



REQUESTS BIDS
for
CONSTRUCTION
of
THE DELAWARE RIVER TRAIL –
Washington Avenue to Spring Garden Street

Mandatory Pre-Proposal Meeting	17 September 2019, 10:00AM EST
Questions Due	4 October 2019
Proposals Due	18 October 2019, 5:00 EST

DRWC invites bids for Construction Services for the Delaware River Trail and will accept proposals until 18 October 2019 at 5:00pm EST at the offices of the Delaware River Waterfront Corporation, 121 N. Columbus Boulevard, Philadelphia, PA 19106. A Mandatory Pre-Proposal Meeting will be held at the same offices on 17 September 2019 at 10:00am EST. Any questions pertaining to this Request will be submitted in writing to either cdougherty@drwc.org or 121 N. Columbus Boulevard Philadelphia, PA no later than 5:00pm EST on 4 October 2019. Answers will be returned 27 September 2019.

**DELAWARE RIVER TRAIL ON-ROAD SECTION –
WASHINGTON AVENUE TO SPRING GARDEN ST.
REQUEST FOR CONSTRUCTION PROPOSALS
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BID ADVERTISEMENT
Request for Bids

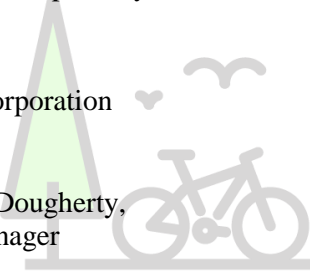
Project: Delaware River Trail: On-Road Section – Washington Avenue to Spring Garden Street

DELAWARE RIVER WATERFRONT CORPORATION (DRWC) INVITES BIDS FOR THE CONSTRUCTION OF THE DELAWARE RIVER TRAIL – ON-ROAD SECTION (THE “TRAIL”) TO BE CONSTRUCTED ALONG THE EASTERN SIDE OF COLUMBUS BOULEVARD FROM WASHINGTON AVENUE TO SPRING GARDEN STREETS, IN PHILADELPHIA, PA. Bids are invited for the following Contract in connection with the construction of the Trail in accordance with the 80 percent completed plans and specifications prepared by NV5.

There will be a mandatory pre-bid meeting at the Offices of the DRWC on **17 September 2019, 10:00am EST** (a representative of the contractor or a sub-contractor must attend the meeting). Additional questions regarding the project should be submitted to Christopher R. Dougherty via email at cdougherty@drwc.org by **5:00 pm EST 4 October 2019**. Responses to all questions will be distributed to all firms by 11 October 2019. Bids will be received at: 121 N. Columbus Blvd., Philadelphia, PA. 19106 until **5:00 PM EST ON 18 October 2019**. Bids will not be opened publicly.

Owner:

Delaware River Waterfront Corporation
121 N. Columbus Blvd.
Philadelphia, PA 19106
Attn: Christopher R. Dougherty,
Planner & Project Manager



Lead Design Consultant:

Michael Connor, PE, LEED AP
NV5
27 Union Square West, 4th Floor
New York, NY 10003-3366

Delaware River Trail

Philadelphia Office:
1315 Walnut St. Ste 900
Philadelphia, PA 19107

I. GENERAL INFORMATION

The Delaware River Waterfront Corporation (DRWC) invites qualified Contractors to furnish bids for **CONSTRUCTION SERVICES** of the Delaware River Trail based on the 80 percent complete Construction Documents provided with this Request. In addition to this, DRWC invites bids for the demolition of the Pennsylvania side aerial tramway tower according to the directions herein.

The Construction Partner will work collaboratively with DRWC, its Owner's Representative and its Design Consultants to provide limited value engineering, construction phasing planning and perform any additional advance coordination in the period leading up to the issuance of a Notice to Proceed. Pending a critical review by regulatory agencies, DRWC will produce a fully-permitted 100 percent completed Construction Documents by the 3rd Quarter of 2019.

Due to the complexity of this project, DRWC urges all potential Contractors to read these instructions completely and carefully. An acceptable proposal will, at minimum, contain the following:

- 1.) A Bid for Trail Construction Based on 80 percent complete Construction Documents;
- 2.) An Itemized Bid Form;
- 3.) A Bid for Demolition of the Pennsylvania Tramway at Penn's Landing as per the 70 percent complete Construction Documents;
- 4.) Draft Construction Sequence;
- 5.) Narrative of Qualifications;
- 6.) Proof of Insurance & Bonding;
- 7.) Draft List of Contractor's Subcontractors;
- 8.) M/W/DBE Solicitation & Commitment Forms

Hard copies of responses will be received until 18 October 2019, at 5:00pm EST.

II. DEFINITIONS

2.1 **PURPOSE.** This request for proposal (RFP) sets forth the information and requirements for preparing and submitting to the Delaware River Waterfront Corporation (the "Corporation" or "DRWC") proposals for providing Construction Services to the Corporation. This RFP, with any bulletins, contains the only instructions governing the proposal and material to be included therein; a description of the service to be provided; requirements which must be satisfied to be eligible for consideration; general evaluation criteria; and other requirements to be met by each proposal.

2.2 **ISSUING OFFICE & PROJECT ADMINISTRATOR.** The sole point of contact for the Corporation regarding the RFP is:

Christopher R. Dougherty, Planner & PM

Delaware River Waterfront Corporation

121 N. Columbus Boulevard

Philadelphia, PA 19106

Phone: (215) 629-3200

2.3. PROJECT. DRWC is a nonprofit corporation organized exclusively for the benefit of the City of Philadelphia and its citizens. DRWC acts as the steward of the Delaware River waterfront to provide a benefit to all of the citizens and visitors of the City. The fundamental purpose of DRWC is to design, develop and manage the central Delaware River waterfront in Philadelphia between Oregon and Allegheny Avenues. DRWC intends to transform the central Delaware River waterfront into a vibrant destination location for recreational, cultural, and commercial activities for the residents and visitors of Philadelphia. As part of its mission, the Corporation has been authorized and empowered by the City of Philadelphia (the City) to develop that certain portion of the central Delaware River waterfront trail from Washington Avenue in the south to Spring Garden Street in the north in Philadelphia, PA (hereinafter, the "Project").

2.4. TYPE OF CONTRACT. DRWC will enter into one contract:

b. "Construction Form Agreement". DRWC reserves the right to negotiate with bidders whose proposals, as to price and other factors, are considered qualified, responsible and capable of performing the work required.

2.5. SELECTION/REJECTION. The Corporation may select or reject any and all proposals, or may negotiate separately with competing proposers in accordance with Part 4 of this RFP.

2.6. INCURRING COSTS. The Corporation is not liable for any costs associated with the RFP incurred by proposers.

2.7. MANDATORY SITE VISIT/PRE-PROPOSAL CONFERENCE. Will be held 17 September 2019, 10:00am EST at the offices of the Delaware River Waterfront Corporation.

2.8. AMENDMENTS. Answers or modifications of the contents of the RFP are not official unless issued in writing by the Corporation. All revisions to the RFP will be made by written Bulletin. Such bulletins are the only binding revisions. Oral or informal communication are not considered binding.

2.9. RESPONSE DATE. To be considered, proposals must be received at the issuing office on or before 18 October 2019 no later than 5:00 pm. Proposals must conform to the content and format requirements described in Section V. of the RFP. Any other information thought to be relevant, but not applicable to the enumerated categories, should be provided. Three (3) copies (hard copy) of the entire proposal must be submitted to the issuing office. One (1) copy is to be submitted in electronic format (CD ROM, flash drive). Do not submit proposals via any filesharing platforms. Proposal must be signed by an official authorized to bind the proposer. The proposal must remain valid for no less than thirty (30) calendar days. Late or incomplete proposals will not be accepted regardless of the reason.

2.10. ORAL PRESENTATION. The Corporation may select from proposals received up to three (3) proposals for oral presentations to the Corporation, or a selection committee designated by the Corporation. The final selection of one (1) bidder, to provide /construction services, must demonstrate that it is qualified and can devote the resources necessary to satisfy all contract requirements. A Best and Final Offer must be provided ten (10) days following the oral presentation. Proposers not selected will be notified by the Corporation.

2.12. CONFIDENTIALITY. Proposals will be held in confidence by the Corporation, except for the selected proposal. Proposals may be reviewed and evaluated by any person, other than competing proposers, at the discretion of the Corporation. Selection or rejection does not affect that right. All material submitted to the Corporation with the proposal becomes property of the Corporation and will be returned to the proposer only at the Corporation's discretion.

2.13. NEWS RELEASES. News releases and media contacts regarding this project will be made by the Corporation only, unless the Corporation directs otherwise in specific instances.

2.14. INSURANCE. Corporation will require Contractor, its agents, employees and subcontractors to indemnify the Corporation, waive subrogation and provide insurance coverage types and limits in accordance with the requirements of the Form Construction Agreement. Without limiting the generality of the foregoing, Delaware River Waterfront Corporation, the Redevelopment Authority, the City of Philadelphia and the Commonwealth of Pennsylvania are to be named as additional insureds on the General Liability Insurance Policy. Also, an endorsement is required stating that the coverage afforded to the above entities and their officers, employees, and agents as additional insureds will be primary to any other coverage available to them. Proposals shall be accompanied by an executed “Undertaking of Insurance” on a standard form provided by the bidder’s insurance company stating such company’s intention to provide insurance to the bidder in accordance with the insurance requirements of the Form Construction Agreement.

2.15 SECURITY DEPOSIT. Proposals shall be accompanied by a security deposit in the form of Bid Bond or Certified Check in the amount of ten (10%) percent of the Bid Sum, made out to DRWC. Proposals shall include the cost of the security deposit in the Bid Sum. After a bid has been accepted, security deposits will be returned to the unsuccessful bidders. The security deposit will be returned to the accepted bidder after delivery to DRWC of the required Performance and Payment Bond.

2.16 SPECIFICATIONS. Selected bidder also must be able to comply with the Project Specifications and Special Provisions attached hereto and incorporated herein as Attachment A (“Project Specifications”) and Attachment B (“Special Provisions”).

2.17 OWNER’S REPRESENTATIVE. Representative selected by DRWC through a separate and parallel procurement process. The Owner’s Representative will be the primary day-to-day point of contact between Owner, Designer and the Construction Partner.

2.18 DESIGN CONSULTANT. Michael Connor, PE, LEED AP, NV5, 1315 Walnut St. Ste 900 Philadelphia, PA 19107

III. PROJECT CONTEXT & BACKGROUND

The Delaware River Waterfront Corporation exists to expand public access to Philadelphia’s waterfront through implementation of the publicly-informed *Master Plan for the Central Delaware*. This plan calls for a series of public open space “nodes”, improved connections back to neighborhoods and a single riverfront multiuse trail from Oregon Avenue to Allegheny Avenue. Currently, DRWC is completing trail upgrades at the north and south of the project area, along the river’s edge. As a quasi-government 501c3 non-profit, the Delaware River Waterfront Corporation plans, designs and builds a host of streetscapes, parks and other amenities on behalf of the City of Philadelphia’s residents and visitors.

The Delaware River Trail – Central Section will be constructed between Washington Avenue in the south and Spring Garden Street in the north. At Spring Garden St., the trail will connect with the already-completed Penn Street Trail. At Washington Avenue, the trail will connect with an off-road section of trail to Pier 70. This project will involve the extensive demolition and reconstruction of the eastern curb

FIGURE 1. DRT On-Road - Typical Section – Dockside Residences



line of Columbus Boulevard (SR 2001) westward from its current location to roughly the western side of the existing northbound bike lane. Moving this curb line westward and occupying parking and bicycle lanes will afford more space for a planted buffer, a bi-directional cycle track, solar lighting and a pedestrian footway. In most cases, the vehicular travel way will not be affected by our work. With nearly all work occurring in the SR right of way abutting major port facilities, the selected Construction Partner, along with the Owner's Representative, will coordinate extensively with PennDOT and the Philadelphia Department of Streets. Additional coordination with the Philadelphia Water Department, private residential communities, private businesses, United States Coast Guard Marine Security Office, Philadelphia Regional Port Authority, CONRAIL, PECO, PGW and telecom providers is also expected along this corridor.

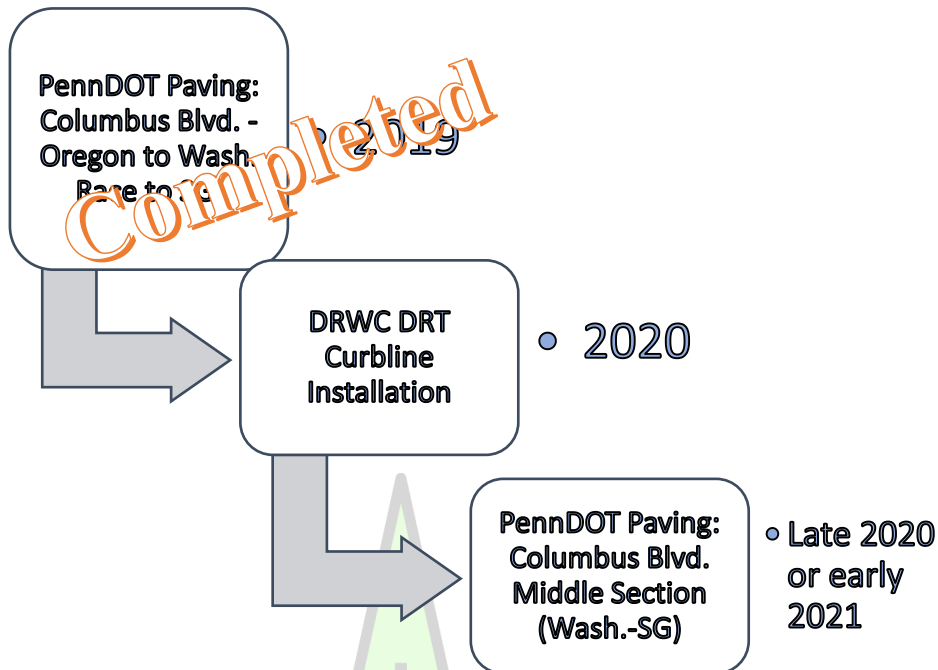
IV. SPECIAL PROJECT CONDITIONS

DRWC wishes to make all proposers aware of the following special terms and conditions for this project. Please read these carefully as they place obligations on the Construction Partner with respect to project timing, coordination and public relations.

- **Coordination with PennDOT Resurfacing Project**

A full milling and repaving of Columbus Boulevard was scheduled for spring 2019. At DRWC's request, the portion of this contract between Washington Avenue and Spring Garden Street was removed pending

the reconstruction of the curblines associated with the DRT On-Road Project. It is anticipated the remainder of this repaving will occur in the 2nd or 3rd Quarter of 2020. **Therefore, the point of interface between these two projects is the new extent of curblines which must be installed before the resurfacing project.**



With this remaining paving work to occur in 2020, we are asking prospective Construction Partners to sign an Acknowledgment of Construction Sequence Form which binds the Construction Partner to prioritizing the curblines construction at the earliest possible date.

- **Changes to Roadway Dimensions**

To better accommodate the trail and reduce mixing of bicycles and pedestrians, PennDOT has allowed for the modification of the travelway/curblines in the vicinity of Callowhill Street. Prospective Construction Partners should be aware of these zones.

- **Central Access Philadelphia (“CAP”) Project**

A portion of the project will pass underneath the future site of the Central Access Philadelphia “CAP” Project which will create a new “lid” park overtop I-95 from Chestnut to Walnut Streets from Front Street to the Great Plaza on Penn’s Landing. Major work on the CAP is scheduled to begin in late 2021. The trail should be completed well prior to the start of construction and no substantial coordination between the two projects is expected.

- **Residential and Commercial Neighbors**

This project is to be built in its entirety in the legal Right-of-Way of Columbus Boulevard as defined by PennDOT. As such, we have not occupied nor acquired any private property for trail purposes. Nevertheless, our construction impacts to adjacent installations, port facilities, residential communities, business and DRWC’s own operations must be carefully mitigated. Contractors are to be especially attuned to impacts affecting the residences at Piers 3 and 5 and Dockside Condominiums or the residents’ ingress and egress of the buildings. Jobsite cleanliness will also be mandatory.

- **Demolition of the Pennsylvania Tower of Aerial Tramway**

DRWC also invites bids for the demolition of the Pennsylvania tower of the former aerial tramway at Penn's Landing. Contractor will develop costs to secure all permits, maintain and protect pedestrian and vehicular traffic and will establish a new construction entrance to better facilitate demolition. Contractor will also provide temporary demolition support (via signed/sealed drawings by professional engineer licensed in PA). At all times, the proposed demolition procedure will be supported by engineering analyses and calculations to verify the strength and stability of the structure. Contractor will saw-cut concrete and reinforcement to the elevation of the relieving platform topping slab and will remove column structure in stages. Contractor will be required to properly dispose of all debris and restore parking lot asphalt to prior condition. See 70 percent complete demolition plans.

V. FORMAT OF RESPONSE

Any questions pertaining to this Request will be submitted in writing to either cdougherty@drwc.org or 121 N. Columbus Boulevard Philadelphia, PA no later than 5:00pm EST on 4 October 2019. Answers will be returned 11 October 2019.

Proposals will contain, at minimum:

- a. Bid for Trail Construction: Based on the 80 Percent Completed Construction Documents and Itemized Bid Sheet provided, Contractors will supply a Bid that represents the current design plans and specifications. Certain elements of design are currently incomplete, such as grading, erosion & sedimentation control, and electrical work.
- b. Itemized Bid Form: Please ensure correspondence between the price stated in your Bid for Construction and the price detailed in your Itemized Bid Form.
- c. Bid for Tramway Tower Demolition: A price to demolish this structure according to the direction above in Section IV.
- d. Draft Construction Sequence: Construction Partners will furnish a sufficiently detailed written or graphical statement of the intended sequencing of the trail construction and demolition of tramway tower. Sequence should account for the special conditions, maintenance & protection of traffic, warm weather waterfront activities, special consideration for residences, businesses and institutions and other logistical realities of the site. Please make this document as detailed, legible and complete as possible.
- e. Narrative of Qualifications: Contractors are asked to submit a written statement of their firm's capabilities to perform the work as scheduled and include summaries of projects involving considerable coordination or logistical complexity and the specific approaches undertaken to achieve project. Please also provide the telephone and email for three individuals who can reference your work.
- f. Draft List of Subcontractors: Contractors will be required to state and describe their anticipated subcontractors' along with any testimonials as to their work.
- g. Solicitation & Commitment Forms: Partners will be asked to provide standard solicitation and demonstration of Subcontractors commitments.

- h. Insurance and Bonding: As stated in Section II.

VI. M/W/DBE PARTICIPATION REQUIREMENTS

Construction Partners should be aware that DRWC seeks to meet or exceed our standing M/W/DBE participation rates of:

- 35 percent, Minority-owned business enterprises;
- 25 percent, Women-owned business enterprises;
- 15 percent, Disabled-owned business enterprises.

VII. EVALUATION

In order to provide DRWC and the City with a best value, proposals will be evaluated according to the quality and competitiveness of the following:

- Bid for Trail Construction Services (15 percent) – Construction Partners should represent real costs accurately and completely based on the level of detail provided in the 80 percent complete CD set.
- Bid for demolition of the Pennsylvania Tower of Aerial Tramway at Penn’s Landing (5 percent);
- Itemized Bid Form (20 percent) – A complete, itemized bid form will be returned herewith.
- Draft Construction Sequence (25 percent) – Contractors should present a written or graphical description of the specific construction approach to be undertaken. This account must also accommodate or consider all Special Conditions noted above. Partners should discuss their MPT arrangements, maintenance of pedestrian and bike facilities and maintenance of vehicular travelways. Identify any problematic elements of design. Describe your overall approach to site maintenance and how your culture of safety will improve project delivery.
- Narrative of Qualifications (20 percent) – Contractors should present a written narrative explaining their fitness for the Construction Phases. At minimum this account will contain:
 - List of major personnel, skills and project experience with efforts >\$10m
 - List of commensurate projects along with reference to excellence in project delivery or conversely, lessons learned. Complex, multi-phased heavy highway and bicycle facility construction experiences in an urban context should be highlighted.
 - A description of any past construction challenges planned or unforeseen along with distinctive approaches or organizational structures undertaken to achieve a successful resolution. Issues involving construction impact mitigation should also be highlighted.
- List of Subcontractors (10 percent) Partner will list proposed or secured sub-contractors along with reference to specific instances where the sub-contractor worked with the Prime.
 - Tentative list of names, personnel and M/W/DBE status;
 - List any references or exemplary projects.

- M/W/DBE Participation (5 percent) For the purpose of evaluating proposals, state all M/W/DBE firms committed. Please submit all Solicitation & Commitment forms and percentages of total contract based off your Preliminary Bid for Construction.

IX. PROCUREMENT SCHEDULE

RFP Issuance:	9 September 2019
Mandatory Pre-Bid Meeting:	17 September 2019, 10:00am EST
Questions Due:	4 October 2019, 5:00pm EST
Answers Furnished:	11 October 2019
Proposals Due:	18 October 2019, 5:00pm EST
Interviews:	21-23 October 2019
Selection of Partner:	24 October 2019



Delaware River Trail



Delaware River Trail

TRAIL CONSTRUCTION BID PROPOSAL FORM

PLEASE NOTE: IN ADDITION TO THIS FORM, A COMPLETE PROPOSAL MUST ALSO INCLUDE: A COMPLETED BID ITEM LIST, A DEMOLITION BID, A DRAFT TRAIL CONSTRUCTION SEQUENCE NARRATIVE, A STATEMENT OF QUALIFICATIONS AND A STATEMENT OF PROPOSED SUBCONTRACTORS SOLICITATION FOR PARTICIPATION & COMMITMENT FORMS, CAMPAIGN CONTRIBUTION DISCLOSURES AND ACKNOWLEDGEMENTS OF ANY ADDENDA (IF APPLICABLE),

PROJECT TITLE: DELAWARE RIVER TRAIL – ON-ROAD – WASHINGTON AVE. TO SPRING GARDEN ST.

TO: DELAWARE RIVER WATERFRONT CORPORATION
ATTN: CHRISTOPHER R. DOUGHERTY
121 N. COLUMBUS BOULEVARD
PHILADELPHIA PA 19106

BID OPENING DATE: [18 OCTOBER 2019]

- A. I/We, the undersigned Bidder hereby agree that the prices herein contained in this Bid Proposal will be used for evaluation purposes in procuring a Contractor.
- B. PROJECT SCHEDULE
 - a. We, the undersigned agree to complete this project within eighteen to twenty-four months.
- C. PERFORMANCE OF PRECONSTRUCTION WORK BY CONSTRUCTION PARTNER:
I, the undersigned Bidder, shall perform the necessary preconstruction work required to assure rapid mobilization;
- D. I certify that I have received, read and understand the 80 Percent Completed Construction Documents and have read and understand the description of this procurement process, all special conditions and any addenda, including the Minutes of the Pre-Bid meeting, and have a good understanding of the project.
- E. I certify that I have the required insurance and project bonding and can provide acceptable insurance certificates if I am the successful bidder.
- F. BID

Our Preliminary Bid for this project as stated here and in our Itemized Trail Bid:

1. \$ _____

IF BIDDER IS AN INDIVIDUAL OR PARTNERSHIP, FORM MUST BE DATED AND SIGNED HERE

This _____ Day of _____, 2019

Signature of Owner or Partner

Business Name of Bidder

Type of Print Name and Title

Address, including Zip Code

Telephone Number

IF BID IS BY A CORPORATION, THIS FORM MUST BE DATED AND SIGNED HERE BY A) THE PRESIDENT OR VICE PRESIDENT AND B) COUNTERSIGNED BY THE SECRETARY, ASSISTANT SECRETARY, TREASURER, OR ASSISTANT TREASURER AND THE CORPORATE SEAL SHALL BE AFFIXED. IF THIS FORM IS NOT SO SIGNED, A DULY CERTIFIED CORPORATE RESOLUTION AUTHORIZING FORM OR EXECUTION USED MUST BE ATTACHED TO THE BID EXECUTED BY THE DULY CERTIFIED INDIVIDUAL.

This _____ Day of _____, 2019

Corporate Seal

Corporate or Business Name of Bidder

Address, Including Zip Code

Telephone Number

Signature of President

Signature of Secretary

Type or Print Name and Title

Type or Print Name and Title

Federal Employer Identification Number:



CONSTRUCTION BID

Delaware River Trail - Section 2 (Washington to Spring Garden)

Contractor: _____

Date: _____

Item No	Description	Quantity	Unit	Unit Cost	Total Cost
Grading & Pavement					
0201-0001	CLEARING AND GRUBBING	1	LS	\$	\$
0203-0001	CLASS 1 EXCAVATION	4,547	CY	\$	\$
0203-0004	CLASS 1B EXCAVATION	6,939	CY	\$	\$
0204-0100	CLASS 3 EXCAVATION	427	CY	\$	\$
0204-0150	CLASS 4 EXCAVATION	487	CY	\$	\$
0212-0001	GEOTEXTILE, CLASS 1	9,180	LF	\$	\$
0301-0004	PLAIN CEMENT CONCRETE BASE COURSE, 8" DEPTH	2,193	SY	\$	\$
0350-0104	SUBBASE 4" DEPTH (NO. 2A)	1,437	SY	\$	\$
0350-0106	SUBBASE 6" DEPTH (NO. 2A)	26,899	SY	\$	\$
0411-0385	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, < 0.3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-L	9,120	SY	\$	\$
0411-0681	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 10 TO < 30 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	1,655	SY	\$	\$
0411-6300	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 3" DEPTH	9,120	SY	\$	\$
0411-6650	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, 10 TO < 30 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	3,132	SY	\$	\$
0411-6670	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, 10 TO < 30 MILLION ESALS, 19.0 MM MIX	158	TON	\$	\$
0460-0002	BITUMINOUS TACK COAT	528	GAL	\$	\$
0491-0012	MILLING OF BITUMINOUS PAVEMENT SURFACE, 1 1/2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR	562	SY	\$	\$
0501-0020	PLAIN CEMENT CONCRETE PAVEMENT, 4" DEPTH	1,666	SY	\$	\$
0610-7002	6" PAVEMENT BASE DRAIN	9,180	LF	\$	\$
0624-0001	RIGHT-OF-WAY FENCE, TYPE 1	52	LF	\$	\$
0630-0001	PLAIN CEMENT CONCRETE CURB	12,101	LF	\$	\$
0676-0001	CEMENT CONCRETE SIDEWALK	11,962	SY	\$	\$
0695-0002	DETECTABLE WARNING SURFACE, CAST IRON	1,112	SF	\$	\$
0811-0003	TEMPORARY PROTECTIVE FENCE	3,700	LF	\$	\$
9000-1000	CONCRETE UNIT PAVERS	1,023	SY	\$	\$
9000-1001	ADA DIRECTIONAL BLOCK, 12" WIDE	6,246	LF	\$	\$
9000-1002	PLAIN CEMENT 6" CONCRETE HEADER	20,209	LF	\$	\$
9000-1003	CEMENT CONCRETE DRIVEWAY, 8" DEPTH	1,369	SY	\$	\$
9000-1004	6" CURB STOP	17	EACH	\$	\$
9000-1005	SALVAGE BRICK AND BLUESTONE AT LOMBARD FOR PLAZA TIE IN	1	LS	\$	\$
9000-1006	GRANITE PAVERS ON CONCRETE SUB-BASE	4,031	SY	\$	\$
9000-1007	PARGE AND PAINT BULKHEAD FACE AT SIDEWALK	350	SF	\$	\$
9000-1009	RAMP MODIFICATIONS AT 188+40	1	LS	\$	\$
9000-1010	ACCESS GATE FOR OPERATIONS LOT	1	LS	\$	\$
9000-1011	GRANITE CLAD CONCRETE STEM WALL	195	LF	\$	\$
9000-1012	GRANITE STEPS	78	LF	\$	\$
9000-1013	BRICK PAVERS ON CONCRETE SUBBASE	4,795	SY	\$	\$
9000-1014	PRECAST PANEL CLAD CONCRETE STEM WALL	500	LF	\$	\$
9000-1015	PRECAST CONCRETE STEPS	470	LF	\$	\$
9000-1016	CAST IN PLACE CONCRETE STEPS	35	LF	\$	\$
9000-1017	POURED IN PLACE CONCRETE CHEEKWALL	57	LF	\$	\$
9000-1018	PAINT EXISTING METAL FENCING	198	LF	\$	\$
9000-1019	CEMENT CONCRETE DRIVEWAY 8" DEPTH, COLOR TINT	646	SY	\$	\$
9000-1020	MODIFICATIONS TO LA VERANDA CANOPY	1	LS	\$	\$
9000-1021	GRANITE COBBLE ON CONCRETE	60	SY	\$	\$
9000-1022	ROUGH GRANITE COBBLE	135	SY	\$	\$
9000-1023	STABILIZED STONE FINES	15	SY	\$	\$
9000-1024	TEMPORARY RUBBER MODULAR CURB	150	LF	\$	\$
Subtotal, Grading & Pavement \$					
Signage & Pavement Marking					
0931-0003	POST MOUNTED SIGNS, TYPE B, STEEL SQUARE POST	245	SF	\$	\$
0935-0001	POST MOUNTED SIGNS, TYPE F	171	SF	\$	\$
0937-0300	FLEXIBLE DELINEATOR POST, SURFACE-MOUNT TYPE SM-1, WHITE POST WITH WHITE SHEETING	9	EACH	\$	\$
0945-0001	RESET POST MOUNTED SIGNS, TYPE F	65	EACH	\$	\$
0960-0001	4" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	1,580	LF	\$	\$
0960-0002	4" YELLOW HOT THERMOPLASTIC PAVEMENT MARKINGS	3,316	LF	\$	\$
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	825	LF	\$	\$

Item No	Description	Quantity	Unit	Unit Cost	Total Cost
0960-0120	WHITE HOT THERMOPLASTIC LEGEND, "SPEED HUMP SYMBOL", 6' - 0" X 6' - 0"	28	EACH	\$	\$
0960-0224	WHITE HOT THERMOPLASTIC LEGEND, "LEFT ARROW", 12' - 0" X 3' - 0"	1	EACH	\$	\$
0960-0226	WHITE HOT THERMOPLASTIC LEGEND, "THRU AND RIGHT ARROW", 20' - 0" X 3' - 7"	1	EACH	\$	\$
0960-0255	WHITE HOT THERMOPLASTIC LEGEND, "YIELD LINE", 12" X 18" TRIANGLE	198	LF	\$	\$
0963-0004	4" PAVEMENT MARKING REMOVAL	2,645	LF	\$	\$
0971-0001	REMOVE POST MOUNTED SIGNS, TYPE B	36	EACH	\$	\$
0975-0001	REMOVE POST MOUNTED SIGNS, TYPE F	69	EACH	\$	\$
9000-1100	RELOCATE HISTORICAL SIGN	1	EACH	\$	\$
9000-1200	GREEN METHYL METHACRYLATE PAVEMENT MARKING	5,018	SF	\$	\$
9000-1201	6" WHITE HOT THERMOPLASTIC PAVEMENT MARKING RUMBLE STRIP	80	LF	\$	\$
9000-1203	WHITE PREFORMED THERMOPLASTIC LEGEND, "BICYCLE WITH RIDER", 6' - 0" X 3' - 4"	113	EACH	\$	\$
9000-1204	WHITE PREFORMED THERMOPLASTIC LEGEND, "STRAIGHT ARROW", 6' - 0" X 2' - 0"	111	EACH	\$	\$
9000-1205	WHITE PREFORMED THERMOPLASTIC LEGEND, BIKE LANE TURN ARROW	15	EACH	\$	\$
9000-1206	WHITE PREFORMED THERMOPLASTIC LEGEND, SHARED LANE MARKING	2	EACH	\$	\$
9000-1207	BORDER CONTRAST PREFORMED THERMOPLASTIC LEGEND, PEDESTRIAN	4	EACH	\$	\$
9000-1208	BLOCK CONTRAST PREFORMED THERMOPLASTIC LEGEND, BIKES YIELD TO PEDS	4	EACH	\$	\$
9000-1209	BLOCK CONTRAST PREFORMED THERMOPLASTIC LEGEND, LOOK FOR BIKES	10	EACH	\$	\$
9000-1210	WHITE PREFORMED THERMOPLASTIC LEGEND, "BICYCLE DETECTOR", 3' - 7" X 12"	1	EACH	\$	\$
Subtotal, Signage & Pavement Marking \$					
Traffic Signals, Lighting, & Electrical					
0910-4114	AWG 4 UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	55,338	LF	\$	\$
0936-0200	STRUCTURE MOUNTED FLAT SHEET ALUMINUM SIGNS	76	SF	\$	\$
0941-0001	RESET POST MOUNTED SIGNS, TYPE B	2	EACH	\$	\$
4951-0125	TRAFFIC SIGNAL SUPPORT, 25' MAST ARM	1	EACH	\$	\$
4951-0135	TRAFFIC SIGNAL SUPPORT, 35' MAST ARM	1	EACH	\$	\$
4951-2145	TRAFFIC SIGNAL SUPPORT, 45' MAST ARM	1	EACH	\$	\$
4951-2150	TRAFFIC SIGNAL SUPPORT, 50' MAST ARM	1	EACH	\$	\$
0954-0152	TRENCH AND BACKFILL, TYPE II	11,027	LF	\$	\$
0954-0153	TRENCH AND BACKFILL, TYPE III	618	LF	\$	\$
0954-0201	SIGNAL CABLE, 14 AWG, 3 CONDUCTOR	320	LF	\$	\$
0954-0202	SIGNAL CABLE, 14 AWG, 5 CONDUCTOR	1,646	LF	\$	\$
0954-0203	SIGNAL CABLE, 14 AWG, 7 CONDUCTOR	261	LF	\$	\$
0954-0600	UNINTERRUPTIBLE POWER SUPPLY (UPS)	1	EACH	\$	\$
0955-3208	VEHICULAR SIGNAL HEAD, THREE 12" SECTIONS	18	EACH	\$	\$
0955-3209	VEHICULAR SIGNAL HEAD, FOUR 12" SECTIONS	4	EACH	\$	\$
0955-3722	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, TYPE A	37	EACH	\$	\$
0956-0500	PEDESTRIAN PUSH BUTTON	16	EACH	\$	\$
0956-0700	VIDEO DETECTOR	5	EACH	\$	\$
9000-1301	TRAFFIC SIGNAL SUPPORT, 20' C-POST	23	EACH	\$	\$
9000-1302	TRAFFIC SIGNAL SUPPORT, D-POLE	7	EACH	\$	\$
9000-1303	TRAFFIC SIGNAL CABLE, 30 CONDUCTOR	1,744	LF	\$	\$
9000-1304	PVC TRAFFIC CONDUIT, 3"	1,549	LF	\$	\$
9000-1305	PVC TRAFFIC CONDUIT ELBOW, 3"	86	EACH	\$	\$
9000-1306	STANDARD FOUNDATION, TYPE 1 (35' OR LESS)	9	EACH	\$	\$
9000-1307	STANDARD FOUNDATION, TYPE 2 (40' TO 45')	1	EACH	\$	\$
9000-1308	STANDARD FOUNDATION, TYPE 3 (50' TO 60')	1	EACH	\$	\$
9000-1309	SOLID STATE LOCAL CONTROLLER, TYPE 333 SD CABINET	1	EACH	\$	\$
9000-1310	6' STREET LIGHT BRACKET ARM	8	EACH	\$	\$
9000-1311	LED ROADWAY LUMINAIRE REPLACEMENT	13	EACH	\$	\$
9000-1312	BICYCLE VIDEO DETECTION	1	EACH	\$	\$
9000-1313	PEDESTRIAN SIGNAL HEAD MODIFICATION	1	EACH	\$	\$
9000-1314	FURNISH & INSTALL METRO STREET NAME SIGN 18" X 48"	24	EACH	\$	\$
9000-1315	REMOVAL OF SELECT TRAFFIC SIGNAL EQUIPMENT (PER INTERSECTION)	8	EACH	\$	\$
9000-1316	REMOVAL OF SELECT TRAFFIC SIGNAL EQUIPMENT - WASHINGTON	1	EACH	\$	\$
9000-1401	PVC STREET LIGHT CONDUIT, 2"	10,508	LF	\$	\$
9000-1402	PVC STREET LIGHT CONDUIT ELBOW, 2"	190	EACH	\$	\$
9000-1403	PVC INTERCONNECT CONDUIT, 4"	20,226	LF	\$	\$
9000-1404	PVC INTERCONNECT CONDUIT ELBOW, 4"	32	EACH	\$	\$
9000-1405	STEEL TRAFFIC CONDUIT, 2" UNDER TRACK	173	LF	\$	\$
9000-1406	FLEXIBLE FABRIC INNERDUCT	10,113	LF	\$	\$
9000-1407	COMPOSITE JUNCTION BOX, 12"x18"x12"	7	EACH	\$	\$

Item No	Description	Quantity	Unit	Unit Cost	Total Cost
9000-1408	CIRCULAR COMPOSITE JUNCTION BOX, 39"ODx18"	15	EACH	\$	\$
9000-1409	FIBER OPTIC CABLE, UNDERGROUND 12 STRAND	620	LF	\$	\$
9000-1410	FIBER OPTIC CABLE, UNDERGROUND 48 STRAND	10,812	LF	\$	\$
9000-1411	LED ROADWAY LUMINAIRE	79	EACH	\$	\$
9000-1412	PHILADELPHIA STREET LIGHT POLE	70	EACH	\$	\$
9000-1413	STREET LIGHT POLE FOUNDATION, 15" BOLT CIRCLE	70	EACH	\$	\$
9000-1414	UNDERGROUND ELECTRICAL SERVICE CONNECTION	10	EACH	\$	\$
9000-1415	PECO UTILITY SERVICES	1	LS	\$	\$
9000-1416	REMOVE STREET LIGHT POLE	75	EACH	\$	\$
9000-1417	REMOVE FOUNDATION	76	EACH	\$	\$
9000-1418	UTILITY MANHOLE MODIFICATION	10	EACH	\$	\$
9000-1419	TESTING OF ENTIRE LIGHTING SYSTEM	1	LS	\$	\$
9000-1420	SERVICE DISCONNECT	14	EACH	\$	\$
9000-1421	RELOCATE PIER 40 SIGNAGE	1	LS	\$	\$
9000-1422	RELOCATE MOSHULU SIGN	1	LS	\$	\$
9000-1423	RELOCATE LIGHT POLES IN DRWC PARKING LOT	3	EACH	\$	\$
9000-1424	RELOCATE HILTON SIGN AT DOCK STREET	1	LS	\$	\$
9000-1425	RELOCATE BUS SHELTER	1	EACH	\$	\$
9000-2015	PLAZA LIGHT POLE	3	EACH	\$	\$
9000-2016	PEDESTRIAN LIGHT POLE (MIRA) WITH SOLAR LUMINAIRE (DELIVER AND INSTALL ONLY, OWNER SUPPLIED ITEM)	135	EACH	\$	\$
9000-2017	PEDESTRIAN LIGHT POLE (CHAMP) WITH SOLAR LUMINAIRE (DELIVER AND INSTALL ONLY, OWNER SUPPLIED ITEM)	15	EACH	\$	\$
9000-2018	TRENCHING AND WIRING FOR NEW PLAZA LIGHT POLES	200	LF	\$	\$
Subtotal, Traffic Signals, Lighting & Electrical \$					
Utilities					
0605-3010	TYPE 4 MANHOLE, STORM WATER, HEIGHT < />=5'	13	EACH	\$	\$
0606-0150	GRADE ADJUSTMENT OF EXISTING MANHOLES	60	SET	\$	\$
0606-0160	GRADE ADJUSTMENT OF EXISTING WATER VALVES	30	SET	\$	\$
0606-0161	GRADE ADJUSTMENT OF EXISTING GAS VALVES	10	SET	\$	\$
0606-0162	GRADE ADJUSTMENT OF EXISTING UTILITY BOXES	65	SET	\$	\$
9000-1500	15" VITRIFIED CLAY PIPE LATERAL	1,416	LF	\$	\$
9000-1501	18" X 15" RCP WYE BRANCH	49	EACH	\$	\$
9000-1502	4' PRECAST CATCH BASIN WITH INLET TRAP	98	EACH	\$	\$
9000-1503	6' PRECAST CATCH BASIN WITH INLET TRAP	3	EACH	\$	\$
9000-1504	4' HIGHWAY GRATE INLET TOP	52	EACH	\$	\$
9000-1505	6' HIGHWAY GRATE INLET TOP	3	EACH	\$	\$
9000-1506	TRENCH DRAIN	39	LF	\$	\$
9000-1507	INLET SPREAD FOOTING	60	EACH	\$	\$
9000-1508	INLET PILE SUPPORT	41	EACH	\$	\$
9000-1509	FIRE HYDRANT	21	EACH	\$	\$
9000-1510	18" RCP SEWER PIPE	1,031	LF	\$	\$
9000-1511	SADDLE CONNECTION TO EX. SEWER	19	EACH	\$	\$
9000-1512	4' CITY INLET TOP	39	EACH	\$	\$
9000-1513	24"x15" RCP WYE BRANCH	15	EACH	\$	\$
9000-1514	FIRE HYDRANT REMOVAL	22	EACH	\$	\$
Subtotal, Utilities \$					
Site Furnishings					
9000-2000	LARGE BENCH	7	EACH	\$	\$
9000-2001	BACKED MEDIUM BENCH	14	EACH	\$	\$
9000-2002	SMALL BENCH	6	EACH	\$	\$
9000-2003	CANOPY BENCH	6	EACH	\$	\$
9000-2004	BICYCLE SHELTER	1	EACH	\$	\$
9000-2005	BIKE RACK	13	EACH	\$	\$
9000-2006	BICYCLE MAINTENANCE STATION	1	EACH	\$	\$
9000-2007	ECO COUNTER ECO DISPLAY CLASSIC WITH URBAN MULTI OPTION	1	LS	\$	\$
9000-2008	LITTER RECEPTACLE	16	EACH	\$	\$
9000-2009	4' LONG PLANTER	2	EACH	\$	\$
9000-2010	6' LONG PLANTER	1	EACH	\$	\$
9000-2011	8' LONG PLANTER	4	EACH	\$	\$
9000-2012	HALF CIRCLE TREE GRATE	10	EACH	\$	\$
9000-2013	HANDRAIL	479	LF	\$	\$
9000-2014	GUARDRAIL	300	LF	\$	\$
Subtotal, Site Furnishings \$					
Landscaping					
0802-0001	TOPSOIL FURNISHED AND PLACED	4,254	CY	\$	\$
0804-0011	SEEDING AND SOIL SUPPLEMENTS - FORMULA B	10	LB	\$	\$
9000-3000	TREES - 3" TO 3 1/2" CAL.	290	EACH	\$	\$
9000-3001	TREES - 4" TO 4 1/2" CAL.	10	EACH	\$	\$
9000-3002	MULTI-TRUNK TREES, 8'-10' HT.	14	EACH	\$	\$
9000-3003	MULTI-TRUNK TREES, 10'-12' HT.	27	EACH	\$	\$

Item No	Description	Quantity	Unit	Unit Cost	Total Cost
9000-3004	CONIFERS, 10'-12' HT.	81	EACH	\$	\$
9000-3005	SHRUBS, #5 CONTAINER	920	EACH	\$	\$
9000-3006	GRASSES AND PERENNIALS, #1 CONTAINER	27,711	EACH	\$	\$
9000-3007	PLUGS, 4" DEEP	43,180	EACH	\$	\$
9000-3008	IRRIGATION RENOVATION (AT HILTON)	1	LS	\$	\$
9000-3009	ROOT BARRIER	2,572	LF	\$	\$
Subtotal, Landscaping					\$
Miscellaneous					
4-1040	ENGINEERING SERVICES (PHILA STREETS DEPT)	30	DAY	\$	\$
4-1041	INSPECTION SERVICES (PHILA STREETS DEPT)	80	DAY	\$	\$
0608-0001	MOBILIZATION	1	LS	\$	\$
0686-0025	CONSTRUCTION SURVEYING, TYPE B	1	LS	\$	\$
0901-0001	MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION	1	LS	\$	\$
9000-5000	EROSION & SEDIMENTATION CONTROL	1	LS	\$	\$
9000-5001	CONRAIL REQUIREMENTS	1	LS	\$	\$
Subtotal, Miscellaneous					\$
Subtotal, Grading & Pavement					\$
Subtotal, Signage & Pavement Marking					\$
Subtotal, Traffic Signals, Lighting & Electrical					\$
Subtotal, Utilities					\$
Subtotal, Site Furnishings					\$
Subtotal, Landscaping					\$
Subtotal, Miscellaneous					\$
TOTAL BID					\$

TRAMWAY TOWER DEMOLITION BID PROPOSAL FORM

PLEASE NOTE: IN ADDITION TO THIS FORM, A COMPLETE PROPOSAL MUST ALSO INCLUDE: A COMPLETED BID ITEM LIST, A DRAFT TRAIL CONSTRUCTION SEQUENCE NARRATIVE, A STATEMENT OF QUALIFICATIONS AND A STATEMENT OF PROPOSED SUBCONTRACTORS, SOLICITATION FOR PARTICIPATION & COMMITMENT FORMS, CAMPAIGN CONTRIBUTION DISCLOSURES AND ACKNOWLEDGEMENTS OF ANY ADDENDA (IF APPLICABLE),

PROJECT TITLE: DEMOLITION OF THE PENN'S LANDING AERIAL TRAMWAY TOWER

TO: DELAWARE RIVER WATERFRONT CORPORATION
ATTN: CHRISTOPHER R. DOUGHERTY
121 N. COLUMBUS BOULEVARD
PHILADELPHIA PA 19106

BID OPENING DATE: [18 OCTOBER 2019]

- A. I/We, the undersigned Bidder hereby agree that the prices herein contained in this Bid Proposal will be used for evaluation purposes in procuring a Contractor.
- B. PROJECT SCHEDULE
 - a. We, the undersigned agree to complete this project within eighteen to twenty-four months.
- C. PERFORMANCE OF PRECONSTRUCTION WORK BY CONSTRUCTION PARTNER:
I, the undersigned Bidder, shall perform the necessary preconstruction work required to assure rapid mobilization;
- D. I certify that I have received, read and understand the 70 percent complete Demolition Documents and have read and understand the project parameters;
- E. I certify that I have the required insurance and project bonding and can provide acceptable insurance certificates if I am the successful bidder.
- F. BID
Our Preliminary Bid for this project as stated here is:
 - 1. \$ _____

IF BIDDER IS AN INDIVIDUAL OR PARTNERSHIP, FORM MUST BE DATED AND SIGNED HERE

This _____ Day of _____, 2019

Signature of Owner or Partner

Business Name of Bidder

Type of Print Name and Title

Address, including Zip Code

Telephone Number

IF BID IS BY A CORPORATION, THIS FORM MUST BE DATED AND SIGNED HERE BY A) THE PRESIDENT OR VICE PRESIDENT AND B) COUNTERSIGNED BY THE SECRETARY, ASSISTANT SECRETARY, TREASURER, OR ASSISTANT TREASURER AND THE CORPORATE SEAL SHALL BE AFFIXED. IF THIS FORM IS NOT SO SIGNED, A DULY CERTIFIED CORPORATE RESOLUTION AUTHORIZING FORM OR EXECUTION USED MUST BE ATTACHED TO THE BID EXECUTED BY THE DULY CERTIFIED INDIVIDUAL.

This _____ Day of _____, 2019

Corporate Seal

Corporate or Business Name of Bidder

Address, Including Zip Code

Telephone Number

Signature of President

Signature of Secretary

Type or Print Name and Title

Type or Print Name and Title

Federal Employer Identification Number:

DELAWARE RIVER TRAIL (SECTION 2) – SPECIAL PROVISIONS

The work to be done under the scheduled items shall comply with the requirements of the corresponding numerical Sections of the most current edition including all addenda of the following Standard Specifications or as per specific requirements shown on the plans or special provisions:

- Pennsylvania Department of Transportation Standard Highway Specifications (Pub 408/2016), Change 6, April 2019
- Pennsylvania Department of Transportation Publications listed in the General Notes of the plans.
- Philadelphia Streets Department Standard Details and Specifications, available at <https://www.philadelphiastreet.com/customer-service/downloads-and-links>

Within Publication 408, wherever references are made to the Commonwealth, the Department or its employees, for the purpose of this contract it shall mean the Delaware River Waterfront Corporation and its corresponding employees, unless otherwise superseded by Law.

PENNDOT AND PHILADELPHIA STREETS DEPARTMENT STANDARD ITEMS

ITEM 4-1040 ENGINEERING SERVICES

- A. This item shall comply with City of Philadelphia Department of Streets Specifications. The City of Philadelphia 5th Survey District shall provide survey services for staking the curb line out on Columbus Boulevard. The contractor shall contact the 5th Survey District at (215) 685-0585, a minimum of 2 weeks prior to the start of work. Preserve all stakes furnished by the Survey District. Survey District resets due to damaged, lost, displaced, or removed stakes and any additional surveying requested by the Contractor is at the Contractor's sole expense. The Surveyor & Regulator may choose to verify and correct at its discretion any stakeouts or completed work elements including roadway improvements performed by the Contractor. Contact the engineer to verify the curb stake locations prior to setting forms. This item is a pre-determined amount to be determined by the Surveyor & Regulator and to be included in the contractor's bid.

ITEM 4-1041 INSPECTION SERVICES

- A. This item shall comply with City of Philadelphia Department of Streets Specifications. The City of Philadelphia shall provide inspection services for paving and related work, to be paid at a cost of \$345 per day. The contractor shall contact the Construction Unit of the Division of Surveys, Design & Construction at (215) 686-5539, a minimum of 2 weeks prior to the start of work. Payment shall be per day.

ITEM 0201-0001 CLEARING AND GRUBBING, LUMP SUM

- A. This item shall comply with Section 201 of the PennDOT Standard Highway Specifications.

ITEM 0203-0001 CLASS 1 EXCAVATION, CUBIC YARD

ITEM 0203-0004 CLASS 1B EXCAVATION, CUBIC YARD

- A. These items shall comply with Section 203 of the PennDOT Standard Highway Specifications.
- B. Class 1 Excavation generally includes all earthwork excavation beyond the existing pavement.
- C. Class 1B Excavation includes all existing pavement to be removed.

