ramps and Detectable Warning Surface

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 630 – Plain Cement Concrete Curb, Section 676 Cement Concrete Sidewalks, and Section 695 – Detectable Warning Surface; apply to this Section.

1.3 SUBMITTALS

- A. Design Mixtures: For each concrete pavement mixture provide a design mixture including alternate mixture designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- B. Material Test Reports: Submit test reports from a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
 - 1. Aggregates
 - 2. Cement
- C. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
 - 1. Cementitious materials
 - 2. Steel reinforcement and reinforcement accessories
 - 3. Admixtures
 - 4. Curing compounds

- 5. Applied finish materials
- 6. Bonding agent or epoxy adhesive
- 7. Joint fillers
- D. Field quality-control test reports.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. They may be subjected to inspection and tests at any time during the progress of their preparation or use. The source of supply of each of the materials shall be approved by the Owner's Representative before delivery or use is started. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to insure the preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed therein.
- B. In no case shall the use of pit-run or naturally mixed aggregates be permitted. Naturally mixed aggregate shall be screened and washed, and all fine and coarse aggregates shall be stored separately and kept clean. The mixing of different kinds of aggregates from different sources in one storage pile or alternating batches of different aggregates will not be permitted.

2.2 CEMENT CONCRETE

- A. Shall meet the requirements of Section 704 of PennDOT Publication 408, Standard Specifications 2020, Change No. 10 for Type A concrete.

2.3 AGGREGATE BASE

- A. The aggregate base course for sidewalks and curbs shall meet the requirements of AASHTO 57 Stone.

2.4 COARSE AGGREGATE

- A. The coarse aggregate for concrete shall meet the requirements of ASTM C 33 and PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 703.2 – Class A aggregates.

2.5 FINE AGGREGATE

- A. The fine aggregate for concrete shall meet the requirements of ASTM C 33 and PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 703.1 – Class A aggregates.

2.6 WIRE FABRIC REINFORCEMENT

- A. Wire fabric reinforcement shall meet the requirements of ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.7 JOINT FILLER AND PREMOLDED JOINT MATERIALS

- A. Joint filler shall meet the requirements of Section 705.l(b) of PennDOT Publication 408, Standard Specifications 2020, Change No. 10.

2.8 GROUT

- A. Nonshrink grout shall be Masterflow 713 Grout, manufactured by Master Builders Company, or equal, and shall be used under all base plates, bearing plates, frames, and as noted on the plans.

2.9 CURING MATERIALS

- A. Shall meet the requirements of Section 711.2 (a) of PennDOT Publication 408, Standard Specifications 2020, Change No. 10.

2.10 FORMS

- A. Forms shall be of steel approved design, except that approved wood forms may be used on sharp curves and for closures. Forms shall be straight, free from warp and twist, and of sufficient strength to resist springing when staked in place. They shall be cleaned and oiled prior to each use with a form oil which does not cause discoloration of the finished surface of the concrete. The forms shall extend the full depth of the concrete.

2.11 DETECTABLE WARNING SURFACE

- A. Furnish Detectable Warning Surface in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 695.2.

PART 3 – EXECUTION

3.1 GENERAL

- A. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified herein. All machinery and equipment owned or controlled by the Contractor, which he proposes to use on the work, shall be of sufficient size to meet the requirements of the work, and shall be such as to produce satisfactory work; all work shall be subject to the inspection and approval of the Owner's Representative.

3.2 ACCEPTANCE SAMPLING AND TESTING

- A. The Contractor shall be responsible for sampling, making, curing and storing concrete specimens for acceptance. Compressive strength acceptance testing necessary to determine conformance to the requirements of the section will be performed by the Contractor, coordinated with and witnessed by the Owner's Representative. Concrete for each structure will be accepted on the basis of the compressive strength specified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 704.1, Table A. The concrete shall be sampled in accordance with ASTM C 172. Compressive strength specimens shall be made in accordance with ASTM C 31 and tested in accordance with ASTM C 39. No additional payment will be made for testing of samples.

3.3 MIXING

- A. Concrete shall not be mixed at the construction site, but may be mixed at a central point, or wholly or in part in truck mixers. Whichever mixing process is used, concrete of the specified proportions and consistency shall be produced. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C 94 and PennDOT Publication 408, Standard Specifications 2020, Change No. 10.

3.4 MIXING CONDITIONS

- A. The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40 F without permission of the Owner's Representative. If permission is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50 nor more than 100 F. The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his/her expense.
- B. When hot weather conditions exist that would impair the quality and strength of the concrete, place the concrete complying with ACI 305 and as specified.
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 degrees F. Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 - 3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles of dry areas.
 - 4. Use water-reducing retarding admixture when required by high tempera-

tures, low humidity, or other adverse placing conditions, as acceptable to the Owner's Representative.

- 5. Cement temperature, when added to mix, shall not exceed 170 degrees F.
- C. Retempering of concrete by adding water or any other material shall not be permitted.
- D. The delivery of concrete to the job shall be in such a manner that batches of concrete will be deposited at uninterrupted intervals.

3.5 DEMOLITION

- A. Remove existing curb and sidewalks per PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 630.3.

3.6 FORMS

- A. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the Owner's Representative. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as designed on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The Contractor shall bear responsibility for their adequacy. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes.
- B. The internal ties shall be arranged so that, when the forms are removed, no metal will show in the concrete surface or discolor the surface when exposed to weathering. All forms shall be wetted with water or with a nonstaining mineral oil which shall be applied shortly before the concrete is placed. Forms shall be constructed so that they can be removed without injuring the concrete or concrete surface. The forms shall not be removed before the expiration of at least 30 hours from vertical faces, walls, slender columns, and similar structures; forms supported by falsework under slabs, beams, girders, arches, and similar construction shall not be removed until tests indicate that at least 60% of the design strength of the concrete has developed.

3.7 PLACING REINFORCEMENT

- A. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concreting. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor shall be submitted to the Owner's Representative.

3.8 EMBEDDED ITEMS

- A. Before placing concrete, any items that are to be embedded shall be firmly and

securely fastened in place as indicated. All such items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The embedding of wood shall be avoided. The concrete shall be spaded and consolidated around and against embedded items.