ITEM 0204-0100 CLASS 3 EXCAVATION, CUBIC YARD

ITEM 0204-0150 CLASS 4 EXCAVATION, CUBIC YARD

- A. These items shall comply with Section 204 of the PennDOT Standard Highway Specifications.

ITEM 0212-0001 GEOTEXTILE, CLASS 1, LINEAR FOOT

- A. This item shall comply with Section 212 of the PennDOT Standard Highway Specifications.

ITEM 0301-0004 PLAIN CEMENT CONCRETE BASE COURSE, 8" DEPTH, SQUARE YARD

- A. This item shall comply with Section 301 of the PennDOT Standard Highway Specifications.

ITEM 0350-0104 SUBBASE 4" DEPTH (NO.2A), CUBIC YARD

ITEM 0350-0106 SUBBASE 6" DEPTH (NO.2A), CUBIC YARD

- A. These items shall comply with Section 350 of the PennDOT Standard Highway Specifications.

ITEM 0411-0385 SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, < 0.3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-L, SQUARE YARD

ITEM 0411-0681 SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 10 TO < 30 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E

ITEM 0411-6300 SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 3" DEPTH, SQUARE YARD

ITEM 0411-6650 SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, 10 TO < 30 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH

ITEM 0411-6670 SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, 10 TO < 30 MILLION ESALS, 19.0 MM MIX

- A. These items shall comply with Section 411 of the PennDOT Standard Highway Specifications.
- B. Section 110.04 Price Adjustments shall be in effect for these bid items.

ITEM 0460-0002 BITUMINOUS TACK COAT, GALLON

- A. This item shall comply with Section 460 of the PennDOT Standard Highway Specifications.
- B. Section 110.04 Price Adjustments shall be in effect for this bid item.

ITEM 0491-0012 MILLING OF BITUMINOUS PAVEMENT SURFACE, 1 1/2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR, SQUARE YARD

- A. This item shall comply with Section 491 of the PennDOT Standard Highway Specifications.
- B. Areas of milling under 1 1/2" depth shall be quantified under this item.

ITEM 0501-0020 PLAIN CEMENT CONCRETE PAVEMENT, 4" DEPTH, SQUARE YARD

- A. This item shall comply with Section 501 of the PennDOT Standard Highway Specifications.
- B. Weep holes necessary for unit paver drainage shall be considered incidental to this item.

ITEM 0605-3010 TYPE 4 MANHOLE, STORM WATER, HEIGHT < /=5'

- A. This item shall comply with Philadelphia Water Department 1985 Standard Details and Standard Specifications for Sewers.

ITEM 0606-0150 GRADE ADJUSTMENT OF EXISTING MANHOLES, EACH
ITEM 0606-0160 GRADE ADJUSTMENT OF EXISTING WATER VALVES, EACH
ITEM 0606-0161 GRADE ADJUSTMENT OF EXISTING GAS VALVES, EACH
ITEM 0606-0162 GRADE ADJUSTMENT OF EXISTING UTILITY BOXES, EACH

- A. These items shall comply with Section 606 of the PennDOT Standard Highway Specifications, as well as Philadelphia Water Department specifications and requirements of the applicable utility provider.

ITEM 0608-0001 MOBILIZATION, LUMP SUM

- B. This item shall comply with Section 608 of the PennDOT Standard Highway Specifications.

ITEM 0610-7002 6" PAVEMENT BASE DRAIN, LINEAR FOOT

- A. This item shall comply with Section 610 of the PennDOT Standard Highway Specifications.

ITEM 0624-0001 RIGHT-OF-WAY FENCE, TYPE 1

- A. This item shall comply with Section 624 of the PennDOT Standard Highway Specifications.
- B. Height of the fence shall 7 feet tall, and match the height of the adjacent fences.
- C. This item includes all items necessary to construct the fence, including end posts and fabric.

ITEM 0630-0001 PLAIN CEMENT CONCRETE CURB, LINEAR FOOT

- A. This item shall comply with Section 630 of the PennDOT Standard Highway Specifications, with the following exception:
Replace the first sentence of Section 630.3 CONSTRUCTION with:
As shown on the details in the drawings, as specified in Section 501.3, and as follows:

ITEM 0676-0001 CEMENT CONCRETE SIDEWALK, SQUARE YARD

- A. This item shall comply with Section 676 of the PennDOT Standard Highway Specifications, with the following exception:
Payment for this item shall only include the concrete sidewalk. The subbase will be paid separately.

ITEM 0686-0025 CONSTRUCTION SURVEYING, TYPE B, LUMP SUM

- A. This item shall comply with Section 686 of the PennDOT Standard Highway Specifications, with the following exception:
Remove Section 686.3(a)3.

ITEM 0695-0002 DETECTABLE WARNING SURFACE, CAST IRON

- A. This item shall comply with Section 695 of the PennDOT Standard Highway Specifications, with the following exception:
 - All DWS on the project shall be DURALAST cast iron plates, manufactured by EJ, East Jordan, Michigan, 49727. Radial plates shall be used on curved sections of DWS that match the radius of the curb return. Make a clean cut on the radial plates to match the width of the sidewalk or bikeway as illustrated in the Intersection Detail Plans.

ITEM 0802-0001 TOPSOIL FURNISHED AND PLACED, CUBIC YARD

- B. This item shall comply with Section 802 of the PennDOT Standard Highway Specifications, with the following exceptions:

Planting Soil Mix:

1. Mix Ratio shall be between 6 Parts Topsoil: 4 Parts Sand : 1 Part Compost and 5 Parts Topsoil : 5 Parts Sand : 1 Part Compost. Mix ratio assumes coarse to medium sand content of topsoil is approximately 25% by volume.
2. Coarse to medium sand size content shall not be less than 50% by volume of final Planting Soil Mix.
3. Material Drainage Rate shall be between 1.5 and 2.5 inches per hour +/- 0.5.
4. Organic content shall be between 4% and 6% by volume.
5. pH shall be 6.5 +/- 0.25.
6. Clay content shall be between 10% and 30% by volume.

Topsoil:

- A. A natural, loamy, friable mineral soil taken from the O and A Horizons essentially free from heavy or stiff clay lumps, stones, cinders, concrete, brick, roots, sticks brush, litter, plastics, metals, refuse or other deleterious materials in accordance with ASTM D 5286-92. The soil shall be free of herbicides, petroleum-based materials or other substances of a hazardous or toxic nature, which may inhibit plant growth. The soil shall be free of noxious weeds, seeds or vegetative parts of weedy plants that cannot be selectively controlled in the planting.
- B. The soil shall have a USDA soil texture classification of Sandy Loam. Deviations including Loam, Clay Loam, and Sandy Clay Loam may be acceptable as determined by the Landscape Architect contingent on test result data including, but not limited to, Particle Size Analysis and Sand Sieve Analysis. If available, coarse-grained topsoil is preferred.

Unacceptable topsoil includes soils that contain more than 35% clay or 45% silt or 25% fine sand.

- C. The topsoil component shall meet the following specifications. Perform the following tests and submit test reports showing the following criteria are met:
1. pH shall fall between 5.5 to 6.5 and Buffer pH shall fall between 6.5 to 7.0.
 2. Soluble salts shall be less than 2.0 millimhos per cm.
 3. Organic content shall fall between 2.0 to 6.0%.
 4. CEC shall be a minimum of 12 Meq/100g.
 5. Carbon to nitrogen (C:N) ratio shall be between 10:1 and 20:1.
 6. Material drainage rate shall be at least 2.0 inches per hour.
 7. Nutrient analysis shall conform to Article 1.6 herein. The testing agency shall provide acceptable ranges for each nutrient with the nutrient analysis.

Compost:

- A. All compost testing shall be done in conformance with the U.S. Compost Council's publication Test Methods for the Examination of Composting and Compost (TMECC) unless otherwise specified above.
- B. The organic amendment shall be stable, mature aerobically composted yard waste. If available, well-aged compost comprised of bark from pine, spruce, fir and other conifers is preferred for blending Planting Soil Mix top dressing amendment. Woodchip bulked bio-solids, sewage sludge, peat, peat humus and mushroom compost products are not acceptable. Material must be composted for a minimum of two (2) years unless approved otherwise by the Landscape Architect. The compost material must meet the following characteristics:
1. The compost shall be a homogeneous material essentially free of soil clods, lumps, roots and stones. Should be a black to dark brown color with few identifiable parts.
 2. The compost shall have a man-made foreign material (hard plastics, metal, glass, etc.) content less than 1.5% as material retained on a U.S. Std. No.5 (4 mm) sieve (TMECC 03.06).
 3. The compost shall be screened such that a minimum of 90% passes a U.S. Std. 3/4" sieve and that no more than 10% passes a U.S. Std. No.10 sieve on a dry weight basis.
 4. pH shall be between 6.0 and 7.0.
 5. Soluble salts content shall be less than 2.0 millimhos per cm.
 6. Organic content shall fall between 35% and 90%.
 7. Carbon to nitrogen (C:N) ratio shall be less than 30:1. Optimum ratio is less than 15:1.

8. Nutrient analysis shall conform to Article 1.8 herein. The testing agency shall provide acceptable ranges for each nutrient with the nutrient analysis.

ITEM 0804-0011 SEEDING AND SOIL SUPPLEMENTS - FORMULA B, LB

- A. This item shall comply with Section 804 of the PennDOT Standard Highway Specifications.

ITEM 0811-0003 TEMPORARY PROTECTIVE FENCE, LINEAR FOOT

- A. This item shall comply with Section 811 of the PennDOT Standard Highway Specifications.
- B. This item shall be used as temporary tree protective fence for groups of trees, and also as a perimeter fence.

ITEM 0901-0001 MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION, LUMP SUM

- A. This item shall comply with Section 901 of the PennDOT Standard Highway Specifications, with the following amendments from the City of Philadelphia:

This work consists of the maintenance and protection of traffic for all traveled roadways within the construction area in accordance with PennDOT Publication 213, Section 901 of PennDOT 408, the drawings, PennDOT 111, and these special provisions.

This work includes providing for temporary pavement markings, temporary roadway lighting, temporary signals, lane striping, pedestrian walkways, flashers, flashing arrow boards, traffic cones, flagmen, delineators, barricades, temporary signs and all materials, equipment and labor necessary for the acceptable maintenance and protection of traffic as indicated on the drawings, or directed by the Engineer.

CONSTRUCTION REQUIREMENTS

GENERAL

Maintenance and protection of traffic is to be in accordance with Section 901, except as herein modified and/or supplemented:

Pursue the work in a logical and expeditious manner with minimal period of disruption. In order to fulfill the intent of this requirement,

Complete the required work as expeditiously as possible;

Coordinate activities with all other contractors and public utility companies operating in the area;

Provide for the safe and orderly movement of pedestrians through the work area;

Provide for emergency, City sanitation, and delivery vehicle traffic through the work areas;

TRAFFIC CONTROL PLAN

Submit a Traffic Control Plan, Construction Schedule and Sequence of Curb Ramp Construction to the Engineer at the Pre-construction Meeting. The Engineer has 10 calendar days to accept or reject the Traffic Control Plan. Changes to the Traffic Control Plan must be submitted 20 calendar days prior to the start of the affected work. The Engineer has 10 calendar days to accept or reject the proposed changes.

In case a detour is determined to be necessary, provide a detour plan for review and approval by the City at least two weeks prior to the need of the detour. All necessary detour indicators must be in accordance with Publication 213. Detour setup, maintenance, and approval will be the Contractor's responsibility.

SEQUENCE OF CONSTRUCTION

Notify City's Right of Way Unit at 215-686-5500, in writing ten (10) calendar days prior to implementing or changing traffic control phasing or details. Send notification by fax to (215) 686-5067 and by mail. Letters are sent to: City of Philadelphia, Right of way Unit, MSB, 1401 JFK Blvd., 9th Flr., Rm. 980, Philadelphia, PA 19102-1685.

All construction must be coordinated with special events. Special events list is subject to change, therefore the contractor is responsible to obtain the most recent list. Questions concerning this list are directed to the Right-of-way Unit at 215-686-5500.

All work during the City's Holiday moratorium from November through January need to be approved by City's ROW Unit. Coordinate and obtain approval for all construction activities during this period from City's ROW Unit (Contact # 215-686-5500).

Lane closures shall be in accordance with PennDOT and City of Philadelphia requirements set forth in the plans.

Maintain access to adjacent properties at all times.

Any and all work to be coordinated with any other adjacent work as well as any other work being performed within the Limits of Work for this project and it is the responsibility of the contractor to do so.

Designate an individual or individuals as the Maintenance of Traffic Engineer who is to be responsible for the maintenance of traffic items. The name, address, and phone number(s) where the Maintenance of Traffic Engineer must be furnished to the Engineer. Have to Maintenance of Traffic Engineer available at all times.

When working adjacent to PECO Facilities, please follow the PECO minimum clearance requirements.

The work is to be pursued in a logical expeditious manner which minimizes the time period for local access "under construction" to the community.

RESTRICTIONS

Jackhammer: Operations that require the use of a jackhammer, such as manhole and valve box resetting and pavement adjustments, are restricted to the period from 9:30 AM to 3:30 PM. The Contractor may be given the opportunity to perform jackhammer operations during other hours, only with the specific permission of the Engineer. This is considered on a location-specific basis. During these operations, maintain traffic as specified above.

Any excavation between October and April is to be approved by the Engineer.

The time elapsed between the start of excavation and the placement of the surface material for the new curb ramps within a particular corner of an intersection is not to exceed 7 calendar days for plain concrete quadrants and 10 calendar days for quadrants with exposed Aggregate, brick or other special paving.

CERTIFICATION OF FLAGGERS

Flaggers must have successfully completed a PennDOT approved flagger training course within the last 3 years. Each flagger must carry a valid card containing the flagger name and signature, training source, and the date of course completion. A roster containing this information for all flaggers must be submitted to the Engineer prior to the start of flagging operations.

For information on the approved sources of training, contact Mr. Brian Fraley of the APC (Associated Pennsylvania Constructors) at (717) 238-2513.

WORKER SAFETY APPAREL

All workers comply with regulations set forth in Title 23 Code of Federal Regulations (CFR) part 634 effective 11-24-08, in regards to worker safety apparel.

Worker safety apparel are in accordance with Federal Highway Administration, DOT , Part 634, Worker Visibility.

MAINTENANCE OF PEDESTRIAN TRAFFIC ON FOOTWAYS AND ACROSS INTERSECTING STREETS

Conduct work in the footway areas as expeditiously as practical and with minimal disruption to the abutting properties. Any work that affects access to a property must be coordinated with the occupant. A minimum five (5) foot wide clear footway along the project and access to abutting properties are provided at all times. The footway is ADA accessible.

The Contractor is responsible for the safe ADA accessible pathway of pedestrians through the construction area. All channelizing devices are to be in accordance with MUTCD Section 6F.63. All materials stored adjacent to the 5 footway must be barricaded.

Footway surfaces are of materials that provide a hard, smooth and even surface thereby causing no danger of injury to pedestrian traffic. All footways are subject to the approval of the Engineer and in no case are footway surfaces be constructed of bare earth or loose stone.

To supplement the Contractor's approved ADA compliant barricades, the Engineer, at his discretion, can direct the Contractor to erect safety fencing at designated locations. All safety fencing is incidental to this item.

Provide approved pedestrian crossings and directional signs at each major cross street to direct pedestrian passage along the project site.

Submit the location and design of each pedestrian crossing to the Engineer along with Traffic Control Plan. The Engineer may reserve his approval of the pedestrian crossing until work on the particular stage in question is imminent. The pedestrian crossing is to allow for the efficient and safe crossing of the general walking public. It is to be constructed of suitable timber members or suitable paving material and must be segregated from

the active work area by effective ADA compliant barriers. The material and construction of the crossings is to be left to the discretion of the Engineer. In no case are pedestrians permitted to walk directly on an excavated or partially completed work area.

The Contractor is responsible for providing the general public with safe access to public transit service at transit stops affected by his operations. Coordinate with SEPTA for temporary relocation of bus stops as needed.

TEMPORARY STREET LIGHTING DURING CONSTRUCTION

Provide and maintain temporary lighting within the construction area along all roadways open to vehicular and pedestrian traffic where construction causes disruption to the existing street light system. The temporary lighting must be maintained in service throughout the period of this contract or until the release of such responsibility is given by the Engineer.

Coordinate the construction activities with the Philadelphia Electric Company who is to determine where connections to their facilities are to be made. Any costs for services by Philadelphia Electric Company or energy costs are included in the lump sum maintenance and protection of traffic during construction.

LIQUIDATED DAMAGES

In addition to the requirements of Paragraph 26 of the City of Philadelphia Standard Contract Requirements for Public Works Contracts, the Contractor is be charged Liquidated Damages for each day that he has not complied with the requirements of this item. The amount chargeable per day is in accordance with PDT 408, Section 901.3 (t).The Liquidated Damages assessed as specified above is deducted from monies due the Contractor.

Liquidated Damages are charged for those days where needed corrections are not made within 24 hours notification by the Engineer.

Explanation of Construction Activities:

Construction work for traffic signal upgrades including new conduit runs, new signal equipment, new signal foundations, and installation of fiber optic interconnect cable.

Construction work for curb-line and sidewalk modifications including corner bump-outs, handicap ramps, curb replacement, sidewalk replacement, island removals, and associated grading and seeding.

Construction of proposed storm sewer inlets and pipes and the associated excavation, trench shoring, and backfill operations.

Placement and removal of traffic signs, traffic posts, and pavement markings.

BASIS OF PAYMENT:

Lump Sum

ITEM 0910-4114 AWG 4 UNDERGROUND CABLE, COPPER, 1 CONDUCTOR, LINEAR FOOT

- A. This item shall comply with Section 910 of the PennDOT Standard Highway Specifications.

ITEM 0931-0003 POST MOUNTED SIGNS, TYPE B, STEEL SQUARE POST, SQUARE FOOT

- A. This item shall comply with Section 931 of the PennDOT Standard Highway Specifications.
- B. Posts used for signs shall be square steel posts per PennDOT Standard Detail TC-8702B. Sign locations and heights for signs located adjacent to the trail shall conform to the detail in the plans. Sign heights for signs located along streets shall conform to the heights indicated in TC-8702B.

ITEM 0935-0001 POST MOUNTED SIGNS, TYPE F, SQUARE FOOT

- A. This item shall comply with Section 935 of the PennDOT Standard Highway Specifications.

ITEM 0936-0200 STRUCTURE MOUNTED FLAT SHEET ALUMINUM SIGNS, SF

- A. This item shall comply with Section 936 of the PennDOT Standard Highway Specifications.

ITEM 0937-0300 FLEXIBLE DELINEATOR POST, SURFACE-MOUNT TYPE SM-1, WHITE POST WITH WHITE SHEETING, EACH

- A. This item shall comply with Section 937 of the PennDOT Standard Highway Specifications.
- B. Verify manufacturer and type with engineer prior to procurement.

ITEM 0941-0001 RESET POST MOUNTED SIGNS, TYPE B, EACH

- A. This item shall comply with Section 941 of the PennDOT Standard Highway Specifications.

ITEM 0945-0001 RESET POST MOUNTED SIGNS, TYPE F, EACH

- A. This item shall comply with Section 945 of the PennDOT Standard Highway Specifications.

ITEM 0954-0152 TRENCH AND BACKFILL, TYPE II, LINEAR FOOT

- ITEM 0954-0153 TRENCH AND BACKFILL, TYPE III, LINEAR FOOT**
- ITEM 0954-0201 SIGNAL CABLE, 14 AWG, 3 CONDUCTOR, LINEAR FOOT**
- ITEM 0954-0202 SIGNAL CABLE, 14 AWG, 5 CONDUCTOR, LINEAR FOOT**
- ITEM 0954-0203 SIGNAL CABLE, 14 AWG, 7 CONDUCTOR, LINEAR FOOT**
- ITEM 0954-0600 UNINTERRUPTIBLE POWER SUPPLY (UPS), EACH**
- A. These items shall comply with Section 954 of the PennDOT Standard Highway Specifications.
- ITEM 0955-3208 VEHICULAR SIGNAL HEAD, THREE 12" SECTIONS, EACH**
- ITEM 0955-3209 VEHICULAR SIGNAL HEAD, FOUR 12" SECTIONS, EACH**
- ITEM 0955-3722 LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, TYPE A, EACH**
- A. These items shall comply with Section 955 of the PennDOT Standard Highway Specifications.
- ITEM 0956-0500 PEDESTRIAN PUSH BUTTON, EACH**
- ITEM 0956-0700 VIDEO DETECTOR, EACH**
- A. These items shall comply with Section 956 of the PennDOT Standard Highway Specifications.
- ITEM 0960-0001 4" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS, LINEAR FOOT**
- ITEM 0960-0002 4" YELLOW HOT THERMOPLASTIC PAVEMENT MARKINGS, LINEAR FOOT**
- ITEM 0960-0021 24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS, LINEAR FOOT**
- ITEM 0960-0120 WHITE HOT THERMOPLASTIC LEGEND, "SPEED HUMP SYMBOL", 6' - 0" X 6'-0", EACH**
- ITEM 0960-0224 WHITE HOT THERMOPLASTIC LEGEND, "LEFT ARROW", 12' - 0" X 3' - 0", EACH**
- ITEM 0960-0226 WHITE HOT THERMOPLASTIC LEGEND, "THRU AND RIGHT ARROW", 20' - 0" X 3' - 7", EACH**
- ITEM 0960-0255 WHITE HOT THERMOPLASTIC LEGEND, "YIELD LINE", 12" X 18" TRIANGLE, LINEAR FOOT**
- ITEM 9000-1201 6" WHITE HOT THERMOPLASTIC PAVEMENT MARKING RUMBLE STRIP, LINEAR FOOT**
- A. These items shall comply with Section 960 of the PennDOT Standard Highway Specifications.
- B. 9000-series items listed shall match the dimensions in the item title and in the details in the plans.
- ITEM 9000-1203 WHITE PREFORMED THERMOPLASTIC LEGEND, "BICYCLE WITH RIDER", 6'-0" X 3'-4", EACH**
- ITEM 9000-1204 WHITE PREFORMED THERMOPLASTIC LEGEND, "STRAIGHT ARROW", 6'-0" X 2'-0", EACH**
- ITEM 9000-1205 WHITE PREFORMED THERMOPLASTIC LEGEND, BIKE LANE TURN ARROW, EACH**

- ITEM 9000-1206 WHITE PREFORMED THERMOPLASTIC LEGEND, SHARED LANE MARKING, EACH**
- ITEM 9000-1207 BORDER CONTRAST PREFORMED THERMOPLASTIC LEGEND, PEDESTRIAN, EACH**
- ITEM 9000-1208 BLOCK CONTRAST PREFORMED THERMOPLASTIC LEGEND, BIKES YIELD TO PEDS, EACH**
- ITEM 9000-1209 BLOCK CONTRAST PREFORMED THERMOPLASTIC LEGEND, LOOK FOR BIKES, EACH**
- ITEM 9000-1210 WHITE PREFORMED THERMOPLASTIC LEGEND, "BICYCLE DETECTOR", 3'-7" X 12", EACH**

- A. These items shall comply with Section 965 of the PennDOT Standard Highway Specifications, with the following exception:
All preformed thermoplastic items shall be PreMark with ViziGrip, manufactured by Ennis-Flint, Greensboro, NC. Any manufacturer recommendations that conflict with Section 965 shall supercede the applicable Section 965 specification.

ITEM 0963-0004 4" PAVEMENT MARKING REMOVAL, LINEAR FOOT

- A. These items shall comply with Section 963 of the PennDOT Standard Highway Specifications.

ITEM 0971-0001 REMOVE POST MOUNTED SIGNS, TYPE B, EACH

- A. This item shall comply with Section 971 of the PennDOT Standard Highway Specifications, with the following exception:
Deliver aluminum signs to the Philadelphia Streets Department.

ITEM 0975-0001 REMOVE POST MOUNTED SIGNS, TYPE F, EACH

- A. This item shall comply with Section 975 of the PennDOT Standard Highway Specifications, with the following exception:
Deliver aluminum signs to the Philadelphia Streets Department.

ITEM 9000-1000, CONCRETE UNIT PAVERS, SQUARE YARDS

1 DESCRIPTION

Under this item the contractor shall install Concrete Unit Pavers as shown on plans or directed by the Engineer.

2 MATERIAL

Pavers shall be of the size and color as shown on the plans and meet the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units.

a) Unit Paver

1. Pavers shall be "Senzo", manufactured by Unilock, with a custom color blend, similar to that used on the Delaware River Trail South and North segments constructed in 2019.

b) Base concrete

1. Shall consist of a Cement Concrete at the thickness indicated on the drawings to be provided under Item 0501-0020, Plain Cement Concrete Pavement. Aluminum oxide additive is not required for unit paver applications.

c) Bedding and Jointing Sand

1. The bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. It can be natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 3. When concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available.
2. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in Table 1.

Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 μ m)	25 to 60
No. 50 (300 μ m)	10 to 30

No. 100 (150 µm)	2 to 10
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3. The joint sand shall conform to the grading requirements of ASTM C 144 as shown in Table 4:

	Natural Sand	Manufactured Sand
Sieve Size	Percent Passing	Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 - 100	95 to 100
No. 16 (1.18 mm)	70 - 100	70 to 100
No. 30 (600 µm)	40 - 75	40 to 75
No. 50 (300 µm)	10 - 35	20 to 40
No. 100 (150 µm)	2 - 15	10 to 25
No. 200 (75 µm)	0	0 to 10

4. Sealer: apply sealer recommended by the paver manufacturer.

3 QUALITY CONTROL

- a) Installation shall be by a contractor and crew with at least 5 years of experience in placing interlocking concrete pavers on projects of similar nature.
- b) Shop or product drawings and product data shall be submitted to the owner.
- c) Full size samples of concrete paving units shall be submitted to indicate color and shape selections.
- d) Sieve analyses for grading of bedding and joint sand shall be submitted to the engineer.
- e) Test results shall be submitted from an independent testing laboratory for compliance of paving unit requirements to ASTM C 936 or other applicable requirements.
- f) The layout, pattern, and relationship of paving joints to fixtures and project formed details.

4 CONSTRUCTION

As shown on the contract drawings and as follows:

- a) Base Preparation
 1. Complete all underground utility work, curbing and foundation construction prior to commencement of concrete base construction.
- b) Concrete Base

1. The pavers shall be laid on a Cement Concrete base conforming to the requirements of Item 0501-0020, Plain Cement Concrete Pavement.
 2. Under no circumstances shall further pavement construction proceed until the concrete base has been inspected and approved by the Engineer.
- c) Paver Installation
1. Sand or pavers shall not be installed during heavy rain or snowfall.
 2. Sand and pavers shall not be installed over frozen base materials.
 3. Frozen sand shall not be installed.
 4. The sand shall be spread evenly over the base course and screeded to a nominal 1 inch thickness, not to exceed 1 ½". The screeded sand should not be disturbed. Sufficient sand shall be placed in order to stay ahead of the laid pavers. Bedding sand shall not be used to fill depressions exceeding 1 ½ in. thickness in the base surface.
 5. Pavers shall be free of foreign material before installation.
 6. Pavers shall be inspected for color distribution and all chipped, damaged or discolored pavers shall be replaced.
- d) Joints between the pavers on average shall be 1/16 in. wide, hand tight.
- e) Gaps at the edges of the paved area shall be filled with cut pavers or edge units.
- f) Pavers to be placed along the edge shall be cut with a masonry saw.
- g) The paver surface shall be swept clean of all debris before compacting, in order to avoid damage from point loads.
- h) A low amplitude, high frequency plate compactor shall be used to compact the pavers into the sand with a compaction force of 5000 lbs.
- i) The pavers shall be compacted and dry joint sand shall be swept into the joints until the joints are full. This will require at least two or three passes with the compactor. Do not compact within 3 ft. of the unrestrained edges of the paving units.
- j) All work to within 3 ft. of the laying face must be left fully compacted with sand-filled joints at the completion of each day.
- k) Excess joint sand shall be swept off when the job is complete.
- l) Apply sealer according to paver manufacturer instructions.

5 MEASUREMENT AND PAYMENT – Square Yards

Concrete Unit Pavers shall be paid per square yard of pavers to be installed. Sand for bedding and joints shall be considered subsidiary to the installation of this item. Aggregate Subbase, Concrete Base, and Concrete Headers shall be paid for under the respective items.

ITEM 9000-1001 – ADA DIRECTIONAL INDICATOR BLOCK, 12" WIDE, SQUARE FEET

1 DESCRIPTION

This work is for the placement of directional indicator paver modules on a sand setting bed on concrete slab as shown in detail on plans.

2 MATERIAL

Paver Block:

- a) ADA Directional Bar by Tectura Designs, a Wausau Tile Inc. brand
- b) Size shall be 12"x12"x2"
- c) Color: A-90
- d) Installed paver block shall be free of cracks, seams, or starts which may impair their structural integrity.
- e) Procurement should be coordinated with Jason Merrick at Tectura JMerrick@wausautile.com. Extra pavers not installed on this project shall be provided to DRWC for future maintenance use.

Substrate Slab:

- a) 6" concrete slab shall be constructed as base for the paver block as shown on the plans. The 6" slab will be considered incidental to the installation of the directional indicator paver block.

Jointing Sand:

- a) Bedding and Jointing Sand
 - 1. The bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. It can be natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 3. When concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available.
 - 2. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in Table 1.

Table 1	
Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100

No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

3. The joint sand shall conform to the grading requirements of ASTM C 144 as shown in Table 4:

	Natural Sand	Manufactured Sand
Sieve Size	Percent Passing	Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 - 100	95 to 100
No. 16 (1.18 mm)	70 - 100	70 to 100
No. 30 (600 µm)	40 - 75	40 to 75
No. 50 (300 µm)	10 - 35	20 to 40
No. 100 (150 µm)	2 - 15	10 to 25
No. 200 (75 µm)	0	0 to 10

3 CONSTRUCTION

Quality Assurance - Paving Installer Qualifications

- The contractor shall have three years' experience with at least 10,000 square feet of pavers installed. Successful completion of 3 paver installations similar in design, material and extent indicated on this project.

Examination - Verify Site Conditions. General contractor shall inspect and certify in writing to installer that site conditions meet the following prior to installation of granite cobble pavers.

- Remove organic, unstable or unconsolidated material from the site.
- Verify conformance of sub grade preparation and elevations to specified requirements
- Verify sub base and base conformance to specified requirements. Do not use setting bed material to correct deficiencies in base course surface.
- Verify written density test results for soil sub grade and sub base course.
- Verify type, location and elevations of edge restraints, utility structures and drainage inlets.

- Verify that the concrete subbase course is ready to support bedding material, pavers and imposed loads.
- Do not proceed with bedding course or paver installation until satisfactory sub grade soils are verified by contractor.
- Verify that the area is free from standing water and certified by general contractor as meeting material, installation and grade specifications.

Field measurements -

- Determine actual paver dimensions (including tolerances) and coordinate with dimensions for pavement areas indicated on contract drawings prior to any pavement installation.
- The first and last ten pavers in any given continuous row shall not be cut. Pavers to be cut to fit shall be done with a masonry saw. To close gaps that are more or less than 12" in a row, cut two pavers and align such that the cut edges are abutting each other and make it appear that the cut pavers are one longer paver.

Installation –

- The sand shall be spread evenly over the base course and screeded to a nominal 1 inch thickness. The screeded sand should not be disturbed. Sufficient sand shall be placed in order to stay ahead of the laid pavers. Bedding sand shall not be used to fill depressions exceeding 1 ½ in. thickness in the base surface.
- Tamp or beat each paver with a wooden block or rubber mallet to obtain full contact with sand bed and to bring finished surfaces within indicated tolerances.
- Install pavers as indicated on drawings. Maintain straight pattern lines. Directional bars shall run parallel to the bicycle and pedestrian travel pattern.
- Successive modules shall be butted tightly against each other in such a way that the space between the modules is minimized and that the perception is that the area was hand-set without modular definition.

Placement Tolerance -

- Maximum of 1/16-inch height variation between adjacent pressed pavers.
- Individual pressed pavers shall not vary more than 1/16 inch from level across width of the pressed paver.
- Paved areas shall not vary more than 1/4 inch from level in a distance of 10 feet (3 m) measured at any location and in any direction.
- Joints between pavers to be greater than 1/16 inch but less than 1/8 inch.

Cleaning and Protection -

- Remove and replace pressed pavers which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in same manner as original units with same joint treatment to eliminate evidence of replacement.
- Wash entire surface with phosphate free neutral cleaner, rinse with clean water and allow to dry thoroughly.
- Apply sealer in accordance with manufacturer's directions. Penetrating or topical type sealer designed especially for pressed concrete pavers.

Field Quality Control -

- Sweep surface clean and verify conformance with drawings.
- Verify that the final paver surface conforms with Americans with Disability Act (ADA) requirements.
- Verify final elevation of pavement to adjacent drainage inlets.
- Verify straightness of bond lines.

Protection -

- After work in this section is complete, General Contractor shall protect work from damage due to subsequent construction activity on site.

4 MEASUREMENT AND PAYMENT – Square Foot

The square foot unit cost of the directional indicator block shall include all labor and materials needed to install the pavers, including sand for the paver bed. Concrete base for the block shall be paid under the appropriate driveway or sidewalk bid items.

ITEM 9000-1002, PLAIN CEMENT 6" CONCRETE HEADER, LINEAR FEET

1 DESCRIPTION

Work includes all labor, materials, equipment, services and maintenance necessary to install concrete headers as shown on the drawings and/or specified herein.

2 MATERIALS

- a) Class A Cement Concrete—Section 704
- b) Premolded Expansion Joint Filler—Section 705.1
- c) Covers for Curing and Protection—Section 711.1
- d) Curing Compound—Section 711.2(a)

3 CONSTRUCTION

As shown on the plans and details and as follows:

- a) Excavation. Excavate as required. Remove existing curb, pavement, and sidewalk to neat lines when indicated, then compact the material, upon which the header is to be constructed, to a firm even surface.
- b) Formwork: In accordance with Section 630.3 (b)
- c) Placing, Finishing, and Curing Concrete: In accordance with Section 630.3 (c)
- d) Joints. Form or saw contraction joints to uniform spacing (no more than 20' and no less than 4') and as specified in Section 501.3(i)2. Place 3/4-inch premolded expansion joint material conforming to the cross-sectional area of the header where indicated and at the end of the workday. Prepare and caulk joints according to caulking manufacturer's recommendations.
- e) Removal of Forms. In accordance with Section 630.3 (f)
- f) Backfilling and Embankment. As soon as possible after the removal of forms, backfill the voids in front and back of the header, using acceptable embankment material, as specified in Section 206.3(b)4. Complete paver work as indicated in the plans.
- g) Installation
 1. Subgrade: Ground surface underneath header shall be compacted to 95% Standard Proctor. Thoroughly clean subbase of all debris, loose dirt and other extraneous materials before pouring header. Do not install header when subbase is wet or muddy. Compact subgrade to 95% Standard Proctor density, minimum.
 2. Protection: Protect the completed header against traffic, injury or defacement, or damage by rain during curing period and subsequent construction operations until Final Acceptance. Keep all areas of work clean, neat and orderly at all times. Keep all adjacent planting areas clean during paving operations. After completion do not allow any traffic of any kind on the finished surface course until it is completely dried through, and adjacent pavement has been completed.

4 MEASUREMENT AND PAYMENT – Linear Foot

Formwork and compacted subgrade shall be considered incidental to this work. Concrete Header will be paid on a linear foot basis, and include all materials and labor necessary to construct the header at the locations in the plans.

ITEM 9000-1003, CEMENT CONCRETE DRIVEWAY, 8" DEPTH, SQUARE YARDS

1 DESCRIPTION

This work is the construction of cement concrete paving for driveways.

2 MATERIAL

In accordance with Section 676.2.

3 CONSTRUCTION

In accordance with Section 676.3, except:

- Concrete driveways shall be 8" deep, with 6" subbase
- Joints shall be performed per the details in the plans. Transverse dummy (control) joints shall be spaced at even intervals within the driveway (1/2 or 1/3 of the width) or in accordance with jointing plans.

4 MEASUREMENT AND PAYMENT – Square Yards

Payment for this item shall only include the concrete driveway. The subbase will be paid separately.

ITEM 9000-1004 – 6' CURB STOP

1 DESCRIPTION

This work includes the installation of precast concrete wheel stops for vehicular parking spaces.

2 MATERIAL

As indicated and as follows:

Class AAA Cement Concrete – Section 704

Reinforcing Bar - Section 709

3 CONSTRUCTION

As indicated and as follows:

Submit shop drawings for prefabricated wheel stops to the Engineer.

4 MEASUREMENT AND PAYMENT– Each

ITEM 9000-1006, GRANITE PAVERS ON CONCRETE SUBBASE, SQUARE YARDS

1 DESCRIPTION

This work is the furnishing and installation of granite pavers on a sand setting bed and concrete base as shown on plans.

2 MATERIAL

Pavers shall be of the size and color indicated below.

a) Granite Pavers

1. As supplied by Ottey and Hoopes, 610-644-4202, or Approved Equal.
2. Face Size: 4"x8", 8"x8", 8"x16", 16"x24", 24"x24", cut on all sides, thermal finish on face.
3. Pattern: Random Ashlar.
4. Colors:
 - a. 60% Georgia Grey Granite
 - b. 20% Greene County Granite
 - c. 20% Silver Cloud Granite

b) Base concrete

1. Shall consist of a Cement Concrete at the thickness indicated on the drawings to be provided under Item 0501-0020, Plain Cement Concrete Pavement.
Aluminum oxide additive is not required for unit paver applications.

c) Bedding and Jointing Sand

1. The bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. It can be natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 3. When concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available.
2. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in Table 1.

Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100

No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

3. The joint sand shall conform to the grading requirements of ASTM C 144 as shown in Table 4:

Table 2		
	Natural Sand	Manufactured Sand
Sieve Size	Percent Passing	Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 - 100	95 to 100
No. 16 (1.18 mm)	70 - 100	70 to 100
No. 30 (600 µm)	40 - 75	40 to 75
No. 50 (300 µm)	10 - 35	20 to 40
No. 100 (150 µm)	2 - 15	10 to 25
No. 200 (75 µm)	0	0 to 10

3 QUALITY CONTROL

- a) Installation shall be by a contractor and crew with at least 5 years of experience in laying stone pavers on projects of similar nature.
- b) Shop or product drawings and product data shall be submitted to the owner.
- c) Full size samples of granite paving units shall be submitted to indicate color and shape selections.
- d) Sieve analyses for grading of bedding and joint sand shall be submitted to the engineer.
- e) Test results shall be submitted from an independent testing laboratory for compliance of paving unit requirements to ASTM C 936 or other applicable requirements.

4 CONSTRUCTION

As shown on the contract drawings and as follows:

- a) Base Preparation
 1. Complete all underground utility work, curbing and foundation construction prior to commencement of concrete base construction.
- b) Concrete Base

1. The pavers shall be laid on a Cement Concrete base conforming to the requirements of Item 0501-0020, Plain Cement Concrete Pavement.
 2. Under no circumstances shall further pavement construction proceed until the concrete base has been inspected and approved by the Engineer.
- c) Paver Installation
1. Sand or pavers shall not be installed during heavy rain or snowfall.
 2. Sand and pavers shall not be installed over frozen base materials.
 3. Frozen sand shall not be installed.
 4. The sand shall be spread evenly over the base course and screeded to a nominal 1 inch thickness, not to exceed 1 ½". The screeded sand should not be disturbed. Sufficient sand shall be placed in order to stay ahead of the laid pavers. Bedding sand shall not be used to fill depressions exceeding 1 ½ in. thickness in the base surface.
 5. Pavers shall be free of foreign material before installation.
 6. Pavers shall be inspected for color distribution and all chipped, damaged or discolored pavers shall be replaced.
- d) Joints between the pavers on average shall be 1/16 in. wide, hand tight.
- e) Gaps at the edges of the paved area shall be filled with cut pavers or edge units.
- f) Pavers to be placed along the edge shall be cut with a masonry saw.
- g) The paver surface shall be swept clean of all debris before compacting, in order to avoid damage from point loads.
- h) A low amplitude, high frequency plate compactor shall be used to compact the pavers into the sand with a compaction force of 5000 lbs.
- i) The pavers shall be compacted and dry joint sand shall be swept into the joints until the joints are full. This will require at least two or three passes with the compactor. Do not compact within 3 ft. of the unrestrained edges of the paving units.
- j) All work to within 3 ft. of the laying face must be left fully compacted with sand-filled joints at the completion of each day.
- k) Excess joint sand shall be swept off when the job is complete.

5 MEASUREMENT AND PAYMENT – Square Yards

Granite Pavers shall be paid per square yard of pavers to be installed. Sand for bedding and joints shall be considered subsidiary to the installation of this item. Aggregate Subbase, Concrete Base, and Concrete Headers shall be paid for under the respective items.

ITEM 9000-1009, RAMP MODIFICATIONS AT 188+40, LUMP SUM

1 DESCRIPTION

This work is for the removal of the concrete ramp encroaching in the ROW at Sta 188+40.

2 MATERIAL

None

3 CONSTRUCTION

Contractor shall remove the existing concrete access ramp at the existing ROW line such that a ROW Fence can be installed along the back of the proposed sidewalk. Remove at the ROW line by sawcut. Investigate site for utilities prior to removal.

4 MEASUREMENT AND PAYMENT – Lump Sum

ITEM 9000-1010, ACCESS GATE FOR OPERATIONS LOT, EACH

1 DESCRIPTION

This work is the installation of a parking lot access gate.

2 MATERIAL

Cast-In-Place Foundation

- Class A Cement Concrete—Section 704

Electrical - forthcoming

Access XL2 gate by Magnetic Access USA, or approved equal automatic gate entry system that can span a 24' wide driveway. System shall also include magnetic loop for automatic detection for outbound traffic.

3 CONSTRUCTION

More detailed specifications and plans forthcoming

Extend electric service from existing gate location to proposed gate.

Install gate and induction loop per manufacturer's recommendation.

Install foundation per plan details.

4 MEASUREMENT AND PAYMENT – Each

Payment for this item shall include procurement and installation of the automatic gate system, induction loop, and concrete footing.

ITEM 9000-1011, GRANITE CLAD CONCRETE STEM WALL, LINEAR FOOT

1. DESCRIPTION

Under this section the Contractor shall furnish and install all dimensioned granite masonry clad concrete stem walls, in accordance with the details indicated on the Contract Drawings, specified, or directed by the Engineer.

2. QUALITY ASSURANCE:

(A) Statement of Application: The Contractor, by commencing the work of this Section, assumes overall responsibility, as a part of his warranty of the work, to assure that all assemblies, components, and parts shown or required within the work of this Section, comply with the Contract Documents. The Contractor shall further warrant:

- (1) That all components, specified or required to satisfactorily complete the installation, are compatible with each other and with the conditions of installation and expected use.
- 2) The overall effective integration and correctness of individual parts and the whole of the system.
- 3) Compatibility with adjoining substrates, materials, and work by other trades.
- 4) There shall be no material failure due to improper design and fabrication of the stone. All materials are to fully perform to their normal life expectancy.

(B) Subcontractor Qualifications: Subcontract fabrication and installation of stone to a firm or firms which have successfully fabricated and/or installed stone similar to the quality specified and in the quantity shown for a period of not less than five (5) years. The Contractor shall submit for approval of the Engineer the name of the subcontractor he proposes to use and upon which his bid is based, along with their respective work history experience, and at least one sample of each different color granite masonry which he will use in the project. Each different color of granite masonry shall be a product of a single quarry.

(C) Examination Criteria: All examinations, selections, and acceptances shall be for the purpose of achieving a final appearance of stone with the greatest possible uniformity, and will be based upon the following criteria:

- (1) Color within pre-selected color ranges and finish.
- (2) Sequence matching of adjacent stone units.
- (3) Only one source of each type of stone shall be used throughout the work. Stone shall match the type, pattern, color, texture, and finish of samples available for inspection in the office of Engineer.
- (4) Conformance to approved shop drawings and details within specified dimensions

and tolerances.

(5) Other criteria as specified in Section 9.95 RCP.25 – “Products”, herein.

(D) Acceptance of Work: Each and every piece of stone shall be subject to the Engineer, in consultation with the Architect's acceptance, and any pieces which may be rejected after having been set shall be carefully cut out and replaced with new suitable stone without delay and without cost to the Owner. Any piece or pieces damaged in the removal and resetting of defective pieces shall also be removed and suitable, approved pieces provided and set. Patching or filling of stone is not permitted. Stone having chipped arises or broken corners shall be rejected. Engineer's inspection of the stone does not relieve the Contractor for this work from his responsibility to provide all stonework in accordance with the approved samples and shop drawings.

(E) Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for adjustments and fitting where taking of field measurements before fabrication might delay the work.

3. MATERIALS

Granite masonry, to be cut and installed, shall be free of cracks, seams, or starts which may impair its structural integrity. All exposed surfaces shall be honed finish as shown on the plans. Granite shall be as approved by the client and as supplied by:

1. Manufacturer: Cold Spring Granite
17482 Granite West Road
Cold Spring MN 56320-4578
(800) 421-0166

2. North Carolina Granite
PO Box 151
Mount Airy, NC 27030
1(800) 227 6242

Or approved equal.

Copings: 4" thick x 18" wide x 5'-2" long, Gray color to match existing granite walls at Spruce Street Harbor Park; assume Virginia Mist granite, honed finish.

Wall Cladding: 2" thick x average 30" height x 5'-2" wide, Gray color to match existing granite walls at Spruce Street Harbor Park; assume Virginia Mist granite, honed finish.

Dowels and other anchoring devices shall be Type 304 stainless steel or suitable non-ferrous metal of the types and sizes shown on drawings.

Mortar for setting and pointing shall be one part Portland cement and one part plastic lime hydrate to three parts of clean, non-staining sand. It shall be mixed in small batches, using clean, non-alkaline water, until it is thoroughly homogeneous, stiff and plastic. After mixing, the mortar shall set for not less than one hour or more than two hours before being used.

Sealant: Sealant and related materials shall conform to the following:

- 1) For joint filler provide closed cell extruded neoprene gasket conforming to ASTM C 509, grade 4, white or light gray to match stone.
- 2) Sealant: Two (2) part self-leveling polyurethane sealant complying with ASTM C-920, Type M, Class 25, Grade P&NS, equal to Sikaflex-2c NS/SL made by Sika Chemical Co., Tremco or Pecora or approved equal . Color of sealant shall be white or light gray to match stone, as approved by the Engineer in consultation with the Landscape Architect.
- 3) Back-up rod shall be "Ethafoam" or approved equal.
- 4) Prime joints using primer recommended by sealant manufacturer.

4. METHOD

1. Fabrication:

- (A) All stonework shall be executed by mechanics skilled in the trade. All stone shall be well-cured and seasoned before cutting. Cut stone units with bed, unless otherwise approved by the Engineer.
- (B) Stone shall be accurately cut to sizes, shapes, profiles and dimensions. There shall be no deviation from jointing.
- (C) Exposed surfaces and edges of stone units shall be free from cracks, broken corners, chipped edges, scratches, or other defects affecting appearance. Patching or filling not permitted.
- (D) The use of stone with chipped edges or faces shall not be permitted.
- (E) Cut stone units full and true on faces, reveals, beds, joint and top, to the full dimensions required by drawings. All edges shall be straight and true with sharp and true arrises. All stone shall fit together accurately.
- (F) Make faces of stone units in same plane flush at joints. All finished surfaces shall be true in line and face.
- (G) Sawn surfaces and edges shall be cleaned of all rust stains and iron particles.
- (H) Cut stone to allow for uniform 3/8" wide joints, or as otherwise noted on the Contract Drawings.

- (I) Provide holes and sinkages required to accommodate anchors and other items which connect to or penetrate the stone.
- (J) Include all cutting, drilling, and fitting of stonework required to accommodate the work of other trades. In cutting and fitting, carefully cut and grind edges to a neat tight fit. Do cutting in such a manner so as not to impair strength or appearance of stone. Use physical templates for all cutting and drilling; obtain required templates from proper trades.

2. Inspection and Coordination

- (A) Inspection: Examine the areas and conditions where granite seat wall is to be installed. Notify the Engineer of any conditions detrimental to the proper installation and subsequent use, and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work. Verify in writing.
- (B) Coordination: Coordinate the work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from applicable trades for proper coordination of this work.

3. Preparation

- (A) Etch concrete substrate with 10% solution of muriatic acid as may be required to remove curing compounds or other substances that would interfere with proper bond of mortar. Rinse with water to remove all traces of acid.
- (B) Seal substrate with sealer as recommended by manufacturer of mortar.

4. Installation Tolerances: All work of this Section shall be plumb, square, level, true to radius and correctly aligned within the following limitations:

- (A) Offset from true horizontal, vertical and design location shall not exceed 1/8" per ten (10) feet of length for any component, not cumulative.
- (B) Maximum offset from true alignment between abutting components shall not exceed 1/16".

5. Control:

- (A) Mockup: Prior to general installation of this work, install a 10' section of the seat wall in accordance with final approved shop drawings. Engineer shall be informed of time and place of such installation of control section. Obtain Engineer's acceptance of visual qualities of control section before start of

general installation. Replace unsatisfactory work, as directed, until acceptable to the Engineer. Retain control section during construction as a standard for judging completed work. Do not alter, move or destroy control section unless directed by the Engineer.

- (B) Qualifications of Workmen: All work shall be performed by skilled workmen, specially trained and experienced in this type of work.

3. Job Conditions

- (A) Contractor is required to submit for approval, in detail, the methods proposed for hot weather or cold weather curing, protection and monitoring of work when the mean daily air temperature is below 40°F.
- (B) Cold Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove any ice or snow formed on stonework bed by carefully applying heat until top surface is dry to touch. Do not use salt to thaw ice in anchor holes or slots. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents, and do not use calcium chloride in mortar or grout. Remove stonework determined to be frozen or damaged by freezing conditions. Comply with cold-weather construction requirements constrained in ACI 530/ASCE6/TMS 602.
- (C) Cold Weather Cleaning: Use liquid cleaning methods only when mean daily air temperature is 40 degrees F or above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- (D) Hot Weather Requirements: Comply with hot weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

3. Delivery, Storage and Handling

- (A) Protection: Protect stone during storage and construction against moisture, soiling, staining, and physical damage. Protect mortar materials and stonework accessories from weather, moisture and contamination with earth and other foreign materials.
- (B) Handling: Handle stone to prevent chipping, breakage, soiling, or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials. Lift with wide-belt type slings wherever possible; do not use wire rope or ropes containing tar or other substances which might cause staining. If required, use wood rollers and provide cushion at end of wood slides.
- (C) Storage: Store stone on wood skids or pallets, covered with non-staining,

waterproof membrane. Place and stack skids and stones to distribute weight evenly and to prevent breakage or cracking of stones. Protect stored stone from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around stones. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

4. Setting of Granite

(A) Application:

Preparation of Subbase: Clean concrete subbase to remove dirt, dust, debris, film or curing compound, and loose particles. Saturate concrete subbase with clean water several hours before placing setting bed. About one hour prior to placing setting bed, remove surface water. Mortar bed shall consist of the following:

(B) Setting

- 1) The prepared mortar shall be spread to the desired thickness. The mortar shall be rodded and compacted with a steel trowel.
- 2) Stone shall be placed in the wet slurry coat before the surface dries. Uniform joints shall be maintained with a nominal width of 1/8".
- 3) After each piece is laid, it shall be beat in with a wooden block or rubber mallet to level the surface and embed the stone. Bearing shall be done before mortar takes initial set.

(C) Mortar Joints: Unless otherwise noted, joints are 3/8" wide typically. After all stone units have been set and setting bed is thoroughly cured, brush all joints clean. Thoroughly wet raked out portion of joints and then fill solid with joint mortar of approved color to match stone. Mortar shall be placed relatively dry and tooled in layers. Finished profile shall be slightly recessed. Grouting of joints as done in tile work is not permitted. Every effort must be made to keep mortar off stone face including applying masking tape to prevent staining of adjacent stone surfaces in continuous strips in alignment with joint edge. Remove tape immediately upon grout having achieved its finish set.

(D) Joint Treatment for Joints to Receive Sealant

- 1) All exterior control joints as noted on the drawings and all joints in base work shall receive back-up fillers and sealant as specified herein.
- 2) General: Install all sealant in strict accordance with manufacturer's recommendations as approved by the Engineer.

3) Preparation: Thoroughly clean all joints, removing all foreign matter such as dust, oil, grease, water, surface dirt and frost. Sealant must be applied to the base surface. Previously applied paint or film must be entirely removed.

4) Application

- a) Install back-up material and joint filler, of type and size specified, using a blunt instrument so as not to puncture the surface skin, at proper depth in joint to provide sealant dimensions as detailed. Provide back-up material of suitable size and shape so that, when compressed (25 to 50%) it will fit in joints as required. Sealant shall not be applied without back-up materials, and, if necessary, bond breaker strip. When using back-up of rod stock, roll the material into the joint to avoid lengthwise stretching. Rod stock shall not be twisted or braided.
- b) Apply masking tape, where required, to prevent staining of adjacent stone surfaces, in continuous strips in alignment with joint edge. Remove tape immediately after joints have been sealed and tooled as directed.
- c) Prime surfaces of all stone to receive sealant.
- d) Apply, tool and finish sealant as required. When tooling light colored sealants, use dry tool or tooling solution recommended by sealant manufacturer.
- e) Clean adjacent surfaces free of sealant or soiling resulting from this work as work progresses. Use solvent or cleaning agent as recommended by sealant manufacturer. All finished work shall be left in a neat, clean condition.
- f) Sealants shall be applied in such a manner as to completely fill the joint.
- g) All sealants shall be tooled to insure complete filling of the joint to eliminate air pockets and voids and to insure positive adhesion of the sealant with the bonding surfaces.
- h) All joints shall be neatly finished.

(D) Cleaning: Excess material shall be cleaned from the stone surface with water immediately as the work progresses. Cleaning shall be done while mortar is fresh and before it hardens on the surface. After being pointed the granite work shall be carefully cleaned starting at the top, removing all dirt, excess mortar stains and other defacements. Stainless steel wire brushes or wool may be used, but the use of other wire brushes, or of acid or other solutions which may cause discolorations is expressly prohibited.

5. Repairing after Installation: Remove and replace stone units which are broken, chipped, stained, or otherwise damaged. Where directed, remove and replace units which do not match adjoining stonework. Patching or hiding defects in granite will not be permitted. Provide new matching units, install as specified and reseal joints to eliminate

evidence of replacement. Reseal defective and unsatisfactory joints to provide a neat, uniform appearance.

6. Protection

- A) After installation and cleaning, protect stonework from damage during subsequent construction activities.
- B) Protect all stonework from other materials that will cause stain. Stone subject to damage after setting shall be properly covered or protected.
- C) At completion of construction work, remove all temporary protection from the work of this Section.
- D) Examine all work and repair all damage. Clean soiled or stained surfaces. In the event damage is irreparable, or soiled or stained surface cannot be cleaned, then remove and replace such items at no additional cost to Owner.

5. SUBMITTALS

- (A) Product Data: Submit to the Engineer for approval manufacturer's, fabricator's and finisher's specifications and installation instructions for products used in the work of this Section, including finishing materials and methods.
- (B) Shop Drawings: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer prior to the fabrication of the blocks.
- (C) Samples: Submit four samples each of the following:
 - 1. Stone: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the blocks.
 - 2. Mortar Materials: Submit certification that mortar materials comply with specification requirements.
 - 3. Grouting Materials: Submit color samples

4. Anchors: Submit each type
5. Joint sealant and back-up material

The samples must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the benches.

(D) Mockup: Contractor shall fabricate and install a mock-up of approximately 36 sf, including a 10 ft length of seat wall in a location approved by the Engineer, in consultation with the Architect. The mockup must be approved by the Engineer prior to installation of the rest of the granite. The mock-up may be used as part of the Work, and may be included in the finished Work, when so approved by the Engineer.

(E) Process: There will be no material delivery to job site without prior written approval from the Engineer; all material delivered to site without such approval shall be rejected. Contractor shall submit samples in sufficient time as to not delay progress of Construction.

6. MEASUREMENT & PAYMENT – Linear Foot.

The quantity to be measured shall be the linear footage of granite clad concrete stem wall at an average height of 30" installed, in place, in accordance with the plans, specifications, and directions of the Engineer, inclusive of all granite, concrete footings, concrete stem walls, reinforcing steel, hardware, stone base, and all other materials and labor required for the construction of the wall.

ITEM 9000-1012, GRANITE STEPS, LINEAR FOOT OF RISER

1. DESCRIPTION

Under this section the Contractor shall furnish and install all dimensioned granite tread risers, concrete base, and footings, in accordance with the details indicated on the Contract Drawings, specified, or directed by the Engineer.

2. QUALITY ASSURANCE:

(A) Statement of Application: The Contractor, by commencing the work of this Section, assumes overall responsibility, as a part of his warranty of the work, to assure that all assemblies, components, and parts shown or required within the work of this Section, comply with the Contract Documents. The Contractor shall further warrant:

- (1) That all components, specified or required to satisfactorily complete the installation, are compatible with each other and with the conditions of installation and expected use.
- 2) The overall effective integration and correctness of individual parts and the whole of the system.
- 3) Compatibility with adjoining substrates, materials, and work by other trades.
- 4) There shall be no material failure due to improper design and fabrication of the stone. All materials are to fully perform to their normal life expectancy.

(B) Subcontractor Qualifications: Subcontract fabrication and installation of stone to a firm or firms which have successfully fabricated and/or installed stone similar to the quality specified and in the quantity shown for a period of not less than five (5) years. The Contractor shall submit for approval of the Engineer the name of the subcontractor he proposes to use and upon which his bid is based, along with their respective work history experience, and at least one sample of each different color granite masonry which he will use in the project. Each different color of granite masonry shall be a product of a single quarry.

(C) Examination Criteria: All examinations, selections, and acceptances shall be for the purpose of achieving a final appearance of stone with the greatest possible uniformity, and will be based upon the following criteria:

- (1) Color within pre-selected color ranges and finish.
- (2) Sequence matching of adjacent stone units.
- (3) Only one source of each type of stone shall be used throughout the work. Stone shall match the type, pattern, color, texture, and finish of samples available for inspection in the office of Engineer.
- (4) Conformance to approved shop drawings and details within specified dimensions

and tolerances.

(5) Other criteria as specified in Section 9.95 RCP.25 – “Products”, herein.

(D) Acceptance of Work: Each and every piece of stone shall be subject to the Engineer, in consultation with the Architect's acceptance, and any pieces which may be rejected after having been set shall be carefully cut out and replaced with new suitable stone without delay and without cost to the Owner. Any piece or pieces damaged in the removal and resetting of defective pieces shall also be removed and suitable, approved pieces provided and set. Patching or filling of stone is not permitted. Stone having chipped arises or broken corners shall be rejected. Engineer's inspection of the stone does not relieve the Contractor for this work from his responsibility to provide all stonework in accordance with the approved samples and shop drawings.

(E) Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for adjustments and fitting where taking of field measurements before fabrication might delay the work.

3. MATERIALS

Granite masonry, to be cut and installed, shall be free of cracks, seams, or starts which may impair its structural integrity. All exposed walking surfaces shall be thermal finish as shown on the plans. Granite shall be as approved by the client and as supplied by:

1. Manufacturer: Cold Spring Granite
17482 Granite West Road
Cold Spring MN 56320-4578
(800) 421-0166

2. North Carolina Granite
PO Box 151
Mount Airy, NC 27030
1(800) 227 6242

Or approved equal.

Granite Treads: 6" height x 36" typical lengths; Gray color to match existing granite walls at Spruce Street Harbor Park; assume Virginia Mist granite, thermal finish.

Mortar for setting and pointing shall be one part Portland cement and one part plastic lime hydrate to three parts of clean, non-staining sand. It shall be mixed in small batches, using clean, non-alkaline water, until it is thoroughly homogeneous, stiff and plastic. After mixing, the mortar shall set for not less than one hour or more than two hours before being used.

Sealant: Sealant and related materials shall conform to the following:

- 1) For joint filler provide closed cell extruded neoprene gasket conforming to ASTM C 509, grade 4, white or light gray to match stone.
- 2) Sealant: Two (2) part self-leveling polyurethane sealant complying with ASTM C-920, Type M, Class 25, Grade P&NS, equal to Sikaflex-2c NS/SL made by Sika Chemical Co., Tremco or Pecora or approved equal . Color of sealant shall be white or light gray to match stone, as approved by the Engineer in consultation with the Landscape Architect.
- 3) Back-up rod shall be "Ethafoam" or approved equal.
- 4) Prime joints using primer recommended by sealant manufacturer.

4. METHOD

1. Fabrication:

- (A) All stonework shall be executed by mechanics skilled in the trade. All stone shall be well-cured and seasoned before cutting. Cut stone units with bed, unless otherwise approved by the Engineer.
- (B) Stone shall be accurately cut to sizes, shapes, profiles and dimensions. There shall be no deviation from jointing.
- (C) Exposed surfaces and edges of stone units shall be free from cracks, broken corners, chipped edges, scratches, or other defects affecting appearance. Patching or filling not permitted.
- (D) The use of stone with chipped edges or faces shall not be permitted.
- (E) Cut stone units full and true on faces, reveals, beds, joint and top, to the full dimensions required by drawings. All edges shall be straight and true with sharp and true arrises. All stone shall fit together accurately.
- (F) Make faces of stone units in same plane flush at joints. All finished surfaces shall be true in line and face.
- (G) Sawn surfaces and edges shall be cleaned of all rust stains and iron particles.
- (H) Cut stone to allow for uniform 3/8" wide joints, or as otherwise noted on the Contract Drawings.
- (I) Provide holes and sinkages required to accommodate anchors and other items which connect to or penetrate the stone.
- (J) Include all cutting, drilling, and fitting of stonework required to accommodate the work of other trades. In cutting and fitting, carefully cut and grind edges to a neat tight fit. Do cutting in such a manner so as not to impair strength or appearance of stone. Use physical templates for all cutting and drilling; obtain required

templates from proper trades.

2. Inspection and Coordination

(A) Inspection: Examine the areas and conditions where granite seat wall is to be installed. Notify the Engineer of any conditions detrimental to the proper installation and subsequent use, and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work. Verify in writing.

(B) Coordination: Coordinate the work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from applicable trades for proper coordination of this work.

3. Preparation

(A) Etch concrete substrate with 10% solution of muriatic acid as may be required to remove curing compounds or other substances that would interfere with proper bond of mortar. Rinse with water to remove all traces of acid.

(B) Seal substrate with sealer as recommended by manufacturer of mortar.

4. Installation Tolerances: All work of this Section shall be plumb, square, level, true to radius and correctly aligned within the following limitations:

(A) Offset from true horizontal, vertical and design location shall not exceed 1/8" per ten (10) feet of length for any component, not cumulative.

(B) Maximum offset from true alignment between abutting components shall not exceed 1/16".

5. Control:

(A) Mockup: Prior to general installation of this work, install a 10' section of the seat wall in accordance with final approved shop drawings. Engineer shall be informed of time and place of such installation of control section. Obtain Engineer's acceptance of visual qualities of control section before start of general installation. Replace unsatisfactory work, as directed, until acceptable to the Engineer. Retain control section during construction as a standard for judging completed work. Do not alter, move or destroy control section unless directed by the Engineer.

(B) Qualifications of Workmen: All work shall be performed by skilled workmen, specially trained and experienced in this type of work.

3. Job Conditions

- (A) Contractor is required to submit for approval, in detail, the methods proposed for hot weather or cold weather curing, protection and monitoring of work when the mean daily air temperature is below 40°F.
- (B) Cold Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove any ice or snow formed on stonework bed by carefully applying heat until top surface is dry to touch. Do not use salt to thaw ice in anchor holes or slots. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents, and do not use calcium chloride in mortar or grout. Remove stonework determined to be frozen or damaged by freezing conditions. Comply with cold-weather construction requirements constrained in ACI 530/ASCE6/TMS 602.
- (C) Cold Weather Cleaning: Use liquid cleaning methods only when mean daily air temperature is 40 degrees F or above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- (D) Hot Weather Requirements: Comply with hot weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

3. Delivery, Storage and Handling

- (A) Protection: Protect stone during storage and construction against moisture, soiling, staining, and physical damage. Protect mortar materials and stonework accessories from weather, moisture and contamination with earth and other foreign materials.
- (B) Handling: Handle stone to prevent chipping, breakage, soiling, or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials. Lift with wide-belt type slings wherever possible; do not use wire rope or ropes containing tar or other substances which might cause staining. If required, use wood rollers and provide cushion at end of wood slides.
- (C) Storage: Store stone on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skids and stones to distribute weight evenly and to prevent breakage or cracking of stones. Protect stored stone from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around stones. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

4. Setting of Granite

- (A) Application:

Preparation of Subbase: Clean concrete subbase to remove dirt, dust, debris, film or curing compound, and loose particles. Saturate concrete subbase with clean water several hours before placing setting bed. About one hour prior to placing setting bed, remove surface water. Mortar bed shall consist of the following:

(B) Setting

- 1) The prepared mortar shall be spread to the desired thickness. The mortar shall be rodded and compacted with a steel trowel.
- 2) Stone shall be placed in the wet slurry coat before the surface dries. Uniform joints shall be maintained with a nominal width of 1/8".
- 3) After each piece is laid, it shall be beat in with a wooden block or rubber mallet to level the surface and embed the stone. Bearing shall be done before mortar takes initial set.

(D) Joint Treatment for Joints to Receive Sealant

- 1) All exterior control joints as noted on the drawings and all joints in base work shall receive back-up fillers and sealant as specified herein.
- 2) General: Install all sealant in strict accordance with manufacturer's recommendations as approved by the Engineer.
- 3) Preparation: Thoroughly clean all joints, removing all foreign matter such as dust, oil, grease, water, surface dirt and frost. Sealant must be applied to the base surface. Previously applied paint or film must be entirely removed.
- 4) Application
 - a) Install back-up material and joint filler, of type and size specified, using a blunt instrument so as not to puncture the surface skin, at proper depth in joint to provide sealant dimensions as detailed. Provide back-up material of suitable size and shape so that, when compressed (25 to 50%) it will fit in joints as required. Sealant shall not be applied without back-up materials, and, if necessary, bond breaker strip. When using back-up of rod stock, roll the material into the joint to avoid lengthwise stretching. Rod stock shall not be twisted or braided.
 - b) Apply masking tape, where required, to prevent staining of adjacent stone surfaces, in continuous strips in alignment with joint edge. Remove tape immediately after joints have been sealed and tooled as directed.
 - c) Prime surfaces of all stone to receive sealant.
 - d) Apply, tool and finish sealant as required. When tooling light colored

sealants, use dry tool or tooling solution recommended by sealant manufacturer.

- e) Clean adjacent surfaces free of sealant or soiling resulting from this work as work progresses. Use solvent or cleaning agent as recommended by sealant manufacturer. All finished work shall be left in a neat, clean condition.
- f) Sealants shall be applied in such a manner as to completely fill the joint.
- g) All sealants shall be tooled to insure complete filling of the joint to eliminate air pockets and voids and to insure positive adhesion of the sealant with the bonding surfaces.
- h) All joints shall be neatly finished.

(D) Cleaning: Excess material shall be cleaned from the stone surface with water immediately as the work progresses. Cleaning shall be done while mortar is fresh and before it hardens on the surface. After being pointed the granite work shall be carefully cleaned starting at the top, removing all dirt, excess mortar stains and other defacements. Stainless steel wire brushes or wool may be used, but the use of other wire brushes, or of acid or other solutions which may cause discolorations is expressly prohibited.

- 5. Repairing after Installation: Remove and replace stone units which are broken, chipped, stained, or otherwise damaged. Where directed, remove and replace units which do not match adjoining stonework. Patching or hiding defects in granite will not be permitted. Provide new matching units, install as specified and reseal joints to eliminate evidence of replacement. Reseal defective and unsatisfactory joints to provide a neat, uniform appearance.
- 6. Protection
 - A) After installation and cleaning, protect stonework from damage during subsequent construction activities.
 - B) Protect all stonework from other materials that will cause stain. Stone subject to damage after setting shall be properly covered or protected.
 - C) At completion of construction work, remove all temporary protection from the work of this Section.
 - D) Examine all work and repair all damage. Clean soiled or stained surfaces. In the event damage is irreparable, or soiled or stained surface cannot be cleaned, then remove and replace such items at no additional cost to Owner.

5. SUBMITTALS

(A) Product Data: Submit to the Engineer for approval manufacturer's, fabricator's and finisher's specifications and installation instructions for products used in the work of this Section, including finishing materials and methods.

(B) Shop Drawings: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer prior to the fabrication of the blocks.

(C) Samples: Submit four samples each of the following:

1. Stone: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the blocks.
2. Mortar Materials: Submit certification that mortar materials comply with specification requirements.
3. Grouting Materials: Submit color samples
4. Anchors: Submit each type
5. Joint sealant and back-up material

The samples must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the benches.

(D) Process: There will be no material delivery to job site without prior written approval from the Engineer; all material delivered to site without such approval shall be rejected. Contractor shall submit samples in sufficient time as to not delay progress of Construction.

6. MEASUREMENT & PAYMENT – Linear Foot of Riser.

The quantity to be measured shall be the linear footage of granite stair tread riser installed, in place, in accordance with the plans, specifications, and directions of the Engineer, inclusive of all granite, concrete footings, concrete base, reinforcing steel, hardware, stone base, and all other materials and labor required for the construction of the steps.

ITEM 9000-1013, BRICK PAVERS ON CONCRETE SUBBASE, SQUARE YARDS

1 DESCRIPTION

This work is the furnishing and installing of brick pavers on a sand setting bed and concrete base as shown on plans.

2 MATERIAL

Pavers shall be of the size and color indicated below.

a) Brick Pavers

1. As supplied by Church Brick, 609-298-0090, or Approved Equal.
2. Manufacturer: Whitacre Greer
3. Face Size: 2-1/4" x 9" Boardwalk Pavers
4. Thickness: 2-1/4"
5. Pattern: Running Bond
6. Finish: Bevel with Spacing Lugs
7. Colors:
 - a. 50% #56 Desert Gray
 - b. 25% #50 Ivory
 - c. 25% #53 Cimmerian

b) Base concrete

1. Shall consist of a Cement Concrete at the thickness indicated on the drawings to be provided under Item 0501-0020, Plain Cement Concrete Pavement.
Aluminum oxide additive is not required for unit paver applications.

c) Bedding and Jointing Sand

1. The bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. It can be natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 3. When concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available.
2. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in Table 1.

Table 1	
Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100

No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

3. The joint sand shall conform to the grading requirements of ASTM C 144 as shown in Table 4:

Table 2		
	Natural Sand	Manufactured Sand
Sieve Size	Percent Passing	Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 - 100	95 to 100
No. 16 (1.18 mm)	70 - 100	70 to 100
No. 30 (600 µm)	40 - 75	40 to 75
No. 50 (300 µm)	10 - 35	20 to 40
No. 100 (150 µm)	2 - 15	10 to 25
No. 200 (75 µm)	0	0 to 10

3 QUALITY CONTROL

- a) Installation shall be by a contractor and crew with at least 5 years of experience in laying stone pavers on projects of similar nature.
- b) Shop or product drawings and product data shall be submitted to the owner.
- c) Full size samples of granite paving units shall be submitted to indicate color and shape selections.
- d) Sieve analyses for grading of bedding and joint sand shall be submitted to the engineer.
- e) Test results shall be submitted from an independent testing laboratory for compliance of paving unit requirements to ASTM C 936 or other applicable requirements.

4 CONSTRUCTION

As shown on the contract drawings and as follows:

- a) Base Preparation
 1. Complete all underground utility work, curbing and foundation construction prior to commencement of concrete base construction.

b) Concrete Base

1. The pavers shall be laid on a Cement Concrete base conforming to the requirements of Item 0501-0020, Plain Cement Concrete Pavement.
2. Under no circumstances shall further pavement construction proceed until the concrete base has been inspected and approved by the Engineer.

c) Paver Installation

1. Sand or pavers shall not be installed during heavy rain or snowfall.
2. Sand and pavers shall not be installed over frozen base materials.
3. Frozen sand shall not be installed.
4. The sand shall be spread evenly over the base course and screeded to a nominal 1 inch thickness, not to exceed 1 ½". The screeded sand should not be disturbed. Sufficient sand shall be placed in order to stay ahead of the laid pavers. Bedding sand shall not be used to fill depressions exceeding 1 ½ in. thickness in the base surface.
5. Pavers shall be free of foreign material before installation.
6. Pavers shall be inspected for color distribution and all chipped, damaged or discolored pavers shall be replaced.

d) Joints between the pavers on average shall be hand tight.

e) Gaps at the edges of the paved area shall be filled with cut pavers or edge units.

f) Pavers to be placed along the edge shall be cut with a masonry saw.

g) The paver surface shall be swept clean of all debris before compacting, in order to avoid damage from point loads.

h) A low amplitude, high frequency plate compactor shall be used to compact the pavers into the sand with a compaction force of 5000 lbs.

i) The pavers shall be compacted and dry joint sand shall be swept into the joints until the joints are full. This will require at least two or three passes with the compactor. Do not compact within 3 ft. of the unrestrained edges of the paving units.

j) All work to within 3 ft. of the laying face must be left fully compacted with sand-filled joints at the completion of each day.

k) Excess joint sand shall be swept off when the job is complete.

5 MEASUREMENT AND PAYMENT – Square Yards

Brick Pavers shall be paid per square yard of pavers to be installed. Sand for bedding and joints shall be considered subsidiary to the installation of this item. Aggregate Subbase, Concrete Base, and Concrete Headers shall be paid for under the respective items.

ITEM 9000-1014, PRECAST PANEL CLAD CONCRETE STEM WALL, LINEAR FOOT

1. DESCRIPTION

Under this section the Contractor shall furnish and install all precast concrete panel clad concrete stem walls and copings, , in accordance with the details indicated on the Contract Drawings, specified, or directed by the Engineer.

2. QUALITY ASSURANCE:

(A) Statement of Application: The Contractor, by commencing the work of this Section, assumes overall responsibility, as a part of his warranty of the work, to assure that all assemblies, components, and parts shown or required within the work of this Section, comply with the Contract Documents. The Contractor shall further warrant:

- (1) That all components, specified or required to satisfactorily complete the installation, are compatible with each other and with the conditions of installation and expected use.
- 2) The overall effective integration and correctness of individual parts and the whole of the system.
- 3) Compatibility with adjoining substrates, materials, and work by other trades.
- 4) There shall be no material failure due to improper design and fabrication of the stone. All materials are to fully perform to their normal life expectancy.

(B) Subcontractor Qualifications: Subcontract fabrication and installation of precast concrete panels and copings to a firm or firms which have successfully fabricated and/or installed precast concrete similar to the quality specified and in the quantity shown for a period of not less than five (5) years. The Contractor shall submit for approval of the Engineer the name of the subcontractor he proposes to use and upon which his bid is based, along with their respective work history experience, and at least one sample of each different color of precast concrete which he will use in the project. Each different color of precast concrete shall be a product of a single fabricator.

(C) Examination Criteria: All examinations, selections, and acceptances shall be for the purpose of achieving a final appearance of precast concrete with the greatest possible uniformity, and will be based upon the following criteria:

- (1) Color within pre-selected color ranges and finish.
- (3) Only one source of each type of precast concrete shall be used throughout the work. Precast concrete shall match the type, pattern, color, texture, and finish of samples available for inspection in the office of Engineer.
- (4) Conformance to approved shop drawings and details within specified dimensions and tolerances.

(5) Other criteria as specified in Section 9.95 RCP.25 – “Products”, herein.

(D) Acceptance of Work: Each and every piece of precast concrete shall be subject to the Engineer, in consultation with the Architect's acceptance, and any pieces which may be rejected after having been set shall be carefully cut out and replaced with new precast concrete without delay and without cost to the Owner. Any piece or pieces damaged in the removal and resetting of defective pieces shall also be removed and suitable, approved pieces provided and set. Patching or filling of precast concrete is not permitted. Pieces having chipped arises or broken corners shall be rejected. Engineer's inspection of the precast concrete does not relieve the Contractor for this work from his responsibility to provide all precast concrete in accordance with the approved samples and shop drawings.

(E) Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for adjustments and fitting where taking of field measurements before fabrication might delay the work.

3. MATERIALS

Precast Concrete Panels and Coping Pieces, shall be free of cracks, seams, or starts which may impair its structural integrity. Precast concrete shall be as approved by the client and as supplied by:

1. Manufacturer: Sun Precast, 570-658-8000 or Approved Equal
2. Color: Tan, Sand, Beige Ranges; color to be selected by Landscape Architect.

Or approved equal.

Copings: As indicated in the drawings.

Wall Cladding: As indicated in the drawings and: 3" thick x average 24" height x 4'-0" wide.

Dowels and other anchoring devices shall be Type 304 stainless steel or suitable non-ferrous metal of the types and sizes shown on drawings.

Mortar for setting and pointing shall be one part Portland cement and one part plastic lime hydrate to three parts of clean, non-staining sand. It shall be mixed in small batches, using clean, non-alkaline water, until it is thoroughly homogeneous, stiff and plastic. After mixing, the mortar shall set for not less than one hour or more than two hours before being used.

Sealant: Sealant and related materials shall conform to the following:

- 1) For joint filler provide closed cell extruded neoprene gasket conforming to ASTM C 509, grade 4, color to match precast concrete.

- 2) Sealant: Two (2) part self-leveling polyurethane sealant complying with ASTM C-920, Type M, Class 25, Grade P&NS, equal to Sikaflex-2c NS/SL made by Sika Chemical Co., Tremco or Pecora or approved equal . Color of sealant to match precast concrete, as approved by the Engineer in consultation with the Landscape Architect.
- 3) Back-up rod shall be "Ethafoam" or approved equal.
- 4) Prime joints using primer recommended by sealant manufacturer.

4. METHOD

1) Fabrication:

- a) Provide cast stone units complying with ASTM C 1364 using the wet-cast method.
- b) Provide units that are resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.
- c) Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
- d) Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
- e) Provide drips on projecting elements unless otherwise indicated.
- f) Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch.
- g) Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch, whichever is greater, but in no case by more than 1/4 inch.
- h) Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch, whichever is greater.
- i) Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch on formed surfaces of units and 3/8 inch on unformed surfaces.
- j) Cure units in enclosed moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
- k) Keep units damp and continue curing to comply with one of the following:
 - i. No fewer than five days at mean daily temperature of 70 deg F or above.
 - ii. No fewer than six days at mean daily temperature of 60 deg F or above.
 - iii. No fewer than seven days at mean daily temperature of 50 deg F or above.
 - iv. No fewer than eight days at mean daily temperature of 45 deg F or above.
 - v. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
 - vi. Colors and Textures: As selected by Architect from manufacturer's full range.

2) Inspection and Coordination

- a) Inspection: Examine the areas and conditions where precast clad walls are to be installed. Notify the Engineer of any conditions detrimental to the proper installation and subsequent use, and timely completion of the work. Do not proceed with the

work until unsatisfactory conditions are corrected to permit proper installation of the work. Verify in writing.

- b) Coordination: Coordinate the work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from applicable trades for proper coordination of this work.

3) Preparation

- a) Set cast stone as indicated on Drawings. Set units accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances.
 - (1) Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - (2) Coordinate installation of cast stone with installation of flashing.
 - (a) Wet joint surfaces thoroughly before applying mortar or setting in mortar.
 - (b) Set units in full bed of mortar with full head joints unless otherwise indicated.
- b) Set units with joints 1/4 to 3/8 inch wide unless otherwise indicated.
 - (1) Build anchors and ties into mortar joints as units are set.
 - (2) Fill dowel holes and anchor slots with mortar.
 - (3) Fill collar joints solid as units are set.
 - (4) Build concealed flashing into mortar joints as units are set.
 - (5) Keep head joints in coping and other units with exposed horizontal surfaces open to receive sealant.
 - (6) Keep joints at shelf angles open to receive sealant.
- c) Rake out joints for pointing with mortar to depths of not less than 3/4 inch. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- d) Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch. Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- e) Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- f) Provide sealant joints at copings and other horizontal surfaces, at expansion, control, and pressure-relieving joints, and at locations indicated.
 - 1. Keep joints free of mortar and other rigid materials.
 - 2. Build in compressible foam-plastic joint fillers where indicated.
 - 3. Form joint of width indicated, but not less than 3/8 inch.
 - 4. Prime cast stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
 - 5. Prepare and apply sealant of type and at locations indicated on the drawings.

4) Installation Tolerances

- a) Variation from Plumb: Do not exceed 1/8 inch in 10 feet maximum.
- b) Variation from Level: Do not exceed 1/8 inch in 10 feet maximum.
- c) Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches or one-fourth of nominal joint width, whichever is less.
- d) Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch, except where variation is due to warpage of units within tolerances specified.

5) Adjusting and Cleaning

- a) Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.
- b) Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
- c) In-Progress Cleaning: Clean cast stone as work progresses.
 - 1. Remove mortar fins and smears before tooling joints.
 - 2. Remove excess sealant immediately, including spills, smears, and spatter.
- d) Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
 - 3. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 - 5. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - 6. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

6) Control:

- (A) Qualifications of Workmen: All work shall be performed by skilled workmen, specially trained and experienced in this type of work.

7) Job Conditions

- (A) Contractor is required to submit for approval, in detail, the methods proposed for hot weather or cold weather curing, protection and monitoring of work when the mean daily air temperature is below 40°F.
- (B) Cold Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove any ice or snow formed on stonework bed by carefully applying heat until top surface is dry to touch. Do not use salt to thaw ice in anchor holes or slots. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents, and do not use calcium chloride in mortar or grout. Remove stonework determined to be frozen or damaged by freezing conditions. Comply with cold-weather construction requirements constrained in ACI 530/ASCE6/TMS 602.
- (C) Cold Weather Cleaning: Use liquid cleaning methods only when mean daily air temperature is 40 degrees F or above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- (D) Hot Weather Requirements: Comply with hot weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

8) Delivery, Storage and Handling

- (A) Protection: Protect pieces during storage and construction against moisture, soiling, staining, and physical damage. Protect mortar materials and masonry accessories from weather, moisture and contamination with earth and other foreign materials.
- (B) Handling: Handle pieces to prevent chipping, breakage, soiling, or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials. Lift with wide-belt type slings wherever possible; do not use wire rope or ropes containing tar or other substances which might cause staining. If required, use wood rollers and provide cushion at end of wood slides.
- (C) Storage: Store precast on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skids and pieces to distribute weight evenly and to prevent breakage or cracking of pieces. Protect stored precast pieces from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around the precast. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

5. SUBMITTALS

- (A) Product Data: Submit to the Engineer for approval manufacturer's, fabricator's and finisher's specifications and installation instructions for products used in the work of this

Section, including finishing materials and methods.

(B) Shop Drawings: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer prior to the fabrication of the blocks.

(C) Samples: Submit four samples each of the following:

1. Precast Colors and Finishes: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the blocks.
2. Mortar Materials: Submit certification that mortar materials comply with specification requirements.
3. Grouting Materials: Submit color samples
4. Anchors: Submit each type
5. Joint sealant and back-up material

The samples must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the pieces.

(D) Mockup: Contractor shall fabricate and install a mock-up of approximately 5 linear feet in a location approved by the Engineer, in consultation with the Architect. The mockup must be approved by the Engineer prior to installation of the rest of the wall. The mock-up may be used as part of the Work, and may be included in the finished Work, when so approved by the Engineer.

(E) Process: There will be no material delivery to job site without prior written approval from the Engineer; all material delivered to site without such approval shall be rejected. Contractor shall submit samples in sufficient time as to not delay progress of Construction.

6. MEASUREMENT & PAYMENT – Linear Foot.

The quantity to be measured shall be the linear footage of precast panel clad concrete stem wall

at an average height of 24" installed, in place, in accordance with the plans, specifications, and directions of the Engineer, inclusive of all precast panels, copings, concrete footings, concrete stem walls, reinforcing steel, hardware, stone base, and all other materials and labor required for the construction of the wall.

ITEM 9000-1015, PRECAST CONCRETE STEPS, LINEAR FOOT OF RISER

1. DESCRIPTION

Under this section the Contractor shall furnish and install all precast concrete tread risers, concrete base, and footings, in accordance with the details indicated on the Contract Drawings, specified, or directed by the Engineer.

2. QUALITY ASSURANCE:

(A) Statement of Application: The Contractor, by commencing the work of this Section, assumes overall responsibility, as a part of his warranty of the work, to assure that all assemblies, components, and parts shown or required within the work of this Section, comply with the Contract Documents. The Contractor shall further warrant:

- (1) That all components, specified or required to satisfactorily complete the installation, are compatible with each other and with the conditions of installation and expected use.
- 2) The overall effective integration and correctness of individual parts and the whole of the system.
- 3) Compatibility with adjoining substrates, materials, and work by other trades.
- 4) There shall be no material failure due to improper design and fabrication of the stone. All materials are to fully perform to their normal life expectancy.

(B) Subcontractor Qualifications: Subcontract fabrication and installation of precast concrete panels and copings to a firm or firms which have successfully fabricated and/or installed precast concrete similar to the quality specified and in the quantity shown for a period of not less than five (5) years. The Contractor shall submit for approval of the Engineer the name of the subcontractor he proposes to use and upon which his bid is based, along with their respective work history experience, and at least one sample of each different color of precast concrete which he will use in the project. Each different color of precast concrete shall be a product of a single fabricator.

(C) Examination Criteria: All examinations, selections, and acceptances shall be for the purpose of achieving a final appearance of precast concrete with the greatest possible uniformity, and will be based upon the following criteria:

- (1) Color within pre-selected color ranges and finish.
- (3) Only one source of each type of precast concrete shall be used throughout the work. Precast concrete shall match the type, pattern, color, texture, and finish of samples available for inspection in the office of Engineer.
- (4) Conformance to approved shop drawings and details within specified dimensions and tolerances.

(5) Other criteria as specified in Section 9.95 RCP.25 – “Products”, herein.

(D) Acceptance of Work: Each and every piece of precast concrete shall be subject to the Engineer, in consultation with the Architect's acceptance, and any pieces which may be rejected after having been set shall be carefully cut out and replaced with new precast concrete without delay and without cost to the Owner. Any piece or pieces damaged in the removal and resetting of defective pieces shall also be removed and suitable, approved pieces provided and set. Patching or filling of precast concrete is not permitted. Pieces having chipped arises or broken corners shall be rejected. Engineer's inspection of the precast concrete does not relieve the Contractor for this work from his responsibility to provide all precast concrete in accordance with the approved samples and shop drawings.

(E) Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for adjustments and fitting where taking of field measurements before fabrication might delay the work.

3. MATERIALS

Precast Concrete Panels and Coping Pieces, shall be free of cracks, seams, or starts which may impair its structural integrity. Precast concrete shall be as approved by the client and as supplied by:

1. Manufacturer: Sun Precast, 570-658-8000 or Approved Equal
2. Color: Tan, Sand, Beige Ranges; color to be selected by Landscape Architect.

Or approved equal.

Precast Concrete Treads: 6" height x 36" typical lengths.

Mortar for setting and pointing shall be one part Portland cement and one part plastic lime hydrate to three parts of clean, non-staining sand. It shall be mixed in small batches, using clean, non-alkaline water, until it is thoroughly homogeneous, stiff and plastic. After mixing, the mortar shall set for not less than one hour or more than two hours before being used.

Sealant: Sealant and related materials shall conform to the following:

- 1) For joint filler provide closed cell extruded neoprene gasket conforming to ASTM C 509, grade 4, white or light gray to match stone.
- 2) Sealant: Two (2) part self-leveling polyurethane sealant complying with ASTM C-920, Type M, Class 25, Grade P&NS, equal to Sikaflex-2c NS/SL made by Sika Chemical Co., Tremco or Pecora or approved equal . Color of sealant shall be white or light gray to match stone, as approved by the Engineer in consultation with the Landscape Architect.
- 3) Back-up rod shall be "Ethafoam" or approved equal.

4) Prime joints using primer recommended by sealant manufacturer.

4. METHOD

1) Fabrication:

- a) Provide cast stone units complying with ASTM C 1364 using the wet-cast method.
- b) Provide units that are resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.
- c) Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
- d) Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
- e) Provide drips on projecting elements unless otherwise indicated.
- f) Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch.
- g) Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch, whichever is greater, but in no case by more than 1/4 inch.
- h) Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch, whichever is greater.
- i) Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch on formed surfaces of units and 3/8 inch on unformed surfaces.
- j) Cure units in enclosed moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
- k) Keep units damp and continue curing to comply with one of the following:
 - i. No fewer than five days at mean daily temperature of 70 deg F or above.
 - ii. No fewer than six days at mean daily temperature of 60 deg F or above.
 - iii. No fewer than seven days at mean daily temperature of 50 deg F or above.
 - iv. No fewer than eight days at mean daily temperature of 45 deg F or above.
 - v. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
 - vi. Colors and Textures: As selected by Architect from manufacturer's full range.

2) Inspection and Coordination

- a) Inspection: Examine the areas and conditions where precast clad walls are to be installed. Notify the Engineer of any conditions detrimental to the proper installation and subsequent use, and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work. Verify in writing.
- b) Coordination: Coordinate the work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from

applicable trades for proper coordination of this work.

3) Preparation

- a) Set cast stone as indicated on Drawings. Set units accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances.
 - (1) Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - (2) Coordinate installation of cast stone with installation of flashing.
 - (a) Wet joint surfaces thoroughly before applying mortar or setting in mortar.
 - (b) Set units in full bed of mortar with full head joints unless otherwise indicated.
- b) Set units with joints 1/4 to 3/8 inch wide unless otherwise indicated.
 - (1) Build anchors and ties into mortar joints as units are set.
 - (2) Fill dowel holes and anchor slots with mortar.
 - (3) Fill collar joints solid as units are set.
 - (4) Build concealed flashing into mortar joints as units are set.
 - (5) Keep head joints in coping and other units with exposed horizontal surfaces open to receive sealant.
 - (6) Keep joints at shelf angles open to receive sealant.
- c) Rake out joints for pointing with mortar to depths of not less than 3/4 inch. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- d) Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch. Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- e) Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- f) Provide sealant joints at copings and other horizontal surfaces, at expansion, control, and pressure-relieving joints, and at locations indicated.
 1. Keep joints free of mortar and other rigid materials.
 2. Build in compressible foam-plastic joint fillers where indicated.
 3. Form joint of width indicated, but not less than 3/8 inch.
 4. Prime cast stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
 5. Prepare and apply sealant of type and at locations indicated on the drawings.

4) Installation Tolerances

- a) Variation from Plumb: Do not exceed 1/8 inch in 10 feet maximum.
- b) Variation from Level: Do not exceed 1/8 inch in 10 feet maximum.
- c) Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches or one-fourth of nominal joint width, whichever is less.
- d) Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush

alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch, except where variation is due to warpage of units within tolerances specified.

5) Adjusting and Cleaning

- a) Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.
- b) Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
- c) In-Progress Cleaning: Clean cast stone as work progresses.
 - 1. Remove mortar fins and smears before tooling joints.
 - 2. Remove excess sealant immediately, including spills, smears, and spatter.
- d) Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
 - 3. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 - 5. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - 6. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

6) Control:

- (A) Qualifications of Workmen: All work shall be performed by skilled workmen, specially trained and experienced in this type of work.

7) Job Conditions

- (A) Contractor is required to submit for approval, in detail, the methods proposed for hot weather or cold weather curing, protection and monitoring of work when the mean daily air temperature is below 40°F.

- (B) Cold Weather Requirements: Do not use frozen materials or materials mixed or

coated with ice or frost. Do not build on frozen substrates. Remove any ice or snow formed on stonework bed by carefully applying heat until top surface is dry to touch. Do not use salt to thaw ice in anchor holes or slots. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents, and do not use calcium chloride in mortar or grout. Remove stonework determined to be frozen or damaged by freezing conditions. Comply with cold-weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

(C) Cold Weather Cleaning: Use liquid cleaning methods only when mean daily air temperature is 40 degrees F or above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

(D) Hot Weather Requirements: Comply with hot weather construction requirements constrained in ACI 530/ASCE6/TMS 602.

8) Delivery, Storage and Handling

(A) Protection: Protect pieces during storage and construction against moisture, soiling, staining, and physical damage. Protect mortar materials and masonry accessories from weather, moisture and contamination with earth and other foreign materials.

(B) Handling: Handle pieces to prevent chipping, breakage, soiling, or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials. Lift with wide-belt type slings wherever possible; do not use wire rope or ropes containing tar or other substances which might cause staining. If required, use wood rollers and provide cushion at end of wood slides.

(C) Storage: Store precast on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skids and pieces to distribute weight evenly and to prevent breakage or cracking of pieces. Protect stored precast pieces from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around the precast. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

5. SUBMITTALS

(A) Product Data: Submit to the Engineer for approval manufacturer's, fabricator's and finisher's specifications and installation instructions for products used in the work of this Section, including finishing materials and methods.

(B) Shop Drawings: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction,

relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer prior to the fabrication of the blocks.

(C) Samples: Submit four samples each of the following:

1. Precast Colors and Finishes: Submit for all items of work of this Section, at the appropriate scale, showing locations, layouts, materials, thicknesses, finishes, dimensions, construction, relation to adjoining construction, erection details, profiles, jointing, hardware, anchors and all other details to fully illustrate the work of this Section. The shop drawings must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the blocks.
2. Mortar Materials: Submit certification that mortar materials comply with specification requirements.
3. Grouting Materials: Submit color samples
4. Anchors: Submit each type
5. Joint sealant and back-up material

The samples must be approved by the Engineer, in consultation with the Landscape Architect, prior to the fabrication of the pieces.

(D) Mockup: Contractor shall fabricate and install a mock-up of approximately 3 linear feet in a location approved by the Engineer, in consultation with the Architect. The mockup must be approved by the Engineer prior to installation of the rest of the steps. The mock-up may be used as part of the Work, and may be included in the finished Work, when so approved by the Engineer.

(E) Process: There will be no material delivery to job site without prior written approval from the Engineer; all material delivered to site without such approval shall be rejected. Contractor shall submit samples in sufficient time as to not delay progress of Construction.

6. MEASUREMENT & PAYMENT – Linear Foot of Riser.

The quantity to be measured shall be the linear footage of precast concrete stair tread riser installed, in place, in accordance with the plans, specifications, and directions of the Engineer, inclusive of all precast concrete, concrete footings, concrete base, reinforcing steel, hardware, stone base, and all other materials and labor required for the construction of the steps.

ITEM 9000-1016, CAST IN PLACE CONCRETE STEPS, LINEAR FOOT

1 DESCRIPTION

This work consists of furnishing and constructing cast in place concrete stairs as indicated on the drawings or as directed by the Engineer.

2 MATERIAL

(a) Cement Concrete Structures per Section 1001.

3 CONSTRUCTION

- a) Place concrete directly on clean, prepared subbase.
- b) Use forms on sides and treads of stairs.
- c) Install pipe sleeves for handrail during concrete pour. Protect pipe sleeves during concrete pour so that the inside remains clean.
- d) Use chairs so that rebar can maintain minimum clearance from ground and top of stair tread.
- e) Place expansion joints as shown on the details.
- f) Provide a broom finish on each tread top.

4 MEASUREMENT & PAYMENT – Linear Foot

The quantity to be measured shall be the linear footage of precast concrete stair tread riser installed, in place, in accordance with the plans, specifications, and directions of the Engineer, inclusive of all concrete, footings, aggregate base, reinforcing steel, hardware, and all other materials and labor required for the construction of the steps.

Steel railing shall be paid per that specific item. The pipe sleeve shall be considered incidental to the steel railing.

ITEM 9000-1017, POURED IN PLACE CONCRETE CHEEKWALL, LINEAR FEET

1 DESCRIPTION

This work is the construction of cement concrete cheekwall at the back of sidewalk, typically against areas of fill.

2 MATERIAL

In accordance with Section 630.2.

3 CONSTRUCTION

In accordance with Section 630.3, except:

- As shown in Philadelphia Streets Department Standard Detail SC0109B.

4 MEASUREMENT AND PAYMENT – Linear Feet

ITEM 9000-1018, PAINT EXISTING METAL FENCING, LINEAR FOOT

1 DESCRIPTION

This work is the cleaning and painting of existing metal fence using a three-coat system, including an organic zinc-rich primer. This work includes abrasive blasting/paint removal, waste disposal, soluble salt/chloride remediation, and application of the three-coat paint system.

2 MATERIAL

All materials shall be in accordance with the specified sections of the Pennsylvania Department of Transportation Standard Specifications and the contract specifications.

(a) Refer to Section 1070.2.

Color shall be provided by DRWC.

3 CONSTRUCTION

(a) Refer to Section 1070.3. The following paragraphs may be excluded:

1. 1070.3(c)9
2. 1070.3(d)7
3. 1070.3(d)8

4 MEASUREMENT & PAYMENT

Payment for cleaning and painting the fence shall be by the linear foot of fence, measured horizontally, and shall include all horizontal and vertical rails, base plates, and any other metal pieces associated with the railing.

ITEM 9000-1019, CEMENT CONCRETE DRIVEWAY, 8" DEPTH, COLOR TINT, SQUARE YARD

1. DESCRIPTION

This work consists of construction of cement concrete driveways on an aggregate bed.

2. MATERIAL

a) See Section 676.2

b) Additional materials:

1. Color Admixture:

- a. Color shall be C-34 Dark Gray and as approved by the Landscape Architect.
- b. The color admixture shall be a single component, pigmented, water reducing concrete admixture such as Chromix Admixture for color conditioned concrete as manufactured by L.M. Scofield Co., Douglasville, GA or approved equal.
- c. Colored concrete shall contain the required number of pounds of color admixture per sack as per manufacturer's specifications.
- d. Admixture shall comply with Uniform Building Code Standard No. 26-9, as evidenced by a Research Committee Recommendation from I.C.B.O. (International Conference of Building Officials).
- e. The use of this color admixture should result in a colored concrete similar to the bikeway/driveway crossings along the Penn Street Trail (see driveway at 901 N. Penn Street, Philadelphia).

2. Compound for Curing Concrete:

- a. Shall be a water based blend of pure waxes, polymers, and additives specifically designed for use with color conditioned concrete. Compound shall be a liquid membrane forming compound for curing concrete, in compliance with ASTM designation C309.
- b. Curing compound for use with color conditioned concrete shall be Lithochrome Colorwax, as manufactured by L.M. Scofield Co., or approved equal.

3. CONSTRUCTION

Construction shall be per Section 676.3, except Section (d), as noted below:

Pavement shall be 8" thick.

(d) Concrete. As specified in Section 1001.3.

Construct a 50 square foot sample panel using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in sample panels. The field sample shall be produced by the individual workers who will perform the work for the Project. Retain samples of cements, sands, aggregates and color additives used in mockup for comparison with

materials used in remaining work. The accepted field sample provides visual standard for work under this Item. The field sample shall remain through completion of work for use as a quality standard for finished work. The contractor shall remove the field sample when directed. Field sample panels are considered incidental to the work of this item and no payment shall be made for additional samples required for approval by the engineer.

Place concrete to depth as indicated on plans. Strike off, finish, and test, as specified in Sections 501.3(k) and (p), except that manual operations are allowed and a light broom finish applied.

Form outside edges and joints with a 6 mm (1/4-inch) radius-edging tool.

Contraction Joints - Sidewalks shall have 1/4" wide by 3/4" deep saw cut type joints as shown on the plans.

Concrete shall be integrally colored using pigment admixture

Admixture shall be thoroughly and uniformly mixed into the concrete.

Light broom finish perpendicular to the bike way.

MEASUREMENT AND PAYMENT – Square Yards

Payment for this item shall only include the concrete sidewalk. The subbase will be paid separately.