3.9 PLACING CONCRETE

- A. The concrete shall not be placed until the depth and character of foundation, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved. Bonding surfaces, including reinforcement, shall be clean, free of laitance and foreign materials. Concrete shall be placed as soon as practical after mixing and in no case later than 1 hour after water has been added to the mix. The method and manner of placing shall be such to avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. Dropping the concrete a distance of more than 5 feet, or depositing a large quantity at one point, will not be permitted. Concrete shall be placed upon clean, damp surfaces, free from running water, or upon properly consolidated soil.
- B. The concrete shall be compacted with suitable mechanical vibrators operating within the concrete. When necessary, vibrating shall be supplemented by hand spading with suitable tools to assure proper and adequate compaction. Vibrators shall be manipulated so as to work the concrete thoroughly around the reinforcement and embedded fixtures and into corners and angles of the forms. Do not drag vibrators through the concrete. Insert and withdraw vibrator slowly with the vibrator running continuously so that no hole will be left in the concrete. Do not flow the concrete from one location to another by use of a vibrator. The vibration at any joint shall be of sufficient duration to accomplish compaction but shall not be prolonged to the point where segregation occurs. Concrete deposited under water shall be carefully placed in a compact mass in its final position by means of a tremie, a closed bottom dump bucket, or other approved method and shall not be disturbed after being deposited.

3.10 CURB RAMPS

- A. Construct Depressed Curb for curb ramp in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 630.3(i)(2.).
- B. Construct curb ramp in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 676.3(j).

3.11 CONSTRUCTION JOINTS

- A. When the placing of concrete is suspended, necessary provisions shall be made for joining future work before the placed concrete takes its initial set. For the proper bonding of old and new concrete, such provisions shall be made for grooves, steps, keys, dovetails, reinforcing bars or other devices as may be prescribed. The work shall be arranged so that a section begun on any day shall be finished during daylight of the same day. Before depositing new concrete on or against concrete which has hardened, the surface of the hardened concrete shall

be cleaned by a heavy steel broom, roughened slightly, wetted, and covered with a neat coating of cement paste or grout. Where bonded construction joints are required, an epoxy binder shall be used.

3.12 EXPANSION JOINTS

- A. Expansion joints shall be constructed at such points and of such dimensions as may be indicated on the drawings. The premolded filler shall be cut to the same shape as that of the surfaces being joined. The filler shall be fixed firmly against the surface of the concrete already in place using an adhesive or other method approved by the Owner's Representative in such manner that it will not be displaced when concrete is deposited against it.

3.13 DEFECTIVE WORK

- A. Any defective work revealed after the forms have been removed shall be immediately removed and replaced. If any dimensions are deficient, or if the surface of the concrete is bulged, uneven, or shows honeycomb, which in the opinion of the Owner's Representative cannot be repaired satisfactorily, the entire section shall be removed and replaced at the expense of the Contractor.

3.14 SURFACE FINISH

- A. All exposed concrete surfaces shall be true, smooth, free from open or rough spaces, depressions, or projections. The concrete in horizontal plane surfaces shall be brought flush with the finished top surface at the proper elevation and shall be struck-off with a straightedge and floated. Mortar finishing shall not be permitted, nor shall dry cement or sand-cement mortar be spread over the concrete during the finishing of horizontal plane surfaces.
- B. When directed, the surface finish of exposed concrete shall be a rubbed finish. If forms can be removed while the concrete is still green, the surface shall be pointed and wetted and then rubbed with a wooden float until all irregularities are removed. If the concrete has hardened before being rubbed, a carborundum stone shall be used to finish the surface. When approved, the finishing can be done with a rubbing machine.

3.15 CURING AND PROTECTION

- A. All concrete shall be properly cured and protected by the Contractor. The work shall be protected from the elements, flowing water, and from defacement of any nature during the building operations. The concrete shall be cured as soon as it has sufficiently hardened by covering with an approved material. Water-absorptive coverings shall be thoroughly saturated when placed and kept saturated for a period of at least 3 days. All curing mats or blankets shall be sufficiently weighted or tied down to keep the concrete surface covered and to prevent the surface from being exposed to currents of air. Where wooden forms are used, they shall be kept wet at all times until removed to prevent the opening of joints and drying out of the concrete. Traffic shall not be allowed on concrete surfaces for 7 days after the concrete has been placed.

3.16 COLD WEATHER PROTECTION

- A. When concrete is placed at temperatures below 40 F, the Contractor shall provide satisfactory methods and means to protect the mix from injury by freezing. The aggregates, or water, or both, shall be heated in order to place the concrete at temperatures between 50 and 100 F.
- B. After the concrete has been placed, the Contractor shall provide sufficient protection such as cover, canvas, framework, heating apparatus, etc., to enclose and protect the structure and maintain the temperature of the mix at not less than 50 F until at least 60% of the designed strength has been attained.

3.17 FILLING JOINTS

- A. All joints which require filling shall be thoroughly cleaned, and any excess mortar or concrete shall be cut out with proper tools. Joint filling shall not be started until after final curing and shall be done only when the concrete is completely dry. The cleaning and filling shall be carefully done with proper equipment and in a manner to obtain a neat looking joint free from excess filler.

3.18 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 321600-1 Cement Concrete Sidewalk. Square Yard.
- B. Item No. 321600-2 Remove Cement Concrete Sidewalk. Square Yard.
- C. Item No. 321600-3 Plain Cement Concrete Curb. Linear Foot.
- D. Item No. 321600-4 Remove Plain Cement Concrete Curb. Linear Foot.
- E. Item No. 321600-5 Detectable Warning Surface, Polymer Composite. Square Feet.
- F. Reinforcement, seals, sawcutting, asphalt, and subbase are incidental. Refer to Specification Section 312350 – Sawcutting, Section 321116 – Subbase Courses, and Section 321219 – Asphalt Paving Wearing Courses.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 321600

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SECTION 321723 – PAVEMENT MARKINGS

PART 1 – GENERAL

1.1 SUMMARY

- A. This work shall consist of establishing the location of landside roadway pavement markings and installing pavement markings, pavement markers, reflectorized material, and surface-mounted flexible post delineation devices on specified pavements in accordance with these specifications, at the locations shown on the plans, or as directed by the Owner's Representative.
- B. Additional work covered under this section includes the layout and painting of parking stripes, roadway legends, and handicapped accessibility international symbols and crosswalk stripes.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 960 – Hot Thermoplastic Pavement Markings and Section 965 – Preformed Thermoplastic Pavement Markings; apply to this Section.