ITEM 9000-1020, MODIFICATIONS TO LA VERANDA CANOPY, LUMP SUM

1. DESCRIPTION

This work consists of salvaging the existing La Veranda restaurant canopy and replacing once construction is completed.

2. MATERIAL

3. CONSTRUCTION

More detailed specifications and plans forthcoming

Contractor shall be responsible for removing the La Veranda sign immediately prior to sidewalk demolition and salvaging as much of the structure as possible. Immediately after construction is completed, contractor shall reinstall canopy. Note that canopy geometry will change due to the relocation of the steps and extension to the new lay-by curb line. Therefore, the new canopy will need a complete new cover to accommodate this new geometry.

Contractor will also be responsible for new lighting in the sign to roughly match the current lighting. Lighting should utilize commercially available LED lighting to replace the current fluorescent bulbs. Connect to the existing electrical power source.

MEASUREMENT AND PAYMENT – Lump Sum

ITEM 9000-1021 – GRANITE COBBLE ON CONCRETE, SQUARE YARDS

1 DESCRIPTION

This work is the furnishing and installation of cobble pavers on a sand setting bed and concrete base as shown in on plans.

2 MATERIAL

Cobble Pavers:

- Light Gray to Gray Granite cobble pavers, Split Sides and Cut face with Thermal finish on face.
- Face Size: 4"x8" – 5"x10".
- Thickness: 4"

Sand Setting Bed:

- 1" thick sand setting bed.

Concrete Base:

- 6" thick concrete base with weep holes as necessary for unit paver drainage.

3 CONSTRUCTION

As indicated on the drawings.

4 MEASUREMENT AND PAYMENT – Square Yard

The square yard unit cost of the cobble paver shall include all labor and materials needed to install the pavers, including the sand setting bed and joints as shown in the plans. Aggregate Subbase, Concrete Base, and Concrete Headers shall be paid for under the respective items.

ITEM 9000-1022 – ROUGH GRANITE COBBLE, SQUARE YARDS

1 DESCRIPTION

This work is the furnishing and installation of cobble pavers on a sand setting bed and compacted stone base as shown in detail on plans.

2 MATERIAL

Cobble Pavers:

- Light Gray to Gray Granite cobble pavers, Split Sides and face.
- Size: 4"x4"x4".

Sand Setting Bed:

- As indicated on drawings.

Compacted Aggregate Base:

- As indicated on drawings.

3 CONSTRUCTION

As indicated on the drawings.

4 MEASUREMENT AND PAYMENT – Square Yard

The square yard unit cost of the cobble paver shall include all labor and materials needed to install the pavers, including the sand setting bed and joints as shown in the plans. Aggregate Subbase, Concrete Base, and Concrete Headers shall be paid for under the respective items.

ITEM 9000-1023, STABILIZED STONE FINES, SQUARE YARD

1 DESCRIPTION

Work includes all labor, materials, equipment, services and maintenance necessary to complete stabilized stone fines paving as shown on the drawings and/or specified herein.

2 MATERIALS

- a) Color and Material – Stone fines shall consist of either decomposed granite or traprock, and be gray in color. The color shall match as close as possible the current colors on the approach to Pier 68.
- b) Stone Fines Screenings - Stone fines shall be ¼” minus aggregate gradation of either decomposed granite or traprock and shall consist of hard, durable, sharp-edge fragments, free from dirt or other deleterious matter, graded within the following limits:

Table 1	
Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

- c) Organic Stabilizer- Stabilizer by Stabilizer Solutions; Color: Dark Gray Mountain Path; as supplied by Green Pro Materials, (908) 647-0159. Stabilizer shall be provided factory mixed with the aggregate stone.
 - 1. Binder shall be a natural, non-toxic, non-staining, environmentally safe, organic binder that is a colorless, odorless concentrated powder specifically manufactured to bind crushed granite or crushed aggregate. The powder shall be of a size that not more than 10% is retained on a U.S. Standard #40 mesh sieve.
 - 2. The estimated mix ratio for shall be 16 lbs of stabilizer per ton of stone fines screenings. The final mix ratio shall be as recommended by the approved stabilizer supplier determined through testing of the stone fines screenings approved for use on this project.

3.

3 CONSTRUCTION

As shown on the plans and details and as follows:

a) Submittals

1. Sieve analysis of proposed material to ensure it meets grading requirements.
2. Specifications of the stabilizer products proposed to be used.
3. Sample of the Stone Fines Screenings, one 5-lb bag of specified mix with stabilizer product for approval to ensure color will be compatible with project site.
4. Provide certification that the stabilizer manufacturer approves the Stone Fines Screening particle size as compatible with the stabilizer product.

b) Quality Assurance

1. The contractor shall have three years' experience installing stone fines paving. Successful completion of 3 installations similar in design, material and extent indicated on this project.

c) Mock-Ups

1. Construct a sample finished section using all specified materials. Sample section shall be approximately 5' x 5'. Sample will demonstrate all construction and hydration methods. The approved sample shall be used as the standard for all work.

d) Installation

1. The Contractor shall examine previous work, related work, and conditions under which this work is to be performed and notify the Engineer in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Contractor accepts substrates, subgrades, previous work, and conditions.
2. Do not install stabilized stone fines during rainy conditions or below 40 degrees Fahrenheit.
3. Coordination: Ensure bench footings, fence footings, and other site furnishing footings (when present) are in place and have been accepted prior to beginning work on the Stone Fines Paving.
4. Install all organic-stabilized stone fines work true to grade, properly coinciding with adjacent work and elevations. Provide a finished surface uniform in texture and appearance. Do not permit finished work to vary more than 3/16 inch in 10 feet from true profile and cross section.
5. Compacted Sub-base: Thoroughly clean subbase of all debris, loose dirt and other extraneous materials before installing stone fines. Do not install stone fines when subbase is wet or muddy. Compact sub-base to 95% Standard Procter density, minimum. Provide pitch to sub-base course that is parallel to finish grade pitch of decomposed granite.

6. **Mixing:** The stone fines supplier shall blend the organic stabilizer with stone fines at the rate of 16 lbs. of stabilizer per ton of stone fines, or as recommended by the manufacturer of the organic stabilizer for the specific type of stone fines selected for the project. The material shall be blended by the supplier. It is essential that the stabilizer be mixed thoroughly and uniformly with the stone fines.
7. **Finish Surface:** Grade the stabilized stone fines smooth to finish grade shown in the Drawings.
8. Place the stabilized stone fines on prepared aggregate base and rake smooth using a steel tine rake to desired grade and cross section.
9. **Depth:** install to depth shown on drawings.
10. **Compaction:** Compact stone fines paving surface in a minimum of two (2) operations after watering. Compact until surface elevations are within tolerances specified herein and to a uniform density within range of 90 to 92 percent at optimum moisture content. Hand tamp near edges of adjoining material to avoid damage to adjoining curbs, lawns, edge materials, and other work. Do not compact over root balls of trees and shrubs under any circumstance.
First Compaction Operation: While the stone fines mix is still thoroughly moist, roll with a heavy lawn type roller (minimum 225 pounds and maximum 30 inch width), to achieve finish grade and initial compaction. Hand tamp at edges as specified.
Second Compaction Operation: Use a heavy (1 ton minimum) small rider equipment type roller, after having initially used the lawn roller, to obtain the desired final dense, smooth, uniform texture.
Do not use wackers or vibratory rollers. Do not begin compaction for 6 hours after placement and up to 48 hours.
The final paving surface level shall not deviate from the design levels by more than plus or minus 1/16 inch. The surface level of the paving immediately adjacent to drainage outlets, gutter, and channels shall not deviate by more than 3/16 inch.
The final surface, when measured under a 10 foot long steel or aluminum straightedge, shall not vary by more than 3/16 inch.
The stone fines surface with adjacent pavements shall not show any difference in level. All humps or depressions exceeding the specified tolerance shall be corrected at no additional cost to the Owner.
11. **Protection:** Protect the paving against traffic, injury or defacement, or damage by rain during curing period and subsequent construction operations until Final Acceptance. Keep all areas of work clean, neat and orderly at all times. Keep all adjacent planting areas clean during paving operations. After completion do not allow any traffic of any kind on the finished surface course until it is completely dried through. Curing period is dependent on weather conditions. The Contractor shall

expect a period up to two weeks. The stabilized crushed stone paving must completely dry out one time before it can be put into service.

e) Repairs

1. Loose gravel on the surface, or unconsolidated crushed aggregate screenings below the surface, is evidence of improper bonding due to poor mixing or insufficient watering. Test the loose material for adequate stabilizer by wetting, then tamping, and allowing it to dry. If the material is still unconsolidated, stabilizer did not get mixed adequately throughout the crushed aggregate screenings. If the material is now solid, initial watering was insufficient.

Excavate damaged area to the depth of the stabilized decomposed granite and square off sidewalls. If area is dry, moisten damaged portion lightly. Pre-blend the dry required amount of stabilizer powder with the proper amount of aggregate in a concrete mixer. Compact with an 8" to 10" hand tamp or 250 to 300 pound roller. Keep traffic off areas for 12 to 48 hours after repair has been completed. Any significant irregularities shall be smoothed out prior to final acceptance of work. Smoothing shall be accomplished by rewetting/saturating rough areas thoroughly, and then rolling the paving again with a heavy roller (2000 lbs, minimum) powered walk-behind or small rider. Wackers are not recommended.

f) Acceptance

1. Finished surface of pathway shall be smooth, uniform and solid. There shall be no evidence of chipping or cracking. Dried, cured, compacted pathway shall be firm throughout profile with no spongy areas. Loose material shall not be present on the surface initially. Any significant irregularities in path surface shall be repaired to the uniformity of entire installation.

e) Demonstration & Training

1. Provide demonstration and training to the Owner in the method for repairing Stone Fine Walkway.

4 MAINTENANCE

- a) Remove debris, such as paper, grass clippings, leaves or other organic material by mechanically blowing or hand raking the surface as needed. Any plowing program required during winter months shall involve the use of a rubber baffle on the plow blade or wheels on the plow that lifts the blade 1/4" off the paving surface.
- b) If cracking occurs, simply sweep fines into the cracks, water thoroughly and hand tamp with an 8" – 10" hand tamp plate.
- c) The Contractor shall monitor the site during the maintenance period and redistribute loose material, water thoroughly to a depth of 1" and re-compact with a power roller of no less than 1000 lbs.
- d) Warranty & Maintenance

1. Submit a written warranty executed by the installer agreeing to repair or replace components of stabilized surfacing that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:
 - a. Premature wear and tear, provided the material is maintained in accordance with manufacturer's written maintenance instructions.
 - b. Improper drainage.
 - c. Failure of system to meet performance requirements.

Cracking or sponginess is evidence of excessive organic stabilizer in the mix.

Unconsolidated areas shall be dug out, and shall be replaced with new crushed aggregate screenings with a high proportion of fines meeting the grading requirements as specified and, pre-blended to specified proportions. Patch areas then shall be wetted thoroughly and rolled smooth as specified for installations.

Any significant irregularities shall be smoothed out prior to final acceptance of work. Smoothing shall be accomplished by rewetting/saturating rough areas thoroughly, and then rolling the surface again with a heavy roller (1000 - 1500 lbs. powered walk-behind or small rider type).

5 MEASUREMENT AND PAYMENT – Square Yards

Subbase and Geotextile Fabric shall be incidental to this item.

ITEM 9000-1024, TEMPORARY RUBBER MODULAR CURB, LINEAR FOOT

1. DESCRIPTION

This work consists of procuring and installing rubber curb at the location indicated.

2. MATERIAL

Use Flexible Rubber Curbing by Lake Traffic Solutions or approved equal.

Curbing must be black rubber, with white reflective strips, and the ability to be bolted to the curb.

3. CONSTRUCTION

More detailed specifications and plans forthcoming

4. MEASUREMENT AND PAYMENT – Linear Foot

ITEM 9000-1100, RELOCATE HISTORICAL SIGN, EACH

1 DESCRIPTION

This work is the relocation of existing historical signage.

2 MATERIAL

Cast-In-Place Foundation

- Class A Cement Concrete—Section 704

Paint

- To be provided by the Pennsylvania Historical and Museum Commission

3 CONSTRUCTION

Remove existing concrete footing around base of pole prior to reinstallation.

Pour concrete for new footing as detailed in the plans.

Reinstall sign within one week of removal.

Remove paint from pole and repaint with paint to be provided by others.

Contractor shall be responsible for any damage to the sign during construction.

4 MEASUREMENT AND PAYMENT – Each

ITEM 9000-1200, GREEN METHYL METHACRYLATE PAVEMENT MARKING, SQUARE FOOT

1 DESCRIPTION

This work is the surface preparation and application of a skid resistant green color resin coating or an approved equal, on bike lanes as indicated in the contract documents or as directed.

2 MATERIAL

a) Use Ennis-Flint CycleGrip MMAX or approved equal. Obtain color approval from the engineer prior to procurement.

b) General: As per the manufacturer’s specifications and as follows:

Provide materials approved by the engineer. Certify materials as specified in Section 106.03(b)3.

Provide a coating material that consists of a prepared colored resin coating plus aggregate or approved equal. The coating must simulate a green colored pavement and must cause no loss of traction for bicyclists or pedestrians.

c) Furnish green pavement markings that satisfy the following chromaticity coordinates:

1) The daytime chromaticity coordinates for the color used for the completed green colored pavement coating:

1		2		3		4	
x	y	x	y	x	y	x	y
0.230	0.714	0.266	0.500	0.367	0.500	0.367	0.583

The daytime luminance factor (Y) shall be at least 7, but no more than 35.

2) The nighttime chromaticity coordinates for the color used for the completed green colored pavement coating:

1		2		3		4	
x	y	x	y	x	y	x	y
0.230	0.754	0.336	0.540	0.450	0.500	0.479	0.520

c) Aggregate: Furnish with the following gradations or in accordance with the manufacturer’s specifications as approved by the representative:

Sieve Size	Retained (%)

1.20 mm (No. 16)	<10%
425 µm (No. 40)	>70%

3 CONSTRUCTION

- a) Surface Preparation: Clean and prepare the pavement to ensure proper, long term adhesion, in accordance with manufacturer's specifications and as follows:
- 1) Clean the surface to remove all dust and debris prior to installation. Prior to installing the coating on any new asphalt pavements, allow a 30 day cure period of the new asphalt surface.
 - 2) Remove existing pavement markings as indicated in the contract documents and as directed.
 - 3) Cover and protect all existing pavement markings (if left in place) and utility appurtenances prior to installation.
- b) Application: Install the binder and aggregate coating system in accordance with the manufacturer's specifications and as follows:
- 1) Conditions for application: Do not apply the colored pavement coating if the pavement and ambient temperature is forecasted /measured to be/fall below 50°F for an extended period of time thus not providing adequate drying time. Wait 24 hours from the time of the last rain or wet conditions prior to installation.
 - 2) Open to Traffic Time: ranges from 1 to 2 hours. When ambient temperature is warmer, this period will be one hour, and longer when ambient temperature is cooler.
 - 3) Manually spread the mixed components of the binder onto the prepared surface at an application rate of approximately 20 square feet per gallon of resin mixture, or as specified by the manufacturer.
 - 4) Once the coating obtains the initial set, remove tape or other materials utilized to mask unpainted areas. Do not permit the use of any equipment or vehicular traffic on the installed coating until after the manufacturer's specified curing time.
 - 5) Remain on site until after the coating is cured and opened to traffic.
 - 6) Do not heat over the green coating for placement of preformed or hot-applied thermoplastic markings. To place pavement markings over coating, use only resin or waterborne pavement markings and legends. If preformed thermoplastic is placed adjacent to pavement coating, use heat shield to protect the surface and edges of the pavement coating and submit method of application to the representative for approval prior to placement.
- c) Defective Markings: As per 964.3 CONSTRUCTION, Section (c).
- d) Guarantee: As per 964.3 CONSTRUCTION, Section (d).

4 MEASUREMENT AND PAYMENT – Square Foot

The measured area is the actual area of pavement that has received the combined application of resin coating and aggregate surface or approved equal, measured in place. No deduction will be made for areas occupied by manholes, inlets, drainage structures, bollards or by any public utility appurtenances within the area. All surface preparation as specified herein and within the manufacturer's specifications and related work is incidental.

- 4951-0125 - TRAFFIC SIGNAL SUPPORT, 25' MAST ARM**
- 4951-0130 - TRAFFIC SIGNAL SUPPORT, 30' MAST ARM**
- 4951-2145 - TRAFFIC SIGNAL SUPPORT, 45' MAST ARM**
- 4951-2150 - TRAFFIC SIGNAL SUPPORT, 50' MAST ARM**

STANDARD DRAWINGS

TE0501

DESCRIPTION

This work consists of furnishing and installing a steel traffic signal pole with continuous mast and an arm of the specified length.

MATERIALS - Section 1104.02, PDT 408 with the modifications listed below and in accordance with PennDOT Standard Drawing TC-8801.

- Bolt Circle and Anchor Bolts:

Arm Length	Anchor Bolt (dia.)	Bolt Circle (dia.)
35' or less	1-3/4"	21"
D-Pole	1-3/4"	21"
40' to 45'	2"	24"
50' to 60'*	2"	24"
<i>* Specify the bolt size for any pole greater than 50' in length on the plan or as directed by the Engineer.</i>		

- 30-foot continuous pole with a uniform taper of .14" per foot.
- The arm is of the specified length with a uniform taper of .14" per foot.
- Philadelphia Street Light Bracket Arm Bolt Pattern: The top of the mast is factory pre- drilled for the Philadelphia Street Light Bracket Arm bolt pattern as shown on the Standard Drawings, Mast Arm Details.
- The centerline of the cable entrance hole is 9" from the top of the pole. The manufacturer provides two (2) thru bolts properly sized for the attachment of the street light bracket.
- Cable Entrance Holes: As shown on the Standard Drawings, Mast Arm Details.
- Access Hole: Locate the top hand hole 180° behind mast arm, 9" above mast arm centerline. Fasten the access hole cover to the mast arm with two screws. Attach a keeper chain.
- Cap the top of the mast and the end of the arm.
- Install a washer between the base plate and the anchor bolt nuts.
- There is no hub on the pole.
- The traffic grounding wire is a #6 AWG stranded copper wire with green jacket.

CONSTRUCTION – Install the mast arm 36" behind the face of curb unless otherwise noted on the plan or directed by the Engineer.

- The location must be verified and approved by the Engineer prior to installation. All foundation locations have to be defined prior to ordering the mast arms. Bidders are advised that partial releases of poles up to two (2) orders may be expected.
- PECO requires 10'-0" clearance from primary electrical facilities. If overhead obstructions or PECO primary electrical facilities prevent the installation of the standard 30'-0" pole height, the upright may be cut to allow installation with the approval of the Traffic Signal Construction Engineer. All such cuts will be de-burred and re-coated to match the finish color.
- Bidders are to investigate all corners and identify all existing building vaults and utility vaults within the project limits. The known locations of exiting vaults are listed in 'Vault locations'.
- Ground the mast arm to the grounding rod in the foundation with a #6 AWG stranded copper wire with green jacket.
- If street lights are to be mounted to the mast, install a 12-2 UF solid copper wire directly from the street light luminaire service ground wire to the grounding rod.
- If installed in an unpaved area and equipped with a push button, construct a 4' concrete walkway to connect the existing walkway, pole, and curb cut ramp as directed by the Engineer.
- Cable Entrance Holes
 - Street lighting service does not enter the pole through the cable entrance holes unless otherwise noted on the plan or directed by the Engineer.
 - Install rubber grommets in every hole. In the absence of wiring, size the grommets to tightly fit the hole.
 - No sign or banding blocks the holes or covers.
- Coating of Mast Arms and Caps:
 - Apply the coating only after the pole has been fabricated. The final product will be rejected if the coating cracks, ripples in curved areas, or is otherwise damaged due to the fabrication and/or shipping. The coating process is as follows:
 - Surface Preparation
 - Degrease the pole by immersion in an agitated 4.5%-6% concentrated caustic solution elevated to a temperature ranging from 150°F-180°F.
 - Pickle the pole by immersion in a heated sulfuric acid solution of 13% concentration, controlling the temperature at 150°F. Rinse the pole clean from any residual effects of the caustic or acid solutions by immersion in a circulating fresh water bath. Immerse the pole in a concentrated zinc ammonium chloride flux solution heated to 130°F. Maintain the solution's acid content between 4.5-5.0. pH.
 - Air dry the assembly to remove any moisture remaining in the flux coat and/or trapped within the product.
 - Zinc Coating
 - Hot- dip galvanize the pole to the requirement of either ASTM A123 (fabricated products) or ASTM A153 (hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810°F-850°F. The maximum aluminum content of the bath is controlled to 0.01%. Flux ash is skimmed from

the bath surface prior to immersion and extraction of the product to assure a debris free zinc coating.

- Top Coat
 - Mechanically etch the surfaces to be powder-coated by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450°F for a minimum of one (1) hour in a gas-fired convection oven.
 - Coat all galvanized exterior surfaces visually exposed with a Urethane or Triglycdyl Isocyanurate (TGIC) Polyester Powder to a minimum dry film thickness (DFT) of 2.0 mils. Electrostatically apply the coating and cured by elevating the zinc-coated substrate temperature to a minimum of 400°F in a gas-fired convection oven.
- Color
 - Finish color is NATIONAL PARK SERVICE BROWN (fed# 20040). Submit a color sample to the Engineer for approval prior to coating.
- Packaging
 - Prior to shipment, cradle poles in a 1.0" rubberized foam base.

MEASUREMENT AND PAYMENT – Each

- Caps, grommets, conduit, and traffic grounding wire are incidental to this item of work. The foundation and anchor bolts, the street lighting bracket, luminaire and wiring are paid under separate items. The concrete walkway, if required, is paid under a separate item.
- Modifications of uprights to meet PECO clearance requirements is incidental to this item.

9000-1301 TRAFFIC SIGNAL SUPPORT, 20' C-POST

STANDARD DRAWINGS

TE0101, TE0102

DESCRIPTION

This work consists of furnishing and installing a C-post of the indicated length including the split base, top cap and grounding rod.

MATERIAL

- C-post
 - The C- post is an aluminum pipe, 20' in length as indicated on the plan or as instructed by the engineer, conforming to ASTM Specification B-221 Alloy 6063-T6, Schedule 40, 4.50-inch O.D., in accordance with the Standard Drawings.
 - Cap the top of the pole.
- Split Base
 - The split base is in accordance with the Standard Drawings. Match the color of the split base to the C-post.
- The finish color of the post, cap and split base is NATIONAL PARK SERVICE BROWN (fed#20040). Submit a color sample to the Engineer for approval prior to coating.
- Grounding
 - Grounding is in accordance with TC-7804 of PDT Pub 148 and as follows: The grounding rod is copper clad, 10' in length and ¾" in diameter.
 - The grounding wire is a #6 AWG stranded copper wire with green jacket.
 - The resistance of the grounding rod must be tested in accordance with the National Electric Code (NEC) and must be less than 10 ohms in accordance with Streets Department requirements. For grounding rods failing the above- mentioned test, relocate the grounding rod to a suitable location approved by the Engineer.

CONSTRUCTION

- Install the C-post a minimum of 36” behind the face of curb unless otherwise noted on the plan or directed by the Engineer. The location must be approved by the Engineer prior to installation.
- Remove the existing concrete footway to the nearest joint. Set the C-post plumb with its slot in the proper relationship to the conduit.
- The C-post includes a polyethylene plastic split base to cover the conduit at the base of the pole. The split base fits freely over the conduit and sits flush with the pavement at the base of the pole.
- If the C-post is installed in an unpaved area, install a 3’x3’x4” concrete pad on a 4” stone subbase at the pole base as directed by the Engineer.
- If the C- post is installed in an unpaved area and equipped with a push button, a 4’ concrete walkway must be constructed to connect the existing walkway, C- post, and curb cut ramp as directed by the Engineer.
- Ground the pole to each conduit and grounding rod with a #6 AWG stranded copper wire. If the pole is painted, scrape the paint in the area where the grounding wire is attached to the pole.
- Directly bury the pole 42” in the ground.
- Restore the adjacent sidewalk and curb to its original condition.
- Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor’s expense.
- Coating of C-Post and Cap
 - Apply the coating only after the C- post has been fabricated. The final product will be rejected if the coating cracks, ripples in curved areas, or is otherwise damaged due to the fabrication and/or shipping. The coating process is as follows:
 - Alkaline clean using A.C.I. Cleaner 178
 - Temperature: 120°C- 140°C Dwell Time: 2 – 5 minutes Concentration: 1 – 1.5% Rinse
 - Temperature: Ambient
 - Dwell Time: 30 Seconds or until alkaline is removed
 - Concentration: NA
 - Chrome Phosphate Conversion Coating A.C.I. Alumni-Bond
 - Temperature: 100°C - 110°C Dwell Time: 1 – 2.5 minutes Concentration: 9 – 12 mil/gal Rinse
 - Temperature: Ambient
 - Dwell Time: 30 Seconds or until excess chrome is removed
 - Dry
 - Place racks of pre-treated metal into oven until completely dry. Top coat Urethane or Triglycdyl Isocyanurate (TGIC) Polyester Powder with a minimum dry film thickness (DFT) of 2.0 mils.

MEASUREMENT AND PAYMENT - Each

- The split base and grounding rod are incidental to this item of work. The #6 AWG stranded copper wire used to ground the steel conduits and the C-post are incidental to this item. The #6 AWG stranded copper wire used to ground the cable in the PVC conduit is incidental to this item.
- For City Contracts, where Traffic Engineering is furnishing this hardware, pickup by the Contractor from the Traffic Shop, G & Ramona Street, Phila PA, is incidental to this item. Contact the Traffic Shop no less than two (2) business days in advance to arrange for pickup.

9000-1302 TRAFFIC SIGNAL SUPPORT, D-POLE

STANDARD DRAWINGS

TE0201

DESCRIPTION

This work consists of furnishing and installing a steel combination traffic mast and street light pole, 30' in length.

MATERIALS

Section 1104.02, PDT 408 with the modifications listed below and in accordance with the Standard Drawings.

- Bolt Circle and Anchor Bolts:
 - Anchor Bolt diameter: 1-1/4"
 - Bolt Circle diameter: 16-1/2"
- 30' continuous pole with a uniform taper of .14" per foot.
- Philadelphia Street Light Bracket Arm Bolt Pattern: The top of the mast is factory pre- drilled for the Philadelphia Street Light Bracket Arm bolt pattern as reflected on the Standard Drawings, *Detail #2*.
- The centerline of the cable entrance hole is 9" from the top of the pole. The manufacturer provides two (2) thru bolts properly sized for the attachment of the street light bracket.
- Cable Entrance Holes: As reflected on the Standard Drawings, *Detail #4*, three (3) cable entrance holes are provided at the top of the mast. The holes are 1"-2" in diameter, located 20' up from the pole base, and 270° clockwise from the hand hole centerline. The entrance holes provide an entrance for traffic signal aerial cables.
- Access Hole: The top hand hole is located 270° clockwise from the bottom hand hole and above the cable entrance holes. Fasten the access hole cover to the mast arm with two screws. Attach a keeper chain.
- Cap the top of the mast.
- Install a washer between the base plate and the anchor bolt nuts.
- The base of the pole has an outer diameter of 10" and a 7-gauge wall thickness.
- There is no hub on the pole.
- The traffic grounding wire is #6 AWG stranded copper wire with green jacket.

CONSTRUCTION

- PECO requires 10'-0" clearance from primary electrical facilities. If overhead obstructions or PECO primary electrical facilities prevent the installation of the standard 30'-0" pole height, the upright may be cut to allow installation with the approval of the Traffic Signal Construction Engineer. All such cuts will be de-burred and re-coated to match the finish color.
- Bidders are to investigate all quadrants and identify all existing vaults within the project limits. The known locations of existing vaults are listed in 'Vault locations'.
- Install the D-pole 36" behind the face of curb unless otherwise noted on the plan or directed by the Engineer. The location must be approved by the Engineer prior to installation. Orient the pole to allow installation of steel lighting brackets at a right angle to the curb line on which the pole is located unless otherwise directed by the Engineer.
- Ground the D-pole to the grounding rod in the foundation with a #6 AWG stranded copper wire.
- If a street light is to be mounted, install a 12-2 UF solid copper wire directly from the street light luminaire service ground wire to the grounding rod.
- Cable Entrance Holes:
 - Street lighting service does not enter the pole through the cable entrance holes unless otherwise noted on the plan or directed by the Engineer.
 - Install rubber grommets in every hole. In the absence of wiring, size the grommets to tightly fit the hole. No sign or banding blocks the holes or covers.
- Coating of D-Pole and Caps:
 - Apply the coating only after the pole has been fabricated. The final product will be rejected if the coating cracks, ripples in curved areas, or is otherwise damaged due to the fabrication and/or shipping. The coating process is as follows:
 - Surface Preparation:
 - Degrease the pole by immersion in an agitated 4.5%-6% concentrated caustic solution elevated to a temperature ranging from 150°F-180°F.
 - Pickle the pole by immersion in a heated sulfuric acid solution of 13% concentration, controlling the temperature at 150°F. Rinse the pole clean from any residual effects of the caustic or acid solutions by immersion in a circulating fresh water bath. Immerse the pole in a concentrated zinc ammonium chloride flux solution heated to 130°F. Maintain the solution's acid content between 4.5-5.0. pH.
 - Air dry the assembly to remove any moisture remaining in the flux coat and/or trapped within the product.
 - Zinc Coating:
 - The pole is hot-dipped galvanized to the requirement of either ASTM A123 (fabricated products) or ASTM A153 (hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810°F-850°F. The maximum aluminum content of the bath is controlled to 0.01%. Flux ash is skimmed from the bath surface prior to immersion and extraction of the product to assure a debris free zinc coating.
 - Top Coat

- Mechanically etch the surfaces to be powder-coated by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450°F for a minimum of one (1) hour in a gas-fired convection oven.
- Coat all galvanized exterior surfaces visually exposed with a Urethane or Triglycdyl Isocyanurate (TGIC) Polyester Powder to a minimum dry film thickness (DFT) of 2.0 mils. Electrostatically applied the coating and cure it by elevating the zinc- coated substrate temperature to a minimum of 400°F in a gas-fired convection oven.
- Color
 - Finish color is NATIONAL PARK SERVICE BROWN (fed# 20040). Submit a color sample to the Engineer for approval prior to coating.
- Packaging
 - Prior to shipment, cradle poles in a 1.0” rubberized foam base.

MEASUREMENT AND PAYMENT – Each

- Caps, grommets, and grounding wire are incidental to this item of work. The foundation, anchor bolts, and grounding rod are paid under ITEM NO. 9000-1306 STANDARD FOUNDATION. The street lighting bracket, luminaire and wiring are paid under separate items. The concrete sidewalk, if required, is paid under a separate item.
- Modifications of uprights to meet PECO clearance requirements is incidental to this item.

9000-1303 - TRAFFIC SIGNAL CABLE, 30 CONDUCTOR

DESCRIPTION

This work consists of furnishing and installing traffic signal cable of the specified size for the purpose of electrical distribution between traffic signal heads and the traffic controller.

MATERIAL - Section 11012.08, PDT 408 with the modifications listed below:

- Solid copper, #14 AWG, IMSA-20-1 cable of the specified size.

CONSTRUCTION

- 30 Conductor Cable
 - Pull this cable through the underground conduit to the base of each pole.
 - Connect all cables to form a continuous electrical distribution system.
- Splicing
 - Splice the traffic signal cable only at the base of a pole in accordance with the color code.
 - Make splices with a UL approved silicon connector and taped.
 - Do not splice signal cable in underground conduit or a junction box unless otherwise directed by the Engineer.
- Spare Conductors
 - Spare conductors are to be the same length as active conductors and neatly grouped and taped at the end of each cable.

Connection Color Code

Phase	Color
Main Street 1 Red	Solid Red
Main Street 1 Yellow	Solid Orange
Main Street 1 Green	Solid Green
Main Street 2 Red	Red w/ Black tracer
Main Street 2 Yellow	Orange w/ Black tracer
Main Street 2 Green	Green w/ Black tracer
Side Street 1 Red	Red w/ White tracer
Side Street 1 Yellow	Blue w/ White tracer
Side Street 1 Green	Green w/ White tracer
Side Street 2 Red	Red w/ Green tracer
Side Street 2 Yellow	Orange w/ Green tracer or White w/ Red tracer
Side Street 2 Green	Blue w/ Black tracer
Ped 1 Hand	Solid Black
Ped 1 Man	Black w/Red tracer
Ped 2 Hand	Solid Blue
Ped 2 Man	Blue w/ Red tracer
Common	White
Spare	Black w/ White tracer
Spare	White w/ Red tracer
Spare	Orange w/ Red tracer
Spare	White w/ Black tracer

- Drip Loop
 - A drip loop is made where the cable enters the signal head with an aerial feed.

MEASUREMENT AND PAYMENT – Linear Foot

9000-1306 STANDARD FOUNDATION, TYPE 1 (35' OR LESS)

9000-1307 STANDARD FOUNDATION, TYPE 2 (40' TO 45')

9000-1308 STANDARD FOUNDATION, TYPE 3 (50' TO 60')

DESCRIPTION

This work consists of constructing a concrete foundation for a traffic signal mast arm of the specified size, including excavation, anchor bolts, and reinforcing steel.

The dimensions of the foundation are in accordance with PennDOT Standard Drawing TC-8801.

MATERIAL

- Foundation: Class A concrete, PDT 408, Section 704
- Expansion Joint Material: PDT 408, Section 705.1
- Anchor Bolts: ASTM A-449

Arm Length	Anchor Bolt (dia.)	Bolt Circle (dia.)	Foundations
35' or less	1-3/4"	21"	As per TC-8801 for mast >30 - 35
40'-45'	2"	24"	As per TC-8801 for mast >45 - 50
50'-60'	2"	24"	As per TC-8801 for mast >50 - 60

- The length of the anchor bolts is in accordance with PennDOT Standard Drawing TC-8801.
- Grout: PDT 408, Section 1001.2
- Reinforcement Steel: PDT 408, Section 709.1
- Grounding
 - Grounding is in accordance with PennDOT Standard Drawing TC-8801 and as follows:
 - The grounding rod is copper clad and 3/4" in diameter.
 - The resistance of the grounding rod must be tested in accordance with the National Electric Code (NEC) and must be less than 10 ohms in accordance with Streets Department requirements. For grounding rods failing the above- mentioned test, relocate the grounding rod to a suitable location approved by the Engineer.
- Conduit
 - In accordance with item 9000-1401, PVC Street Lighting Conduit, 2"; and item 9000-1304 PVC Traffic Conduit, 3".

CONSTRUCTION – Construct the foundation in accordance with PennDOT Standard Drawing TC-8801.

- The location must be verified and approved by the Engineer prior to construction. If any obstructions are identified during field meeting that would prevent the installation of a foundation per the project plans, coordinate with Engineer to identify a new location. All foundation locations have to be defined prior to the procuring the mast arms.
- Bidders are to investigate all corners and identify all existing building vaults and utility vaults within the project limits. The known locations of exiting vaults are listed in 'Vault locations'.

- Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surfaces (DWS), unless determined necessary by the Engineer
- Take responsibility for the location of all subsurface structures and utilities in the construction area.
- Excavate the foundation site to the required dimensions, without placement of shoring or forms. If the presence of subsurface utilities prevents the construction of a foundation of the specified size, suspend work immediately and notify the Engineer.
- Remove the existing concrete footway to the nearest joint.
- Securely cover the excavation after completion and remain covered when no work is in progress. Keep the excavation reasonably dry and free of mud until placement of the concrete.
- Set six (6) anchor bolts by template to the proper dimensions in accordance with PennDOT Standard Drawing TC-8801 and at the same elevation as the adjacent curb unless otherwise directed by the Engineer.
- Construct forms to firmly hold the template and anchor bolts in place while the concrete is poured. Extend each anchor bolt 6" above the finished grade of the foundation.
- Protect anchor bolt assemblies after the construction of foundations, using appropriate methods, prior to installation of poles.
- If the anchor bolt is damaged prior to the pole installation, an acceptable method of correction must be approved by the Engineer. Install a 2" PVC conduit in the foundation for a street lighting connection and terminated a minimum of 2" above the surface. The direction of the conduit is determined by the Engineer at the time of construction.
- Install a grounding rod of the appropriate length in the foundation, extending a minimum 9'-6" into virgin soil outside the foundation wall, and 6" above the finished grade of the foundation.
- The concrete foundation is monolithic in construction and cures for a minimum of ten (10) days prior to pole installation. If installed in a paved area, the surface of the foundation is at the same grade as the adjacent sidewalk.
- If installed in an unpaved area, the surface of the foundation is 4" above the finished grade and has chamfered edges.
- Install non-shrink grout in the space between the mast arm/ d-pole base plate and the foundation. Install a drain hole, 1/2" in diameter, in the grout on the side of the foundation with the lowest elevation
- Construct a 1/4" thick expansion joint with filler between the foundation and adjacent sidewalk/curb to the full depth of the sidewalk/curb.
- Etch the maximum allowable arm size (i.e. 25', 45') into the foundation.
- Restore the adjacent sidewalk and curb to its original condition. Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor's expense.
- Assume responsibility for protecting the foundation and the anchor bolts assembly from any damage prior to pole installation and final acceptance of the pole and mast arm by the City. In case of damage to either the foundation or the anchor bolts assembly that is deemed irreparable by the Engineer, replace the entire foundation at no additional cost to the City.

MEASUREMENT AND PAYMENT – Each

- All materials and labor necessary to construct the foundation, including excavation, expansion joint material, reinforcement steel and grout are incidental to this item of work. The grounding rod and anchor bolts are incidental to this item of work. All work to protect the foundation or the anchor bolts assembly, or satisfactorily repair any damage prior to poles installation and acceptance, up to and including replacing the entire foundation, is incidental to this item.

9000-1309 - SOLID STATE CONTROLLER, TYPE 333SD CABINET

DESCRIPTION

This work consists of furnishing and installing a foundation mounted, Type 170E-HC11, traffic signal controller of the specified type in a cabinet of the specified size, including all mounting hardware, skirt, and concrete foundation as indicated or as directed by the Representative. This work also includes the installation of software as supplied by the City of Philadelphia.

MATERIAL

- General-Controller - Conform controller assembly to the following:
 - The current version at the time of advertisement of "Traffic Signal Control Equipment Specification of the State of California, Business and Transportation Agency, Department of Transportation".
 - The Federal Highway Administration Specification FHWA IP-78-16 dated 1999 for the Type 170 Traffic Signal Controller System. The manufacturers of all component parts and hardware are on the Caltrans list of approved suppliers or are approved by City of Philadelphia Department of Streets, Traffic Division.
 - The cabinet of the specified type meets Caltrans specifications.
 - The cabinet has a removable type, 5/8" in size, handle design for the door(s), and hinges in accordance with Caltrans specifications.
 - Continuously weld all joints of the cabinet.
 - Mount a fluorescent light on the inside of each door, which automatically lights upon door opening.
 - Equip the cabinet with a pull-out shelf drawer assembly.
 - Conform aluminum surfaces on all cabinets to Caltrans Type 170 Controller Specification Chapter 6, Section 2, Item 6.2.2, Number 2.2.4. Apply an anti-graffiti coating as follows:
 - Unwrap cabinet and inspect for damage or missing parts.
 - Wipe away any marker with lacquer thinner.
 - Wash cabinets with Fremont 626TP cleaner/ coater using a high-pressure washer heated to 165°F.
 - Rinse cabinet and parts with clean water. Do not re-use rinse water.
 - Hang cabinet with the top facing down on an overhead trolley.
 - Ensure doors are hung horizontally with the floor to prevent contamination with a maximum of 4 doors per rack.
 - Place parts which will be coated into the oven for drying and initial heating for 15 minutes at 400°F.
 - Coat the entire exterior of the cabinet and doors with a Urethane or Triglycdyl Isocyanurate (TGIC) Polyester Powder to a dry film thickness (DFT) of 2.0 mils. The finish is National Park Service Brown, federal #20040. Submit a color sample to the Representative for approval prior to coating.

- Pull one out of the oven at a time and apply a TCI Anti-Graffiti Clear #9810-0231 to the deep crevices of the cabinet and door. Do not coat the entire cabinet while heated.
 - Once all parts are cooled, clear coat the entire assembly with a film build of 2.5 to 3.0 mils.
 - Fully cure all parts in the oven at 380°F for 40 minutes.
 - After cooling, wrap each package and return.
- The latching mechanism is a three- point draw roller type as specified under Caltrans TYPE 170 Controller specification number 6.2.3, section 2.3.2 and 2.3.7.
- Replace the reference on locks in Section 1104.03(b) with the following:
 - “Equip the larger cabinet door with a spring lock, Corbin type or equal, which can be opened only by a City of Philadelphia Traffic Engineering key, combination PPB1.”
 - “Equip the smaller compartment door with a similar spring lock, which can be opened only by a standard City of Philadelphia police box key.”
- Equip the controller with 4 serial communication ports, each capable of communicating at speeds up to 9600 bytes/sec. The port assignments are as follows:
 - Port 1: Internal Modem (Ethernet Serial Port Server)
 - Port 2: PC Laptop Connection
 - Port 3: Conflict Monitor Communication
 - Port 4: Future Use
- Equip controller with IP interface card (Ethernet Serial Port Server) capable of allowing Ethernet communications between the controller and the Ethernet switch provided under a separate item if necessary.
- Provide traffic signal controller compatible IP communications interface cards (Ethernet Serial Port Server) that meets the following requirements:
 - Provide Ethernet Serial Port Servers that are new, corrosion resistant, and in strict accordance with the details shown in the plans and as specified herein.
 - Provide Ethernet Serial Port Servers that provides for connecting RS-232 devices directly to a TCP/IP network.
 - Provide Ethernet Serial Port Servers that include all licenses, where required, for any software or hardware in the system.
 - Functional Requirements:
 - Provide Ethernet Serial Port Servers that are available in a single port unit. This unit is to be installed in the 170 traffic signal controller modem slot and is to fully integrate with the controller. This Ethernet Serial Port Servers is to allow for the connection of one 170 traffic signal controller.
 - Ethernet Serial Port Servers that support both 10 Mbps and 100 Mbps Ethernet connections (auto-sensing).
 - Electrical Requirements:
 - Data Performance Requirements: Support RS-232C or latest.

- Data Rate: Capable of providing a baud rate up to 230,400 bps. P
- Power Requirements: Operate from the 170 modem slot
- Wiring: All wiring external to the unit is to meet NEC requirements.
 - All wires are to be cut to proper length before assembly. No wire is to be doubled back to take up slack. Wires are to be neatly laced into cable with nylon lacing or plastic straps. Cables are to be secured with clamps. Service loops are to be provided at all connections.
- Mechanical Requirements:
 - Connectors:
 - Provide Ethernet Serial Port Servers capable of housing one (1) RJ45 female connector. The unit is to provide a DB9 Aux port for configuration and act as a DCE or DTE switch selectable.
 - Provide Ethernet Serial Port Servers that visually indicates, via LEDs, the port status (10 or 100 BASE-T), link and activity indication, and full or half duplex.
 - Security:
 - Password protection
 - Optional 256-bit AES Rijndael encryption
 - Management: SNMP, Telnet, serial, internal Web server, and Microsoft Windows®-based utility for configuration
 - Adherence to Standards: Provide Ethernet Serial Port Servers that are compliant with the following: Institute of Electrical and Electronic Engineers (IEEE) 802.3, 802.3d, 802.3u
 - Environmental Requirements:
 - Operating Temperature: -40 C to 75 C
 - Construction: The equipment design and construction is to utilize the latest available techniques with a minimum number of parts, subassemblies, circuits, cards, and modules to standardization and commonality.
 - The equipment is to be designed for ease of maintenance. All component parts are to be readily accessible for inspection and maintenance.
- Mechanical Components:
 - Provide Ethernet Serial Port Servers that have corrosion resistant external screws, nuts, and locking washers. The use of self-tapping screws is not allowed.
 - Provide Ethernet Serial Port Servers that have all parts made of corrosion resistant material, such as plastic, stainless steel, anodized aluminum, or brass.

- Provide Ethernet Serial Port Servers that have all materials protected from fungus growth and moisture deterioration. Separate dissimilar metals using an inert dielectric material.
- Connectors and Harnesses:
 - Provide Ethernet Serial Port Servers that have external connections made by means of connectors. The connectors are to be keyed to preclude improper hookups. All wires to and from the connectors are to be color coded and/or appropriately marked.
 - Connecting harnesses of appropriate length and terminated with matching connectors are to be provided for interconnection with the port server units.
- Provide a ½" diameter entrance hole in the top of the timer unit between slots 3 & 4.
- If the plans identify a connection with a twisted pair cable, provide surge suppressor, UL listed with a dual pair (four wire) module implementing three stage hybrid technology or equivalent type as specified below and as approved by Traffic, for communications cable to a 10 KA (2500 A per line).
 - a) Peak Surge Current (10 times):
 - 8 x 20 μs 10 kA
 - 10 x 700 μs 500 A per line
 - Life Expectancy:
 - 8 x 20 μs >100 occurrences
 - 10 x 700 μs
 - Response time < 1 nanosecond
 - Technology SAD Hybrid
 - Dimensions 1.8" x 1.0" x 2.4"
 - Operating Temperature -40°C to +85°C
- Provide surge protection with multi- strike capability, UL listed and line to neutral clamping voltage to be no more than 340 V at 20,000 amps. Filtering surge protector is not to exceed 3.5" x 6.0" x 2.5", excluding studs or mounting flange. Spark cap arrestors are not permitted. All surge protection devices must meet the requirements listed below and be approved by Traffic. The cabinet and content must, as an assembly, pass all NEMA TS-2 voltage spikes test for the AC line.
 - Peak Current (8 x 20 μs) 20,000 Amps
 - Life Test 5% change (Voltage clamp before and after 25 surges of 20 kA waveshape)
 - Clamp Voltage 280 V type @ 20 kA
 - Response Time voltage never exceeds 280 v during surge

- Continuous Service Current (120 VAC, 60 Hz) 10 Amps max f)
Operating Temperature -40°C to +85°C
- Generator Adaptor Kit: PDT 408, Sections 954.3(l) & 1104.05(h), except as follows:
 - Provide the cabinet with the capability of automatic transfer from utility to generator power through the use of a heavy duty relay, a 30 Amp twist-lock flanged inlet receptacle with NEMA Configuration L5-30P (Hubbell #2615 or Equal), and a weather proof stainless steel cover with ¼ turn secure cover (Hubbell Wiring Devices Power Entry Connector, Model HBL303SSO, or approved equal).
 - Utility power is to be connected to the normally closed contacts. Cabinet main power is to be connected to the relay commons. The generator power plug will connect to the normally open contacts AND the relay coil. Therefore, whenever the generator power receptacle has 120VAC, so does the coil which, when energized, pulls in the relay common contacts to connect to the normally open contacts, powering the cabinet and disconnecting from utility power.
 - Power transfer will not be energized until the generator plug is live. It will remain energized until the generator plug is removed from the cabinet. The maintenance personnel need only to plug the generator into the side of the cabinet and the transfer to generator power will be complete.
 - Provide a 10-foot, UL-listed, outdoor rated, NEMA L5-30P cord for each cabinet, with male and female connections. Include warning labels and re-usable storage ties.
 - Generator Security: Provide a stainless steel ½" x 1-1/2" shank (#25) eye bolt, stainless steel washers and nyloc nut, to be field mounted on each controller cabinet at an optimal location, as directed by the Engineer to secure field generators.
- Local Controller:
 - The controller assembly is in conformance with Section 952.
- Furnish all controller assemblies so that the controller returns to normal operation from time clock flash automatically.
- Equip the cabinet with plug- in hand control and a method to switch the signal controller from automatic to manual control. The method to be used requires prior approval from City of Philadelphia Department of Streets, Traffic Division.
- Provide for automatic return from flashing operation when lost electrical service has been restored.

- Hardware the “Flash Sense”, “Stop Time” and “Cabinet Door Open” functions to operate without a Model 242 DC isolator. Maintain optical isolation.
- Equip the Conflict Monitor with a programmable serial interface capable of communicating at a speed of up to 1200 bits/sec with the 170 Microcomputer. The Conflict Monitor, when polled by a system compatible 170 Microcomputer, returns information including, but not limited to, the status of all monitored inputs and events stored in non-volatile memory. It also monitors the absence of a red indication along with normal conflicts and perform all the functions required by a Model 2010 ECL IP Conflict Monitor, including the following features:
 - Ethernet port and IP addressable capability to provide both direct connect and remote access.
 - Monitor the absence of signal on any channel.
 - Include three (3) pre-emption inputs to disable red monitoring.
 - Include red signal monitoring interface through front panel connector.
 - Detect simultaneous display of GREEN and YELLOW on a channel.
 - Detect simultaneous display of GREEN and RED on a channel.
 - Detect minimum YELLOW display following a GREEN on a channel.
 - Store up to 64 events.
 - Inform 170 controller of a resetting via a communication port.
 - Monitor incoming line voltage.
- Provide two (2) spare load switches. Provide a minimum of eight (8) and a maximum of sixteen (16) pre-wired load switch positions as shown on the plans. Switch pack is of a repairable, modular type construction. Provide a minimum of four (4) flash transfer relays.
- Provide pre-wired input file with a minimum of eight (8) inputs, and equipped with Model 242 Two-Channel AC isolators. Supply the required number of Model 242 AC isolators, plus one spare, for each intersection. Also provide slots and internal wiring for two (2) future Model 224 four-channel loop sensing units.
- If coordination is required with an existing electromechanical 120 volt interconnect system, as indicated or as directed by the Representative, provide all interface equipment necessary for three (3) 120 volt sync pulses.
- Software:
 - Comply with the following procedure:
 - Equip the controller with a blank HC-11 chip. Submit this chip to the Representative.
 - City of Philadelphia Department of Streets, Traffic Division will burn the necessary software onto the chip within 10 business days of receipt.