PART 2 – PRODUCTS

2.1 CERTIFICATION

- A. The Contractor shall furnish manufacturer's certified test reports for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. The reports can be used for material acceptance or the Owner's Representative may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the Owner's Representative upon arrival of a shipment of materials to the site.

2.2 PAVEMENT MARKINGS

- A. Hot thermoplastic pavement marking materials shall meet the requirements identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 960.
- B. Preformed thermoplastic pavement marking materials shall meet the requirements identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 965.
- C. Glass beads shall meet the requirements identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 1103.14.

2.3 DELINEATION DEVICES

- A. Delineation devices shall meet the requirements identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 937.2 for post mount, ground mount delineation devices.

PART 3 – EXECUTION

3.1 WEATHER LIMITATIONS

- A. The painting shall be performed only when the surface is dry and when the surface temperature is at least 45 degrees F and rising and the pavement surface temperature is at least 5 degrees F above the dew point. Painting operations shall be discontinued when the surface temperature exceeds the paint manufacturer's recommendations.

3.2 EQUIPMENT

- A. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead and/or silica sand dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.
- B. The mechanical marker shall be an atomizing spray-type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall apply markings of uniform cross sections and clear-cut edges without running or spattering and without over spray.

3.3 PREPARATION OF SURFACE

- A. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material that would reduce the bond between the paint and the pavement. The area to be painted shall be cleaned by sweeping and blowing or by other methods as required to remove all dirt, laitance, and loose materials.
- B. Paint shall not be applied to Portland cement concrete pavement until the areas to be painted are clean of curing material. Sandblasting or high-pressure water shall be used to remove curing materials.
- C. Paint shall not be applied to bituminous pavements until the areas to be painted are clean and have been in place for at least 7 days.

3.4 LAYOUT OF MARKINGS

- A. The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be as follows, or as shown on the plans: Surface painted signs and symbols Landside Roadway Markings Parking Lot Markings

- B. Glass beads shall not be applied to black outline paint markings or temporary markings as designated by the Owner's Representative.

3.5 APPLICATION

- A. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the Owner's Representative.
- B. The edges of the markings shall not vary from a straight line more than 1/2 inch in 50 feet and marking dimensions and spacings shall be within the following tolerances:

Dimension and Spacing	Tolerance
36 inches or less	+/-1/2 inch
greater than 36 inches to 6 feet	+/-1 inch
greater than 6 feet to 60 feet	+/-2 inches
greater than 60 feet	+/-3 inches

- C. The paint shall be mixed and applied to the pavement with a marking in accordance with the manufacturer's instructions. The addition of thinner will not be permitted. A period of 7 days shall elapse between placement of a bituminous surface course and application of the paint.
- D. If markings are required before paving operations are complete, the Contractor may place temporary markings at 50 percent of the specified application rates. Glass beads are not required for temporary markings.
- E. Glass beads shall be distributed upon the marked areas at the locations noted in the specifications immediately after application of the paint. A dispenser shall be furnished which is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate(s) identified in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 960 and Section 965. Glass beads shall not be applied to black paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made.

3.6 BORDER

- A. A 6-inch wide outline border of nonreflectorized black paint is required around all permanent pavement markings placed on concrete pavement.

3.7 PROTECTION

- A. After application of the paint, all markings shall be protected from damage until the paint is dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings of paint.

3.8 TEMPORARY PAVEMENT PAINTING

- A. Markings may be required for phasing operations or before paving operations are complete. Temporary markings may be placed at least 50 percent of the specified application rate specified for permanent markings. Black border paint is not required for temporary pavement marking.

3.9 PAINT REMOVAL

- A. Remove markings by painting over with black paint. Submit and obtain acceptance for the method to be used, prior to commencement of work. Removal of existing pavement markings by milling or by shot blasting is not acceptable. Removal methods shall be employed that will cause the least damage to pavement structure or pavement surface. Satisfactorily repair any pavement or surface damage caused by the removal methods. Pavement markings to be removed shall be at locations shown on the plans or as designated by the Owner's Representative as operations require. Remove pavement markings per PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 963.3.
- B. Prior to commencement of the work, the contractor shall submit and obtain approval of the proposed method of paint removal. The Owner's Representative reserves the right to require a demonstration of the proposed method prior to removal.

3.10 DELINEATION DEVICES

- A. Locate delineation devices as indicated, by type and color. Install devices as shown in the plans and details. Verify that the reflective surface of all delineation devices is visible to approaching traffic.
- B. Post Mounts. Check each post to be certain it is plumb.
 - 1. Surface Mount. Install surface mount base anchors on the existing pavement and insert post and secure as recommended by the manufacturer.

3.11 QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 321723-1 4" White Hot Thermoplastic Pavement Markings. Linear Foot.
- B. Item No. 321723-2 24" White Hot Thermoplastic Pavement Markings. Linear Foot.
- C. Item No. 321723-3 4" Pavement Marking Removal. Linear Foot.

- D. Item No. 321723-4 White Preformed Thermoplastic Legend, "MPH", 8' – 0". Each.
- E. Item No. 321723-5 White Preformed Thermoplastic Legend, "Wrong Way Arrow", 23' – 0". Each.
- F. Item No. 321723-6 White Preformed Thermoplastic Legend, "2", 8' – 0". Each.
- G. Item No. 321723-7 White Preformed Thermoplastic Legend, "5", 8' – 0". Each.
- H. Item No. 321723-8 Pavement Marking Removal. Square Feet.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 321723

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SECTION 329119.13 – TOPSOIL PLACEMENT AND GRADING

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section specifies subsoil scarification, topsoil placement, application of soil amendments, final grading, fertilizing, turf seeding, mulching, and initial irrigation for the areas indicated on Drawings. The installation of sod is permitted to be substituted for the turf seeding and mulching upon the approval of the Owner's Representative.
- B. This Section also includes removing of topsoil from existing grassed and landscaped areas adjacent to the roadways, stockpiling, and subsequent placement on site.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 802 – Topsoil Furnished and Placed, Section 804 – Seeding and Soil Supplements, and Section 805 – Mulching; apply to this Section.