- The chip will be returned to the Contractor and only be installed only in a controller furnished under the applicable contract.
- Emergency Pre-Emption and Transit Signal Prioritization
 - Controller and Cabinet must be capable of fitting and operating with emergency pre-emption detection and transit signal prioritization that is compatible with the existing City of Philadelphia systems. The furnish and installation of these components are included as a separate pay item.
- Foundation: Class A concrete – PDT 408, Section 704.
- Expansion joint material – PDT 408, Section 705.1.
- Skirt: Aluminum, Match the color to the cabinet.
- Anchor Bolts: In accordance with TC-8802 of PDT Pub 148.
- Caulking Compound - Section 705.8.
- Grounding:
 - Grounding is in accordance with TC-8804 of PDT Pub 148 and as follows:
 - The grounding rod, if required, is copper clad, 10' in length and ¾" in diameter. The grounding wire is a #6 AWG stranded copper wire.
 - The resistance of the grounding rod must be tested in accordance with the National Electric Code (NEC) and must be less than 10 ohms in accordance with City of Philadelphia Streets Department requirements. For grounding rods failing the above- mentioned test, relocate the grounding rod to a suitable location approved by the Representative.

CONSTRUCTION

- The location of the cabinet must be approved by the Representative prior to installation. Construct the foundation in accordance with TC-8802 of PDT Pub 148.
- Take responsibility for the location of all subsurface structures and utilities in the construction area.
- Excavate the foundation site to the required dimensions, without placement of shoring or forms.
- If the presence of subsurface utilities prevents the construction of a foundation of the specified size, suspend work immediately and notify the Representative.
- Remove the existing concrete footway to the nearest joint. Securely cover the excavation after completion and remain covered when no work is in progress. Keep the excavation reasonably dry and free of mud until placement of the concrete.
- Construct foundation in accordance with TC-8802 of PDT Pub 148, and in accordance with the manufacturer's recommendations. Set four (4) anchor bolts by template to the proper dimensions in accordance with TC-8802 of PDT Pub 148 and at the same elevation as the adjacent curb unless otherwise directed by the Representative.

- If the anchor bolt is damaged prior to the pole being installed, an acceptable method of correction must be approved by the Representative.
- Construct forms to firmly hold the template and anchor bolts in place while the concrete is poured. Extend each anchor bolt 3" above the finished grade of the foundation.
- Install a grounding rod of the appropriate length in the foundation, extending 8' below the bottom of the foundation and 3" above the surface of the foundation.
- Ground the controller to the grounding rod with a #6 AWG stranded copper wire.
- The concrete foundation is monolithic in construction and cures for a minimum of 7 days prior to cabinet installation. If installed in a paved area, the surface of the foundation is at the same grade as the adjacent sidewalk.
- If installed in an unpaved area, the surface of the foundation is 4" above the finished grade and has chamfered edges. In addition, 3' concrete pads are constructed in front of the cabinet doors. The concrete pads are poured monolithic with the foundation.
- Install caulking compound in the space between the cabinet base and the foundation. Install a drain hole, 1" in diameter, on the side of the foundation with the lowest elevation
- Construct a ¼" thick expansion joint with filler between the foundation and adjacent sidewalk/curb to the full depth of the sidewalk/curb.
- Restore the adjacent sidewalk and curb to its original condition. Excessive damage to the existing pavement caused by the Contractor, as determined by the Representative, is to be corrected at the Contractor's expense.

CABLE CONNECTIONS

- Copper Cable
 - Connect the traffic signal cable and interconnection cable to the proper controller terminals according to the Traffic color code. Maintain connections for proper phasing as per the plan.
 - Do not use crimp-type connectors for traffic control cable or interconnection cable.
 - Complete all wiring and cable connections in a neat and workmanlike manner with all such cables tie-wrapped.
 - Spare conductors are the same length as active conductors and are neatly grouped and taped at the end of each cable. Connect all communication cable conductors to the terminal block.
 - If necessary, the cabinet has a communication cable terminal block mounted on the inside of the lower left wall. The terminal block has a sufficient number of connections to splice two (2) 12-pair communication cables together.
 - Mount RS-232 interface for connecting a portable PC to the 170 microcomputer to the front face of the drawer of the shelf drawer assembly. The RS-232 interface consists of a shielded cable with a DB9 connector at one end and a 170 C2 type connector at the other. The DB9 connector is plugged into the C2 port of the 170 controller.

- Fiber Optic Cable Work By Others
 - Coordinate this work with the Representative

PATCH PANELS

- Install Patch Panels according to the following standard:
 - Equip the cabinet with a 19", rack mountable, patch panel mounted on an easily removable aluminum panel to house all internal fiber splices. Provide a patch panel able to accommodate connections as required, and according to the following standard:
 - 332L & 336L: Up to 72 connections
 - 333SD: Up to 144 connections
 - Secure the fiber optic cable(s) to the panel before entering the fiber optic splice tray and patch panel.
- Patch Cables Connect fiber optic patch cables to the controller IP interface card and the Ethernet switch. Fiber optic patch cables and a fiber optic ethernet switch are provided under separate items.
 - Mount a RS-232 interface for connecting a portable PC to the 170 microcomputer to the front face of the drawer of the shelf drawer assembly. The RS-232 interface consists of a shielded cable with a DB9 connector at one end, and a 170 C2 type connector at the other. Mount the DB9 connector on the panel for easy access, and the C2 type connector plugged into the C2 port of the 170 controller.
- Store an 8' service loop for each jacketed fiber optic cable. Secure each service loop to the bottom of the lowest rack in the cabinet. Secure the service loops in a manner which provides ease of reattachment and then carefully routed to the patch panel.

CONTRACTOR SERVICES AND CITY ACCEPTANCE

- Submit to the Representative all controller equipment, including the cabinet, for approval by the City prior to purchase by the Contractor via the sample controller test and/or equipment's catalog drawing.
- Once approved, pass a 120- hour Stand Alone Test prior to installation. Each controller, complete with database must be tested and approved under the Stand Alone Test.
- The City may request that the testing of any non-standard controller take place at the Traffic Shop.
- Notify the City and PADOT of the testing period a minimum of 48 hours in advance of the test and schedule an inspection date. A technician representing the supplier must be present during the Stand Alone Test.
- Provide all on street diagnostic and repair services. Provide emergency response numbers, including cellular and pager numbers, of certified response and repair service personnel to the City and PADOT. Begin service within one hour of notification during the hours of 6:00 AM and 8:00 PM, Monday through Friday, and within 4 hours at all other times. All services must be completed within 24 hours. The system will not be accepted until a service agreement is submitted to the City.
- City and PADOT personnel will date and initial the inside of the controller door upon acceptance.

DRAWINGS

- Submit schematic and wiring diagrams for approval prior to the manufacture of the controller. Conform the required drawings to standards established by the American Society of Mechanical Engineers for Electrical and Electronics Diagrams - USAS Y14.15 -1966.
- A complete set of approved schematic and wiring diagrams and operations and maintenance manuals are provided with each controller.
- Provide two (2) copies of the field connection diagram and color sequence chart for each intersection. Place one (1) copy in the controller and submit one (1) copy to the Representative.
- Provide timing and phasing sequence plans for each intersection.

MEASUREMENT AND PAYMENT - Each

- Includes the following:
 - The grounding rod, grounding wire, the cabinet skirt and anchor bolts.
 - Generator transfer hardware, cable, and generator security eye-bolt.
 - UPS & power indication light for all 333 cabinets.
 - All materials and labor necessary to construct the foundation, including excavation, expansion joint material, and caulking compound.
 - All cable connections.
 - Modification of the controller to provide coordination with an existing electromechanical 120 volt interconnect system. Controller service agreement.
 - 3' concrete pad(s) adjacent to the cabinet door(s) in an unpaved area. Fiber optic cable terminations to be by others.
 - Payment for restoration of pavements, curb or lawn areas will be incidental to this item.

9000-1310 6' STREET LIGHT BRACKET ARM

STANDARD DRAWINGS

SL0101

DESCRIPTION

This work will consist of the furnishing and installation of an aluminum bracket, of the specified length, onto a street light pole, traffic signal pole, or bridge structure as indicated on the plan or as directed by the Engineer.

MATERIALS:

In accordance with the Standard Drawings and as follows:

- Bracket:
 - Aluminum Alloy 6061-T6
 - Specified length, extending horizontally at 90° to pole shaft (no rise).
 - A one-inch (1") grommet hole will be installed six-inches (6") from the mounting plate on the bottom of the bracket.
 - Powder coat painted color: National Park Service Brown, Federal Color # 20040, uniform throughout the entire bracket.
 - A highly weather resistant, pigmented, polyurethane coating will be applied to the pole. The coating will have a minimum dry film thickness of 1.5 mils.
- Wiring: 12-2 UF with ground.
- Mounting Hardware: Stainless Steel

CONSTRUCTION

- Wire new luminaire with 12-2 UF with ground wire. Provide sufficient slack in wires to facilitate maintenance.
- Install wiring to connect the terminal block at the bottom of the pole to the photocell at the top of the pole.
- Connect all ground wires to the ground lug and all feeds to terminal block. Ground pole base and grounding lug to existing ground rod.
- Marred or damaged finish will be cause for rejection any time prior to acceptance by the Engineer.
- Touch-up minor scratches in the field using a method approved by the Engineer.

MEASUREMENT & PAYMENT - Each

- Each, to include transportation, installation and any additional hardware to make for a complete, tested, and operational light standard.
- There is no separate payment for the handling or storage of any owner-supplied lighting materials.
- All labor and materials necessary to mount bracket will be incidental to this item of work.
- Grounding and service wire is incidental to this item of work.

9000-1310 LED ROADWAY LUMINAIRE REPLACEMENT
9000-1411 LED ROADWAY LUMINAIRE

DESCRIPTION

Furnish, install, and wire an LED (Light Emitting Diode) roadway luminaire, including all mounting hardware and all labor and material necessary to make connections and splices from luminaire to service feeder. Replacement of existing luminaire also includes removal of existing HID roadway luminaire from existing roadway-scale pole and return of materials.

RETURN OF MATERIALS

- As specified herein, luminaires removed by the Contractor and deemed salvageable by the Engineer shall be delivered to storage location as directed by the City of Philadelphia - Lighting Division within 30 days unless otherwise directed by the Engineer. The Contractor shall place all removed equipment in boxes for return to the City or dispose as directed by the Engineer. The Contractor must contact City of Philadelphia at least 24 hours prior to delivery.
- Materials shall be returned, without damage, to the Street Lighting Shop, located at 701 Ramona Avenue, unless otherwise directed by the Engineer.

MATERIALS

- Provide LED roadway cobrahead-style luminaire models from General Electric Evolve series, Philips Hadco, Cooper Lighting, or approved equal.
- Light Emitting Diode (LED), cobra-type luminaire, die-cast aluminum housing, dark brown outside finish (National Park Service Brown, Federal Color #20040); two-door optical/circuit board assembly and driver assembly; integral heat sink, 7-prong top-mounted NEMA photocontrol receptacle, UL listed for wet locations, IP 65 rated optical enclosure, conforming to all applicable ANSI standards for roadway lighting equipment.
- Luminaire will have a round shape, resembling the style of the current roadway cobrahead luminaire installed in the City.
- Optical/Circuit Board Assembly
- Roadway Lighting:
 - Structured LED array for A3 (asymmetric wide) photometric distribution; 4000° K high brightness LEDs with color rendering index (CRI) of no less than 70, rated for operation in temperature range of -40° C to 67° C, 15,300 initial lumens minimum, lumen maintenance of 92% at 50,000 hours operation, nested concentric directional reflectors, hinged acrylic lens holder with latch; factory-set for specified photometric distribution, photometry reported in accordance with IESNA standard LM-79.
- Sidewalk Lighting:
 - Structured LED array for A1 (asymmetric narrow) photometric distribution; 4000° K high brightness LEDs with color rendering index (CRI) of no less than 70, rated for operation in temperature range of -40° C to 67° C, 15,300 initial lumens minimum, lumen maintenance of 92% at 50,000 hours operation, nested concentric directional reflectors, hinged acrylic lens holder with latch; factory-set for specified photometric distribution, photometry reported in accordance with IESNA standard LM-79.
- Driver Assembly
 - Universal electronic driver for operation on specified input voltage, mounted on removable power door, Drive current of 1000 ma at >90% power factor and <20% total

harmonic distortion (THD) full load, Class A sound rating, Integral surge protection per IEEE/ANSI C62.41-1991.

- Slipfitter
 - Adjustable up to 2" tenon with support length of 5"; include a guard to prevent entrance of birds.
- Wiring
 - 12-2 UF with ground copper wire from luminaire to service feeder.
- Photocontrol
 - Provide photocell as per City of Philadelphia standards.
- Warranty
 - Provide luminaire with full 10-year warranty. Any luminaire or part thereof developing defects within this period will be replaced by the Manufacturer without expense to the City. The City will be the sole judge in determining which replacements are to be made, and their decision will be final.
- Submittals
- The Contractor will submit the following items, prior to purchase and installation:
 - Manufacturer's catalog cuts
 - Warranty documentation
 - Photometric file (.IES format) for the luminaire
 - A sample of the luminaire will be submitted to the City for approval.

CONSTRUCTION METHODS

Section 910 and as follows:

- The luminaire is to be leveled and adjusted before being secured to the pole. Wire luminaire as shown in Contract drawings.

MEASUREMENT & PAYMENT - Each

- This work will include all labor and materials necessary for the supply and installation of an operational LED Roadway Luminaire.
- The item includes removal and return of existing luminaires, at no additional expense.
- Electric service connections are paid under a separate pay item (9000-1414 UNDERGROUND ELECTRICAL SERVICE CONNECTION).

9000-1312 BICYCLE VIDEO DETECTION

DESCRIPTION

This work consists of furnishing and installing a bicycle video detection system, including all hardware and cable, at the location(s) shown on the contract drawings.

MATERIAL - Section 956 of PDT 408, and as follows:

Video camera(s) capable of detecting bicycles, processor module(s), video cable, mounting hardware, and all necessary items to provide a fully functional video detection system to operate in conformance with the contract drawings and as per the specifications herein. Provide video monitor, or appropriate video means, at time of inspection for verification of detection zones.

- Video Camera
 - Lens:
 - 18X continuous focus zoom (minimum)
 - Horizontal field of view 8.1 to 45.9 degrees
 - Vertical field of view 5 to 58 degrees
 - Video Formats:
 - RS 170, NTSC, CCIR, PAL
 - Resolution:
 - NTSC: 460 TVL horizontal at center
 - 350 TVL vertical at center
 - PAL: 450 TVL horizontal at center
 - 400 TVL vertical at center
 - Sensitivity:
 - Full video, No AGC, 1.0 lux
 - Connector:
 - BNC for video output and power connector for line power, neutral, and ground at rear of camera
 - Housing and Sunshield:
 - Zoom lens image sensor sealed in waterproof and dust-tight NEMA-4 housing. Thermostatically controlled face plate heater.
 - Adjustable weather and sunshield with drip guard.
 - Power:
 - RS170/NTSC: 115 VAC 60 Hz.
 - CCIR/PAL: 24 VAC 50 Hz.
 - 10 to 28 VDC
 - Dimensions:
 - Sunshield: 15"-16" length (minimum)
 - Camera: 10.5" length (minimum), 3.5" diameter (minimum)
 - Weight:

- 5.25 lbs. including camera, lens, housing, sunshield, and mounting bracket.
 - Environmental:
 - Temperature: -29° F to 165° F (-34° C to 74° C), Humidity 0% to 100%
- Processor
 - Mounting:
 - Detector rack
 - Detection Zones:
 - 24 zones minimum per camera.
 - Capable of being AND'd or OR'd together providing Boolean logic capability.
 - Capable of directional detection.
 - Delay/Extend function.
 - Environmental:
 - Temperature: -29° F to 165° F (-34° C to 74° C)
 - Humidity: 0% to 95%, non-condensing
 - Vibration: 0.5G, 3 axes, 5-30 Hz.
 - Shock: 10G in all 3 axes
 - Power:
 - 12 or 24 VDC
 - or 115/230 VAC
 - Video input:
 - Composite 75 ohms
 - BNC Connector
 - RS170 (NTSC), CCIR (PAL)
 - Video Output:
 - BNC Connector
 - RS170 (NTSC), CCIR (PAL)
 - Communications:
 - DB9 male for RS-232
 - RJ-45 connector for RS-485
 - Cables and Brackets
 - Up to two (2) mounting brackets, as per manufacturers recommendations.

CONSTRUCTION - Section 956.3(a)2 of PDT 408, and as follows:

- Mount video camera (s) at the locations shown on the drawings using up to two (2) mounting brackets necessary to obtain manufacturer recommended installation location.
- Connect video cable and power cable in accordance with manufacturer's requirements.
- Install processor module(s) in controller assembly.
- Adjust video camera lens to optimize field of view and program video detection areas. Provide lens adjustment module in controller assembly.
- Connect detector outputs to appropriate controller phases as indicated in the phasing, timing and color sequence chart on the drawings.

- Adjust video detection areas and sensitivity as required to provide full operation shown on the drawings.
- Provide service technician from the supplier of the video detector equipment during the turn-on.

MEASUREMENT AND PAYMENT - Each

- All mounting hardware, wiring, and technical services necessary for a complete installation is incidental to this item of work.

9000-1313 PEDESTRIAN SIGNAL HEAD MODIFICATION

DESCRIPTION

This work consists of modifying the mounting of an existing pedestrian signal head for desired visibility as shown on the plans.

MATERIAL

- Mounting Hardware to be replaced if necessary:
 - Pipes, elbows, and brackets required for a pole-mounted installation are aluminum, conforming to ASTM Specification B-221 Alloy 6063-T6.
 - Brackets must extend a minimum of 16 inches from the mounting pole to avoid blockage from other signals and devices.
 - Banding and u-bolts required for a pole-mounted installation are stainless steel.
 - The color of the mounting hardware is National Park Service Brown (Fed No. 20040).

CONSTRUCTION

- Modify signal in accordance with the Standard Drawings. Modify or reinstall the signal head as directed on the plans.
- Take responsibility for drilling all holes that may be required for the signal installation. Install grommets in all exposed holes.
- Pole Mount:
 - Mount signal heads on the in-board side of each pole, unless otherwise noted on the plan or directed by the Engineer.
 - The bottom of the signal head is at a height of 10'.
 - Mount signal heads to a C-post or pedestal pole with cast aluminum brackets and stainless steel U-bolts. Brackets must extend a minimum of 16 inches from the mounting pole to avoid blockage from other signals and devices.
 - Mount signal heads to a mast arm or D-pole with cast aluminum brackets and $\frac{3}{4}$ " x 0.020" stainless steel banding. Use common banding for all signals installed on the pole. An overhead-mounting bracket attached to the mast will not be accepted.
- Wiring:
 - Wire each signal head with a separate 5 or 7-conductor, solid copper, #14 AWG, IMSA 20-1, traffic signal cable, as specified on the plan, extending from the signal head to the base of the pole in accordance:
 - 5 or 7 Conductor Cable
 - A separate cable connects each signal head to the underground cable at the base of the pole.
 - If cable is being connected to a post mounted signal head, it must enter through the bottom mounting bracket.
 - 10, 15, or 30 Conductor Cable

- Pull this cable through the underground conduit to the base of each pole.
- Connect all cable to form a continuous electrical distribution system.
- Splicing
 - Splice the traffic signal cable only at the base of a pole in accordance with the color code.
 - Make the splice with a UL approved silicon connector and taped.
 - Do not splice signal cable in underground conduit or a junction box unless otherwise directed by the Engineer.
- Spare Conductors
 - Spare conductors are the same length as active conductors and are neatly grouped and taped at the end of each cable. Cable enters through the bottom mounting bracket of a pole mounted signal head.

MEASUREMENT AND PAYMENT – Each

- All mounting hardware, signal indications, and all other labor and materials required for a complete installation are incidental to this item of work.
- Tunnel visors, louvers, and back plates are incidental to this item of work. Traffic signal cable is paid under separate items.

9000-1314 FURNISH & INSTALL METRO STREET NAME SIGN 18" X 48"

STANDARD DRAWINGS

SN0101, SN0302

DESCRIPTION

This work consists of furnishing and installing Metro street name signs and/ or combination Metro street name signs of the specified size, including mounting hardware, as indicated on the plan or as directed by the Engineer.

MATERIAL

The Engineer must approve the sign before and after installation to ensure acceptable layout and effect.

Aluminum Sign Blank

- 0.100 Gauge ASTM Specification B-209, Alloy 5052-h38, Finish Chemical Conversion Treatment ASTM B499, Class 2.
- The dimensions of the sign blank are in accordance with the Standard Drawings.

Reflective Sheeting

- Conform all sheeting to the standards established by the FHWA, Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, MUTCD, and PDT 408.
- Fabricate the street name portion of the sign in the following manner:
 - Cover the street name portion of the sign with white, high intensity grade sheeting.
 - Cover it with a highly durable, transparent, pressure sensitive, acrylic, retroreflective green sheeting with cut-outs for the lettering and the Liberty Bell, if applicable.
- The coefficient of retro-reflection of the assembly must be a minimum of 13% and a maximum of 20%.

Lettering

- Conform the dimensions and content of the sign to the plan, the Standard Drawings, and the following requirements:
 - Lettering, series, numbers, arrows, and all other legends (including the Liberty Bell icon) are high intensity white in accordance with the MUTCD.
 - Font: Clearview
 - Signs for streets with names having eight (8) or fewer characters will also incorporate the Liberty Bell icon.

- Riders:
 - 6" Two-Street Name Riders: Conforming to standard 12" sign, use arrows as needed to convey location of each street.
 - 6" Cautionary Riders (i.e. 'No Outlet', 'Loop Street'): High intensity yellow background with 4" black lettering.
 - 6" Arterial & Park Road Riders (i.e. 'Arterial', 'Fairmount Park'): Blue background with 4" high intensity white lettering. Arterial riders include NSEW designators.
 - 6" Dedication ("AKA") Riders: Red background with 4" high intensity white lettering.
 - 12" State Route, US Highway and Interstate Riders: Symbols, coloring & lettering to conform to MUTCD and PDT Pub 236, modified as needed to fit within the rider. Directional arrows, when used, are to match the NSEW designators.
 - State Routes: White background with black lettering. Route number (1-3 digits) within Keystone symbol, between NSEW designators.
 - U.S. Highways: White background with black lettering, Route number (1-2 digits) within U.S. Highway Shield, between NSEW designators.
 - Interstate Highways: White background with black directional arrows, Route number (1-3 digits) included within Interstate Shield.
 - 12" Horizontal R6-1 'One Way' Riders: Conforming to MUTCD and PDT Pub 236, modified as needed to fit within the rider.
- The spacing for the standard lettering is in accordance with the MUTCD and as follows:
 - The position of the street name and designation are balanced for optimum effect and are not exploded or squeezed horizontally.
 - All signs with similar lettering have the same layout.
 - Font size/brush stroke to be determined on the basis of the size of the sign blank and the length of characters in the street name, Maximize font size to the largest size possible.
- Private Driveways
 - Metro street name signs for private driveways to match all standards, except as follows:
 - White background with green lettering.
 - The only designation for a private road is: Driveway (Dwy). Designations for City streets (St, Rd, etc) are not permitted.
 - Do not add Liberty Bell icon.
 - Only One-Way riders are permitted.
- Installation Hardware:
 - Standard Metro Street Name Post/Traffic C-Post: Standard stainless steel clamps.
 - Poles greater than 4.5": Extruded aluminum brackets.
 - All hardware must conform to the standard drawings, and be approved by the Engineer prior to installation.

CONSTRUCTION

- Install signs in accordance with the Standard Drawings.
- Signs mounted to traffic signal poles must not block the holes and access hole covers located at the top of the mast arms or D-Poles.
- Secure all signs with a minimum of two (2) brackets or clamps.
- Mount each sign installed parallel with the curb at a minimum height of 14' above the ground unless otherwise directed by the Engineer.
- Mount each sign installed perpendicular to the curb at a minimum height of 15' above the ground unless otherwise directed by the Engineer.
- The Engineer must approve the sign after installation to ensure acceptable effect and position.
- Mark the date of installation on the back of the sign.
- Thoroughly wipe all sign faces after installation.

MEASUREMENT AND PAYMENT – EACH SIGN

- Incidental to this item is the graphic design of each sign.
- All hardware necessary for installation by the Contractor is incidental to this item.

9000-1315 REMOVAL OF SELECT TRAFFIC SIGNAL EQUIPMENT (PER INTERSECTION)

DESCRIPTION

This work consists of removing existing traffic signal equipment at an intersection as noted on the plan or as directed by the Engineer, including traffic signal poles, traffic signal heads, radar poles, street light davits/ brackets/ luminaries, all related signs, signs mounted on traffic poles and wood poles, street name signs, controllers, cabinets, junction boxes, grounding rods, cable, abandonment of exposed conduit and all related hardware. This item is not applicable to removal of traffic signal equipment at the intersection of Columbus Boulevard & Washington Avenue.

CONSTRUCTION

- Do not remove the existing traffic signal equipment until the replacement traffic control equipment is operational and approved by the Engineer.
- If the signal equipment is being removed but not replaced, 'STOP' signs are to be erected prior to the removal of the existing equipment. The location of the stop signs must be approved by the Engineer prior to installation.
- Prior to the start of work, the existing traffic signal and street light electrical service are to be disconnected from its source by the Contractor. In lieu of the Contractor performing this work, the Contractor may make arrangements for PECO forces to disconnect the electrical service at no additional cost to the City. Cap all wires as necessary.
- Care must be exercised during removal, transport, and storage of the traffic signal or street light equipment, including LEDs. The Contractor is responsible for any damage to the equipment during these operations, and delivery of equipment.
- Strip all material from the poles prior to delivery.
- Deliver all traffic signal equipment to the Traffic Shop. The Contractor must contact the Traffic Signal Construction Engineer at least two (2) business days prior to delivery.

Streets Department Traffic Signal and Sign Shop
4501 G Street
Philadelphia, PA 19120

Philadelphia Street Lighting Shop
701 Ramona Avenue
Philadelphia, PA 19120

- Remove C-post(s) in its entirety.
- Cut abandoned conduit at the elbow 1 foot below the surface.
- Remove the existing concrete footway to the nearest joint. Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surfaces (DWS), unless determined necessary by the Engineer.
- Restore the adjacent sidewalk and curb to its original condition.

- Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor's expense.
- Remove existing traffic related signs on adjacent poles, posts, or wood poles that affect the operation of the intersection, as directed by the Engineer.

MEASUREMENT AND PAYMENT – Each/Intersection

- This item includes all labor and materials necessary to remove and deliver traffic signal equipment and street lighting brackets/davits/luminaries.
- This item includes all labor and materials necessary to seal abandoned conduit.
- This item includes removal of existing traffic related signs on adjacent poles, posts, or wood poles.
- Removal of traffic signal mast arm foundations or d-pole foundations are payable under Item 9000-1417, Remove Foundation.

9000-1316 REMOVAL OF SELECT TRAFFIC SIGNAL EQUIPMENT - WASHINGTON

DESCRIPTION

This work consists of removing existing traffic signal equipment at an intersection as noted on the plan or as directed by the Engineer, including traffic signal poles, traffic signal heads, radar poles, street light davits/ brackets/ luminaries, all related signs, signs mounted on traffic poles and wood poles, street name signs, controllers, cabinets, junction boxes, grounding rods, cable, abandonment of exposed conduit and all related hardware. This item is only applicable for removal of traffic signal equipment at the intersection of Columbus Boulevard & Washington Avenue as indicated on the traffic signal plans.

CONSTRUCTION

- Do not remove the existing traffic signal equipment until the replacement traffic control equipment is operational and approved by the Engineer.
- If the signal equipment is being removed but not replaced, 'STOP' signs are to be erected prior to the removal of the existing equipment. The location of the stop signs must be approved by the Engineer prior to installation.
- Prior to the start of work, the existing traffic signal and street light electrical service are to be disconnected from its source by the Contractor. In lieu of the Contractor performing this work, the Contractor may make arrangements for PECO forces to disconnect the electrical service at no additional cost to the City. Cap all wires as necessary.
- Care must be exercised during removal, transport, and storage of the traffic signal or street light equipment, including LEDs. The Contractor is responsible for any damage to the equipment during these operations, and delivery of equipment.
- Strip all material from the poles prior to delivery.
- Deliver all traffic signal equipment to the Traffic Shop. The Contractor must contact the Traffic Signal Construction Engineer at least two (2) business days prior to delivery.

Streets Department Traffic Signal and Sign Shop
4501 G Street
Philadelphia, PA 19120

Philadelphia Street Lighting Shop
701 Ramona Avenue
Philadelphia, PA 19120

- Remove C-post(s) in its entirety.
- Cut abandoned conduit at the elbow 1 foot below the surface.
- Remove the existing concrete footway to the nearest joint. Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surfaces (DWS), unless determined necessary by the Engineer.
- Restore the adjacent sidewalk and curb to its original condition.

- Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor's expense.
- Remove existing traffic related signs on adjacent poles, posts, or wood poles that affect the operation of the intersection, as directed by the Engineer.

MEASUREMENT AND PAYMENT – Each/Intersection

- This item includes all labor and materials necessary to remove and deliver traffic signal equipment and street lighting brackets/davits/luminaries.
- This item includes all labor and materials necessary to seal abandoned conduit.
- This item includes removal of existing traffic related signs on adjacent poles, posts, or wood poles.
- Removal of traffic signal mast arm foundations or d-pole foundations are payable under Item 9000-1417, Remove Foundation.

9000-1405 STEEL TRAFFIC CONDUIT, 2" UNDER TRACK

STANDARD DRAWINGS

IC0104 (for open trench items)

DESCRIPTION

This work consists of furnishing and installing a steel conduit of the specified size under and/or adjacent to a track structure as indicated on the plan or as directed by the Engineer.

MATERIAL

- The conduit, and all appurtenances (bends, couplings, etc), are hot-dipped galvanized, inside and outside, and rigid steel conforming to the requirements of Federal Specification WW-C-581 and ANSI Specification C80.1.
- The conduit is manufactured to the standard trade size and dimensions.

CONSTRUCTION

- General
 - Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surfaces (DWS), unless determined necessary by the Engineer.
 - Restore the adjacent sidewalk and curb to its original condition.
 - Conduit will be grounded at each junction box, traffic signal and/or street light post or pole.
- Under Track
 - Install the conduit in accordance with the requirements of the track owner or as directed by the Engineer.
 - The proposed conduit location must be approved by the Engineer prior to installation.
 - Install the conduit with a minimum coverage of 24", measured from the top of conduit.
 - Conduit to extend a minimum of 6' beyond the track foundation. Do not couple steel conduit to PVC conduit; run it between junction boxes or poles/posts, as necessary to provide sufficient grounding between the steel conduit and the grounding cables within the junction boxes, poles and/or posts.
 - Make the cutting of conduit with a hacksaw, or other means approved by the Engineer, with the cut made square to its length. Ream the cut ends of conduit to remove all rough edges and threaded prior to installation. Complete the bending of conduit by a pipe bender without the use of heat.
 - The track operations are not to be disrupted or delayed at any time.
- Open Trench

- Open trench installation to conform with the standard drawings, and the specifications for 9920-0104 PVC Traffic Signal Conduit, except that grounding wire is not required within steel conduit.

MEASUREMENT AND PAYMENT – Linear Foot

- Steel conduit installed under track structures are paid under the under track or open trench pay items. Pay for all other conduit is under separate items.
- The grounding of steel conduit at each junction box, post, pole, etc, is incidental to this item.
- All labor and materials necessary to install conduit under a track structure are incidental to this item of work.

9000-1406 FLEXIBLE FABRIC INNERDUCT

DESCRIPTION

This work consists of furnishing and installing a flexible fabric innerduct with termination system, as indicated on the plan or as directed by the Engineer, in PVC conduit or designated utility duct for all underground interconnects.

MATERIAL

Innerduct - meeting the following requirements:

- Property Value Test Method
- Melting Point 419-446°F ASTM D4223-99
- Density 1.12 ASTM D1577-96
- Glass Transition Temperature 122-158°F ASTM D4723-99
- Thermal Conductivity 0.14-0.31 W/M K ASTM D4723-99
- Coefficient Of Thermal Expansion 60×10^{-6} IN/ (M F) ASTM D4723-99
- Oxygen Index 22.0-24.0 ASTM D2863
- Heat Of Combustion 21.0-39.0kJ/g ASTM D4723-99
- Tensile Strength 2560 lbs. ASTM D5034/5035
- Elongation @ 600 LB LOAD 5% ASTM D5034/5035
- Tear Strength 1230 lbs. ASTM D5034/5035
- Kinetic Friction <0.1 ASTM D4518-91
- Auto Combustion Temperature 532° C/ 990° F
- Attach multiple cell configuration for the entire length of the product.
- The product is to have color-coded stitching for cell identification.
- The product is to have a maximum coefficient of friction of .08.
- A solid copper, polyvinyl color-coded conductor (#19 AWG minimum) for tracing is to be contained in the sidewall edge fold of the sleeve. It is to be rated for a minimum of 6 amps and 600 volts.
- All cells must contain a minimum 1250 lb, color-coded pull-rope.
- Use steel reels for total product weight exceeding 300 lbs.
- The size and required number of cells is to be as indicated on the plan or as directed by the Engineer.

CONSTRUCTION

- Install the innerduct in a PVC conduit in accordance with the manufacturer's recommendations. Terminate the system using leak resistant, inflatable bags to be installed in accordance with the manufacturer's recommendations.

MEASUREMENT AND PAYMENT – Linear Foot

- The PVC conduit is paid under a separate item.

9000-1407 COMPOSITE JUNCTION BOX 12" x 18" x 12" DEEP
9000-1408 CIRCULAR COMPOSITE JUNCTION BOX 39" OD x 18"

DESCRIPTION

This work consists of furnishing and installing a composite traffic junction box of the specified size with grounding rod and mounting rack, if applicable.

MATERIAL

Junction Box

- 9000-1407 is the standard junction box size for traffic signals.
- 9000-1408 is used where six (6) or more conduit enter the box, adjacent to traffic signal controllers, and for all traffic signals with interconnect as shown on the plans.
- The junction box is made of a polymer concrete, reinforced with heavy-weave fiberglass, of the nominal dimensions specified.
- Enclosures and lids are cement gray in color rated for a minimum design load of 22,500 lbs over a 10" x 20" plate with a minimum test load of 33,500 lbs.
- The cover for the rectangular box has a non-skid coefficient of friction of 0.5, a thickness of 2", and a watertight gasket.
- The cover for the circular box has a non-skid coefficient of friction of 0.5, a thickness of 2.5", and a watertight gasket.
- The bottom of the box is open. The wall of the box is ½" thick and flared. Imprint the cover with the logo "City of Philadelphia Traffic Signal" and equipped with two (2) 4"x ½" pull slots.
- Equip the circular box with a mounting rack, which must be approved by the Engineer prior to purchase.

Stone

- In accordance with PDT 408 Section 350.2 - NO 2A COARSE AGGREGATE.

Geotextile

- In accordance with PDT 408 Section 735.1 - GEOTEXTILE, CLASS 1.

Grounding

- Grounding is in accordance with TC-8804 of PDT Pub 148 and as follows: The grounding rod is copper clad, 10' in length and ¾" in diameter.
- The grounding wire is a #6 AWG stranded copper wire with green jacket.
- The resistance of the grounding rod must be tested in accordance with the National Electric Code (NEC) and must be less than 10 ohms in accordance with Streets Department requirements. For grounding rods failing the above- mentioned test, relocate the grounding rod to a suitable location approved by the Engineer.

CONSTRUCTION

- The junction box location must be approved by the Engineer prior to installation.
- Remove the existing concrete footway to the nearest joint. Make all cuts in accordance with Item 9907-1050, Sawcut Footway. Install the junction box on a minimum of 6" (min 1 cubic foot) of 2A stone overlaid with geotextiles. *Do not used 2A "modified" stone.*
- Confirm the elevation of the box to the proposed grade of the adjacent pavement. In unpaved areas, the junction box is at the same elevation at the top of nearest curb. The surrounding area must be filled in a manner, which eliminates any tripping hazards.
- Extend the conduit a minimum of 3" above the bottom of the box and a maximum of 9" below the top of the box. The top of the cable is a minimum of 1" below the lid.
- Mount the rack, if applicable, to the wall of the box in such a manner that does not adversely affect the integrity of the box. Make sure any fiber cable mounted in the box does not come in contact with the ground.
- Install a 10' grounding rod. Ground all conduits to the rod with a #6 AWG stranded copper wire.
- If existing conditions mandate conduit entrance through the side of the box, holes must be drilled as per the manufacturer's recommendation and sealed with a foam or non-shrink grout.
- Restore the adjacent pavement to its original condition in accordance with the appropriate items. ***The use of expansion joint material is prohibited.***
- Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor's expense.
- Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surfaces (DWS), unless determined necessary by the Engineer
- Restore the adjacent sidewalk and curb to its original condition.

MEASUREMENT AND PAYMENT – EACH.

- The grounding rod, 2A stone and geotextile are incidental to this item of work.
- The #6 AWG stranded copper wire used to ground the steel conduits is incidental to this item. The mounting rack is incidental to this item. Perform the drilling and sealing of holes for conduit entrance through the side of the box at no additional cost. Sawcutting and the restoration of adjacent pavement are paid under separate items. Fill required to transition unpaved areas is paid under a separate item.

9000-1409 FIBER OPTIC CABLE, UNDERGROUND, 12-FIBER
9000-1410 FIBER OPTIC CABLE, UNDERGROUND, 48-FIBER

DESCRIPTION

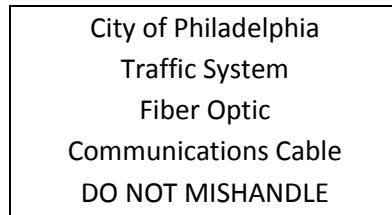
This work consists of the furnishing and installing single-mode fiber optic loose tube, gel-free cable for outdoor use of the specified installation type and fiber count, including all mounting hardware, and vertical cable storage assemblies.

MATERIALS

- General
 - Cable is single mode fiber optic cable, 12 strand or 48 strand as specified in the drawings,
 - Loose tube, gel free.
 - The cable has a graded index for higher performance and outdoor use.
 - Preference will be given to cable coatings printed with the following, repeating at regular intervals: Phila Streets Dept Interconnect Cable – 215-686-1200/3-1-1
 - Deliver the cable with the fiber counts according to the plans and proposal.
 - Conform the cable to the latest publications of Electronic Industries, Association/Telecommunications Industry Association (EIA/ TIA), Rural Electrification Agency (REA) PE-90 and IEEE.
 - Install all fiber optic cable within 6 months of manufacture.
 - All fiber optic cable is of the same type and manufacturer for all cable segments within the contract.
 - Meet the maximum attenuation parameter separately for each fiber in the cable over the entire operating temperature range.
 - Provide a ripcord to ease the outer sheath removal during installation
 - Mark the cable's jacket according to Section 350G of the National Electrical Safety Code. Implement the color-coding for individual fibers and buffer tubes according to the Publication EIA/ TIA-598. The outside jacket is a distinctive color other than black, which is approved by the Engineer prior to purchase.
 - Submit for review and approval, a 10' sample of each cable type, along with the product's latest technical information provided by the manufacturer, by the Engineer prior to purchase. Complete this review within 15 business days of the receipt of material.
 - All fiber optic cable meets or exceeds the following technical parameters:
 - Wavelength: 1310 and 1550 nanometers
 - Minimum Bandwidth: 150 MHz Km
 - Core/Clad diameter: 9/125 microns
 - Coating diameter: 250 microns
 - Maximum number of fibers per tube: 12
 - Maximum tension allowable during installation: >2700N(600 lbs.)

- Minimum bending radius:
 - <15 centimeters (cable < 96 fibers)
 - <20 centimeters (cable > 96 fibers)
 - Maximum attenuation: 0.35 dB/km at 1310 nanometers
 - C to +70
 - Operating Temperature Range: -40
 - Outer Jacket O.D: Such that all cable are accommodated by the innerduct and/ or conduit as specified in the cable plant documentation.
- Underground Cable
 - All underground cable is suitable for outdoor, in-conduit installation and have a dielectric central strength member.
- Aerial Cable
 - Aerial cable is self-supporting dielectric cable or Figure-8 cable, as specified, and suitable for exposed, outdoor installation.
 - The connection brackets are galvanized or stainless steel and specifically designed for the appropriate use. All brackets must be approved by the Engineer and the appropriate utility company prior to installation.
- Packaging Requirements - Cable on Reels
 - Permanently identify each reel of fiber optic cable with a label listing, but not be limited to, the following information:
 - Cable type and number
 - Gross weight
 - Cable length
 - Job order number
 - Date of manufacturing
 - Date of factory test
 - A data sheet containing the factory test results for each fiber in the cable accompanies each reel. Submit all data sheets to the Engineer for review and approval prior to installation. Complete this review within 15 business days of receipt of material.
 - The ends of the fiber optic cable on reel are protected with caps and be accessible for testing before installation. If damage to cables is suspected at any time, the Engineer may request a retest of all suspected cable, at the Contractor's expense, within 48 hours of notification.
 - Store all cable in accordance with the manufacturer's recommendations.
- Vertical Cable Storage Assemblies
 - 2 ea Hex Head Bolt 5/8" -11 x 6" long
 - 2 ea Standard 5/8" Through Bolt
 - 2 ea Hex Nut 5/8"-11
 - 4 ea. Round Washer 5/8"
 - 3 ea Spool
 - 1 ea Cross-Arm

- 4 ea Lock Washer 5/8"
- 2 ea Hex Head Self Tap Screw
- Identification Tags
 - All identification plates to be heavy duty plastic, UV resistant.
 - Colors to be black background with white engraved lettering.
 - Each plate to have four (4) holes, and installed with at least two (2) heavy duty, UV resistant cable ties of sufficient length to wrap the plate with all cables with a single tie.
 - 4" high x 6" wide x 1/16" thick, with 7/16 inch lettering to read as follows:



CONSTRUCTION

- General
 - Remove existing interconnect cable.
 - Install the cable as per the manufacturer's procedures unless otherwise specified through this document.
 - At no time any cable, buffer tube or fiber be subjected to a bend radius less than 15 times its outer jacket diameter.
 - Submit all pulling procedures for review and approval by the Engineer prior to installation. Complete this review within 20 business days of receipt of material.
 - Only allow splices at the ends of each cable segment for specified termination and splice purposes (only within termination cabinets, controller cabinets and the telephone room); all specified segments are one continuous length of cable.
 - Cable must be attached to the wall of a junction box or manhole in a manner, which does not adversely affect the integrity of the box. Cable must not lie at the bottom of the junction box or manhole.
 - Label cable as 'City of Philadelphia Interconnect Cable' in accordance with PUC regulations. Terminate cable in accordance with the manufacturer's recommendations.
 - Install Identification Tags using heavy duty cable ties on cables within all junction boxes, manholes, hand holes, drip loops, signal pole bases, and on all aerial poles (wood or D-Pole) within five (5) feet of the pole on all sides of the aerial run. All tags to be installed for optimal visibility for service crews, or as directed by the Engineer. Trim all cables ties as they are installed and remove the waste from the job site.

- Underground

- Install the interconnect cable in City conduit or a utility duct bank as noted on the plan or directed by the Engineer.
- Service Loops
 - All service loops comply with the minimum bend radius for that cable, buffer tube or fiber.
 - All service loops use loop rings, brackets or similar methods to ensure loop radius integrity.
 - Place all service loops in out-of-the-way locations but are accessible with minimal effort.
 - Service loops maintain a minimum bend radius of 20 times the outer diameter of the cable, unless otherwise specified.
 - Where multiple cable service loops are required at the same location, loop and secure separately each cable.
 - The vertical cable storage assemblies must provide a minimum bend radius for the fiber optic cable and insure radius integrity.
 - Vertical cable storage assemblies must provide vertical storage banded or lag bolted to each proposed wood pole in a three point application to help provide the minimum bend radius.
 - The bracket material must be galvanized steel with dielectric racking material insuring radius integrity and safety.
 - The vertical cable storage assemblies must be installed in accordance with manufacturers installation instructions.

MEASUREMENT AND PAYMENT - Linear Foot

- All labor and material necessary for a complete installation including all mounting hardware and brackets are incidental to this item of work.
- Furnishing and installing of all fiber tags and cables ties are incidental to this item of work.
- The removal of existing interconnect cable are incidental to this item of work.
- Conduit is paid under a separate item.
- Vertical cable storage assemblies are incidental to this item.

9000-1412 PHILADELPHIA STREET LIGHT POLE

STANDARD DRAWINGS

SL0101

DESCRIPTION

This work will consist of the furnishing and installation of a foundation-mounted fiberglass street light pole as indicated on the plan or as directed by the Engineer.

Provide mounting hardware or reuse mounted hardware from removed project street light poles to hang banners as directed by the Delaware River Waterfront Corporation.

MATERIALS:

In accordance with the Standard Drawings and as follows:

- Pole Length: 30 feet
- Pole Finish:
 - The resin used to make the pole will be ultraviolet resistant and pigmented the same color as the final coating to be applied.
 - Color: National Park Service Brown, Federal Color # 20040, uniform throughout the entire wall thickness of the pole.
 - A highly weather resistant, pigmented, polyurethane coating will be applied to the pole. The coating will have a minimum dry film thickness of 1.5 mils.
 - The pole will have a smooth, uniform surface.
 - The interior of the pole will be free of all manufacturer processing residue and loose materials prior to shipment.
- Anchor Base:
 - Cast Aluminum A356-T6
 - Prime for paint adhesion and polyurethane coated to match pole.
- Base Cover:
 - Base cover will be one (1) piece fiberglass, shroud type.
 - Color to match pole.
- Handhole: A 4" x 12" handhole will be oriented 180° from bracket.
- Mounting Plate and Terminal Block:
 - The manufacturer will factory install a fiberglass reinforced composite, 6" x 14", mounting plate installed inside pole opposite handhole cover.
 - The terminal block (Homac #RB6214SL or approved equal) will be a 12 point (6 over 6) installed on the mounting plate for connection of service wire cable (up to 1/0 AWG) and luminaire service wire (#12 to #2 AWG).
- Grounding:
 - #6 AWG ground wire, lugs and welds.
- Pole Strength and Deflection:
 - Reference ANSI C136.20, Section 10.
 - Wind Deflection - Maximum 10% of the pole length based on an 80 mph wind (plus 30% gust) using a 15 EPA.
 - Static Deflection - Maximum 1-1/2% static deflection due to weight of arm and luminaire.

- Permanent Set - Maximum 1% permanent deflection after release of test load equivalent to the wind loading calculated for wind deflection.
- Maximum Bending Moment - Calculated using maximum wind loading. Pole will withstand two times this maximum bending moment.
- Service Wiring: 12-2 UF with ground.
- Fuses, 10 Amp.

TESTING REQUIREMENTS

- Sample poles will be tested by manufacturer to determine actual bending and deflection values. The sample size will be 5% of total order with a maximum of five (5) poles.
- Testing will conform to ANSI standards.
- Results will be submitted to Street Lighting prior to shipment.

CONSTRUCTION

- Protection and care of the unit during shipment and installation is of utmost importance and it is the Contractor's responsibility to use all precautions and equipment necessary to install the unit in its original factory condition without scratches, abrasions or any deformation of the finish.
- Leave all wrapping in place until pole, luminaire and appurtenant material are installed and leveled. All materials will be stored in accordance with the manufacturer's recommendation.
- Install fiberglass light pole onto new or existing foundation and secure to anchor bolts. Install all poles plumb.
- Mount pole to allow brackets to be installed at a right angle to the curb line on which the pole is located unless otherwise directed by the Engineer.
- Use aluminum shims under no more than three (3) bolts of any base.
- Check for vertical alignment of the shaft. Adjust to the correct alignment. Tighten anchor nuts, as specified in PDT 408, Section 1105.03.
- Bolt mount plate to ground lug. Mount terminal block to mounting plate.
- Wire new luminaire with 12-2 UF with ground wire. Provide sufficient slack in wires to facilitate maintenance.
- Install 10 Amp fuses and wiring to connect the terminal block at the bottom of the pole to the photocell at the top of the pole.
- Connect all ground wires to the ground lug and all feeds to terminal block. Ground pole base and grounding lug to existing ground rod.
- Remove post wrapping using zip string. The use of knives or razors is prohibited.
- Marred or damaged finish will be cause for rejection any time prior to acceptance by the Engineer.
- Touch-up minor scratches in the field using a method approved by the Engineer.

MEASUREMENT & PAYMENT - Each

- Each, to include transportation, installation and any additional hardware to make for a complete, tested, and operational light standard.
- There is no separate payment for the handling or storage of any owner-supplied lighting materials.
- All labor and materials necessary to mount pole will be incidental to this item of work.
- Grounding and service wire is incidental to this item of work.
- The concrete foundation is furnished and paid as part of item 9000-1413, Street Light Foundation, 15" Bolt Circle
- Mounting banners to light poles and all hardware required to mount the banners is incidental to this item.

9000-1413 STREET LIGHT POLE FOUNDATION, 15" BOLT CIRCLE

STANDARD DRAWINGS

SL0511, SL0515, SL0516, SL1212

DESCRIPTION

This work will consist of the excavation and construction of a concrete foundation of the specified size for a street light pole including all anchor bolts, nuts, washers, and materials necessary for a complete installation. Incidental to this item is all work required for removal and restoration of existing paving, including concrete and granite/unit pavers.

MATERIAL

- Foundation: Class A concrete, PDT 408, Section 704
- Cure: PDT 408, Section 711.2(a)
- Reinforcement Steel: PDT 408, Section 709.1
- Expansion Joint Material: PDT 408, Section 705.1
- Anchor Bolts: Galvanized per ASTM A449, 1" diameter x 36" long, with a 4" hook.
- Anchor Bolt Nuts and Washers: Per Standard Drawings. Fully galvanized. Provide one (1) hex nut one (1) lock washer and one (1) flat washer per bolt per anchor bolt.
- Grounding Rod: Copper clad, 10'-0" length, 3/4" diameter.
 - The resistance of the grounding rod must be tested in accordance with the National Electric Code (NEC) and must be less than 25 ohms in accordance with Streets Department requirements. For grounding rods failing the above-mentioned test, the Contractor will relocate the grounding rod to a suitable location approved by the Engineer.

Anchor Bolts and Bolt Circle will be in accordance with the Standard Drawings, and as follows:

Pole Type	Bolt Circle	Anchor Bolts	Base Dimensions
Street Light Pole	11-inch	1-inch diameter	1'-8" x 1'-8"
Street Light Pole	15-inch	1-inch diameter	2'-0" x 2'-0"

CONSTRUCTION

- All light locations must be laid out in the field and verified by the Engineer prior to any sawcutting. Contact the Engineer at least two (2) weeks in advance to schedule pole spotting. No pole spotting will be performed until all utility mark-outs have been completed.
- Investigate all corners and identify all existing building vaults and utility vaults within the project limits. The known locations of existing vaults are listed.
- All work will conform to PDT 408, Section 910 and as indicated on the contract drawings. Install copper clad ground rod and ground clamp in each foundation and 2" sweep-bend conduits as needed for circuit runs as shown on the contract drawings. Spare sweeps will be installed at the end of each run. Conduits in the foundation will be placed to minimize bends in the conduit runs. All excess excavation material will be removed immediately after the foundation has been backfilled. The work area will be kept clean at all times.

- For spread foundations: Excavation and restoration of footway paving will consist of removing the entire block section or panel (to the nearest joint or score line), sawcutting as necessary to maintain a clean, neat line at the joint or score line. Sawcuts will not be overcut at corners. Work will be in accordance with the Standard Drawings.
- Following the installation of the light pole foundation, paving will be replaced around the new pad, matching the existing subsurface, base and finish conditions, in kind or approved equal. Concrete replacement will include score patterns to match existing and smooth or broom finishes, as directed. Granite/unit pavers will be reset on new base material to match existing patterns. Pavers will be sawcut as required to reset pavers with clean, consistent joints.
- The location must be verified and approved by the Engineer prior to construction. If any obstructions are identified during field meeting that would prevent the installation of a foundation per the project plans, coordinate with Engineer to identify a new location.
- Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surfaces (DWS), unless determined necessary by the Engineer
- Take responsibility for the location of all subsurface structures and utilities in the construction area.
- Excavate the foundation site to the required dimensions, without placement of shoring or forms. If the presence of subsurface utilities prevents the construction of a foundation of the specified size, suspend work immediately and notify the Engineer.
- Securely cover the excavation after completion and remain covered when no work is in progress. Keep the excavation reasonably dry and free of mud until placement of the concrete.
- Construct forms to firmly hold the template and the four (4) anchor bolts in place while the concrete is poured. Extend each anchor bolt 6" above the finished grade of the foundation.
- Protect anchor bolt assemblies after the construction of foundations, using appropriate methods, prior to installation of poles.
- Install grounding rod of the appropriate length in the foundation, extending 8' below the bottom of the foundation and 3" above the surface of the foundation.
- The concrete foundation is monolithic in construction and cures for a minimum of 7 days prior to pole installation. Chamfer all exposed edges.
- Etch the bolt circle size (i.e. 11" or 15") into the foundation.
- Finished elevation:
 - 2" above finished grade (paved areas)
 - 4" above finished grade (unpaved areas)
- Curing will be completed by using curing compound applied uniformly in continuous operation by power spray or roller per manufacturer's directions. Do not use moisture curing or moisture-Retaining-Cover curing method.
- If the anchor bolt is damaged prior to the pole installation, an acceptable method of correction must be approved by the Engineer. Install a 2" PVC conduit in the foundation for a street lighting connection and terminated a minimum of 2" above the surface. The direction of the conduit is determined by the Engineer at the time of construction.
- Construct a ¼" thick expansion joint with filler between the foundation and adjacent sidewalk/curb to the full depth of the sidewalk/curb.

- When the work is completed, the area will be restored to its original condition, in kind, or approved equal. All work areas will be clean and all pavement markings will be removed prior to final acceptance. Restore the adjacent sidewalk and curb to its original condition. Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor's expense. The Contractor must salvage all granite, cobblestone, and unit pavers removed and not reinstalled as part of new foundation. Salvaged material will be utilized to patch adjacent pole removal locations.
- Assume responsibility for protecting the foundation and the anchor bolts assembly from any damage prior to pole installation and final acceptance of the pole and mast arm by the City. In case of damage to either the foundation or the anchor bolts assembly that is deemed irreparable by the Engineer, replace the entire foundation at no additional cost to the City.

MEASUREMENT & PAYMENT - Each

- All materials and labor necessary to construct the foundation, including excavation, expansion joint material, reinforcement steel and grout are incidental to this item of work. Also included are all anchor bolts, nuts, washers, conduits, ground clamps, ground wire and ground rod for a complete installation. All work to protect the foundation or the anchor bolts assembly, or satisfactorily repair any damage prior to poles installation and acceptance, up to and including replacing the entire foundation, is incidental to this item.
- Included at no additional compensation are all pavement removal, storage excavation, concrete, form work, removal and proper disposal of excavated material, joint filler, mortar, salvage of excess granite/cobblestone/unit pavers, and pavement restoration.
- Pavement restoration required to restore pavement damaged or removed during installation of foundation is incidental to this item regardless of pavement type.

9000-1414 UNDERGROUND ELECTRICAL SERVICE CONNECTION

DESCRIPTION

- This work is connecting the underground traffic or street lighting electrical service cable to an underground power source in City of Philadelphia street lighting or traffic signal electric junction boxes. This work must be performed by a qualified electrical contractor.

CONSTRUCTION

- Perform work in accordance with NEC and PECO requirements.
- Do not use compression connectors.
- All connections are to be continuous and without splices.
- Wire installed for underground service must be terminated in accordance with PECO standards and requirements.
- The use of junction boxes for street lighting conduit is not permitted without approval of the Chief Street Lighting Engineer.

MEASUREMENT AND PAYMENT - Each

- Service cable necessary for connection will be paid separately under the following item: ITEM 0910-4114 AWG 4 UNDERGROUND CABLE, COOPER, 1 CONDUCTOR
- Modifications to utility manhole(s) necessary for connection will be paid separately under the following item: 9000-1419 UTILITY MANHOLE MODIFICATION

9000-1415 PECO UTILITY SERVICES

STANDARD DRAWINGS

SL0202

DESCRIPTION

This work consists of connecting the underground traffic signal or street lighting electrical service cable to its power source and is performed by PECO.

MATERIAL

- Materials must be approved by PECO, including all electrical connection hardware.
- Only PECO approved material are to be used to make all electrical connections.

CONSTRUCTION

- All underground taps are performed by PECO or PECO-approved COC.
- Only PECO or PECO-approved COC's are permitted to work on or within PECO facilities. PECO must approve entry within manholes.
- If PECO underground facilities are damaged and in need of repair, coordinate with PECO for method of repair.
- Submit a tentative schedule of electrical connections to the Engineer and PECO 90 days prior to the first connection. Update this schedule every 30 days, if necessary.
- Service and Meter Application must accompany requests for connections.
- Provide PECO energy a schedule of coordinated work activities 12 week written advance notice and payment prior to scheduling of electrical connections.
- PECO must be notified in advance, provided with a schedule and daily status of manhole entry once the project begins.

MEASUREMENT AND PAYMENT - Dollar

- Service cable necessary for connection will be paid separately under the following item: ITEM 0910-4114 AWG 4 UNDERGROUND CABLE, COPPER, 1 CONDUCTOR
- In accordance with Section 110.03(d)4 Services by Others, except that the mark up on service is limited to 5%.
- If PECO allows the contractor to perform this work, the contractor will be compensated as the same rate as PECO charges.
- Furnish a copy of the invoice, receipt, or cancelled check as support of the expense incurred before payment shall be made to the Contractor.

9000-1416 REMOVE STREET LIGHT POLE

DESCRIPTION

This work will consist of removing an existing street light pole, including bracket/davit, luminaire and all appurtenances as indicated on the plan or as directed by the Engineer.

RETURN OF HARDWARE

- As specified herein, all street lighting hardware removed by the Contractor and deemed salvageable by the Engineer will be delivered to storage location as directed by the City of Philadelphia – Street Lighting Division within 30 days unless otherwise directed by the Engineer. The Contractor will place all removed equipment in boxes for return to the City or dispose as directed by the Engineer. The Contractor must contact City of Philadelphia at least one (1) business day prior to delivery.
- Materials will be returned, without damage, to the Street Lighting Shop, 701 Ramona Avenue, (phone number: 215-685-1220) unless otherwise directed by the Engineer.
- Remove and store all banners and mounting hardware. Return banners to Delaware River Waterfront Corporation (DRWC) or store banners for reinstallation on new light poles at DRWC's direction.

DISPOSAL OF MATERIALS

All other materials removed but not salvaged will be disposed offsite by the Contractor in accordance with all federal, state, and local regulations.

CONSTRUCTION METHODS

- The existing street lighting system will not be removed until the new lighting system has been installed and is functional. The Contractor will provide test caps for the existing circuit with 600 volt rated, UL listed electrical tape, and contact PECO Energy Company for disconnection of the existing circuit.
- Prior to beginning this work, the existing street light electrical service will be disconnected from its source by the Contractor. In lieu of the Contractor performing this work, the Contractor may make arrangements for PECO forces to disconnect the electrical service at no additional cost to the City. Cap all wires as necessary per PECO standards. This work may only be performed by a PECO-approved contractor.
- The Contractor will document existing damage to the fiberglass street light poles, luminaires, lamps, photocells, and brackets prior to removal.
- Care must be exercised during removal, transport, and/or storage of the street lighting equipment. The Contractor will be responsible for any damage to the equipment during these operations.
- The luminaire will be tagged with a permanent ink-marking pen, giving the order number on which the item was removed.
- The Contractor will remove all service wiring.
- Abandoned conduit will be cut below the surface and grouted.
- The removed fiberglass street light poles, luminaires, lamps, photocells, and brackets will be delivered to the Street Lighting Shop at 701 Ramona Avenue. The Contractor must contact the Street Lighting Shop at least 24 hours prior to delivery.
- All material will be stripped from the poles prior to delivery.
- For direct-bury poles, the existing concrete footway will be removed to the nearest joint.

- The restoration of the excavated area will be consistent with the surrounding area and constructed in accordance with appropriate Divisions.
- Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, will be corrected at the Contractor's expense.

MEASUREMENT & PAYMENT - Each

- This item will include all labor and materials necessary to remove and deliver or dispose of all street lighting hardware as indicated on the plan or as directed by the Engineer.
- This item will include all labor and materials necessary to seal abandoned conduit.
- The disconnection of electrical service will be incidental to this item of work.
- The removal of any abandoned signs, banners, or other mounted items will be incidental to this item unless otherwise indicated or directed to be relocated. The relocation of any mounted items will be paid under a separate item.
- The removal of a street light foundation will be payable under a separate item.
- Restoration of excavated areas will be payable under separate items.
- Payment for the return or disposal of all hardware is in all cases incidental to the pay items related to removal.

9000-1417 REMOVE FOUNDATION

DESCRIPTION

This work consists of removing an existing concrete street light or traffic signal pole foundation of any type as shown on the plan or as directed by the Engineer.

CERTIFICATION REQUIRED

- This work must be performed by a PECO certified contractor.

RETURN OF HARDWARE

- As specified herein, all street lighting hardware removed by the Contractor and deemed salvageable by the Engineer will be delivered to storage location as directed by the City of Philadelphia – Street Lighting Division within 30 days unless otherwise directed by the Engineer. The Contractor will place all removed equipment in boxes for return to the City or dispose as directed by the Engineer. The Contractor must contact City of Philadelphia at least one (1) business day prior to delivery.
- Materials will be returned, without damage, to the Street Lighting Shop, 701 Ramona Avenue, (phone number: 215-685-1220) unless otherwise directed by the Engineer.

CONSTRUCTION

- Remove the existing foundation in its entirety.
- Remove the existing concrete footway to the nearest joint.
- Remove cable from existing conduit, unless otherwise directed by the Engineer. Where cable is to remain, perform the following:
 - The Contractor will “safe off” the existing circuit with a suitable UL listed direct burial termination kit at the point where the foundation is demolished.
 - Where possible the Contractor will push back the wire into the existing conduit.
 - The Contractor will contact PECO Energy Company for disconnection of the existing circuit.
 - After the circuit is made safe and PECO is contacted, the Contractor will abandon the circuit in place in such a manner that the cable is not exposed or accessible in any manner.
- Securely cover the excavation after completion and remain covered when no work is in progress. Keep the excavation reasonably dry and free of mud until placement of the concrete.
- The surface pavement and subbase material will be restored in-kind to the adjacent pavement. Contractor will utilize salvaged paving material from adjacent light standard foundation installation, such as granite and unit pavers for pavement restoration.
- Contractor will provide pavement removal/restoration, excavation, backfill and compaction.
- Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, is corrected at the Contractor’s expense.

MEASUREMENT AND PAYMENT - Each

- This item will include demolition, removal of materials, concrete, and pavement restoration.
- Removal of cable between the removed foundation and up to two (2) adjacent street lights is incidental to this pay item.
- The “safe off” of abandoned cables, if permitted and including PECO contact and coordination, is incidental to this pay item.

- Payment for the return or disposal of all hardware is in all cases incidental to the pay items related to removal.

9000-1418 UTILITY MANHOLE MODIFICATION

DESCRIPTION

This work consists of modifying a utility manhole to permit entrance of traffic or street lighting underground conduit, including all excavation, restoration, and materials necessary for a complete installation. The modification and penetration of the manhole may include up to two (2) conduit penetrations at each excavated location.

CONSTRUCTION

- Indicate the size and location of the conduit to be installed on the plan.
- Extend the conduit through the wall of the manhole and be terminated flush with the inside wall.
- All conduit points of entry into the utility manholes are subject to the approval of the appropriate utility company.
- All materials and workmanship meet with the approval of the appropriate utility company.
- The conduit does not enter the manhole through the neck or corbelled section of the manhole. Obtain the necessary authorization to begin work in the manhole from the utility company.
- Verizon manholes cannot be opened without an escort from Verizon. Notify Verizon 15 days in advance of such work.
- Restore the manhole to its original condition. Properly seal the wall of the manhole and replace all damaged bricks as necessary. Repair and point the adjacent area as required.

MEASUREMENT AND PAYMENT - Each

Each manhole modification and penetration will include up to two(2) conduit penetrations within the same excavation, at no additional cost.

Conduit is paid under a separate item.

9000-1419 TESTING OF ENTIRE LIGHTING SYSTEM

DESCRIPTION

This work is the furnishing of instruments and personnel to perform electrical tests which demonstrate that entire system is in proper working order. Tests are in addition to, and not in substitution for, tests of individual items at manufacturer's plant.

MATERIAL

Furnish suitable electrical instruments including voltmeters, ammeters, megohmmeter and other equipment necessary to perform tests specified.

CONSTRUCTION

In accordance with applicable portions of PennDOT Standard Specification Section 910.3 (u) and as follows:

- Make insulation and ground resistance tests before operating tests. Provide necessary openings in circuits for testing instruments. Place and connect all instruments, equipment and devices necessary for the tests. Upon completion of tests, remove instruments and instrument connections and restore all circuits to permanent condition.
- Coordinate activities, and cooperate with others on projects to ensure that systems are energized when required.
- All new 600V wiring will have an insulation resistance-to-ground test prior to connections to any equipment. Tests will be made with a 1000 volt meter and demonstrate a resistance of not less than 1500 mega-ohms.
- All ground rods will be tested by the three-point fall potential method to demonstrate an earth ground of not more than 25 ohms.
- Perform a nighttime inspection of the lights with the Engineer once a particular block of the street is energized. Adjust the direction of the luminaire photo control to avoid "on-off" operation caused by external light sources, as often as necessary until final acceptance.
- Perform nighttime light level and lumen test.
- Operate switches, circuit breakers and control devices to show correct and satisfactory operation.
- Operational Test
 - After adjusting photocell location for proper on-off operation to the satisfaction of the Engineer, tape Photocell eye. The tape will remain in place for the duration of the project. Luminaires will operate 24 hours a day, 7 days a week to ensure proper operation. At the acceptance of the project the Contractor will remove the tape from the photocell eye.

MEASUREMENT & PAYMENT – N/A

- This work will not be paid separately and is incidental to all other electrical items.

9000-1420 SERVICE DISCONNECT

STANDARD DRAWINGS

SLO203

DESCRIPTION

This work will consist of furnishing and installing 2 pole, 60 amp trip, 100 amp frame, 240 volt, UL listed molded case circuit breaker and fiberglass mounting plate to provide service disconnect at light pole service connections as indicated on the plans.

MATERIAL

- Circuit breaker: UL listed 2 pole, 60 amp trip, 100 amp frame, 10 KAIC, 240 volt, thermal magnetic molded case circuit breaker. Water tight.
- Terminal connectors (line and load side): Capable of accepting #2 AWG CU wire, Homac Terminal Block or equal. Include neutral bus and grounding hardware.
- Mounting Plate: Aluminum, T6160 per ASTM B210
- Submit shop drawings/catalog cuts for approval.

CONSTRUCTION

- Furnish and install circuit breakers where indicated on the contract wiring diagrams.
- Mount the circuit breaker on the fiberglass mounting plate located inside the pole.
- Place two "B" Breaker reflective Stickers on specified poles: One sticker on the street side, one on the curb side, each 5 feet above ground. No spray paint is to be used.

MEASUREMENT & PAYMENT - Each

Included is all hardware necessary to secure the service disconnect breaker inside the specified light pole. Included also is all connections and splices to the circuit breaker and grounding hardware.

- 9000-1401 PVC STREET LIGHTING CONDUIT, 2"**
- 9000-1402 PVC STREET LIGHTING CONDUIT ELBOW, 2"**
- 9000-1304 PVC TRAFFIC CONDUIT, 3"**
- 9000-1305 PVC TRAFFIC CONDUIT ELBOW, 3"**
- 9000-1403 PVC TRAFFIC INTERCONNECT CONDUIT, 4"**
- 9000-1404 PVC TRAFFIC INTERCONNECT CONDUIT ELBOW, 4"**

STANDARD DRAWINGS

IC0104

DESCRIPTION

This work consists of furnishing and installing a Schedule 40 PVC conduit of the specified size, including fittings, and installing ground wire as specified in the drawings or as directed by the Engineer.

MATERIAL

- Conduit, Fittings (Including Couplings and End Connectors), and Caps; in accordance with Section 1101.09 of PDT 408 except as follows:
 - Made from compounds, ASTM-D1784.
 - Elbow type: 90 degree, long radius sweep
 - Cement adhesive is in accordance with the manufacturer's recommendations.
- Ground Wire
 - For 2-inch street light conduit: #6 AWG stranded copper wire with green jacket.
 - For 3-inch traffic signal conduit: #6 AWG stranded copper wire with green jacket.
 - For 4-inch traffic interconnect conduit: #14 AWG stranded copper tracer wire, only in occupied conduit.
- PVC Shield and Brackets (If required for pole installation)
 - PVC shield and brackets are accordance with the requirements of the pole owner.

CONSTRUCTION

- All light pole & traffic signal hardware locations must be verified by the Engineer prior to installation of conduit. If conduit is installed prior to excavating for a foundation and it is found that the foundation must move, the Contractor shall replace the conduit and footway at no extra cost.
- Install the conduit with a minimum coverage of 24", measured from the top of the conduit, unless otherwise specified on the plan.
- Place a plastic identification tape 12" above the conduit.
- Make connections with couplings in accordance with the manufacturer's recommendations unless otherwise approved by the Engineer.

- Make the cutting of conduit by a hacksaw, or other means approved by the Engineer, with the cut made square to its length. Ream the cut ends of conduit to remove all rough edges prior to installation.
- Use manufactured elbows for any 90° upsweep from each horizontal to vertical run of conduit. The bending of a length of conduit to provide this upsweep is not acceptable.
- The vertical extension of the conduit (riser) consists of a straight length of conduit terminated 2" above finished grade.
- Install ground wire through the length of the conduit.
- Bond the ground wire to the grounding rod in the junction box/foundation/controller/pole.
- Conduit installed for future use includes an approved pull-rope and watertight cap at the end of each run.
- If the conduit is being installed on a wood pole or a SEPTA pole, the installation is in accordance with the requirements of the pole owner and as follows:
 - Install the conduit to a height of ten (10) feet above the finished grade, and secured every two (2) feet unless otherwise directed by the Engineer.
 - Each conduit has a pull-rope installed for future use.
 - The top of the conduit has a cap with an opening for the cable(s).
 - Install a PVC shield from the top of the conduit to a point 19' above the top of the conduit. Mount the shield in accordance with the manufacturer's recommendations.
 - Remove or relocate any sign or other object that causes an obstruction.
 - The installed conduit has smooth edges.
 - The installed conduit does not create a hazardous condition for pedestrians.
 - Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with detectable Warning Surfaces (DWS), unless determined necessary by the Engineer
 - Restore the adjacent sidewalk and curb to its original condition.
- Protect all exposed conduit during, and (for coordinated work) after construction is completed.
- Additional requirements for 2-inch street light conduit:
 - Conduit is to be terminated at each street light base and at designated PECO manholes. Conduit is to run adjacent to the curb within the cartway. Avoid unit paver, brick, and/or decorative footways wherever possible.
- Additional requirements for 4-inch traffic interconnect conduit:
 - Install conduits in accordance with the Standard Drawings.
 - Perform work in such a manner as to avoid impacting any of the existing curb cut ramps with Detectable Warning Surface (DWS), unless determined necessary by the Engineer
 - Restore the adjacent sidewalk and curb to its original condition.

MEASUREMENT AND PAYMENT – Linear Foot

- The #6 & #14 AWG copper ground & tracer wire, caps, identification tape and pull-rope are incidental to this item of work.
- All labor and materials necessary to install conduit on a wood pole or SEPTA pole are incidental to this item of work. The removal of any signs or other objects required to complete the installation is payable under separate items.
- Pay for conduit trenching, plastic identification tape, and restoration under 0954-0152, Trench and Backfill, Type II and 0954-0153, Trench and Backfill, Type III.

ITEM 9000-1421 RELOCATE PIER 40 SIGNAGE, LUMP SUM
ITEM 9000-1422 RELOCATE MOSHULU SIGN, LUMP SUM
ITEM 9000-1424 RELOCATE HILTON SIGN AT DOCK STREET, LUMP SUM

1 DESCRIPTION

This work consists of relocating existing business signs along the trail.

2 MATERIAL

Foundations

1. Cast-In-Place Foundation.

- Class A Cement Concrete—Section 704

Electrical - forthcoming

3 CONSTRUCTION

More detailed specifications and plans forthcoming

Contractor shall be responsible for removing the existing business sign, and relocating the sign to a new concrete footing. The contractor shall initially investigate the connections from the sign to the existing concrete footing for the engineer, as revisions to the proposed footing drawings may be required. The engineer has made assumptions for footing connections in the drawings that may require revision.

In order to reduce the amount of time the sign is out of operation, the contractor shall pour the new footing prior to sign relocation after the design of the connections are confirmed. The contractor shall make every attempt at relocating the sign from the existing footing to the new footing, and reconnect the electrical connection within 48 hours. Coordinate with the owner's rep and specific business to schedule the sign relocation. Contractor will be responsible for any damage to the sign during relocation and storage.

The contractor shall relocate the active electrical line to the new sign location. Install conduit in the footing per the detail, and connect to the existing conduit as soon as reasonable possible. Utilize a licensed electrician in the City of Philadelphia to perform this work.

4 MEASUREMENT AND PAYMENT – Lump Sum

ITEM 9000-1423 RELOCATE LIGHT POLES IN DRWC PARKING LOT, EACH

1 DESCRIPTION

This work consists of relocating existing lighting within DRWC parking lots.

2 MATERIAL

Foundations

1. Cast-In-Place Foundation.

- Class A Cement Concrete—Section 704

Electrical - forthcoming

3 CONSTRUCTION

More detailed specifications and plans forthcoming

Construct new footings at locations indicated on plans and relocate existing light fixtures to new footings.

In order to reduce the amount of time the light is out of operation, the contractor shall pour the new footing prior to light relocation. The contractor shall make every attempt at relocating the light from the existing footing to the new footing, and reconnect the electrical connection within 48 hours. Contractor will be responsible for any damage to the light during relocation and storage.

The contractor shall relocate the active electrical line to the new light pole location. Install conduit in the footing per the detail, and connect to the existing conduit as soon as reasonably possible. Utilize a licensed electrician in the City of Philadelphia to perform this work.

4 MEASUREMENT AND PAYMENT – Each

ITEM 9000-1425 RELOCATE BUS SHELTER, EACH

1 DESCRIPTION

This work consists of relocating existing bus shelters.

2 MATERIAL

Foundations

1. Cast-In-Place Foundation.
 - Class A Cement Concrete—Section 704

3 CONSTRUCTION

More detailed specifications and plans forthcoming

Construct new footings at locations indicated on plans and relocate the bus stop to new footings.

Relocation shall be coordinated with SEPTA and the City of Philadelphia.

4 MEASUREMENT AND PAYMENT – Each

ITEM 9000-1500	15" VITRIFIED CLAY PIPE LATERAL, LINEAR FOOT
ITEM 9000-1501	18" X 15" RCP WYE BRANCH, EACH
ITEM 9000-1502	4' PRECAST CATCH BASIN WITH INLET TRAP, EACH
ITEM 9000-1503	6' PRECAST CATCH BASIN WITH INLET TRAP, EACH
ITEM 9000-1504	4' HIGHWAY GRATE INLET TOP, EACH
ITEM 9000-1505	6' HIGHWAY GRATE INLET TOP, EACH
ITEM 9000-1506	TRENCH DRAIN, LINEAR FOOT
ITEM 9000-1507	INLET SPREAD FOOTING, EACH
ITEM 9000-1508	INLET PILE SUPPORT, EACH
ITEM 9000-1509	FIRE HYDRANT, EACH
ITEM 9000-1510	18" RCP SEWER PIPE, LINEAR FOOT
ITEM 9000-1511	SADDLE CONNECTION TO EX. SEWER, EACH
ITEM 9000-1512	4' CITY INLET TOP, EACH
ITEM 9000-1513	24"x15" RCP WYE BRANCH, EACH
ITEM 9000-1514	FIRE HYDRANT REMOVAL, EACH

1 DESCRIPTION

This work consists of the construction of Philadelphia Water Department water and sewer items.

2 MATERIAL

Per Philadelphia Water Department 1985 Standard Details and Standard Specifications for Sewers.

3 CONSTRUCTION

Per Philadelphia Water Department 1985 Standard Details and Standard Specifications for Sewers.

4 MEASUREMENT AND PAYMENT – As listed above

ITEM 9000-2000, LARGE BENCH, EACH
ITEM 9000-2001, BACKED MEDIUM BENCH, EACH
ITEM 9000-2002, SMALL BENCH, EACH
ITEM 9000-2003, CANOPY BENCH, EACH

1 DESCRIPTION

This work consists of furnishing and installing benches, associated footings, stone bases, and all hardware as needed and as indicated on the drawings, as required by the manufacturer, or as directed by the Engineer.

2 MATERIAL

All materials shall be in accordance with the contract specifications.

a) Large Bench:

1. Manufacturer: Landscape Forms, (269) 337-1330
2. Model: Trapecio, with Custom Stainless Steel Armrests

b) Backed Medium Bench:

1. Manufacturer: MM Cite, (267) 300-6995
2. Model: Woody Park Bench with Backrest 3000mm, LWD150, Tropical Wood

c) Small Bench:

1. Manufacturer: MM Cite, (267) 300-6995
2. Model: Woody Park Bench 1000mm, LWD112, Tropical Wood

d) Canopy Bench:

1. Manufacturer: MM Cite, (267) 300-6995
2. Model: Woody Solar, WDS 180; Customized with Lighting; No USB Port; Colors To Be Determined; Assume (3) three different powder coat colors with (1) color per bench.

e) Concrete Footings:

1. Class A Cement Concrete – Section 1001

f) Hardware:

1. As shown on the drawings.

3 QUALITY CONTROL

- a) Contractor shall submit manufacturer's installation instructions.
- b) Contractor shall layout bench locations in field for approval prior to installation.
Landscape Architect reserves the right to make minor adjustments to the layout in the field at no additional cost to the Owner.

4 CONSTRUCTION

- a) Contractor shall install benches as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – Each

ITEM 9000-2004, BICYCLE SHELTER, EACH

1 DESCRIPTION

This work consists of furnishing and installing the bicycle shelter, bicycle storage tiers, associated footings and foundations, stone base, and any and all hardware as needed and as indicated on the drawings, as required by the manufacturer, or as directed by the Engineer.

2 MATERIAL

All materials shall be in accordance with the contract specifications.

a) Bicycle Shelter:

1. Manufacturer: MM Cite, (267) 300-6995
2. Model: Aureo Velo Bicycle Shelter for Two Storage Tiers AE-V360-02-SS
3. Color: To Be Determined

b) Bicycle Storage Tiers:

1. Manufacturer: Velopa, as supplied by MM Cite
2. Model: Velopa Capacity Two Tier; Parking for (18) eighteen bicycles

b) Concrete Footing:

1. Class A Cement Concrete – Section 1001

c) Mounting Hardware:

1. As shown on the drawings.

3 QUALITY CONTROL

- a) Contractor shall submit manufacturer's installation instructions.
- b) Contractor shall layout bicycle shelter location in field for approval prior to installation. Landscape Architect reserves the right to make minor adjustments to the layout in the field at no additional cost to the Owner.

4 CONSTRUCTION

- a) Contractor shall install shelter as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – Each

ITEM 9000-2005, BIKE RACK, EACH

1 DESCRIPTION

This work consists of furnishing and installing bike racks as indicated on the drawings or as directed by the Engineer.

2 MATERIAL

a) Bike Rack:

1. Bike Rack shall be "Flo" Stainless Steel Bicycle Rack, as manufactured by Landscape Forms (800) 430-6206, or approved equal.

- a. Finish: Stainless Steel

b) Mounting Hardware

As shown on the drawings.

3 QUALITY CONTROL

Contractor shall submit an order form for approval prior to placing order.

4 CONSTRUCTION

Contractor shall install bike rack as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – EACH

The quantity of Bike Racks to be paid for under this Item shall be measure by each individual unit in accordance with the plans, specifications, and as directed by the Engineer.

1. Mounting Hardware incidental to the item.

ITEM 9000-2006, BICYCLE MAINTENANCE STATION, EACH

1 DESCRIPTION

This work consists of furnishing and installing a bicycle maintenance station as indicated on the drawings or as directed by the Engineer.

2 MATERIAL

- a) Bicycle Maintenance Station:
 - a. Manufacturer: Dero, (612) 359-0689
 - b. Model: Fixit-H, Surface Mount, Powder Coated, Color to be Determined
 - c. With Optional Bike Pump: Air Kit 3-B, Metal Pump Head, Powder Coated, Color to be Determined
- b) Mounting Hardware
As required by the manufacturer.

3 QUALITY CONTROL

Contractor shall submit an order form for approval prior to placing order.

4 CONSTRUCTION

Contractor shall install bicycle maintenance station as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – EACH

- 1. Mounting Hardware incidental to the item.

ITEM 9000-2007 ECO COUNTER ECO DISPLAY CLASSIC WITH URBAN MULTI OPTION,
LUMP SUM

1 DESCRIPTION

This work consists of the furnishing and installation of a bicycle and pedestrian counter.

2 MATERIAL

Foundations

1. Cast-In-Place Foundation.
 - Class A Cement Concrete—Section 704

Display

1. Eco-Display Classic + manufactured by Eco-Counter, Montreal, Quebec. Custom display to be developed by DRWC and submitted to Eco-Counter prior to manufacture.

Counters

1. Urban Post MULTI manufactured by Eco-Counter, Montreal, Quebec. System shall have one PYRO sensor and two ZELT loops.

Contact: Neil Poku at Eco-Counter (514) 849-9779 neal.poku@eco-counter.com

3 CONSTRUCTION

More detailed specifications and plans forthcoming

Install foundations for display and PYRO sensor at the locations indicated in the plans.

Install display and counters per manufacturer's recommendation.

Provide underground power connection from nearest PECO source (assume the transformer on the south side of Spruce Street Harbor Park plaza).

4 MEASUREMENT AND PAYMENT – Lump Sum

ITEM 9000-2008, LITTER RECEPTACLE, EACH

1 DESCRIPTION

This work consists of furnishing and installing litter and recycling receptacles as indicated on the drawings or as directed by the Engineer.

2 MATERIAL

a) Litter and Recycling Receptacle:

1. Manufacturer: Forms and Surfaces, (800) 451-0410
2. Model: Dispatch Receptacle, Dual Stream (Baffle Included); 36 Gallon; Liner: (2) 16 Gallon, Drain Holes and Bag Slots Included
3. Lid Powdercoat Color: Slate Texture
4. Body/Base Powdercoat Color: Silver Texture
5. Mounting: Surface Mounted

b) Mounting Hardware

As recommended by the manufacturer.

3 QUALITY CONTROL

Contractor shall submit an order form for approval prior to placing order.

4 CONSTRUCTION

Contractor shall install receptacle as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – EACH

- a) Mounting hardware required per the plan details is incidental to this item.

ITEM 9000-2009, 4' LONG PLANTER, EACH
ITEM 9000-2010, 6' LONG PLANTER, EACH
ITEM 9000-2011, 8' LONG PLANTER, EACH

1 DESCRIPTION

This work consists of furnishing and installing planters, and self-watering components as indicated on the drawings and below.

2 MATERIAL

All materials shall be in accordance with the contract specifications.

a) Manufacturer, Color, and Product Line:

1. Manufacturer: Tournesol Siteworks, (800) 542-2282
2. Color: Rust
3. Line: Wilshire Steel Collection – Mild Steel Planters with Powder-Coated Finish

b) 4' Long Planter:

1. Size: 48" Long x 24" Wide x 24" High
2. Model: WWR-CS482424
3. Self-Watering Components: CWM-R2014-2k

c) 6' Long Planter:

1. Size: 72" Long x 24" Wide x 24" High
2. Model: WWR-CS722424
3. Self-Watering Components: CWM-R2014-3k

d) 8' Long Planter:

1. Size: 96" Long x 24" Wide x 24" High
2. Model: WWR-CS962424
3. Self-Watering Components: CWM-R2014-4k

3 QUALITY CONTROL

- a) Contractor shall submit manufacturer's installation instructions.
- b) Contractor shall layout planter locations in field for approval prior to installation.
Landscape Architect reserves the right to make minor adjustments to the layout in the field at no additional cost to the Owner.

4 CONSTRUCTION

- a) Contractor shall install planters and self-watering components as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – Each

Soil, mulch and plantings, shall be paid for under the respective items.

ITEM 9000-2012, HALF CIRCLE TREE GRATE, EACH

1 DESCRIPTION

This work consists of furnishing and installing half circle tree grates, frames embedment anchors, levelling pads, and all hardware as needed and as indicated on the drawings, as recommended by the manufacturer, or as directed by the Engineer.

2 MATERIAL

All materials shall be in accordance with the contract specifications.

a) Half Circle Tree Grates:

1. Manufacturer: Urban Accessories, as Supplied by Mid-Atlantic Products, (410) 778-1110
2. Model: 6' Radius 'Rainbow' Half Grate; Ductile Iron; Raw Finish; cast in one piece; grate is 1-1/4" thick at edge; center opening expansions at 2'-3" and 2'-10" diameter; no openings greater than 3/8".

3 QUALITY CONTROL

- a) Contractor shall submit manufacturer's installation instructions and shop drawings.
- b) Contractor shall layout tree grate locations in field for approval prior to installation. Landscape Architect reserves the right to make minor adjustments to the layout in the field at no additional cost to the Owner.

4 CONSTRUCTION

- a) Contractor shall install tree grates as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – Each

ITEM 9000-2013, HANDRAILS, LINEAR FOOT

1 DESCRIPTION

This work consists of furnishing, constructing, and installing stainless steel handrails as indicated on the drawings or as directed by the Engineer.

2 MATERIAL

- a) Stainless Steel, as indicated on the drawings.

3 QUALITY CONTROL

Contractor shall submit an order form for approval prior to placing order.

4 CONSTRUCTION

- a) Metal handrails and railings shall be fabricated by firms or shops experienced and skilled in the custom fabrication of architectural metal handrails and railings.
- b) Bends in rails shall be precision-formed to a smooth continuous radius by skilled workers. Work quality and finish shall be true to detail. Butt joints shall have internal pipe sleeve or dowel. Ends shall be closed with similar materials, welded and ground smooth.
- c) Welding shall be performed in the shop unless otherwise indicated. Welded joints of handrails and railings shall be ground and dressed smooth to match adjacent surfaces and so that the shape and profile of the item welded is maintained.
- d) Metal handrails and railings shall be prefabricated and preassembled in the factory or shop as far as practicable.

5 MEASUREMENT & PAYMENT – Linear Foot

The quantity of Stainless Steel Handrail to be paid for under this Item shall be measured by each linear foot of run per plan view. Each horizontal linear foot shall include all members vertically in that one foot span, regardless of number of vertical pipes that are on the rail. The per linear foot cost shall also entail all pipe sleeves and necessary hardware, in accordance with the plans, specifications, and as directed by the Engineer.

ITEM 9000-2014, GUARDRAIL, LINEAR FOOT

1 DESCRIPTION

This work consists of furnishing, constructing, and installing stainless steel guardrail as indicated on the drawings and below, or as directed by the Engineer.

2 MATERIAL

- a) Stainless Steel, as indicated on the drawings.
- b) Overall Height to be 42", with 4" clear at bottom
 - a. Top and Bottom Rails: 2" wide x 1-1/2" rectangular bar stock
 - b. Posts: 2" x 1" rectangular bar stock, 48" On Center
 - c. Pickets' 1/2" x 1/2" square pickets 3-1/2" On Center

3 QUALITY CONTROL

Contractor shall submit an order form for approval prior to placing order.

4 CONSTRUCTION

- a) Metal handrails and railings shall be fabricated by firms or shops experienced and skilled in the custom fabrication of architectural metal handrails and railings.
- b) Bends in rails shall be precision-formed to a smooth continuous radius by skilled workers. Work quality and finish shall be true to detail. Butt joints shall have internal pipe sleeve or dowel. Ends shall be closed with similar materials, welded and ground smooth.
- c) Welding shall be performed in the shop unless otherwise indicated. Welded joints of handrails and railings shall be ground and dressed smooth to match adjacent surfaces and so that the shape and profile of the item welded is maintained.
- d) Metal handrails and railings shall be prefabricated and preassembled in the factory or shop as far as practicable.

5 MEASUREMENT & PAYMENT – Linear Foot

The quantity of Stainless Steel Handrail to be paid for under this Item shall be measured by each linear foot of run per plan view. Each horizontal linear foot shall include all members vertically in that one foot span, regardless of number of vertical pipes that are on the rail. The per linear foot cost shall also entail all pipe sleeves and necessary hardware, in accordance with the plans, specifications, and as directed by the Engineer.

ITEM 9000-2015, PLAZA LIGHT POLE, EACH

1 DESCRIPTION

This work shall consist of furnishing, delivery and installation of 26' height light poles, luminaires, concrete footings, reinforcing steel, stone base, anchor bolts, grounding rod, and any and all hardware required by the manufacturer at the locations indicated on the plans and per the details.

2 MATERIAL

All materials shall be in accordance with the contract specifications and with the specified sections of the Pennsylvania Department of Transportation Standard Specifications and the contract specifications.

a) Light Pole:

1. Manufacturer: Landscape Forms, (269) 337-1330
2. Model: Arne Area Light, 26' Ht. (8 Meter) Pole; (3) luminaires per pole
3. Model Number: ARP 18B1WF: Arne, 18 LED, 500 MA, 3000K, Wide Flood, Clear Lens, Column Mount.

b) Class A Cement Concrete per Section 1001.

c) Anchor Bolt Nuts and Washers as per the light pole manufacturer's recommendations.

d) Mounting hardware shall be as per manufacturer's recommendations.

3 QUALITY CONTROL

a) Contractor shall submit manufacturer's installation instructions.

b) Submit shop drawings to the Engineer for approval, detailing bolt pattern and connections to the concrete base provided under Item 9000-0022 Pole Foundation without Conduit and manufacturer's specifications of lighting pole and luminaires proposed for the project.

4 CONSTRUCTION

a) Contractor shall mount light poles on foundations as shown on the drawings and as per Manufacturer's Installation Instructions.

b) Contractor shall take special care not to damage lights during transport, storage, and installation.

c) The Contractor shall be responsible for the location of all subsurface structures and utilities in the construction area.

- d) The foundation site shall be excavated to the required dimensions. If the presence of subsurface utilities prevents the construction of a foundation of the specified size, the Contractor shall suspend work immediately and notify the Engineer.
- e) All foundations shall be completed prior to the installation of final paving.
- f) The excavation shall be securely covered after completion and remain covered when no work is in progress. The excavation shall be kept reasonably dry and free of mud until placement of the concrete.
- g) The concrete foundation shall be monolithic in construction and shall cure for a minimum of 7 days prior to pole installation.
- h) Anchor bolts shall be set by template to the proper dimensions in accordance with the light pole manufacturer's recommendations.
- i) The Contractor shall construct forms to firmly hold the template and anchor bolts in place while the concrete is poured. Each anchor bolt shall extend above the finished grade of the foundation to a height required as per the manufacturer's recommendations.
- j) If the anchor bolt is damaged prior to the pole installation, an acceptable method of correction must be approved by the Engineer.
- k) Construct a ¼" thick expansion joint with filler between the foundation and adjacent sidewalk/curb to the full depth of the sidewalk/curb.
- l) Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, shall be corrected at the Contractor's expense.

5 MEASUREMENT & PAYMENT - Each

ITEM 9000-2016, PEDESTRIAN LIGHT POLE (MIRA) WITH SOLAR LUMINAIRE (DELIVER AND INSTALL ONLY, OWNER SUPPLIED ITEM), EACH
ITEM 9000-2017, PEDESTRIAN LIGHT POLE (CHAMP) WITH SOLAR LUMINAIRE (DELIVER AND INSTALL ONLY, OWNER SUPPLIED ITEM), EACH

1 DESCRIPTION

This work shall consist of delivery and installation of pedestrian solar street lighting poles, luminaires, concrete footings (without conduit), anchor bolts, and any and all hardware required by the manufacturer at the locations indicated on the plans.

2 MATERIAL

All materials shall be in accordance with the contract specifications and with the specified sections of the Pennsylvania Department of Transportation Standard Specifications and the contract specifications.

a) Light Pole:

1. Owner Supplied Light shall be "HEI Champ 4000, P200-215" or "HEI Mira 4000, P100-160" models, manufactured by HEI Technology, Austria, Phone: +43 1 9121351 21

b) Class A Cement Concrete per Section 1001.

c) Anchor Bolt Nuts and Washers as per the light pole manufacturer's recommendations (HEI Technology).

d) Mounting hardware shall be as per manufacturer's recommendations.

3 QUALITY CONTROL

a) Contractor shall submit manufacturer's installation instructions.

b) Submit shop drawings to the Engineer for approval, detailing bolt pattern and connections to the concrete base provided under Item 9000-0022 Pole Foundation without Conduit and manufacturer's specifications of lighting pole and luminaires proposed for the project.

4 CONSTRUCTION

a) Contractor shall mount light poles on foundations as shown on the drawings and as per Manufacturer's Installation Instructions.

b) Contractor shall take special care not to damage lights during transport, storage, and installation.

c) The Contractor shall be responsible for the location of all subsurface structures and utilities in the construction area.

- d) The foundation site shall be excavated to the required dimensions. If the presence of subsurface utilities prevents the construction of a foundation of the specified size, the Contractor shall suspend work immediately and notify the Engineer.
- e) All foundations shall be completed prior to the installation of final paving.
- f) The excavation shall be securely covered after completion and remain covered when no work is in progress. The excavation shall be kept reasonably dry and free of mud until placement of the concrete.
- g) The concrete foundation shall be monolithic in construction and shall cure for a minimum of 7 days prior to pole installation.
- h) Anchor bolts shall be set by template to the proper dimensions in accordance with the light pole manufacturer's recommendations.
- i) The Contractor shall construct forms to firmly hold the template and anchor bolts in place while the concrete is poured. Each anchor bolt shall extend above the finished grade of the foundation to a height required as per the manufacturer's recommendations.
- j) If the anchor bolt is damaged prior to the pole installation, an acceptable method of correction must be approved by the Engineer.
- k) Construct a ¼" thick expansion joint with filler between the foundation and adjacent sidewalk/curb to the full depth of the sidewalk/curb.
- l) Excessive damage to the existing pavement caused by the Contractor, as determined by the Engineer, shall be corrected at the Contractor's expense.

5 MEASUREMENT & PAYMENT - Each

- a) Delivery and Installation of Pedestrian Light Poles with Luminaire, inclusive of concrete footings, and all associated hardware: Each.
- b) The Pedestrian Light Pole and Luminaire is an Owner Supplied Item. Contractor shall pick up the poles from the Port of Philadelphia and deliver to the site. Any costs for required storage shall be the responsibility of the Contractor. All costs for delivery and storage shall be incidental the above item numbers.

ITEM 9000-3000, TREES, 3 – 3-1/2" Cal., EACH
ITEM 9000-3001, TREES, 4 – 4-1/2" Cal., EACH
ITEM 9000-3002, MULTI-TRUNK TREES, 8-10' Ht., EACH
ITEM 9000-3003, MULTI-TRUNK TREES, 10-12' Ht., EACH
ITEM 9000-3004, CONIFERS, 10-12' Ht. EACH
ITEM 9000-3005, SHRUBS, #5 Container, EACH
ITEM 9000-3006, GRASSES AND PERENNIALS, #1 Container, EACH
ITEM 9000-3007, PLUGS, 4" DEEP, EACH

1 DESCRIPTION

In accordance with Section 808.1.

2 MATERIAL

In accordance with Section 808.2

3 CONSTRUCTION

In accordance with Section 808.3 and as follows:

(g) Planting

6. Period of Establishment. This work shall consist of the maintenance of plant material for twelve (12) months, or the length of the warranty, whichever is later. This period starts after the completion and acceptance of the planting by the Engineer.
 - i. All plants shall be kept in a healthy condition by watering, spraying, fertilizing, pruning, or by any other necessary operations of care. Plants, which are, or become, unhealthy from any cause, or appear to be in badly impaired condition, shall be promptly replaced and any plants that settle below or rise above the desired finished grades shall be reset at the proper grades.
 - ii. All replacements shall be plants of the same kind, size, and quality as originally specified in the "Plant List" and they shall be furnished, planted, and staked at no additional cost, except those damaged by vandalism. Should vandalism occur, the Contractor shall notify the Engineer in writing describing the quantity of plant materials affected and related damages.
 - iii. For final inspection and acceptance of plant materials, the Contractor shall remove all trash, rubbish, litter, wrapping, guy wires, tree protectors, and stakes at the end of the plant establishment period. Not less than thirty (30) days prior to the end of the plant establishment period, the Contractor shall notify the Engineer requesting inspection of the work to determine its degree of completion to establish the end of the plant establishment period.
 - iv. After inspection, the Contractor will be notified of final acceptance of the work, or any deficiencies, which must be corrected to the satisfaction of the Engineer before final acceptance.
 - v. If the work is accepted at time of final inspection, the maintenance work shall be considered fulfilled and terminated. Should any work need replacement at time of

final inspection, the maintenance period shall be continued until such replacements are made and deemed acceptable by the Engineer.

vi. Payment for this work is incidental to planting.

10. Mulching. Use approved double shredded hardwood bark mulch in all planting areas.

4 MEASUREMENT AND PAYMENT – Each

Watering done at the time of planting and during the period of establishment (as described in 808.3(g)7) will be incidental to the planting of each plant or tree. All mulching will be incidental to the planting of each plant or tree.

ITEM 9000-3009, ROOT BARRIER, Linear Foot

1 DESCRIPTION

This work consists of furnishing and installing tree root barrier as indicated on the drawings, as recommended by the manufacturer, or as directed by the Engineer.

2 MATERIAL

All materials shall be in accordance with the contract specifications.

a) Root Barrier:

1. Manufacturer: NDS, (888)825-4716
2. Model: EP Series Root Barrier Panel, 24"x36".

3 QUALITY CONTROL

- a) Contractor shall submit manufacturer's installation instructions and product data.
- b) Contractor shall install root barrier at one tree in the field for approval prior to installation for approval by Landscape Architect.

4 CONSTRUCTION

- a) Contractor shall install root barrier as shown on the drawings and as per Manufacturer's Installation Instructions.

5 MEASUREMENT & PAYMENT – Linear Foot

ITEM 9000-5000 EROSION AND SEDIMENTATION CONTROL, LUMP SUM

1 DESCRIPTION

This item acts as a placeholder for a lump sum bid on the Erosion and Sedimentation Control for the entire project. The contractor will further refine their costs once E&S plans have been approved by PA DEP and PWD. Contractor shall assume a typical urban street project in their bid, with inlet protection at all inlets, filter socks where needed, and rock construction entrances to major work areas.

2 MATERIAL

3 CONSTRUCTION

More detailed specifications and plans forthcoming

4 MEASUREMENT AND PAYMENT – Lump Sum

ITEM 9000-5001 CONRAIL REQUIREMENTS, LUMP SUM

1 DESCRIPTION

This items covers all requirements from Conrail for work along the two rail spurs located north of Christian Street, as well as any work in the median of Columbus Boulevard in the proximity of the rail track.

2 MATERIAL

Contractor shall comply with the CONRAIL ROW WORK REQUIREMENTS which can be found at <https://www.conrail.com/working-on-conrail-property/>. This includes obtaining Right of Entry and proper insurance. For the purposes of this bid, assume 15 days of an inspector or flagman to be present on site. If any additional days over 15 are warranted, DRWC will pay for those days at Conrail's billable rate above the bid amount. These additional days must be approved by DRWC beforehand.