1.3 SUBMITTALS

- A. Submit the following to the Owner's Representative in accordance with requirements of Section C, Special Provisions.
- B. Certification of Grass Seed: Seed vendor's signed statement of turf seed analysis, certifying that each lot of seed has been tested in accordance with requirements of the Commonwealth of Pennsylvania within the previous 6 months by a recognized independent seed testing laboratory. This statement shall include:
 - 1. Name and address of laboratory.
 - 2. Date of analysis.
 - 3. Origin and lot number for each type of seed variety.
 - 4. Results of analysis, including, for each seed variety:
 - a. Botanical and common name (species and variety).
 - b. Percentage by weight of variety in overall mixture.
 - c. Percentage of purity.
 - d. Percentage of germination.

- e. Percentage by weight of weed content.
- f. Percentage by weight of inert content.
- C. Topsoil Analysis Report: Submit certified soil analysis report for topsoil.
 - 1. Report of analysis by a recognized soil testing laboratory stating particle size distribution, percentages of silt, clay, sand and organic matter, soil pH, and the mineral and plant nutrient content of soil. Report shall indicate suitability of topsoil for healthy, vigorous growth of turf grasses. If not suitable, include recommended quantities for nitrogen, phosphorus, potash, limestone, aluminum sulphate, or other soil amendments that must be added to make topsoil suitable.

1.4 PROJECT CONDITIONS

- A. Planting time: Unless otherwise approved by the Owner's Representative, sow permanent seed in all areas of project in periods between March 15 to May 15, or between August 15 and October 1.
- B. Maintenance period: Correlate planting with specified maintenance periods to provide required maintenance from date of substantial completion.

PART 2 – PRODUCTS

2.1 NEW TOPSOIL

- A. Fertile, friable, naturally loamy, surface soil; reasonably free of subsoil, clay lumps, brush, weeds, and other litter; and free of roots, stumps, stones larger than 2 inches in any dimension, and other extraneous or toxic matter harmful to plant growth.
- B. Provide topsoil with a pH range of approximately 6.0 pH to 7.0 pH when tested in accordance with the methods of testing as recommended by the Association of Official Agricultural Chemists. Organic content shall not be less than 3 percent or more than 20 percent as determined by the wet-combustion method (chromic acid reduction). Not less than 20 percent nor more than 80 percent of the topsoil material shall pass the 200 mesh (0.075 mm) sieve, as determined by the wash test in accordance with ASTM C 117.
 - 1. Natural topsoil may be amended by the Contractor with approved materials and methods to meet above requirements.
- C. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at site of work. Obtain topsoil from naturally well-drained sites where topsoil occurs at least 4 inches deep; do not obtain from bogs or marshes.

2.2 SOIL AMENDMENTS

- A. Lime: Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 100% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. Lime shall be applied at the rate consistent with soil testing recommendations, or as shown on the plans. All liming materials shall conform to the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 804, and ASTM C 602.

2.3 FERTILIZER

- A. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified herein, and shall meet the requirements of Fed. Spec. O-F-241 and applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon.
- B. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.
- C. The fertilizers may be supplied in one of the following forms:
 - 1. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
 - 2. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or
 - 3. A granular or pellet form suitable for application by blower equipment.
- D. Fertilizers shall be 10-20-20 commercial fertilizer and shall be spread at the rate of 140 pounds per 1000 square yards.

2.4 GENERAL LAWN SEEDING MIX

- A. Use general lawn seeding mix in accordance with Formula B Residential Mix in Table B within PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 804.2.

2.5 TEMPORARY SEEDING MIX

- A. Use temporary seeding mix in accordance with Formula T Temporary Grass Mix in Table B within PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 804.2.

2.6 MULCH

- A. Acceptable mulch shall be Cellulose-fiber or wood-pulp mulch products with chemical tackifier and a non-toxic green dyemarker commercially available for use in spray applications. All mulch materials shall conform to the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 805.

PART 3 – EXECUTION

3.1 SOIL PREPARATION

- A. Limit preparation to areas that will be planted within 72 hours.
- B. Till sub grade to a minimum depth of 6 inches. Remove stones exceeding 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter including gravel or other inorganic deposits in excess of 4 stones per square foot (average).
 - 1. Immediately after initial tilling, remove existing grass clumps, vegetation, and turf. Dispose of such material outside of Owner's property; do not turn over into soil being prepared for turfs.
 - 2. Where grades to be topsoiled have been established by others, maintain grades in a true and even condition.
 - 3. Where grades have not yet been established, smooth-grade the areas to the prescribed elevations indicated and leave in a condition that is properly-compacted and evenly-graded to prevent formation of low places where water will pond.
- C. Spread topsoil mixture to depth required to meet thickness, grades, and elevations shown, after light rolling and natural settlement.
 - 1. Unless otherwise shown, provide minimum depth of 2 inches (50 mm) after compaction. Do not spread if either topsoil material or sub grade is frozen.
 - 2. Clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
 - 3. Allow for sod thickness in areas to be sodded.
- D. Add soil amendments at rates per manufacturer and spread initial fertilizers at rate of 140 pounds per 1000 square yards to top surface of topsoil.
 - 1. Mix lime with dry soil before mixing in fertilizer.
 - 2. Mix thoroughly into top 4 inches of topsoil prior to fine-grading.

3. Do not mix fertilizer with topsoil more than 72 hours in advance of seeding or sodding operations.
 4. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots, and other extraneous matter.
- E. Fine-grade to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. After compaction rolling, leave surfaces at prescribed grades with uniform slope to drain and free from low areas where water might pond. Limit fine grading to areas that can be planted within 72 hours. Remove trash, debris, stones larger than 2 inches in diameter, and other objects that may interfere with planting or maintenance operations.
- F. Promptly remove topsoil or other materials falling on pavement as result of hauling or spreading of topsoil.