3 CONSTRUCTION

4 MEASUREMENT AND PAYMENT – Lump Sum

FORM CONSTRUCTION AGREEMENT

Each of the following described documents shall be an integral part of the Construction Agreement between the Corporation and the Contractor with respect to the Project; in the event of any conflict between any of the terms or conditions contained in any two or more of these documents, the terms and conditions contained in the following described documents shall govern and control in the following order of priority (beginning with the document whose terms and conditions have the highest priority and progressing to, and ending with, the document whose terms and conditions have the lowest priority):

1. Rider to AIA Document A102-2007 Edition between the Owner and the Contractor, Other Conditions or Services.
2. Addendum to Construction Agreement for Funding Requirements;
3. AIA Document A102-2007 Edition of "Standard Form of Agreement between Owner and Contractor."
4. AIA Document A201, 2007 Edition, "General Conditions of the Contract for Construction" as modified by the Corporations supplemental conditions;
5. Drawings and Specifications prepared by RBA Group, included in the Bid Set including Project Manual dated _____, Bid set drawings dated _____, and Addenda _____.
6. Performance Bond (AIA Document A311) (Included by reference)

**AGREEMENT DATED AS OF _____, 2012
BY AND BETWEEN
DELAWARE RIVER WATERFRONT CORPORATION (THE "OWNER")
AND**

**_____
(THE "CONTRACTOR")**

RIDER TO AIA DOCUMENT A102, 2007 Edition

PART I GENERAL

MODIFICATION OF STANDARD AIA FORM

- A. AIA Document A102 – 2007 Edition “Standard Form of Agreement Between Owner and Contractor,” AIA Document A201, 2007 Edition “General Conditions of the Contract for Construction” and Supplementary Conditions shall be part of these Specifications, and will be binding on the Contractor and all Subcontractors.
- B. This Rider amends, modifies or supersedes some of the provisions in the AIA Document A102 – 2007 Edition of "Standard Form of Agreement Between Owner and Contractor." All supplemental provisions shall be considered as added thereto and incorporated by reference. Where any article, paragraph or subparagraph in AIA Document A102 is supplemented by one of the following paragraphs, the provisions of such article, paragraph or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph or subparagraph in AIA Document A102 or AIA A201 is amended, voided or superseded by any one of the following paragraphs, the provisions of the following paragraphs shall control.

PART 2 MODIFICATIONS

ARTICLE 1 THE CONTRACT DOCUMENTS

- A. Add the following to the end of Article 1:

"1.1. All of the personnel employed by the Contractor for the Work will be deemed employees of the Contractor and not be deemed "employees" or "joint employees" of the Owner, and the Owner will not be deemed to have any control over the Contractor's employees.

1.2. The Contractor is not authorized, and has no actual, apparent or inherent authority, to bind the Owner to any contract, liability, cost, expense, decision, opinion or other covenant, obligation or undertaking, without the express written consent of the Owner."

ARTICLE 2 THE WORK OF THIS CONTRACT

- A. Add the following to the end of Article 2:

"The General Conditions of the Contract shall be the 2007 Edition of AIA Document A201, General Conditions of the Contract for Construction which is incorporated herein by reference."

- B. Add the following as Paragraph 2.1, Work Schedule:

2.1.1. Within five days after the execution of this Contract, Contractor shall furnish to Owner a schedule (the "Work Schedule") setting forth key service and activity dates for the Work, including, without limitation, a critical path for all procurement and construction activity.

ARTICLE 3 RELATIONSHIP OF THE PARTIES

- A. Delete Article 3 in its entirety and substitute the following in its place:

"3.1 The Contractor recognizes and accepts the relationship of trust and confidence established between it and the Owner by this Agreement, and the Contractor agrees with the Owner to furnish its best skill, judgment, and supervision; to furnish efficient business administration and superintendence; and to manage the Work so as to cause its completion within the Contract Time and at a cost equal to or less than the Guaranteed Maximum Price (the "GMP") in an expeditious and economical manner.

3.2 The Contractor represents to the Owner that the Contractor: (a) is experienced and skilled to the degree of knowledge and skill possessed by the most experienced and skilled in the same field, in the construction of facilities of the type described herein as the Project; (b) has the financial liquidity to meet its obligations hereunder and (c) has, by careful examination, satisfied itself of: (i) the nature, location and character of the Project site, including without limitation, the surface condition of the land and all visible structures and obstructions thereon, both natural and man-made, and all surface water conditions of the Project site; (ii) the nature, location and character of the general area in which the Project site is located, including knowledge of its climatic conditions, available labor supply and labor cost and available equipment supply and equipment and trade cost; (iii) the quality and quantity of materials, supplies, tools, equipment, labor and services necessary to complete the Work in the manner required herein; and (iv) all other matters or things which, in the reasonable judgment of the Contractor, could in any manner affect the performance of the Work."

3.3 Owner hereby designates GEORGE SMITH as its representative to act for, and bind, it with respect to the Work (the "Owner's Representative"); provided, however, Owner may change Owner's Representative from time to time by giving written notice of such change to the Contractor. All documents, information, copies, notices and written communications required to be provided by the Contractor to the Owner pursuant to this Contract shall be sent simultaneously to both Owner's Representative in the manner set forth in Subparagraph 9.6. All reviews and conferences between the Owner and the Contractor shall be attended by the Owner's Representative (or Owner Representative's designee)."

**ARTICLE 4 DATE OF COMMENCEMENT AND
SUBSTANTIAL COMPLETION**

- A. Delete Paragraph 4.3. and substitute it with the following:

"The Contractor shall achieve Substantial Completion of the entire work not later than one hundred (100) days from the date of Commencement."

- B. Add the following as Paragraph 4.4:

"In view of the critical nature of the time of Substantial Completion of the Work, if the Owner reasonably determines that the rate of progress of the Work has been delayed or that the date for Substantial Completion is in jeopardy of not being met, the Owner may ask the Contractor to notify the Owner in writing what steps the Contractor proposes to take to remedy such situation and provide the Owner, in a form acceptable to Owner, a detailed mini-schedule setting forth the actions to be taken by the Contractor. The foregoing will be in addition to any remedies available to Owner pursuant to Contractor's default under Article 14 of the General Conditions."

ARTICLE 5 BASIS FOR PAYMENT

- C. Add the following to Subparagraph 5.1.1:

The Contractor's Fee is _____ percent (___%) of the actual Cost of the Work, as more fully described in Article 7. The Contractor's Fee is comprised of a ___ percent (___%) overhead component and a ___ percent (___%) profit component. The Contractor's Fee shall not exceed \$_____, except as otherwise provided herein with respect to Change Orders requiring an addition of scope.

- D. Add the following to Subparagraph 5.1.2:

Adjustments to Contractor's Fee for changes in the Work shall be _____ percent (___%) of the total actual Cost of the Work related to any authorized

scope change, as more particularly detailed in the Change Order for the change in the Work.

- E. Add the following to Subparagraph 5.1.3:

Subcontractors shall receive no more than _____ percent (___%) overhead and _____ percent (___%) profit for Change Orders increasing the scope of the Work.

- F. Delete Subparagraph 5.2.1 in its entirety and add the following:

The Contract Sum for the Project is guaranteed not to exceed \$_____, subject to additions or deductions by Change Order as provided in the Contract Documents. Such maximum sum is referred to in the Contract Documents as the "Guaranteed Maximum Price" or "GMP." The GMP shall be comprised of the Costs of the Work (as defined in Article 7) and the Contractor's Fee identified in Article 5. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner. If the total amount of the Cost of the Work and Contractor's Fee is less than the GMP, the savings shall accrue one hundred percent (100%) to the Contractor.

ARTICLE 8 COSTS NOT TO BE REIMBURSED

- A. Add the following as Subparagraph 8.1.9:

"Amounts required to be paid by the Contractor with respect to its general business conduct for federal, state or local income, gross receipts or franchise taxes."

- B. Add the following as Subparagraph 8.1.10:

"Amounts paid or incurred by the Contractor for insurance coverage required under this Agreement, except as otherwise provided in Subparagraph 7.6.1."

- C. Add the following as Subparagraph 8.1.11:

"Any fines and penalties due to the Contractor's negligence."

ARTICLE 10 SUBCONTRACTS AND OTHER AGREEMENTS

- D. Amend Paragraph 10.1 by adding the following at the end:

"The Contractor will enter into subcontracts (the "Subcontracts") with the selected Subcontractors. The Contractor will require all to treat as confidential and not disclose to any party the financial terms of its bid or Subcontract. Each Subcontract shall include a construction schedule for the Work to be performed by

the Subcontractor and each shall also provide for: (a) construction of the applicable portion of, or furnishing materials for, the applicable Work, for a fixed price; (b) timing of submittals; (c) start-up and coordination; (d) manufacturing installation quality; (e) completion or delivery, as the case may be, within a specified period of time consistent with the Project Schedule; (f) in the case of Subcontractors performing construction activities, holdback from progress payments equal to ten percent (10%) of the value of the Work performed until the Subcontractor has Substantially Completed its portion of the Work; (g) the delivery of final releases of liens for Final Payment; (h) suspension or termination for convenience; (i) compliance with safety precautions and programs; and (j) a warranty against defective Work, extending from the date the Work is Substantially Completed until one year after the Work has been Substantially Completed.

The Contractor shall be responsible for coordination of the Subcontracts. Without limiting the generality of the foregoing, the Contractor shall ensure that:

- (1) all phases of the Work are either performed by Contractor or contracted for with the various Subcontractors;
- (2) all phases of the Work overlap in an orderly manner, with phased construction undertaken when necessary; and

ARTICLE 11 ACCOUNTING RECORDS

E. Delete Article 11 in its entirety and substitute the following:

"The Contractor will check all materials, equipment and labor entering into the Work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement, and the accounting system shall be acceptable to the Owner. The Contractor will afford to the Owner or the Owner's representatives access to all of the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers and similar data relating to this Agreement, and the Contractor shall preserve all such information and records for at least four years after the Final Payment has been made."

ARTICLE 12 PAYMENTS

A. Amend Subparagraph 12.2.1 by adding the following to the end:

"; (3) a final Certificate for Payment has then been issued by the Architect; (4) the Contractor has executed a release of all liens and claims against the Owner and the Project site arising under or by virtue of this Agreement; (5) the Contractor has furnished the Owner with written releases of liens by all Subcontractors; (6) The Contractor has furnished the Owner with an affidavit that all payrolls, bills

for material and equipment, and other indebtedness connected to the Work for which the Owner may in any way be responsible have been paid and (if requested by the Owner and to the extent possible) satisfactory evidence that all parties have been paid in full; (7) Contractor has provided to the Architect a clean set of record drawings marked up to indicate locations and dimensions of all components of the Project shown on such drawings; (8) the Contractor has secured and furnished to the Owner all keys, manuals, and written guaranties and warranties of Subcontractors bearing the date of Substantial Completion or other date as may be agreed to by the Owner stating the period of the warranty as required by the Contract Documents; (9) the Contractor has organized and implemented the performance testing of equipment required in the Specifications, trained the Owner's maintenance personnel to operate such equipment, and delivered to the Owner written operating and maintenance manuals or instructions for all equipment and finished surfaces requiring them; and (10) the Contractor has furnished to the Owner evidence of any insurance which is required to stay in effect after completion of the Project. Within thirty (30) days after receiving all of the materials required under this Subparagraph 12.2.1., the Owner shall make the Final Payment to the Contractor."

ARTICLE 13 DISPUTE RESOLUTION

- A. Delete Paragraph 13.2 in its entirety and replace with the following:

"13.2 Dispute Resolution. Notwithstanding anything in the Contract Documents to the contrary, except for matters relating to the interpretation of the Drawings and Specifications or any modifications of the Drawings and Specifications and matters in question relating to whether the Contractor's performance of the Work complies with the Drawings, Specifications or any modifications thereof (which will be initially referred to the Architect in accordance with the General Conditions) all claims, disputes and other matters in question between parties in this Agreement arising from or relating to this Agreement and/or the Contract Documents or the breach thereof will be decided by in any court of appropriate jurisdiction. No such action will be brought, however, until the parties have tried in good faith to resolve the matter amicably and all Work has been completed (or there has been an earlier termination of this Agreement). All such claims, disputes and matters in question (including without limitation, any claims, disputes and matters in question which are initially referred to the Architect in accordance with the General Conditions) will be aggregated for trial in a single lawsuit. The Contractor will be deemed to have waived any claim against the Owner unless the Contractor gives the Owner written notice of such claim within fourteen (14) days of the time that the Contractor has knowledge of the facts giving rise to such claim. Such written notice will state in detail the nature of the event and the Contractor's estimate of the effect of such event on the amounts owed to the Contractor hereunder and the date for Substantial Completion. Such notice will be given by the Contractor before proceeding to execute any Work

required by such event except in an emergency endangering life or property, in which case the Contractor will proceed in accordance with the General Conditions."

ARTICLE 14 TERMINATION OR SUSPENSION

A. Delete Article 14 in its entirety and replace it with the following:

"14.1 The Owner may, at any time, for the Owner's convenience and without cause, upon three (3) days' prior notice, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine. No adjustment shall be made for increases in the Costs of the Project, including the Fee relating to any increased Costs of the Project, caused by suspension, delay, or interruption. No adjustment shall be made to the extent that (A) performance is, was, or would have been so suspended or delayed or interrupted by another cause for which the Contractor is responsible, or (B) an adjustment is made or denied under another provision of this Contract.

14.2. The Owner may, at any time, terminate this Contract for the Owner's convenience and without cause upon three (3) days' prior notice to the Contractor. Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- (a) cease operations as directed by the Owner in the notice;
- (b) take actions necessary or that the Owner may direct for the protection and preservation of the Work; and
- (c) terminate all existing Subcontracts and enter into no further Subcontracts.

In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for all Costs of the Project already incurred to which Contractor would otherwise be entitled pursuant to the terms of this Contract, and all Costs of the Project incurred by reason of such termination, together with the Fee based on all such Costs of the Project.

ARTICLE 15 MISCELLANEOUS PROVISIONS

B. Add the following as Subparagraph 15.7:

"15.7 NOTICES

15.7.1 All notices, approvals, demands, requests, reports, statements and other communications to either party (each a "Notice") will be in writing and will be mailed by United States registered or certified mail, return receipt requested with costs prepaid; sent by reliable express courier service with costs prepaid; or by facsimile (transmission confirmed) to the respective addresses specified on the first page of the AIA Document A102 attached hereto and incorporated herein (or to such other address as may be specified by Notice to the other party).

If to OWNER:

Attn: _____
Facsimile No.: () _____

with a copy to:

Attn: _____
Facsimile No.: () _____

If to CONTRACTOR:

Attn: _____
Facsimile No.: () _____

15.7.2. The effective date of any Notice will be: (a) if delivered by mail or express courier, the date of the addressee's receipt; or (b) if sent by fax, the date of receipt if received by 5:00 p.m. local time on a business day or, if not, the first business day after receipt. Any Notice delivered by facsimile or similar means will be confirmed by a hard copy delivered as soon as practicable thereafter. It is understood and agreed that this Paragraph 9.4 is not intended to govern the day-to-day business communications necessary between the parties in performing their duties, in due course, under the terms of this Agreement."

C. Add the following as Subparagraph 15.8:

14.8 Statute of Limitations. No applicable statute of limitations will be deemed to have commenced with respect to any portion of the Work

which is not in accordance with the requirements of the Contract Documents and which would not be visible or apparent upon conducting a reasonable investigation.

D. Add the following as Subparagraph 15.9:

"15.9 THE CONTRACTOR'S WARRANTY/DEFECTIVE WORK

15.9.1. The Contractor warrants and guarantees to Owner that all of the Work shall be performed and completed in accordance with the Contract Documents, in a first-class and workmanlike manner, and shall not be Defective. For purposes of this Contract, "Defective" means Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference, standard, test or approval referred to in the Contract Documents, or has been damaged prior to the making of the Final Payment.

15.9.2. The Contractor shall promptly correct, or cause to be promptly corrected by the applicable Subcontractor, Defective Work that has been rejected by the Contractor, the Architect, or the Owner, whether observed before or after the Final Payment has been made, and whether or not such Defective Work has been fabricated, installed or completed. The cost of correcting Defective Work shall not be a Cost of the Work and the Contractor shall bear all of the costs of correcting such Defective Work, including the cost of additional testing and inspections. If the Contractor fails to correct Defective Work, Owner may have such Work corrected, in which case, Contractor shall pay Owner any costs incurred by Owner in connection therewith.

15.9.3 The Contractor shall promptly pay any amounts owed to the Owner on account of Defective Work or the cost of correcting Defective Work. If Final Payment has not been made, the Owner may deduct such amounts from any amounts owing to the Contractor under any Application for Payment or the Final Payment.

15.9.4. If, within the later to occur of (A) one year after Final Payment, or (B) the length of time of any applicable special warranty required by the Contract Documents, any of the Work (including Work that replaces Defective Work) is found to be Defective, the Contractor shall correct the Work, at its cost, promptly after written notice from the Owner to do so. This obligation shall survive both the Final Payment and termination of this Agreement.

15.9.5. Notwithstanding anything contained in Subparagraph 14.9.4., the applicable period of time relating to the Contractor's obligation to correct

Defective Work shall not be deemed to expire unless such Defective Work is visible or would be visible if the Owner had conducted a reasonable investigation before or during such applicable period.

E. Add the following as Subparagraph 15.10:

"15.10 MECHANICS LIENS

15.10.1. Payment Affidavit and Releases. In addition to any other requirements in the General Conditions and other Contract Documents, the Payment Application shall be supported by the following additional documentation, each in a form satisfactory to the Owner: (i) a Payment Affidavit, Release and Waiver of Liens executed by Contractor in the form satisfactory to the Owner, (ii) a Payment Affidavit, Release and Waiver of Liens executed by each Subcontractor in the form satisfactory to the Owner and (iii) a Payment Affidavit, Release and Waiver of Liens executed by each Sub-subcontractor/Supplier in the form satisfactory to Owner releasing claims and waiving mechanics' and materialmen's liens with respect to work performed and materials supplied for the Project and monies to be paid pursuant to such Application for Payment. Should Contractor fail or be unable to provide any such Payment Affidavit, Release and Waiver of Liens from a Subcontractor and its Sub-subcontractors/Suppliers with respect to work performed and materials supplied for the Project as set forth above, then Owner may withhold payment from Contractor in such amounts as Owner may determine are necessary to protect Owner against claims or liens by such Subcontractor or its Sub-subcontractor/Supplier, subject to Contractor's right to provide Owner with a bond (from a surety company, and in form and substance, acceptable to Owner) to indemnify, defend and hold harmless the Owner against all possible claims and liens by such Subcontractor and its Sub-subcontractors/Suppliers.

15.10.2 Owner's Right to Withhold Payments. In addition to any other rights in the Agreement, General Conditions and other Contract Documents, the Owner may withhold payment for any Work claimed to have been performed by Contractor if any of the Contractor's laborers or Subcontractors (or any of their Sub-subcontractors/Suppliers) has filed a mechanic's or materialmen's lien against the Project, and the Contractor has not caused the lien to be discharged; provided, that the amount withheld shall not exceed the amount of the lien plus any reasonable expenses which may be incurred in dealing with the lien;

15.10.3 Removal of Liens. Should any mechanic's or materialmen's lien attach to the Site or the Project in violation of the provisions hereof, the Contractor shall cause the immediate removal thereof; provided, that if

then approved by the Owner, the Contractor may remove such lien by obtaining and filing a bond satisfactory in form and in an amount acceptable to the Owner and the court, and otherwise in accordance with all applicable legal requirements. Said bond shall be obtained and filed within ten (10) days after the date on which such lien attaches to the Project. The cost of such bond and resolving lien claims may be allowed as a Cost of the Work if approved in writing by the Owner in its sole discretion.

15.10.4 Indemnity Against Liens and Lien Claims. The Contractor shall, at its sole expense, defend, indemnify, and hold harmless Owner from all mechanics' liens, or claims of rights to enforce such liens, filed or asserted by any Subcontractor or any of their respective Sub-subcontractors/Suppliers or anyone else claiming by or through any of them or any of Contractor's laborers, against the Project or the improvements to be erected thereon arising out of any Work performed or labor or materials furnished under the Contract. Neither final payment by the Owner nor acceptance of the Work shall constitute a waiver of this duty to defend, indemnify and hold harmless Owner. If any such mechanics' lien or claim for lien shall be filed at any time, the Contractor shall promptly defend such lien or claim for lien at its sole expense (including without limitation attorneys fees and expenses), and shall pay and satisfy any lien or judgment as may be established in such case. Further, upon the filing of any such lien, the Contractor shall, at its sole expense, promptly cause the lien to be discharged, whether by posting a bond with the court or by other means acceptable to Owner; and the Contractor shall thereupon seek leave from the court to substitute itself for the Owner as the party defendant. The Contractor may litigate any lien claim or suit filed thereon, at its sole expense (including without limitation attorneys fees and expenses), provided that the Contractor causes the lien to be discharged and fulfills its obligation to defend, indemnify and hold harmless Owner. The Contractor shall reimburse the Owner for all damages and expenses incurred by the Owner, including without limitation any costs incurred by Owner (including without limitation all attorneys fees and expenses) and any amounts that Owner may be compelled to pay to bond off, discharge or satisfy any such lien or claim. Owner shall have the right to deduct any such damages and expenses from any and all sums due to Contractor, without prejudice to the right of Owner to recover any further amounts due to Owner from Contractor.

OWNER

CONTRACTOR

By: _____

By: _____

Name: _____
Title: _____

Name: _____
Title: _____

ADDENDUM TO CONSTRUCTION AGREEMENT

INTRODUCTION

This Addendum is part of the contractual package comprised of **[INSERT CONTRACT DOCUMENTS]** (collectively the "Construction Agreement"). This Addendum is intended to address the requirements of various funding sources for the Project (the "Funding Requirements"). This Addendum shall be binding on the Contractor and all Subcontractors and sub-subcontractors working on the Project.

Where any Article, or portion thereof, of the Construction Agreement is amended, modified or superseded by this Addendum, the provisions set forth in this Addendum will control but provisions of such Article not so specifically amended, modified or superseded shall remain in effect. If any of the Funding Requirements designated below as being applicable to this Project, or portion thereof, shall be in conflict with any other Funding Requirements applicable to this Project, or portion thereof, the Funding Requirements, or portion thereof, which is more restrictive or stringent shall take precedence.

GENERAL TERMS AND CONDITIONS

The Contractor acknowledges that a portion of the cost of the Work is being paid from grant(s) to the DWRC from the funding sources designated as applicable below pursuant to certain grant agreement(s) (the "Grant Agreement(s)"). The Grant Agreement(s) require DWRC to assure compliance with the Funding Requirements set forth below, and Contractor shall comply with such provisions as if it had been a party to the Grant Agreement(s).

Without limiting the generality of anything contained in the Construction Agreement to the contrary, in the event Contractor, or any party claiming through Contractor, fails to comply with the Funding Requirements applicable to this Project as set forth below and such failure results in a breach of the Grant Agreement or otherwise invalidates or adversely affects DWRCs funding for the Project, Contractor shall, at its sole expense, defend, indemnify, and hold harmless DWRC from and against any and all damages, costs, judgments, liabilities, demands, suits and expenses (including attorney's fees) directly or indirectly relating to the same. Neither final payment by DWRC nor acceptance of the Work shall constitute a waiver of this duty to defend, indemnify and hold harmless DWRC.

CITY FUNDING REQUIREMENTS

The following Funding Requirements relate to contracts entered into in connection with the grant which the Owner received for the Project from the City of Philadelphia (the "City"):

Compliance with Applicable Laws.

The Contractor will observe and comply with all present and future laws, ordinances, orders, rules, regulation and requirements of all federal, state and municipal governments, courts, departments, commissions, boards or any other body exercising functions similar to those of any of the foregoing, which may be applicable to the Owner or the Project ("Applicable Law(s)"). The Contractor will observe and comply with all Applicable Laws and with the Economic Opportunity Plan (the "Project EOP"), as set forth in Exhibit "A".

Non-Discrimination.

The Contractor must not discriminate nor permit discrimination against any person because of race, color, religion, age, national origin or sex, sexual orientation, or gender preference. In the event of such discrimination, the Owner may terminate this Agreement forthwith.

Exclusionary Private Organizations.

In accordance with Chapter 17-400 of the Philadelphia Code, the 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 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, age, national origin or ancestry, constitutes a substantial breach of this Agreement entitling the Owner to all rights and remedies provided in the Agreement or otherwise available in law or equity.

(a) The Contractor agrees to include the immediately preceding paragraph, with appropriate adjustments for the identity of the parties, in all subcontracts which are entered into for work to be performed pursuant to this Agreement.

(b) Nothing contained herein shall prevent the Contractor or its subcontractors or anyone working with them from employing a union workforce and paying union dues. Employing a unionized workforce and the payment of union dues or benefits shall not constitute a breach of this Agreement.

Commission on Human Relations.

The Contractor agrees to cooperate with the Philadelphia Commission on Human Relations (the

“Commission”) 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.

□ **MacBride Principles.**

The Contractor (including any parent company, subsidiary, exclusive distributor or company affiliated with the Contractor) does not have, and will not have at any time during the term of this Agreement (including any extensions thereof), any investments, licenses, franchises, management agreements or operations in Northern Ireland and no product to be provided under this Agreement will originate in Northern Ireland, unless the Contractor has implemented the fair employment principles embodied in the MacBride Principles.

(a) In the performance of this Agreement, the Contractor may not utilize any suppliers, subcontractors or subgrantees at any tier (i) who have (or whose parent, subsidiary, exclusive distributor or company affiliate have) any investments, licenses, franchises, management agreements or operations in Northern Ireland, or (ii) who will provide products originating in Northern Ireland unless said supplier, sublicensee or subcontractor has implemented the fair employment principles embodied in the MacBride Principles. The Contractor shall include the provisions of this Section with appropriate adjustments for the identity of the parties, in all subcontracts and supply agreements which are entered into in connection with the performance of this Agreement.

(b) The Contractor shall cooperate with the City of Philadelphia’s Director of Finance in any manner which said director deems reasonable and necessary to carry out the Director’s responsibilities under § 17-104 of the Philadelphia Code. The Contractor’s false certification or representation in connection with this Section or any failure to comply with the provisions of this Section shall constitute a substantial breach of this Agreement entitling the Owner to all rights and remedies provided in this Agreement or otherwise available at law or in equity. In addition, false certification or representation is subject to prosecution under Title 18 Pa. C.S.A. § 4904.

□ **Certification of Non-Indebtedness.**

The Contractor hereby certifies and represents that the Contractor and the Contractor’s parent company(ies), subsidiary(ies), and affiliate(s), if any, are not currently indebted to the City of Philadelphia (the “City”), and will not during the term of this Agreement 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. The Contractor shall require any subcontractors to be bound by the following provisions, and the Contractor shall cooperate with the Owner in exercising the rights and remedies described below or otherwise available at law or in equity:

(a) “The Contractor hereby certifies and represents that the Contractor, and the Contractor’s parent company(ies) and their subsidiary(ies), are not currently indebted to the City of Philadelphia (the “City”), and will not at any time during the term of the Subgrant Agreement 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.”

(b) Any breach or failure to conform to the aforesaid certifications shall constitute a default by the Contractor and entitle the Owner to exercise any rights or remedies available to it under this Agreement, at law, and in equity.

□ **Disadvantage Business Enterprise Requirements**

DRWC encourages the response and inclusion of Minority Business Enterprises (“MBE”), Woman Business Enterprises (“WBE”), and Disabled Business Enterprises (“DSBE”) (collectively, “M/W/DSBE”) in its contracts. The goal of DRWC is to ensure that all businesses desiring to do business with DRWC have an equal and fair opportunity to compete by creating access to DRWC’s contract opportunities by M/W/DSBEs and meaningfully increasing opportunities for the participation by M/W/DSBEs in DRWC’s contracts at all tiers of contracting.

DRWC has set the following M/W/DSBE participation goals for this project:

MBE 15%-20%
WBE 5%-10%
DSBE Best efforts

1. To count toward inclusion goals, all M/W/DSBEs must be certified by the Office of Economic Opportunity (OEO) (formerly the Philadelphia Minority Business Enterprise Council (MBEC)) or the Pennsylvania Unified Certification Program (UCP), or current certifications already issued by other states, cities, agencies, etc. Only work performed by certified firms will count toward a contractor’s final achievement of its inclusion goals. Certifications that expire during a firm’s participation on a particular phase of the project may be counted toward overall goals for participation ranges. However, said firm MUST become re-certified prior to consideration for goal credit for any future contracts affiliated with this plan. If a firm has been de-certified, said firm would not be eligible to participate.

2. In order to maximize opportunities for as many businesses as possible, a firm that is certified in two or more categories (e.g. MBE and WBE and DSBE or WBE and DSBE) will only be credited toward one participation range as either an MBE or WBE or DSBE. The firm will not be credited toward more than one category. Bidders will note with their submission which category, MBE or WBE or DSBE, is submitted for credit.

3. An MBE/WBE/DSBE submitting as the prime bidder is required, like all other bidders, to submit a bid that is responsive to the Policy and will only receive credit toward the relevant participation ranges (e.g., MBE range or WBE range or DSBE range) for the amount of its own work or supply effort on this Invitation and Bid. In addition, the participation of an M/W/DSBE partner, as part of a joint venture created for this bid, may be credited towards the participation ranges only to the extent of the M/W/DSBE partner’s ownership interest in the joint venture in accordance with the following criteria:

- The MBE, WBE or DSBE partner(s) must be certified prior to bid opening;
- The M/W/DSBE partner(s) must derive substantial benefit from the arrangement;
- The M/W/DSBE partner(s) must be substantially involved in all phases of the contract including bidding, planning, staffing and daily management;
- The business arrangement must be customary (i.e., each partner shares in the risk and profits of the joint venture commensurate with their ownership interest, contributes working capital and other resources, etc).

4. For the purpose of applying the participation ranges on DRWC projects that include add or deduct alternates, commitments listed by bidders on the Solicitation for Participation and Commitment Form should be based upon the base bid. In the event DRWC elects to award any add or deduct alternates, the DRWC reserves the right to require the apparent lowest responsible bidder to amend its Solicitation for Participation and Commitment Form, to ensure the bidder's continuing responsibility.

In addition, respondents may provide a more detailed description of any efforts they have made within their company and proposal which will help DRWC achieve its inclusion goals. These efforts may include, but are not limited to the following: 1) a description of respondents' written diversity program identifying the race, gender and ethnic composition of its board of directors; 2) its employment profile; 3) a list of all M/W/DSBE vendors that the respondent does business with and a statement of the geographic area(s) where its services are most concentrated; and 4) a description of respondents efforts to maintain a diverse workforce, to maintain a diverse board of directors or administer a fair and effective M/W/DSBE contracting process.

Prevailing Wage Requirements

The Contractor shall pay or provide (and shall cause all subcontractors to pay or provide) to its or their workers, laborers and mechanics (who are employed by the Contractor or a subcontractor to work on an hourly or daily basis at any trade or occupation at or about the construction site) at least the prevailing rate of wage and supplements paid to others engaged in the same trade or occupation at the time and in the locality in which the work is being performed. Compliance with this provision shall be guided by the prevailing wage statutes of Pennsylvania as appropriate given the location of the Work. By including this reference to the prevailing wage statutes of Pennsylvania the DRWC does not intend to suggest that it is governed by these statutes but instead intends that these be used as guidance for its Contractors.

Certified Payroll Requirements

The accurate record of employment and wage payments required to be kept and preserved by contractors and subcontractors on public work shall include at least the following information:

1. The name, address and social security number of each workman.

2. The craft, if applicable, the classification within each craft, and any other classification, at which the workman worked.

These records shall show the number of hours in each day, specified by actual calendar date, during which each workman worked and if he worked in more than one craft or classification for which different rates were payable the records shall show the number of hours in each day as aforesaid in which he worked at the different crafts or classifications. Time cards of employees shall be kept and preserved. The records shall be preserved for 2 years from date of payment and shall be open at all reasonable hours for inspection by the DRWC.

The contractor and each subcontractor shall file a statement each week and a final statement at the conclusion of the work on the contract with the DRWC, under oath, and in form satisfactory to the DRWC, certifying that workmen have been paid wages in strict conformity with the provisions of the contract as prescribed by this section or if wages remain unpaid to set forth the amount of wages due and owing to each workman respectively.

Exhibit "A"

City of Philadelphia Economic Opportunity Plan for The Project

I. Introduction and Definitions

A. Executive Orders 02-05 and 14-08 establish an antidiscrimination policy administered by the Office of Economic Opportunity ("OEO") relating to the participation of Minority (MBE), Woman (WBE) and Disabled (DSBE) Owned Business Enterprises (collectively referred to hereafter as M/W/DSBEs) in City and City Related Contracts. Chapter 17-1600 of The Philadelphia Code requires the development and implementation of Economic Opportunity Plans ("EOP") which memorialize a contractor's best and good faith efforts to provide meaningful and representative opportunities for M/W/DSBEs and to employ a diverse workforce in connection with the contract or covered project. Collectively, these laws support equal opportunity for all businesses and assure that City funds are not used directly or indirectly, to promote, reinforce or perpetuate discriminatory practices.

As a condition of the grant of City Funding for the design and construction of the Project, the DRWC is bound by and shall cause its subcontractors to comply with the requirements of this EOP. Accordingly, DRWC, its contractor and subcontractors (hereinafter, "Contractor") make a legally binding commitment to abide by the provisions of this EOP which include Contractor's commitment to exercise its best and good faith efforts to provide meaningful and representative contracting opportunities for M/W/DSBEs and to employ a diverse workforce of tradespeople, including minority and female persons, in all phases and throughout the term of any contract(s) awarded in connection with the Project.

B. For the purposes of this EOP, MBE, WBE and DSBE shall refer to businesses so recognized by the OEO. For this EOP, the term "Best and Good Faith Efforts," the sufficiency of which shall be in the sole determination of the City, means: a Contractor's efforts, as evaluated by the City, the scope, intensity and appropriateness of which are designed and performed to achieve meaningful business opportunities for M/W/DSBEs and employment opportunities for minorities and females. The following are examples of Best and Good Faith Efforts:

- Contractor seeks assistance from the Philadelphia area building trades, pre-apprenticeship and workforce development programs to conduct employment outreach and identify minority and female tradespeople for work on the project.
- Contractor adheres to a published policy of nondiscrimination in the hiring, retention and promotion of employees which includes communication of that policy to Contractor's project forepersons and employees.
- Contractor makes commitments to use MBEs, WBEs and DSBEs in its contract for commercially acceptable services and material supply even when the Contractor might otherwise

prefer to perform/supply these items without subcontracting.

- Contractor timely solicits through all reasonable and available means the interest of M/W/DSBEs that have the capability to perform the work of the contract. Such efforts include use of the OEO Registry of Certified Firms, solicitation through pre-bid meetings and job fairs, advertising in minority focused publications, written mailings to M/W/DSBEs. The Contractor must determine with certainty if the M/W/DSBEs are interested by taking appropriate steps to follow up on initial solicitations; one time contact, without any follow up, is not acceptable.
- Contractor provides interested MBEs, WBEs and DSBEs adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- Contractor provides arms length business assistance to interested M/W/DSBEs which may include access or introduction to major manufacturer/suppliers, lending institutions and union halls.
- Contractor negotiates in good faith with interested M/W/DSBEs. A Contractor using good business judgment would consider a number of factors in negotiating with subcontractors, including M/W/DSBE subcontractors, and would take a firm's price and capabilities as well as the objectives of the City's antidiscrimination policies into consideration.

II. Economic Opportunity Plan Commitments

A. M/W/DSBE Participation

1. Participation Ranges. As a benchmark for the Contractor's expression of its Best and Good Faith Efforts to provide meaningful and representative opportunities for M/W/DSBEs in this Project, the following participation ranges have been developed. These participation ranges represent, in the absence of discrimination in the solicitation and selection of M/W/DSBEs, the percentage of MBE, WBE and DSBE participation that is reasonably attainable on this Project through the exercise of Contractor's best and good faith efforts. These ranges are based upon an analysis of factors such as the overall size and scope of the Project and the availability of MBEs, WBEs and DSBEs to perform various elements of the Project. The following participation ranges are established for this Project:

Design & Construction	MBE	WBE	DSBE
	15%-20%	5% - 10%	Best Efforts

a. Documentation of Best and Good Faith Efforts. Contractor shall respond to the Participation Ranges by completing the Documentation of Best and Good Faith Efforts Form ("BGFE Form") attached hereto, documenting its solicitations and commitments with M/W/DSBEs, and detailing its exercise of best and good faith efforts to include M/W/DSBEs in the contract. The submission of the BGFE Form is an element of responsiveness to this EOP and material to the Subgrant Agreement; for purposes of this EOP, DRWC shall submit all BGFE Forms to PAID for transmittal to the City.

(1) The BGFE Form must include the company name, address, contact person, telephone number, facsimile number and OEO registry number of each M/W/DSBE firm solicited for participation in this Project (regardless of the response by the firm), a detailed description of the services or the supply effort solicited/quoted and the dollar amount and percentage of contract commitments made to M/W/DSBE firms. Contractor must avoid using one-word descriptions of the services or supply effort and is required to submit copies of the supporting quotation(s) or letter(s) of intent. If no commitments are made, or if quotes were not received from M/W/DSBE firms solicited by the Contractor, Contractor must provide an explanation. Only firms that are recognized by OEO as certified M/W/DSBEs will receive credit as a Best and Good Faith Effort. A list of M/W/DSBEs is maintained by the OEO and is available online at www.phila.gov/mbec/directory or in printed format at the OEO offices, located in the Municipal Services Building, 1401 JFK Blvd. Suite 330, Philadelphia, PA. 19102-1666.

(2) The Contractor's identified commitment(s) to use an M/W/DSBE on the BGFE Form constitutes a representation by Contractor that the M/W/DSBE is capable of completing the subcontract with its own workforce, and that the Contractor has made a legally binding commitment with the firm. The listing of the M/W/DSBE firm by Contractor further represents that Contractor will subcontract (or partner, in the case of a joint venture) with the listed firm(s) for the work or supply effort described and the dollar/percentage amount(s) set forth on the BGFE Form. The Contractor must maintain its M/W/DSBE percentage commitments throughout the term of the Project and shall continue to exercise Best and Good Faith Efforts for the duration of the Project.

(3) A Contractor that enters into a subcontract with an M/W/DSBE shall be considered to have made a Best and Good Faith Effort only if the M/W/DSBE subcontractor performs a commercially acceptable function ("CAF"). An M/W/DSBE is considered to perform a CAF when it engages in meaningful work or supply effort that provides for a distinct element of the subcontract, where the distinct element is worthy of the dollar amount of the subcontract and where the M/W/DSBE carries out its responsibilities by actually performing, managing and supervising the work involved. The amount of work subcontracted, industry practices and any other relevant factors will determine whether the M/W/DSBE is performing a CAF and how much credit the Contractor receives towards the participation ranges. For example, a Contractor using an M/W/DSBE non-stocking supplier (i.e., a firm that does not manufacture or warehouse the materials or equipment of the general character required under the contract) to furnish equipment or materials will only receive credit towards the participation ranges for the fees or commissions charged, not the entire value of the equipment or materials furnished.

(4) In calculating the percentage of M/W/DSBE participation, Contractor shall apply the standard mathematical rules in rounding off numbers. In the event of inconsistency between the dollar and percentage amounts listed on the BGFE Form, the percentage will govern.

(5) The letters of intent, quotations and any other accompanying documents regarding solicitation and commitments with MBEs, WBEs and DSBEs, including the BGFE Form, become part of this EOP. M/W/DSBE percentage commitments are to be maintained throughout the term of the Project and shall apply to the total Project value. Any change in commitment, including but not limited to substitutions for the listed firms, changes or reductions in the work and/or listed dollar/percentage amounts, must be reported in writing to PAID for evaluation by the City. Throughout the term of the contract, Contractor is required to continue its Best and Good Faith Efforts.

B. Employment of a Diverse Workforce

1. Employment Benchmarks and Outreach

Contractor agrees to exhaust its Best and Good Faith Efforts to employ minority persons and females in its workforce. As evidence of its Best and Good Faith Efforts, Contractor shall establish and maintain a current list of minority and female recruitment sources and provide written notification to these recruitment sources, to community organizations and the trades unions when Contractor has employment opportunities available. Contractor shall maintain a record of the organizations' responses. Contractor is encouraged to contact the Diversity Apprenticeship Program, Careerlink Philadelphia, Opportunity Industrial Center, Greater Philadelphia Urban Affairs Coalition, Lucien Blackwell Apprenticeship Program and similar programs to identify tradespersons and employees. Contractor is encouraged to sponsor minority and female apprentices and consider working with representatives of trades unions to create apprenticeship opportunities for Philadelphia residents. Contractor is obligated to exhaust its Best and Good Faith Efforts to employ :

Minority Apprentices – 50% of all hours worked across all trades

Minority Journeymen – 32% of all hours worked across all trades

Female Apprentices and Journeypersons– 7% of all hours worked across all trades

Contractor agrees that when a union with which Contractor has a collective bargaining agreement has impeded Contractor's efforts to meet its obligations hereunder, Contractor shall immediately refer this information to PAID and the City.

III. Compliance and Monitoring of Best and Good Faith Efforts

A. The City, acting through its OEO, will evaluate the Contractor's Best and Good Faith Efforts on the basis of Contractor's BGFE Form(s) and any other information requested from Contractor by PAID or the City. If the OEO determines that the Contractor has not made sufficient Best and

Good Faith Efforts, the Contractor will be so notified; if the Contractor, after a reasonable period to cure, does not demonstrate compliance, Contractor will be subject to the remedies prescribed in Section IV hereof. Contractor agrees to cooperate with OEO in its compliance monitoring efforts, and to submit, within the time limits prescribed by OEO, all documentation which may be requested by OEO relative to this EOP, including the items described below. The Contractor must provide as required and maintain the following contract documentation for a period of three (3) years following the expiration or earlier termination of the contract:

- Copies of signed contracts and purchase orders with M/W/DSBE subcontractors;
- Evidence of payments (cancelled checks, invoices, etc.) to subcontractors and suppliers to verify participation;
- Telephone logs and correspondence relating to M/W/DSBE commitments.

B. The Contractor shall submit, with each grant request and for the duration of the Project, M/W/DSBE Utilization Reports which document the utilization and actual payments to committed M/W/DSBEs and hourly employment of minority persons and females in connection with the Project.

C. The Contractor shall pay its M/W/DSBEs within five (5) business days after acceptance of work or materials from an M/W/DSBE.

1. The M/W/DSBE Utilization Reports shall reconcile actual dollar amounts paid to M/W/DSBEs with M/W/DSBE commitments presented in the BGFE Form.

IV. Remedy for Non-Compliance

A. The Contractor agrees that its compliance with the requirements of this EOP is material to the Subgrant Agreement. Any failure to comply with these requirements may constitute a substantial breach of the Subgrant Agreement. It is further agreed and understood that in the event the City determines that the Contractor has failed to reasonably comply with these requirements the City may cause PAID to terminate the Subgrant Agreement. This remedy is for the sole benefit of the City and City's failure to enforce any provision or the City's indulgence of any non-compliance with any provision hereunder, shall not operate as a waiver of any of the City's rights in connection with the grant agreements nor shall it give rise to actions by any third parties including identified M/W/DSBE subcontractors. No privity of contract exists between the City and the M/W/DSBE subcontractor identified in any contract resulting from this EOP. The City does not intend to give or confer upon any such M/W/DSBE subcontractor(s) any legal rights or remedies in connection with subcontracted services under any law or Executive Order or by any reason of any contract resulting from this EOP except such rights or remedies that the M/W/DSBE subcontractor may seek as a private cause of action under any legally binding contract to which it may be a party.

V. Documentation of Best and Good Faith Efforts

DRAFT AIA® Document A102™ - 2007

Standard Form of Agreement Between Owner and Contractor
where the basis of payment is the Cost of the Work Plus a
Fee with a Guaranteed Maximum Price

AGREEMENT made as of the [] day of [] in the year []
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

[Redacted]

and the Contractor:
(Name, legal status, address and other information)

[Redacted]

for the following Project:
(Name, location and detailed description)

[Erik Williams]
[Redacted]

The Architect:
(Name, legal status, address and other information)

[Redacted]

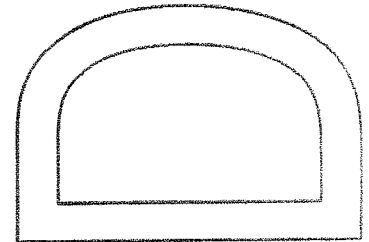
The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is not intended for use in competitive bidding.

AIA Document A201™-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.



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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. If anything in the other Contract Documents, other than a Modification, is inconsistent with this Agreement, this Agreement shall govern.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 RELATIONSHIP OF THE PARTIES

The Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

ARTICLE 4 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 4.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

§ 4.2 The Contract Time shall be measured from the date of commencement.

§ 4.3 The Contractor shall achieve Substantial Completion of the entire Work not later than _____ (_____) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work	Substantial Completion date
_____	_____

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time, or for bonus payments for early completion of the Work.)

ARTICLE 5 CONTRACT SUM

§ 5.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum is the Cost of the Work as defined in Article 7 plus the Contractor's Fee.

§ 5.1.1 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

§ 5.1.2 The method of adjustment of the Contractor's Fee for changes in the Work:

§ 5.1.3 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ 5.1.4 Rental rates for Contractor-owned equipment shall not exceed _____ percent (_____ %) of the standard rate paid at the place of the Project.

§ 5.1.5 Unit prices, if any:
(Identify and state the unit price; state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit (\$0.00)
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§ 5.2 GUARANTEED MAXIMUM PRICE

§ 5.2.1 The Contract Sum is guaranteed by the Contractor not to exceed (\$), subject to additions and deductions by Change Order as provided in the Contract Documents. Such maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.
(Insert specific provisions if the Contractor is to participate in any savings.)

§ 5.2.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when the amount expires.)

§ 5.2.3 Allowances included in the Guaranteed Maximum Price, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price
------	-------

§ 5.2.4 Assumptions, if any, on which the Guaranteed Maximum Price is based:

§ 5.2.5 To the extent that the Drawings and Specifications are anticipated to require further development by the Architect, the Contractor has provided in the Guaranteed Maximum Price for such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

ARTICLE 6 CHANGES IN THE WORK

§ 6.1 Adjustments to the Guaranteed Maximum Price on account of changes in the Work may be determined by any of the methods listed in Section 7.3.3 of AIA Document A201-2007, General Conditions of the Contract for Construction.

§ 6.2 In calculating adjustments to subcontracts (except those awarded with the Owner's prior consent on the basis of cost plus a fee), the terms "cost" and "fee" as used in Section 7.3.3.3 of AIA Document A201-2007 and the term "costs" as used in Section 7.3.7 of AIA Document A201-2007 shall have the meanings assigned to them in AIA Document A201-2007 and shall not be modified by Articles 5, 7 and 8 of this Agreement. Adjustments to subcontracts awarded with the Owner's prior consent on the basis of cost plus a fee shall be calculated in accordance with the terms of those subcontracts.

§ 6.3 In calculating adjustments to the Guaranteed Maximum Price, the terms "cost" and "costs" as used in the above-referenced provisions of AIA Document A201-2007 shall mean the Cost of the Work as defined in Article 7 of this Agreement and the term "fee" shall mean the Contractor's Fee as defined in Section 5.1.1 of this Agreement.

§ 6.4 If no specific provision is made in Article 5 for adjustment of the Contractor's Fee in the case of changes in the Work, or if the extent of such changes is such, in the aggregate, that application of the adjustment provisions of Article 5 will cause substantial inequity to the Owner or Contractor, the Contractor's Fee shall be equitably adjusted.

on the same basis that was used to establish the Fee for the original Work, and the Guaranteed Maximum Price shall be adjusted accordingly.

ARTICLE 7 COSTS TO BE REIMBURSED

§ 7.1 COST OF THE WORK

§ 7.1.1 The term Cost of the Work shall mean costs necessarily incurred by the Contractor in the proper performance of the Work. Such costs shall be at rates not higher than the standard paid at the place of the Project except with prior consent of the Owner. The Cost of the Work shall include only the items set forth in this Article 7.

§ 7.1.2 Where any cost is subject to the Owner's prior approval, the Contractor shall obtain this approval prior to incurring the cost. The parties shall endeavor to identify any such costs prior to executing this Agreement.

§ 7.2 LABOR COSTS

§ 7.2.1 Wages of construction workers directly employed by the Contractor to perform the construction of the Work at the site or, with the Owner's prior approval, at off-site workshops.

§ 7.2.2 Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site with the Owner's prior approval.

(If it is intended that the wages or salaries of certain personnel stationed at the Contractor's principal or other offices shall be included in the Cost of the Work, identify in Article 15, the personnel to be included, whether for all or only part of their time, and the rates at which their time will be charged to the Work.)

§ 7.2.3 Wages and salaries of the Contractor's supervisory or administrative personnel engaged at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work.

§ 7.2.4 Costs paid or incurred by the Contractor for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 7.2.1 through 7.2.3.

§ 7.2.5 Bonuses, profit sharing, incentive compensation and any other discretionary payments paid to anyone hired by the Contractor or paid to any Subcontractor or vendor, with the Owner's prior approval.

§ 7.3 SUBCONTRACT COSTS

Payments made by the Contractor to Subcontractors in accordance with the requirements of the subcontracts.

§ 7.4 COSTS OF MATERIALS AND EQUIPMENT INCORPORATED IN THE COMPLETED CONSTRUCTION

§ 7.4.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

§ 7.4.2 Costs of materials described in the preceding Section 7.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Contractor. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ 7.5 COSTS OF OTHER MATERIALS AND EQUIPMENT, TEMPORARY FACILITIES AND RELATED ITEMS

§ 7.5.1 Costs of transportation, storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Contractor at the site and fully consumed in the performance of the Work. Costs of materials, supplies, temporary facilities, machinery, equipment and tools that are not fully consumed shall be based on the cost or value of the item at the time it is first used on the Project site less the value of the item when it is no longer used at the Project site. Costs for items not fully consumed by the Contractor shall mean fair market value.