3.2 SEEDING

- A. Restore prepared turf areas to specified condition if eroded or otherwise disturbed after fine grading and before planting.
- B. Moisten prepared turf areas before planting if soil is dry. Water thoroughly and allow surface to dry off before seeding operations. Do not create muddy soil.
- C. Rate of application shall be in accordance with Table B in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 804.2.
- D. Sow seed with a spreader or a seeding machine. Do not seed when wind velocity exceeds 5 miles per hour. Distribute seed evenly over entire area by sowing equal quantity in 2 directions at right angles to each other.
1. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
 2. Sow no less than the quantity of seed specified.
- E. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

3.3 HYDROSEEDING

- A. Mix specified seed, fertilizer, and pulverized mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into a homogenous slurry suitable for hydraulic application.
- B. Apply slurry uniformly to all areas to be seeded. Rate of application as required to obtain seed application rate in accordance with Table B in PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 804.2.

3.4 MULCHING

- A. Protect seeded slopes against erosion with jute mesh erosion netting or other similar coverings acceptable to the Owner's Representative.
- B. Apply mulch as required by manufacturer's recommendations.

3.5 RECONDITIONING EXISTING TURF AREAS

- A. Recondition turf areas where settlement or washouts occur or where minor re-grading is required.
- B. Recondition existing turf areas damaged by Contractor's operations including storage of materials or equipment and movement of vehicles.
- C. Recondition other existing turf areas where indicated on Drawings.
- D. Provide fertilizer, seed or sod, and soil amendments same as specified for new turf areas and as required to provide healthy stand of grass in reconditioned areas. Provide new topsoil as required to fill low spots and meet required finish grades.
- E. Remove diseased or unsatisfactory grass clumps; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor's operations including oil drippings, stone, gravel, and other construction materials; replace with new topsoil.
- F. Where substantial turf remains (but is thin), mow, rake, aerate if compacted, fill low spots, remove humps, cultivate soil, apply lime, fertilizer, and sow specified seed at rate indicated. Remove weeds before seeding. If weeds are extensive, apply selective chemical weed killers as required. Apply a seedbed mulch, if required, to maintain moist condition.
- G. Water newly planted areas and keep moist until new grass is established.

3.6 PROTECTION

- A. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and until substantial and healthy stand of grass is established.
- B. Take necessary precautions as required to avoid damage to existing plants, turf, and structures.

3.7 MAINTENANCE

- A. Contractor shall obtain the services of a professional lawn and landscape firm to provide the following required maintenance services. Contractor shall not use its own forces to accomplish this maintenance.

- B. Begin maintenance of grass areas immediately after each area is planted and continue for the periods required to establish acceptable stand of turf grass, but no less than the following:
 - 1. If seeded in fall after September 1, provide minimum of 30 days maintenance in fall, and provide a minimum of 45 additional days continuing maintenance during following spring until acceptable turf is established.
- C. Maintain turf areas by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, re-grading, replanting as required to establish a smooth, acceptable turf, free of eroded or bare areas.
- D. Re-mulch with new mulch in areas where mulch has been disturbed by wind or maintenance operations sufficiently to nullify its purpose. Anchor as required to prevent displacement.
- E. Replant bare areas with same materials specified for new turf.
- F. Watering: Provide and maintain temporary piping, hoses and watering equipment to convey water from Airport water source(s) location indicated and to keep turf areas uniformly moist as required for proper growth. Design temporary watering system to provide a minimum of 3/4 inch of water per day.
 - 1. Lay out temporary watering system and arrange watering schedule to prevent puddling, water erosion, and displacement of seed or mulch (if any). Lay out temporary watering system to avoid necessity of walking over muddy or newly seeded areas.
 - 2. Begin watering immediately. Water on a daily basis for the following 10 days. Apply water uniformly, providing coverage over entire site nominally equivalent to 3/4 inches of rainfall per day. Reduce rate to nominal 1/2 inch of water per day after 5 days.
 - 3. At end of initial 10-day period, remove temporary irrigation system. Continue watering with conventional sprinkler watering system on an as-needed basis.
- G. Mow grass as soon as there is 4 to 4 1/2 inches of top growth, cut grass with the mower blades set at 3" height. Repeat mowing as required to maintain specified height.
 - 1. Remove no more than 40 percent of grass leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Time initial and subsequent mowings to maintain following grass heights.
 - a. Mow grass at approximately 3 inches high. Do not mow to less than 3 inches.
 - 2. Apply second fertilizer application after first mowing and when grass is

dry. Use fertilizer that will provide at least 1.0 lb. of actual nitrogen per 1,000 sq. ft. of turf area.

3.8 ACCEPTANCE

- A. When work is substantially completed, including maintenance, the Owner's Representative will, upon request, make an inspection to determine acceptability.
- B. Turf work may be inspected for acceptance in parts agreeable to the Owner's Representative, provided work offered for inspection is complete, including maintenance.
- C. Replant rejected work and continue specified maintenance until re-inspected by the Owner's Representative and found to be acceptable.
- D. Seeded areas will be acceptable provided requirements, including maintenance, have been met and healthy, uniform close stand of specified grass has been established with an average of one healthy grass plant per square inch, free of weeds, with no bare spots in excess of 5 inches in diameter, and free of surface irregularities.

3.9 CLEANUP

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto surface of paved areas.
- B. During seeding operations, maintain all areas neat and clean. On a daily basis, remove excess materials and debris to site location designated by the Owner's Representative. At completion of Work, remove all such materials from site and dispose of in a legal manner.
- C. Restore any damage caused by seeding operations to original condition.

3.10 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 329119.13-1 Topsoil Furnished and Placed. Cubic Yard.
- B. Item No. 329119.13-2 Seeding and Soil Supplements – Formula B Residential Mix. Pound.
- C. Item No. 329119.13-3 Mulching – Wood Fiber. Ton.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 329119.13

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SECTION 330526.16 – UTILITY IDENTIFICATION MARKERS

PART 1 – GENERAL

1.2 SUMMARY

- A. This work is the removal and installation of marker posts used to identify the location of buried gas pipelines.

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10; apply to this Section.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Post shall be 3.5" in diameter, 72" in length and made with resin or composite. A yellow dome cap will be provided with a warning graphic, 811 message and contact information for the utility company. Contractor shall confirm with the utility company the specific language to be printed on the cap.

PART 3 – EXECUTION

3.1 REMOVAL

- A. The marker and any foundation shall be removed down to finished grade.

3.2 INSTALLATION

- A. Contractor shall coordinate new location of markers with utility company. Secure the post with T-anchor. Anchor post in concrete if required by the utility company.

3.3 PROTECTION OF UTILITIES

- A. The location of utilities shown in the area of marker posts is approximate. The contractor will be required to verify all utility locations and notify the respective utility companies. The contractor shall use extreme care while excavating or augering. Any damage done to utilities, whether shown or not, shall be immediately repaired by the Contractor at their expense.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 330526.16-1 Remove Gas Pipeline Marker Post. Each.
- B. Item No. 330526.16-2 Gas Pipeline Marker Post. Each.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 330526.16

SECTION 334900 – STORM DRAINAGE STRUCTURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes new stormwater structures and repairs or modifications to existing stormwater structures including:
 - a. Stormwater Inlets
 - b. Stormwater Manholes
 - c. Stormwater Structure Modification
 - d. Miscellaneous Frame and Grate Repairs or Adjustments
 - e. Pipe Underdrains

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 600; apply to this Section.
- B. Related Sections include 321600 – Concrete Curbs and Sidewalks, 311000 – Site Clearing, and 321116 – Subbase Courses.

1.3 QUALITY ASSURANCE

- A. Reference Standards: Meet requirements of the referenced standards except to the extent more detailed or stringent requirements are indicated by the Contract Documents, including requirements of this Section and of governing codes and regulations.
- B. Compliance with Laws, Codes, Rules, and Regulations: Comply with all local, State, and Federal laws, rules, and regulations applicable to this Section and to the selective demolition work to be done.

1.4 SUBMITTALS

- A. Furnish shop drawings, manufacturer's data, test reports and materials certifications as required in the referenced section, including:
 - 1. Product Data: For the following:
 - a. Grates, frames, rims and covers
 - b. Steps

2. Aggregate test data certifications for gradation and source
 3. Concrete mix design
 4. Reinforcement
 5. Bedding material test data certifications for gradation and source
 6. Backfill material gradation and density
- B. The test data shall not have been prepared more than 6 months prior to the date of submittal.
- C. Shop Drawings: For the following:
1. Manholes, Inlets, Catch Basins, or other structures: include plans, elevations, sections, details, and frames, covers and grates FOR EACH STRUCTURE. Include design calculations or certification for Highway Loading.
- D. Coordination Drawings: Show structure sizes, locations, and elevations. Indicate interface and spatial relationship between manholes, piping, and proximate structures.
- E. Field quality-control test reports as applicable.
- F. Contractor shall measure the inverts of each existing inlet to verify their depths and submit to the Owner's Representative for approval.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Protect pipe, pipe fittings, and seals from dirt and damage.
 - B. Handle structures according to manufacturer's written rigging instructions.
- 1.6 PROJECT CONDITIONS
- A. Interruption of Existing Storm Drainage Service: Submit to the Owner's Representative a plan and schedule for approval of the proposed stormwater installations so as to minimize service interruptions.

PART 2 – PRODUCTS

2.1 CONCRETE

- A. Plain and reinforced concrete used in structures, connections of pipes with structures, and the support of structures or frames shall be 4000 psi concrete in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 714 – Precast Concrete Products.

2.2 FRAMES, COVERS, AND GRATES

- A. The castings shall conform to one of the following requirements:
 - a. Gray iron castings shall meet the requirements of ASTM A 48, Class 30B and 35B.
 - b. Malleable iron castings shall meet the requirements of ASTM A 47.
 - c. Steel castings shall meet the requirements of ASTM A 27.
 - d. Structural steel for grates and frames shall conform to the requirements of ASTM A 283, Grade D.
 - e. Ductile iron castings shall conform to the requirements of ASTM A 536.
 - f. Austempered ductile iron castings shall conform to the requirements of ASTM A 897.
- B. All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support HS-25 loading. Each casting shall be installed according to manufacturer recommendations and shall be acceptable to the Owner's Representative.
- C. Each frame and cover or grate unit shall be provided with fastening members to prevent it from being dislodged by traffic but which will allow easy removal for access to the structure.
- D. All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A123.

2.3 STEPS

- A. The steps or ladder bars shall be the size, length, shape, and fabricated of the materials shown on the drawings. The steps shall be able to withstand a minimum load of 300 lbs when the load is applied seven inches from the face of support. Steps shall be vertically aligned and uniformly spaced at a distance of 12 inches for the entire depth of the structure. The minimum tread width shall be 16 inches. The steps shall protrude a minimum of 7 inches from the face of the wall. Steps shall be design to prevent feet from slipping off the side of the step.
- B. Steps shall be installed in all structures with a depth greater than 4 feet.

2.4 BACKFILL MATERIAL

- A. Backfill material shall be the excavated material that was produced from the installation of the pipes and structures as approved by the Owner's Representative, or material meeting the requirements of Specification 321116 – Subbase Courses for material as approved by the Owner's Representative.

2.5 BEDDING MATERIAL

- A. Bedding material shall be AASHTO 57 stone, free of clay, humus, or other objectionable matter.

2.6 UNDERDRAIN PIPES

- A. Underdrain pipes shall be in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 610.

PART 3 – EXECUTION

3.1 EXCAVATION

- A. The width of the excavation shall be sufficient to permit satisfactory installation of the structures, installation and connection of the pipes or culverts and thorough tamping of the bedding and backfill material under and around the pipe and structures. The excavation walls shall be approximately vertical.
- B. Where rock, hardpan, or other unyielding material is encountered, the Contractor shall remove it from below the foundation grade for a depth of at least 12 inches. The width of the excavation shall be at least 1 foot greater than the horizontal outside diameter of the structure. The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches in uncompacted depth to form a uniform but yielding foundation.
- C. Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The Owner's Representative shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.
- D. All material excavated not suitable for backfill shall be legally disposed of off Airport property by the Contractor.

3.2 TRENCH BENCHING AND SHORING

- A. The Contractor shall provide all labor, material, and tools to furnish sheeting, shoring, and bracing as required by the Department of Aviation, the Commonwealth of Pennsylvania, and Department of Labor OSHA 29 CFR Part 1926 including any successive regulations.
- B. The Contractor shall be responsible for submission of a sheeting, shoring, and bracing or benching plan drawing showing details and sequencing of construction, construction materials, construction material sizing, calculations, and existing soil conditions. This plan drawing shall be developed, reviewed, approved and sealed by a Professional Engineer registered in the Commonwealth of Pennsylvania.
- C. The Contractor shall submit six (6) sets of trench benching and shoring plans, clearly showing the Engineers Seal, to the Owner's Representative.

- D. Shoring shall not be removed until the permanent work is in proper condition to receive the load. No additional payment for this item will be authorized.

3.3 DEWATERING

- A. The Contractor shall, at all times, provide and maintain in operation pumping and/or well point equipment for the complete dewatering of the excavation. No structure shall be permitted to be installed in which any amount of water flows or is pooled.

3.4 CONCRETE STRUCTURES

- A. Concrete structures shall be built on prepared foundations, conforming to the dimensions and form indicated on the plans. The construction shall conform to PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 714 – Precast Concrete Products. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the Owner's Representative before the concrete is poured.
- B. All invert channels shall be constructed and shaped accurately so as to be smooth, uniform, and cause minimum resistance to flowing water. The interior bottom shall be sloped downward toward the outlet.

3.5 PRECAST CONCRETE STRUCTURES

- A. Precast concrete drainage structures shall be constructed on prepared or previously placed slab foundations and shall conform to the dimensions and locations shown on the plans. All precast concrete sections necessary to build a completed structure shall be furnished. The different sections shall fit together readily, and all jointing and connections shall be cemented with mortar. Provision shall be made for any connections for lateral pipe, including drops and leads that may be installed in the structure. The flow lines shall be smooth, uniform, and cause minimum resistance to flow. The metal steps which are embedded or built into the side walls shall be aligned and placed at vertical intervals of 12 inches.

3.6 INLET AND OUTLET PIPES

- A. Contractor shall measure the inverts of each existing inlet to verify their depths and submit to the Owner's Representative for approval.
- B. Inlet and outlet pipes shall extend through the walls of the structures for a sufficient distance beyond the outside surface to allow for connections but shall be cut off flush with the wall on the inside surface, unless otherwise directed by the Owner's Representative. For concrete or brick structures, the mortar shall be placed around these pipes and box culverts so as to form a tight, neat connection.
- B. Pipes are to be buried to at least the minimum depth required by local ordinances.

- C. Underdrain pipes shall be constructed in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 610.

3.7 PLACEMENT AND TREATMENT OF CASTINGS, FRAMES, AND FITTINGS

- A. All castings, frames, and fittings shall be placed in the positions indicated on the plans or as directed by the Owner's Representative and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.
- B. When frames or fittings are to be placed upon previously constructed masonry, the bearing surface or masonry shall be brought true to line and grade and shall present an even bearing surface in order that the entire face or back of the unit will come in contact with the masonry. The unit shall be set in mortar beds and anchored to the masonry as indicated on the plans or as directed and approved by the Owner's Representative. All units shall set firm and secure.
- C. After the frames or fittings have been set in final position and the concrete or mortar has been allowed to harden for 7 days, then the grates or covers shall be placed and fastened down.

3.8 INSTALLATION OF STEPS

- A. The steps shall be installed as indicated on the plans or as directed by the Owner's Representative. When the steps are to be set in concrete, they shall be placed and secured in position before the concrete is poured. When the steps are installed in brick masonry, they shall be placed as the masonry is being built. The steps shall not be disturbed or used until the concrete or mortar has hardened for at least 7 days. After this period has elapsed, the steps shall be cleaned and painted, unless they have been galvanized.
- B. When steps are required with precast concrete drainage structures, they shall be cast into the sides of the structure at the time the sections are manufactured or set in place after the structure is erected by drilling holes in the concrete and cementing the steps in place. When steps are required with corrugated metal structures, they shall be welded into aligned position at a vertical spacing of 12 inches. In lieu of steps, prefabricated ladders may be installed. In the case of brick or concrete structures, the ladder shall be held in place by grouting the supports in drilled holes. In the case of metal structures, the ladder shall be secured by welding the top support and grouting the bottom support into drilled holes in the foundation or as directed.

3.9 STRUCTURE BACKFILLING

- A. After a structure has been completed, the area around it shall be filled with approved material, in horizontal layers not to exceed 6 inches in loose depth, and compacted to the density required in Specification Section 321116. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by

the Owner's Representative.

- B. Backfilling shall not be placed against any structure until permission is given by the Owner's Representative. In the case of concrete, such permission shall not be given until the concrete has been in place 7 days, or until tests made by the laboratory under supervision of the Owner's Representative establish that the concrete has attained sufficient strength to provide a factor of safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.
- C. Backfill shall not be measured for direct payment. Performance of this work shall be considered incidental to the contract unit price for the structure involved.

3.10 REPAIR AND ADJUSTMENT OF MISCELLANEOUS FRAMES AND LIDS

- A. Repair and field adjustment of miscellaneous frames and lids for manholes, valve boxes, inlets and other structures shall be performed as identified on the plans and details.

3.11 CLEANING AND RESTORATION OF SITE

- A. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as ordered by the Owner's Representative. The Contractor shall restore all disturbed areas to their original condition.
- B. After all work is completed, the Contractor shall remove all tools and equipment, leaving the entire site free, clear, and in good condition.

3.12 CONTRACTOR QUALITY CONTROL

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.
- B. All storm drainage pipe installation must satisfy the minimum pipe cover and slope requirements of Tinicum Township.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 334900-1 4" Perforated Pipe Underdrain. Linear Foot.
- B. Item No. 334900-2 8" Pipe Underdrain. Linear Foot.
- C. Item No. 334900-3 4" Pipe Underdrain. Linear Foot.
- D. Item No. 334900-4 Type C Concrete Top Unit With Structural Steel Grate. Set.
- E. Item No. 334900-5 Grade Adjustment of Existing Manholes. Set.

- F. Item No. 334900-6 Standard Inlet Box. Each.
- G. Item No. 334900-7 Top Slab With Round Opening For Manhole Cover. Each.
- H. Item No. 334900-8 Manhole Frame and Cover. Set.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 334900

SECTION 338000 – COMMUNICATIONS UTILITIES

PART 1 – GENERAL

1.1 SUMMARY

- A. This work is the removal and installation of telecommunication facilities. This also covers conduits and wiring for the facilities. All related work is incidental to the specification herein.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10; apply to this Section.

PART 2 – PRODUCTS

2.1 JUNCTION BOXES

- A. Junction box in accordance with detail on C-505 for 17" x 30" Open Bottom Handhole Box.

2.2 OVERHEIGHT VEHICLE PHONE, ENCLOSURE, AND CONDUITS

- A. Existing overheight vehicle phone and enclosure shall be reused for relocation. The size and material of conduits shall match installation. The Contractor shall utilize existing wiring to the extent practicable so long as there is no impact in service. The Contractor shall coordinate with the Department of Aviation for additional cabling to connect to relocated phone, as needed, if existing cabling cannot be used. Contractor shall investigate and assess the wiring through the Owner's Representative.

PART 3 – EXECUTION

3.1 REMOVAL

- A. Remove items as indicated on plans. Coordinate with utility company as required.
- B. Remove all accessible abandoned wiring of all types, or cap and label in junction box for reuse in compliance with the National Electrical Code.
- C. Contractor is responsible for investigating the existing wiring and conduit routing prior to any demolition of the overheight vehicle phone. Contractor shall submit documentation to the Owner's Representative depicting the routing of the conduits in the area with notation of size, material, and other pertinent information to characterize the conduit and wiring used in the existing setup.

3.2 INSTALLATION

- A. Install items as indicated on plans. Coordinate with utility company as required. Coordinate with Owner's Representative for final acceptance and commissioning of relocated overheight vehicle phone as needed. Interruptions to phone service shall be minimal and must be scheduled in coordination with the Owner's Representative in advance of relocation commencing. Contractor shall rewire and extend wiring to new location as necessary. The overheight vehicle phone and enclosure shall be fully operational before the Contractor submits a request for final acceptance and commissioning. Contractor shall include a wiring plan by a licensed electrician, which shall be paid under Item No. 338000-1 and shall be submitted to the Owner's Representative for review and approval.

3.3 PROTECTION OF UTILITIES

- A. The location of utilities shown on plans is approximate. The contractor will be required to verify all utility locations and notify the respective utility companies. The contractor shall use extreme care while excavating or auguring. Any damage done to utilities, whether shown or not, shall be immediately repaired by the Contractor at their expense.

3.4 JUNCTION BOXES

- A. Replace existing junction boxes in kind or with approved alternate and adjust to grade per plan and in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 910 and Section 954.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 338000-1 Relocate & Rewire Overheight Vehicle Phone and Enclosure. Lump Sum.
- B. Item No. 338000-2 17" X 30" Open Bottom Handhole Box, 18" Depth. Set.
- C. Item No. 338000-3 17" X 30" Open Bottom Handhole Box, 30" Depth. Set.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 338000

SECTION 347113.26 – VEHICLE GUIDE RAILS

PART 1 – GENERAL

1.1 SUMMARY

- A. This item consists of furnishing all materials, labor and equipment and performing all operations in connection with the removal and replacement of guide rail as shown on the drawings and in accordance with these specifications and/or as directed by the Owner's Representative.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including City of Philadelphia Standard Contract Requirements for Public Works Contracts and Section C, Special Provisions; PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 620 – Guide Rail; apply to this Section.

1.3 QUALITY ASSURANCE

- A. Reference Standards: Meet requirements of the referenced standards except to the extent more detailed or stringent requirements are indicated by the Contract Documents, including requirements of this Section and of governing codes and regulations.
- B. Compliance with Laws, Codes, Rules, and Regulations: Comply with all local, State, and Federal laws, rules, and regulations applicable to this Section and to the selective demolition work to be done.

1.4 SUBMITTALS

- A. The Contractor shall submit dated certification from the manufacturer, fabricator, or producer that guide rail items furnished meet specifications, all in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 106.03(b)3.
 - 1. Detailed, clearly drawn shop drawings of any terminal sections.
 - 2. Work drawings for installation of guide rail.

PART 2 – PRODUCTS

2.1 GUIDE RAIL MATERIALS

- A. All guide rail materials shall meet the requirements of PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 620.

PART 3 – EXECUTION

3.1 GUIDE RAIL

- A. All work shall be done in accordance with PennDOT Publication 408, Standard Specifications 2020, Change No. 10, Section 620 and Standards for Roadway Construction, Pub. 72M as shown on the plans.
- B. All bolts, except where otherwise required for expansion, shall be drawn tight and be of sufficient length to extend at least 1/4 inch beyond the nuts. After erection, the projecting ends of all bolts except those holding offset brackets, shall be cut off not more than 1/2 inch from the face of the nut.

3.2 PROTECTION OF UTILITIES

- A. The location of utilities shown in the area of a guide rail post is approximate. The contractor will be required to verify all utility locations and notify the respective utility companies. The contractor shall use extreme care while excavating or augering. Any damage done to utilities, whether shown or not, shall be immediately repaired by the Contractor at their expense.

3.3 CONTRACTOR'S QUALITY CONTROL REQUIREMENTS

- A. Conform to all applicable provisions of City of Philadelphia Standard Contract Requirements for Public Works Contracts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

- A. Item No. 347113.26-1 Remove Existing Guide Rail (Contractor's Property). Linear Feet.
- B. Item No. 347113.26-2 Type 31-S Guide Rail. Linear Feet.
- C. Item No. 347113.26-3 Remove Terminal Sections. Each.
- D. Item No. 347113.26-4 Terminal Section, Single. Each.

4.2 BASIS OF PAYMENT

- A. Payment shall be made at the contract unit price for the unit of measurement specified above. No additional payment will be made for this work.

END OF SECTION 347113.26