§ 7.5.2 Rental charges for temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Contractor at the site and costs of transportation, installation, minor repairs, dismantling and removal. The total rental cost of any Contractor-owned item may not exceed the purchase

price of any comparable item. Rates of Contractor-owned equipment and quantities of equipment shall be subject to the Owner's prior approval.

§ 7.5.3 Costs of removal of debris from the site of the Work and its proper and legal disposal.

§ 7.5.4 Costs of document reproductions, facsimile transmissions and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office.

§ 7.5.5 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, subject to the Owner's prior approval.

§ 7.6 MISCELLANEOUS COSTS

§ 7.6.1 Premiums for that portion of insurance and bonds required by the Contract Documents that can be directly attributed to this Contract. Self-insurance for either full or partial amounts of the coverages required by the Contract Documents, with the Owner's prior approval.

§ 7.6.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work and for which the Contractor is liable.

§ 7.6.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which the Contractor is required by the Contract Documents to pay.

§ 7.6.4 Fees of laboratories for tests required by the Contract Documents, except those related to defective or nonconforming Work for which reimbursement is excluded by Section 13.5.3 of AIA Document A201-2007 or by other provisions of the Contract Documents, and which do not fall within the scope of Section 7.7.3.

§ 7.6.5 Royalties and license fees paid for the use of a particular design, process or product required by the Contract Documents; the cost of defending suits or claims for infringement of patent rights arising from such requirement of the Contract Documents; and payments made in accordance with legal judgments against the Contractor resulting from such suits or claims and payments of settlements made with the Owner's consent. However, such costs of legal defenses, judgments and settlements shall not be included in the calculation of the Contractor's Fee or subject to the Guaranteed Maximum Price. If such royalties, fees and costs are excluded by the last sentence of Section 3.17 of AIA Document A201-2007 or other provisions of the Contract Documents, then they shall not be included in the Cost of the Work.

§ 7.6.6 Costs for electronic equipment and software, directly related to the Work with the Owner's prior approval.

§ 7.6.7 Deposits lost for causes other than the Contractor's negligence or failure to fulfill a specific responsibility in the Contract Documents.

§ 7.6.8 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between the Owner and Contractor, reasonably incurred by the Contractor after the execution of this Agreement in the performance of the Work and with the Owner's prior approval, which shall not be unreasonably withheld.

§ 7.6.9 Subject to the Owner's prior approval, expenses incurred in accordance with the Contractor's standard written personnel policy for relocation and temporary living allowances of the Contractor's personnel required for the Work.

§ 7.6.10 That portion of the reasonable expenses of the Contractor's supervisory or administrative personnel incurred while traveling in discharge of duties connected with the Work.

§ 7.7 OTHER COSTS AND EMERGENCIES

§ 7.7.1 Other costs incurred in the performance of the Work if, and to the extent, approved in advance in writing by the Owner.

§ 7.7.2 Costs incurred in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property, as provided in Section 10.4 of AIA Document A201-2007.

§ 7.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by the Contractor, Subcontractors or suppliers, provided that such damaged or nonconforming Work was not caused by negligence or failure to fulfill a specific responsibility of the Contractor and only to the extent that the cost of repair or correction is not recovered by the Contractor from insurance, sureties, Subcontractors, suppliers, or others.

§ 7.8 RELATED PARTY TRANSACTIONS

§ 7.8.1 For purposes of Section 7.8, the term "related party" shall mean a parent, subsidiary, affiliate or other entity having common ownership or management with the Contractor; any entity in which any stockholder in, or management employee of, the Contractor owns any interest in excess of ten percent in the aggregate; or any person or entity which has the right to control the business or affairs of the Contractor. The term "related party" includes any member of the immediate family of any person identified above.

§ 7.8.2 If any of the costs to be reimbursed arise from a transaction between the Contractor and a related party, the Contractor shall notify the Owner of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If the Owner, after such notification, authorizes the proposed transaction, then the cost incurred shall be included as a cost to be reimbursed, and the Contractor shall procure the Work, equipment, goods or service from the related party, as a Subcontractor, according to the terms of Article 10. If the Owner fails to authorize the transaction, the Contractor shall procure the Work, equipment, goods or service from some person or entity other than a related party according to the terms of Article 10.

ARTICLE 8 COSTS NOT TO BE REIMBURSED

§ 8.1 The Cost of the Work shall not include the items listed below:

- .1 Salaries and other compensation of the Contractor's personnel stationed at the Contractor's principal office or offices other than the site office, except as specifically provided in Section 7.2. or as may be provided in Article 15;
- .2 Expenses of the Contractor's principal office and offices other than the site office;
- .3 Overhead and general expenses, except as may be expressly included in Article 7;
- .4 The Contractor's capital expenses, including interest on the Contractor's capital employed for the Work;
- .5 Except as provided in Section 7.7.3 of this Agreement, costs due to the negligence or failure of the Contractor, Subcontractors and suppliers or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable to fulfill a specific responsibility of the Contract;
- .6 Any cost not specifically and expressly described in Article 7; and
- .7 Costs, other than costs included in Change Orders approved by the Owner, that would cause the Guaranteed Maximum Price to be exceeded.

ARTICLE 9 DISCOUNTS, REBATES AND REFUNDS

§ 9.1 Cash discounts obtained on payments made by the Contractor shall accrue to the Owner if (1) before making the payment, the Contractor included them in an Application for Payment and received payment from the Owner, or (2) the Owner has deposited funds with the Contractor with which to make payments; otherwise, cash discounts shall accrue to the Contractor. Trade discounts, rebates, refunds and amounts received from sales of surplus materials and equipment shall accrue to the Owner, and the Contractor shall make provisions so that they can be obtained.

§ 9.2 Amounts that accrue to the Owner in accordance with the provisions of Section 9.1 shall be credited to the Owner as a deduction from the Cost of the Work.

ARTICLE 10 SUBCONTRACTS AND OTHER AGREEMENTS

§ 10.1 Those portions of the Work that the Contractor does not customarily perform with the Contractor's own personnel shall be performed under subcontracts or by other appropriate agreements with the Contractor. The Owner may designate specific persons from whom, or entities from which, the Contractor shall obtain bids. The Contractor shall obtain bids from Subcontractors and from suppliers of materials or equipment fabricated especially for the Work and shall deliver such bids to the Architect. The Owner shall then determine, with the advice of the Contractor and the Architect, which bids will be accepted. The Contractor shall not be required to contract with anyone to whom the Contractor has reasonable objection.

§ 10.2 When a specific bidder (1) is recommended to the Owner by the Contractor; (2) is qualified to perform that portion of the Work; and (3) has submitted a bid that conforms to the requirements of the Contract Documents without reservations or exceptions, but the Owner requires that another bid be accepted, then the Contractor may require that a Change Order be issued to adjust the Guaranteed Maximum Price by the difference between the bid of the person or entity recommended to the Owner by the Contractor and the amount of the subcontract or other agreement actually signed with the person or entity designated by the Owner.

§ 10.3 Subcontracts or other agreements shall conform to the applicable payment provisions of this Agreement, and shall not be awarded on the basis of cost plus a fee without the prior consent of the Owner. If the Subcontract is awarded on a cost-plus a fee basis, the Contractor shall provide in the Subcontract for the Owner to receive the same audit rights with regard to the Subcontractor as the Owner receives with regard to the Contractor in Article 11, below.

ARTICLE 11 ACCOUNTING RECORDS

The Contractor shall keep full and detailed records and accounts related to the cost of the Work and exercise such controls as may be necessary for proper financial management under this Contract and to substantiate all costs incurred. The accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner's auditors shall, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy, the Contractor's records and accounts, including complete documentation supporting accounting entries, books, correspondence, instructions, drawings, receipts, subcontracts, Subcontractor's proposals, purchase orders, vouchers, memoranda and other data relating to this Contract. The Contractor shall preserve these records for a period of three years after final payment, or for such longer period as may be required by law.

ARTICLE 12 PAYMENTS

§ 12.1 PROGRESS PAYMENTS

§ 12.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 12.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 12.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than () days after the Architect receives the Application for Payment. *(Federal, state or local laws may require payment within a certain period of time.)*

§ 12.1.4 With each Application for Payment, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner or Architect to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor; less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 12.1.5 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Guaranteed Maximum Price among the various portions of the Work, except that the Contractor's Fee shall be shown as a single separate item. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 12.1.6 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by

dividing (a) the expense that has actually been incurred by the Contractor on account of that portion of the Work for which the Contractor has made or intends to make actual payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 12.1.7 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201-2007;
- .2 Add that portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work, or if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing;
- .3 Add the Contractor's Fee, less retainage of percent (%). The Contractor's Fee shall be computed upon the Cost of the Work at the rate stated in Section 5.1.1 or, if the Contractor's Fee is stated as a fixed sum in that Section, shall be an amount that bears the same ratio to that fixed sum fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;
- .4 Subtract retainage of percent (%) from that portion of the Work that the Contractor self-performs;
- .5 Subtract the aggregate of previous payments made by the Owner;
- .6 Subtract the shortfall, if any, indicated by the Contractor in the documentation required by Section 12.1.4 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and
- .7 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 12.1.8 The Owner and the Contractor shall agree upon a (1) mutually acceptable procedure for review and approval of payments to Subcontractors and (2) the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 12.1.9 In taking action on the Contractor's Applications for Payment, the Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and shall not be deemed to represent that the Architect has made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Section 12.1.4 or other supporting data; that the Architect has made exhaustive or continuous on-site inspections; or that the Architect has made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 12.2 FINAL PAYMENT

§ 12.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201-2007, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the Contractor has submitted a final accounting for the Cost of the Work and a final Application for Payment; and
- .3 a final Certificate for Payment has been issued by the Architect.

§ 12.2.2 The Owner's auditors will review and report in writing on the Contractor's final accounting within 30 days after delivery of the final accounting to the Architect by the Contractor. Based upon such Cost of the Work as the Owner's auditors report to be substantiated by the Contractor's final accounting, and provided the other conditions of Section 12.2.1 have been met, the Architect will, within seven days after receipt of the written report of the Owner's auditors, either issue to the Owner a final Certificate for Payment with a copy to the Contractor, or notify the Contractor and Owner in writing of the Architect's reasons for withholding a certificate as provided in Section 9.5.1 of the AIA Document A201-2007. The time periods stated in this Section 12.2.2 supersede those stated in

Section 9.4.1 of the AIA Document A201-2007. The Architect is not responsible for verifying the accuracy of the Contractor's final accounting.

§ 12.2.3 If the Owner's auditors report the Cost of the Work as substantiated by the Contractor's final accounting to be less than claimed by the Contractor, the Contractor shall be entitled to request mediation of the disputed amount without seeking an initial decision pursuant to Section 15.2 of A201-2007. A request for mediation shall be made by the Contractor within 30 days after the Contractor's receipt of a copy of the Architect's final Certificate for Payment. Failure to request mediation within this 30-day period shall result in the substantiated amount reported by the Owner's auditors becoming binding on the Contractor. Pending a final resolution of the disputed amount, the Owner shall pay the Contractor the amount certified in the Architect's final Certificate for Payment.

§ 12.2.4 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

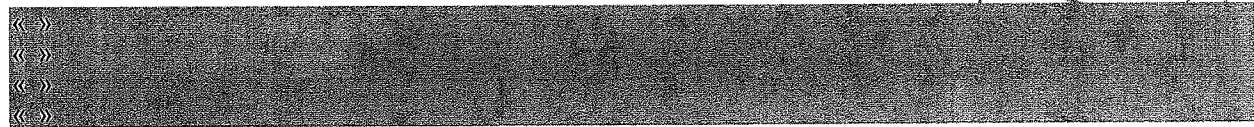


§ 12.2.5 If, subsequent to final payment and at the Owner's request, the Contractor incurs costs described in Article 7 and not excluded by Article 8 to correct defective or nonconforming Work, the Owner shall reimburse the Contractor such costs and the Contractor's Fee applicable thereto on the same basis as if such costs had been incurred prior to final payment, but not in excess of the Guaranteed Maximum Price. If the Contractor has participated in savings as provided in Section 5.2, the amount of such savings shall be recalculated and appropriate credit given to the Owner in determining the net amount to be paid by the Owner to the Contractor.

ARTICLE 13 DISPUTE RESOLUTION

§ 13.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201-2007, unless the parties appoint below another individual, not a party to the Agreement, to serve as Initial Decision Maker. *(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*



§ 13.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by mediation pursuant to Section 15.3 of AIA Document A201-2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

- Arbitration pursuant to Section 15.4 of AIA Document A201-2007
- Litigation in a court of competent jurisdiction
- Other *(Specify)*



ARTICLE 14 TERMINATION OR SUSPENSION

§ 14.1 Subject to the provisions of Section 14.2 below, the Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007.

§ 14.2 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A201-2007, the amount, if any, to be paid to the Contractor under Section 14.2.4 of AIA Document A201-2007 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed an amount calculated as follows:

- .1 Take the Cost of the Work incurred by the Contractor to the date of termination;
- .2 Add the Contractor's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 5.1.1 or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and
- .3 Subtract the aggregate of previous payments made by the Owner.

§ 14.3 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 14.2.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 14, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders.

§ 14.4 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-2007; in such case, the Guaranteed Maximum Price and Contract Time shall be increased as provided in Section 14.3.2 of AIA Document A201-2007, except that the term "profit" shall be understood to mean the Contractor's Fee as described in Sections 5.1.1 and Section 6.4 of this Agreement.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 Where reference is made in this Agreement to a provision of AIA Document A201-2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 15.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

 %

§ 15.3 The Owner's representative:
(Name, address and other information)

§ 15.4 The Contractor's representative:
(Name, address and other information)

§ 15.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days' written notice to the other party.

§ 15.6 Other provisions:

ARTICLE 16 ENUMERATION OF CONTRACT DOCUMENTS

§ 16.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 16.1.1 The Agreement is this executed AIA Document A102-2007, Standard Form of Agreement Between Owner and Contractor.

§ 16.1.2 The General Conditions are AIA Document A201-2007, General Conditions of the Contract for Construction.

§ 16.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 16.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages

§ 16.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date

§ 16.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 16.

§ 16.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:



- .2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201-2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)



ARTICLE 17 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201-2007.)

Type of insurance or bond

Limit of liability or bond amount (\$0.00)

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

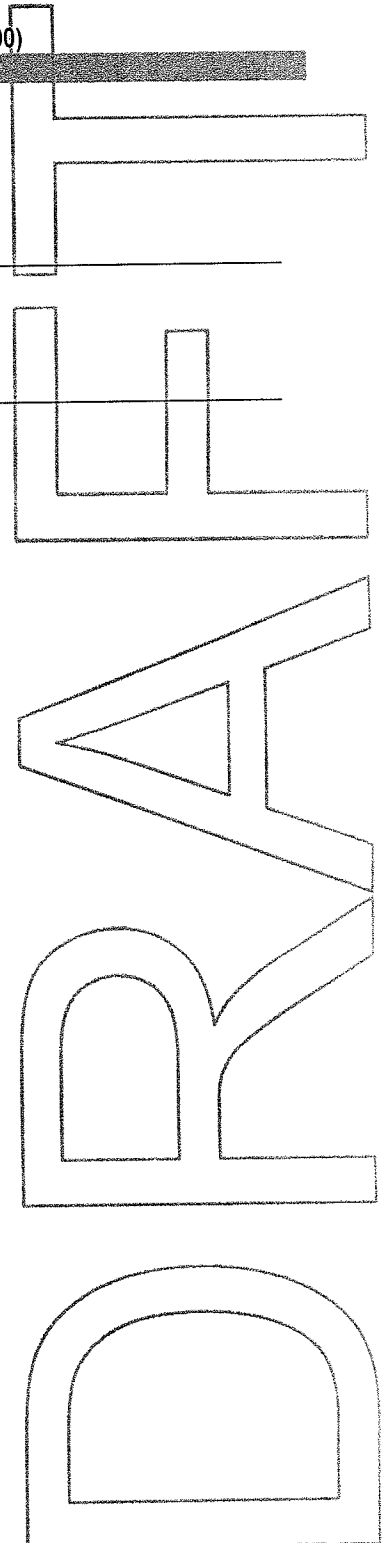
CONTRACTOR (Signature)



(Printed name and title)



(Printed name and title)



DRAFT AIA Document A201™ - 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

« State »

THE OWNER:
(Name, legal status and address)

« State »

THE ARCHITECT:
(Name, legal status and address)

« State »

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- 5 SUBCONTRACTORS
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- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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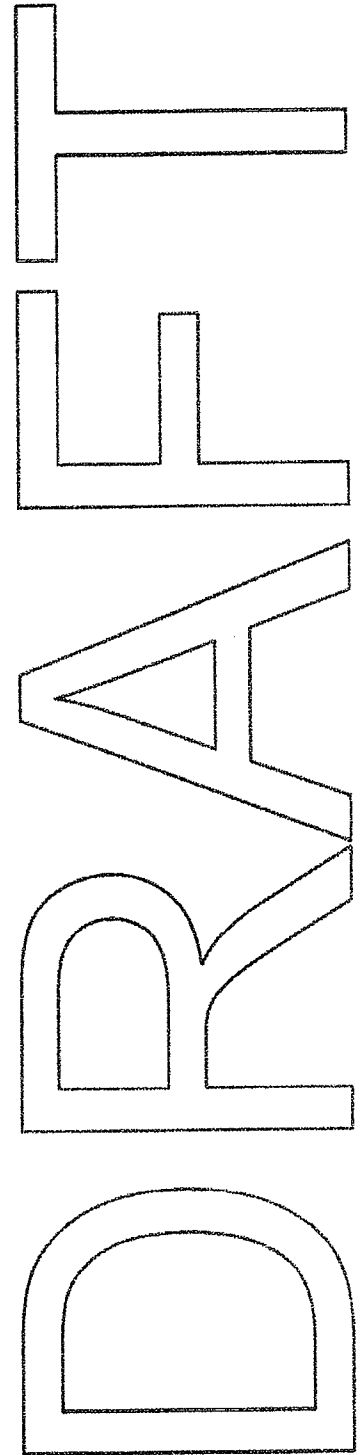
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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by an amendment or other modification executed by Owner. Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

1 The Agreement between the Owner and Contractor or other Contract Documents or information supplied to the Contractor in connection with this Project, including any deficiency, inconsistency or misrepresentation therein, shall not create any cause of action in favor of or against any third party whether such action may be for breach of contract, breach of warranty, negligence, misrepresentation or other tort, or otherwise including claims against the architect and its consultants, and their employees, officers and representatives.

2 Except when Contractor is required to pursue a claim directly against a Subcontractor as directed elsewhere in the contract documents, Contractor agrees that any and all claims, disputes or legal actions filed or pursued by the Contractor in connection with this contract, the contract documents or the project, shall be filed or pursued only against the named Owner of the Project under the claims procedures set forth in this Agreement and that no claims or legal actions will be filed or pursued against the Owner's administrators, officers, directors, their employees, representatives, or its Architect and/or their consultants, or their employees or representatives. Contractor agrees that this paragraph shall survive termination of this agreement. Contractor also agrees that this paragraph shall be binding whether or not it claims prior breach of this contract and that this paragraph shall apply to any and all claims including breach of contract, breach of warranty, negligence, misrepresentation or other tort, or otherwise.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations, including any labor, materials, equipment and services provided by Subcontractor of whatever tier, material and equipment suppliers or any other entity the Contractor has engaged in connection with the Project whether on or off the site. The invalidity of any covenant, restriction, condition, limitation or any other part or provision of the Contract Documents shall not impair or affect in any manner the validity, enforceability or effect of the remainder of the Contract Documents. The Work may constitute the whole or a part of the Project. Sections 1.2.6, 1.2.7 and 1.2.8 are hereby incorporated into this Section 1.1.3 by reference.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 MISCELLANEOUS DEFINITIONS

.1 The term "Product" as used throughout the Contract Documents includes materials, systems and equipment.

.2 The term "indicated" refers to graphic representations, notes or schedules on the Drawings, or other sections or schedules in Specifications and similar requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled" and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

.3 The terms such as "directed", "requested", "authorized", "selected", "approve", "required" and "permitted" mean "directed by the Architect", "requested by the Architect" and similar phrases. However, no implied meaning shall be interpreted to extend the Architect's responsibility into Contractor's area of construction supervision. Responsibility for the means and methods are the Contractors. Sequences, durations, and the like are to be resolved in accordance with Project scheduling requirements.

.4 The term "approved" where used in conjunction with Architect's action on Contractor's submittals, applications and requests is limited to the responsibilities and duties of Architect stated in General Conditions. Such approval shall not release Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.

.5 The term "furnish" means to supply and deliver to the project site ready for unloading, unpacking, assembly, installation and similar operations.

.6 The term "install" describes operations at the Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimensions, finishing, curing, protecting, cleaning and similar operations as required to complete construction and make operational.

.7 The term "provide" furnish and install complete and ready for the intended use. When neither furnish, install nor provide is stated, provide is implied.

.8 The term "similar" means in its general sense, but necessarily identical.

.9 The term "an installer" is an entity engaged by Contractor, either as an employee, or subcontractor, for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

.10 The term "experienced" when used with the term "installer" means having a minimum of five previous projects similar in size and scope to this Project and familiar with the precautions required (including, without limitation, precautions required for working in and around similar projects), and has complied with requirements of the authority having jurisdiction.

.11 The term, "Subcontractor" shall, unless the context otherwise requires, include sub-subcontractors of any tier, suppliers of equipment and materials incorporated into the Work, and any other entity performing Work or providing equipment or materials under direct or indirect agreement, understanding or contract with Contractor.

.12 The term, "Completion Dates" are the dates of Substantial and Final Completion.

.13 The term, "Addendum" is a change to the Contract documents issued by Architect with Owner's approval prior to the execution of the Agreement and specifically listed in the Agreement.

.14 The term, "Final Completion" is the date the Contract has been fully performed, all the Work has been completed and a final Certificate of Payment approved by Owner has been issued by Architect.

.15 The term, "Applicable Laws" are all Federal, State and local laws, statutes, ordinances (including without limitation municipal ordinances and codes), building codes, rules, regulations and orders of public authorities that lawfully apply to the Project.

.16 Where reference to "the Contractor" is made in AIA General Conditions of the Contract for Construction, General Conditions and Instructions to Bidders, it shall mean "each" Contractor, unless specified otherwise. INITIAL DECISION-MAKER

The Initial Decision-Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 All construction Work shown on the Drawings and not expressly specified in the Project Manual and all Work specified and not shown on the Drawings, but obviously necessary to the proper execution of same, shall be performed by a Subcontractor or Construction Manager, as it is not the intent to delineate or describe every detail and feature of the Work. No additional cost to perform Work hereunder will be allowed, unless it can be clearly shown to be beyond the scope and intent of the Drawings and Project Manual and absolutely essential to the proper execution of the Work.

§ 1.2.5 All references to Federal, A.S.T.M. State or Local specifications are those of designated issue or if not designated, the issue current on the date of bid opening shall prevail.

§ 1.2.6 Anything shown on the Drawings and not mentioned in the Specifications or mentioned in the Specifications and not shown on the Drawings shall have the same effect as if shown or mentioned respectively in both. Any Work shown on one Drawing shall be construed to be shown on all Drawings, and Contractor shall coordinate the Work and Drawings to conform to the requirements of the Contract Documents. Clarifications will be made for questions and discrepancies called to the Architect's attention, in writing, within the time period established for questions, requests for information and the like. Clarifications prior to the bid date will be issued as Addenda to the Contract Documents. If such correction or clarification is not made, the Work in question shall be considered to be required as if it has been specified and shown on the drawings.

§ 1.2.7 Where the Work is shown in complete detail on only half or a portion of the Drawings or there is an indication of a continuation, the remainder being shown in outline, the Work drawn out in detail shall be understood to apply to the other like portions of the structure. On all Work of a remodeling nature or installation within the present buildings, it will be the responsibility of Contractor, by personal inspection, to satisfy themselves as to the correctness of any information given which may affect the quantity, size and quality of materials required for a satisfactorily completed Contract, whether or not such information is indicated on the Drawings or within the Specifications.

§ 1.2.8 The General Conditions, Specifications, and Drawings, and other Contract Documents contemplate a finished piece of Work of such character and quality as is described in and is reasonably inferable from them and Contractor, recognizing the impossibility of producing drawings and specifications with perfect accuracy, agrees that his submitted price for the Work herein under includes sufficient money allowance to make his Work complete and operable, fitting with the Work of other contractors (if any) and the Owner and in compliance with good practice and the ordinances, codes, and regulations of all bodies or persons having governmental authority over it. Contractor agrees that inadvertent discrepancies or the failure to repeat on any drawing the figures or notes given on another shall not support or justify additional charges or claims.

§ 1.2.9 Contractor represents that it is qualified to manage the construction of the Project as depicted in the Contract Documents and to determine its own means, methods, techniques, sequences and procedures. To the extent that means, methods, techniques, sequences and procedures are identified in the Contract Documents, Contractor is required to independently evaluate those means, methods, techniques, sequences and procedures for the purpose of determining whether the means, methods, techniques, sequences and procedures depicted in the Contract Documents are adequate to construct the Project. Contractor further represents that it has based its bid upon its own determination of the means, methods, techniques, sequences and procedures required to construct the Project.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. To the extent that the Contractor makes a representation in the conditions of the Contract, any such representation is a contractual obligation required to be performed and is a representation to the Owner and Architect upon which each of them are entitled to rely.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the

Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. Nothing in this section shall obligate the Owner to carry out the Work for the benefit of the Contractor. The Owner reserves the right, but has no obligation, to bid, reassign, or otherwise secure all or part of the Work that was awarded to Contractor, utilizing the provisions of the Contract Documents governing changes. Only if Owner makes a reassignment of all of the Work shall the reassignment itself constitute a termination of Contractor's Contract. At the same time, actions which form that basis for Owner's reassignment of all or part of the Work without termination of the Contractor may also form the basis for Termination under Article 14. The Owner may reassign Work performed by another Contractor, may bid the reassigned Work publicly, or may otherwise contract with a new contractor to perform the reassigned Work. Nothing herein releases Contractor from its obligations to Owner to pay damages for Contractor's breach of the provisions of the Contract Documents.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of each Subcontract by Contractor and Subcontractor is a representation by both that all Contract Documents are, as to the Work being performed under that Subcontract, full and complete, are sufficient to have enabled Contractor to determine the adequacy of accepted Subcontractors' bids and other Cost of the Work to enter into the Subcontract and construct the Work outlined therein, and otherwise to fulfill its obligations hereunder, including, but not limited to, Contractor's obligations to construct the Work on or before the date of Substantial Completion established in the Contract Documents. Contractor further acknowledges and declares that it has visited and examined the site, examined all physical and other conditions affecting the Work and is fully familiar with all of the conditions thereon and thereunder affecting the same. Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been

avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.5 Contractor shall satisfy itself as to the accuracy of all grades elevations, dimensions and locations. In all cases of interconnection of its Work with existing or other work, it must verify at the site all dimensions relating to such existing or other work. Any errors due to Contractor's failure to so verify all such grades, elevations, locations or dimensions must be promptly rectified by Contractor without any additional cost to Owner.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 By making requests for substitutions based on Subsection 3.4.2 above, the Contractor (a) represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified; (b) represents that the Contractor will provide the same warranty for the substitute that the Contractor would for that specified; (c) certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claim for additional costs related to the substitution which subsequently become apparent; (d) will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects; and (e) will reimburse the Owner for the costs incurred for any redesign by the Architect made necessary by the proposed substitution.

§ 3.4.5 The Contractor shall assure that his employees comply with the following:

- 1 The Contractor is solely responsible for the safety of Project workers and to assure compliance with OSHA rules and regulations as stated in the Project specifications.
- 2 Construction security means that the Contractor shall be responsible to protect and secure his own tools, equipment and materials. He is also responsible to protect the Owner's property and facilities which he occupies or uses.
- 3 Workers shall not possess or consume drugs, alcoholic beverages, and/or other controlled substances when on site.

The Owner shall have the right to have the Contractor remove from the site all workers in violation of the above stated standards of conduct.

§ 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials, workmanship and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents, in a first-class and workmanlike manner used by similarly experienced contractors in the performance of work of comparable value and character as this Project, and shall not be Defective. For purposes of this Contract, "Defective" means Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference, standard, test or approval referred to in the Contract Documents, or has been damaged prior to the making of the Final Payment. ~~will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit.~~ Work, materials, or equipment not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

~~§ 3.5.2 All materials and workmanship shall be guaranteed for a minimum of one year from date of final Payment for the entire Project, except where a longer period is specified (specifically, but not exclusively, two years for all structural work and the length of time of any applicable special warranty required by the Contract Documents). Contractor shall correct the Work at its cost, promptly after written notice from Owner to do so. This obligation shall survive both the Final Payment and termination of this Agreement. Owner's rights and remedies hereunder shall be in addition to any other rights and remedies which Owner may have pursuant to law or this contract. Owner shall be entitled to all other rights and remedies provided by this contract and by law, in addition to the warranty rights and remedies set forth in this Section 3.5.~~

§ 3.5.3 ALL WARRANTIES SHALL INCLUDE LABOR AND MATERIALS AND SHALL BE SIGNED BY THE MANUFACTURER OR SUBCONTRACTOR AS MAY BE APPROPRIATE AND SHALL BE COUNTERSIGNED BY CONTRACTOR. ALL WARRANTIES SHALL BE ADDRESSED TO OWNER AND CONTRACTOR AND DELIVERED TO ARCHITECT UPON COMPLETION OF THE WORK AND BEFORE OR WITH THE SUBMISSION OF REQUEST FOR ALL FINAL PAYMENT.

§ 3.5.4 Contractor shall issue in writing to Owner as a condition precedent to Final Payment a "General Warranty" reflecting the terms and conditions of this Section 3.5 for all Work under the Contract.

§ 3.5.5 Warranties shall become effective on a date established by Owner in accordance with the Contract Documents. This date shall be the Date of Substantial Completion of the entire Work, unless otherwise provided in any Certificate of Partial Substantial Completion approved by Owner and Architect.

§ 3.5.6 Contractor shall warrant for a period of twelve (12) months that the Work shall be watertight and leak-proof at every point and in every area, except where leaks can be attributed to damage to the Work by external forces beyond Contractor's control. Contractor shall, immediately upon notification by Owner of water penetration, determine the source of water penetration and, at its own expense, do any work necessary to make the building(s) watertight. Contractor shall also, at its own expense, repair or replace any other damaged material, finishes and

furnishings, damaged as a result of this water penetration, and return the Work to its original condition.

§ 3.5.7 In addition to the foregoing stipulations, Contractor shall comply with all other warranties referred to in any portions of the Contract Documents or otherwise provided by law or in equity, and where warranties overlap, the more stringent requirement shall govern.

§ 3.5.8 If for any reason Contractor cannot warrant any part of the Work using material or construction methods which have been specified or shown, it shall notify Owner and Architect in writing, giving reasons, together with the name of product and data on a substitution it can warrant.

§ 3.5.9 Contractor shall promptly correct or cause to be promptly corrected by the applicable Subcontractor Defective Work that has been rejected by Contractor, Architect or Owner, whether observed before or after the Final Payment has been made, and whether or not such Defective Work has been fabricated, installed, or completed. The cost of correcting Defective Work shall not be a cost of the Work and Contractor shall bear all of the costs of correcting such Defective Work, including the cost of additional testing and inspections. If Contractor fails to correct Defective Work, Owner may have such Work corrected, in which case, Contractor shall pay Owner any costs incurred by Owner in connection therewith.

§ 3.5.10 Contractor shall promptly pay any amounts owed to Owner on account of Defective Work or the cost of correcting Defective Work. If Final Payment has not been made, Owner may deduct such amounts from any amounts owing to Contractor under any Application for Payment or the Final Payment.

§ 3.5.11 Notwithstanding anything contained in this Subparagraph 3.5, the applicable period of time relating to Contractor's obligation to correct Defective Work shall not be deemed to expire unless such Defective Work is visible or would be visible if Owner had conducted a reasonable investigation before or during such applicable period.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the

reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review

submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but

shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 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 Section 3.18.1 shall not be limited by a limitation on 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.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld. The parties hereby agree that, during the construction phase of the Project, the Owner will independently make decisions and take those actions otherwise required of the Architect, provided that the Owner may seek the Architect's recommendation, turn such responsibilities over to the Architect, and/or request the Architect seek to provide initial dispute resolution between the Owner and the Contractor. Copies of all correspondence and any documents required to be delivered to the Architect by the Contractor under the Contract Documents shall be provided to the Owner when such items are sent.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or

procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other, through the Architect if so requested in writing by the Owner, about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect and the Owner has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect or the Owner considers it necessary or advisable, the Architect and the Owner will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

§ 5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by

terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.2 Contractor must include all provisions of the Contract Documents in its Subcontractor agreements binding its Subcontractors to the same extent the Contractor is bound herein. In addition, Contractor must specifically insert (and not just incorporate) provisions requiring the Contractor's subcontractors to indemnify, hold harmless and defend the Owner, Architect, and their consultants, administrators, officers and employees (including waiver of worker's compensation statutory protection) to the same extent the Contractor is bound by the Contract. The Contractor shall also provide for the inclusion of all material requirements of the Contract Documents in the agreements with the Subcontractors.

§ 5.3.3 Except as may be otherwise provided in these General Conditions, as modified, Subcontractors may make claims only against the Contractor with whom the Subcontractors have entered into an agreement to perform work.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

§ 5.5 PAYMENT TO SUBCONTRACTORS

§ 5.5.1 Contractor shall pay each Subcontractor, upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to Contractor on account of such Subcontractor's Work. Contractor shall also require each Subcontractor to make similar payments to its suppliers and sub-subcontractors.

§ 5.5.2 The Owner shall have no obligation to pay or to see to the payment of any monies to any Subcontractor. Contractor shall promptly advise the Owner of any claim or demand by a Subcontractor asserting that any amount is due to such Subcontractor or claiming any default by Contractor in any of its obligations to such Subcontractor.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to order materials directly from its own vendors and materialmen and to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15. As a condition precedent to any such claim, and to facilitate the timely performance and installation of the Work, the Contractor will provide at least thirty (30) days' advance written notice to the Owner of the proposed early and late start dates of each subcontractor prior to that subcontractor commencing its portion of the Work.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 ~~Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.~~

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 Contractor agrees to indemnify and hold the Owner and Architect harmless from any claims or damages brought by a Subcontractor arising out of actions or omissions of Contractor and any Subcontractors in performing their Work under the Contract Documents. The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- 1 The change in the Work;
- 2 The amount of the adjustment, if any, in the Contract Sum; and
- 3 The extent of the adjustment, if any, in the Contract Time; and
- 4 No work shall be performed until Change Orders have been issued and signed as per Change Order requirements, except in case of emergency as described in Article 10 or as otherwise approved by Owner in writing. In case of emergency, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss.

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.2.1. The Contractor represents that any Change Order agreed between the Owner and Contractor on this project will include all costs associated with the additional work described in the Change Order, including all costs of associated delay, acceleration, inefficiency and overhead, as well as costs of material, labor and supervision. To the extent that any request for Change Order or correspondence prior to the signed Change Order is contrary to this paragraph, such requests or correspondence shall have no effect. Any use of the construction contingency or savings must be expressly reflected on the Change Order form itself at the time that the Change Order is signed by the parties.

- 1 The Contractor represents that it has the skills, expertise and cost accounting programs and/or tools necessary to maintain a record of all costs associated with any change in the work and that it will maintain a complete record of all costs associated with a change at the time such costs are incurred. The Contractor will create a cost item in its cost recording system for each change for which it intends to request a Change Order. At the time the Contractor requests a Change Order, it will identify the cost reporting reference number and will provide all supporting documentation maintained by the Contractor for such costs, including certified payroll, invoices, record of equipment costs and costs for overhead, supervision and tools. The Contractor will update its cost system as necessary to capture all costs associated with a change in the work and will regularly update the Owner as costs are incurred for which it desires to be paid. Once a Change Order is issued for a change in the work, the Contractor shall not be entitled to any other costs or damages, including but not limited to any costs for inefficiencies, delays or other costs, that result from the change in the work. The Contractor will provide the information required of this provision in strict accordance with the Change Order provisions of this contract and acknowledges that the Owner has a right to rely on the Contractor's strict compliance, including compliance with time requirements such that the Owner has an opportunity to minimize the costs associated with the change request by timely submission of the information required under this Section. The intent and requirement of this paragraph is for the Contractor to provide all facts, analysis and evidence of this claim as early as is practicable so that the Owner has the opportunity to minimize damages and fully evaluate the Contractor's claim without

incurring litigation costs. The Contractor shall not reserve rights to damages or present claims for damages or evidence of damages at any subsequent proceeding that were not presented to support its Change Order request and Notice of Claim documentation. It is material to this contract that the Owner be given an opportunity to review the totality of the evidence the Contractor intends to present in connection with any Change Order request at the time the Change Order request is being considered.

- .2 Payment of a Change Order shall constitute accord and satisfaction of all claims in connection with the change or changes to the Contract addressed by the Change Order, and it is understood and agreed that a signed Change Order form shall be the complete and fully integrated agreement for all related costs and that there are no oral or written understandings, representations or agreements, directly or indirectly, connected with the Change Order that are not affirmatively stated on the signed Change Order form. The Contractor's execution of a Change Order constitutes a representation that it will make no further claims for damages inconsistent with this paragraph.
- .3 Any change to the Contract amount as a result of a Change Order shall be based upon the Control Estimate as submitted by the Contractor.
- .4 For any Change Order work not itemized on the Control Estimate, the change to the Contract amount shall be an agreed upon amount by the Owner and the Contractor based upon a Subcontractor's cost breakdown of labor and/or materials plus ten percent for overhead and five percent for profit.
- .5 The Construction Manager shall be entitled to an equitable adjustment in the Contract Time as a result of Change Orders approved and executed by the Owner. The Contract Sum may be adjusted only for Owner-directed Change Orders.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8. Final Completion shall be when the Contract is fully performed, including all Punch List items.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial-Final Completion within the Contract Time.

§ 8.2.4 If low temperatures make it impossible to continue operations safely by use of cold weather precautions, the Contractor shall cease work and notify the Architect and Owner by letter. When work is resumed the Contractor shall notify the Owner by letter. Such stoppage shall not constitute an extension of the completion date.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine. No Change Order extending the Contract Time, inclusive of Completion Dates, on any of the grounds of labor disputes, fire, unavoidable casualties or other causes beyond Contractor's control, shall result in any increased payments to the Contractor for extended overhead, delay damages, "impact" damages, loss of efficiency, loss of productivity or any other similar form of loss, damage or compensation.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 To the extent that Contractor may be entitled to damages for delay, interference, inefficiency or lost productivity, such damages shall be submitted in the Contractor's request for Change Order and Notice of Claim to be included in an appropriately executed Change Order. The legitimate right to such (including the truth of the facts asserted as the basis for the claim) and the accuracy of the amount of such costs or damages shall be verified by affidavit and submitted with appropriate backup information to support any such amount. Contractor acknowledges that it is not entitled to damages for delay, interference, acceleration or inefficiency in any amount other than the amount of any agreed Change Order. To the extent that a Change Order cannot be agreed to, Contractor shall submit a claim in accordance with the provisions of Article 15. For any such claim that is submitted or pursued, Contractor acknowledges that it is not entitled to any amount greater than the verified amount submitted in its request for a Change Order. The Contractor's recoveries of damages for delay under provisions of the Contract Documents are limited as follows:

- .1 The amount of any damages received by the Contractor shall be limited by the amounts used by the Contractor in the preparation of his bid and by the amounts set forth in the Schedule of Values submitted in accordance with section 9.2 of these General Conditions, whichever is the lesser.
- .2 Notwithstanding any other provision of the Contract to the contrary, in no event shall the Owner be liable for any special, incidental, indirect, consequential, or delay damages. The limitation of liability contained herein shall be effective without regard to the Owner's performance or failure or delay of performance under any other term or condition of this Contract.

§ 8.3.4 DAMAGE CLAIMS FOR DELAYS CAUSED BY CONTRACTORS, SUBCONTRACTORS AND SUPPLIERS OR AN EMPLOYEE OF ANY OF THEM

- .1 The Owner is not responsible for delays caused to the Contractor by any other contractor or Subcontractor. The Owner is not responsible for problems caused by the failure of Contractor to coordinate the Work performed by the Subcontractors. The Owner is not liable for any damages

suffered by a Contractor arising from any Contractor's delays and/or failure to coordinate its work. Contractor hereby waives and releases the Owner from any liability and damages caused by lack of coordination by a Contractor, or between or among the Subcontractors, including their subcontractors and suppliers.

.2 The Owner and its representatives shall not be liable to Contractor for any increased costs or damages for Defective work, interference, or delays resulting from any conflict between or among contractors, if more than one, their subcontractors and suppliers. The Owner shall not be a party to disputes or actions between or among contractors or their subcontractors and suppliers concerning such additional expense or damage.

.3 It is agreed by all parties that disputes or actions between Contractor concerning any additional expense or damage herein before mentioned shall not delay completion of the Work, which shall be continued by the parties pending final resolution of a claim including judicial proceedings.

.4 The Contractor hereby waives privity of contract defenses.

.5 It is agreed by the parties to this Contract (the Owner as promisee and the Contractor as promisor) that the intent of this Section 8.3.4 is to benefit the other and is the mutual intent of the Owner and the Contractor that this Section 8.3.4 raises the Contractor and any other contractors to the status of third party beneficiaries only as to the terms and conditions of Section 8.3.4. The Contractor agrees that Section 8.3.4 is provided as a benefit to the Contractor and his Subcontractors and that the Contractor specifically excludes, releases, foregoes and waives any claims against the Owner or the Architect for extended overhead, delay damages, "impact" damages, loss of efficiency, loss of productivity acceleration, or any other similar form of loss, damage or compensation, or other damages related to any delays whatsoever or from any amendment to the Project Schedule.

.6 Liquidated damages are necessary, in that it is impossible to precisely calculate the monetary loss to the Owner as the result of any delay in implementation of the date of Substantial Completion.

.1 Should the Contractor fail to complete achieve Substantial Completion on or before that date set forth in Exhibit A to AIA Document A133-2009, the Contractor shall be liable to the Owner for the sum of One Thousand Dollars (\$1,000) for each day of delay for which the Contractor is responsible, assessable as liquidated damages and not as a penalty the Owner may deduct.

.2 Should the Contractor fail to provide the close out documents after ninety (90) calendar days from the date of Substantial Completion of the Project, the Contractor shall be liable for the sum of Five Hundred Dollars (\$500) daily, assessable as liquidated damages and not as a penalty the Owner may deduct. This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by

such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Any allowances included in the Application for Payment shall be separately itemized with supporting data attached. The Application for Payment shall include an updated Project Schedule and shall be accompanied by a certification by an officer of Contractor to the effect that, to the extent permissible under Pennsylvania law:

- .1 There are no mechanics', materialmen's or laborers' liens or claims or any other liens or claims, legal or equitable, contractual, statutory, or constitutional, outstanding or known to exist at the date of this Application;
- .2 All due and payable bills with respect to the Work have been paid to date or are included in the amount requested in the current Application and there is no known basis for the filing of any mechanic's, materialmen's or laborer's lien or claim or any other lien or claim, legal or equitable, contractual, statutory, or constitutional, on the Work; and
- .3 Waivers and releases from all Subcontractors, laborers, and materialmen for Work done and materials furnished have been obtained in such form as to constitute an effective waiver and release of all such liens and claims under the laws of Pennsylvania, and shall be delivered to Architect together with Contractor's waiver and release of liens and claims at the time of submission of the Application for Payment.

§ 9.3.1.4 Estimates for payment documents will require breakdown of the total work completed to date of submission.

§ 9.3.1.5 The Owner shall make final inspection within 10 business days after receipt of the Contractor's written request for final inspection and Application for Final Payment. If the work is substantially completed, the Architect shall issue a Certificate of Completion and a final Certificate for Payment and the Owner shall make payment in full within 45 days thereafter, less one and one-half times the amount required to complete any then remaining, uncompleted, punch list items, which amount shall be certified by the Architect and upon receipt by the Owner of any guarantee bonds which may be required, in accord with the Contract Documents, to insure proper workmanship for a designated period of time. The certificate given by the Architect shall list each uncompleted item and a reasonable cost of completion. Final payment of any amount withheld for the completion of the minor items shall be paid upon completion of the items with submission of his final application for payment. Any amounts withheld under this Section are in addition to any amounts withheld under other provisions of the Contract Documents.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims,

security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 unsatisfactory Prosecution of the Work in accordance with the Contract Documents; or repeated failure to carry out the Work in accordance with the Contract Documents.
- .8 failure to comply with government statutes, regulations and laws.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

The Owner's obligation to make any of the payments required under any of the provisions of this Contract shall be subject to off-set against any claims the Owner may have against the Contractor under or in connection with this Contract or any other contract. If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Final Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed

to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no-fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 Following Substantial Completion, in the event the Contractor or its subcontractor fails to complete the list of items of the Work instructed by the Architect to be corrected or completed within 30 days (or such additional time as may be reasonable required and explained to the Owner by the Contractor or its subcontractors in writing) after the date of Substantial Completion, the Owner may (a) exercise any available remedies to correct or complete such Work or retain a third party to correct or complete such Work at the cost of the defaulting Contractor, and (b) retain and deduct from any payments or retention otherwise due to the defaulting Contractor any fees and expenses for services required to be provided by the Architect more than 30 days after the specified Completion Date. The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 — liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 — failure of the Work to comply with the requirements of the Contract Documents; or
- .3 — terms of special warranties required by the Contract Documents.

§ 9.10.5 When the Architect finds that the Work is acceptable under the Contract Documents, the Architect shall request the Contractor to make closeout Submittals:

- .1 Evidence of compliance with requirements of governing authorities.
- .2 Bound and indexed Operation and Maintenance Manuals, including all extended Warranties issued by Contractors and/or manufacturers.
- .3 Record Drawings incorporating As-Built Revisions to drawings and/or specifications, including change orders.
- .4 Contractor's Affidavit of Payment of Debts and Claims, A.I.A. Document G706.
- .5 Contractor's Affidavit of Release of Liens, A.I.A. Document G706A.
- .6 Application and Certification for Final Payment, A.I.A. Documents G702 and G703. Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 9.10.6 Final payment shall be based upon full completion of the Project. The final payment shall not be due and payable until the Contractor's satisfactory completion of the requirements listed pursuant to Section 9.10.5. Final payment to the Contractor shall not relieve any Surety of its obligation to the Owner.

§ 9.10.7 Where one or more claims against the Contractor, which are in controversy appear unsatisfied, the Owner

may direct final payment to be made, or a partial payment to be made from the monies due, should it be determined that the withholding of the entire final payment would work a hardship on the Contractor or delay the final payments required under this paragraph. The Contractor shall itemize the claims which remain unsatisfied, giving the reason therefore, and the statements of the surety companies (if any) shall provide that the final payment, or partial payment, as the case may be, shall not relieve any surety of any obligations to the Owner. If only partial payment is permitted under this paragraph, the final payment shall not be made until the Contractor shall have furnished satisfactory evidence and a statement from the surety that all claims against the Contractor have been paid and that payment to the Contractor of the Contract balance shall not relieve the surety of any of its obligations to the Owner.

§ 9.10.8 The acceptance by the Contractor of the final payment shall be and shall operate as a release to the Owner from all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, shall operate to release the Contractor from any obligations under this Contract.

§ 9.10.9 If more than one inspection of Substantial Completion or Final Completion is required, the Contractor will be billed for the Owner's costs incurred including reasonable professional fees and costs for the services of the Architect and Owner's Representative and consultants. Following Substantial Completion, in the event Contractor or any Subcontractor fails to complete the list of items of the Work instructed by the Owner's representative to be corrected or completed within 60 days after the date of substantial completion, the Owner may: (a) exercise any available remedies to correct or complete deficient Work or retain a third party to correct or complete such Work at the cost of the defaulting Contractor; and (b) retain and deduct from any payment or retention otherwise due to the defaulting Contractor any fees or expenses for services required to be provided by the Owner's representative and the Owner more than 60 days after the date of Substantial Completion.

9.11 Mechanic's Liens

9.11.1 Notwithstanding anything to the contrary in these General Condition, the Contractor does hereby waive and relinquish all rights for itself and of all of its Subcontractors, and all subcontractors and suppliers in direct privity of contract with each Subcontractor (hereinafter "Sub-subcontractor/ Supplier"), to file a mechanics' or materialmen's lien, or notice of intention to file any lien, and does hereby covenant, promise and agree that no mechanics' lien or other lien of any kind whatsoever shall be filed or maintained against the real property of which the Project is a part, the improvements located thereon or the Owner's interest therein, or against any other improvements or appurtenances thereto now or hereafter located on the Project site, by or in the name of Subcontractor or Sub-subcontractor/Supplier or others acting or claiming through or under the Contractor for work done or materials furnished in connection with or under this Agreement or by any other party acting through or under them or any of them for and about the Project.

9.11.2 This agreement by Contractor waiving the right of lien of its Subcontractors and Sub-subcontractors/Suppliers shall be an independent covenant and shall operate and be effective as well with respect to work done and materials furnished under any supplemental contract for extra work in the erection, construction and completion of the Project to the same extent as any work and labor done and materials furnished in connection with the Project or under this Agreement.

9.11.3 This undertaking respecting a waiver of liens shall be further implemented by the execution and delivery by the Contractor to the Owner of a general Waiver of Liens executed by Contractor, in a form acceptable to the Owner, with regard to its Subcontractors and Sub-subcontractors/Suppliers, which shall be filed on record and indexed in the Office of the Prothonotary of the Court of Common Pleas of Philadelphia County prior to the commencement of any work by the Contractor or any of its Subcontractors and Sub-subcontractors/Suppliers hereunder.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.1.2 The Contractor shall comply with the Federal Occupational Safety & Health Act (OSHA) of 1970, as amended, and perform associated recording and reporting requirements.

§ 10.1.3 The Contractor shall not install any known product or materials, as currently defined by current State and Federal regulations, in the execution of the Contract which might have a harmful, hazardous or toxic affect upon tradespersons working on the Project, or upon any other occupants or future occupants of the building, regardless of materials approved for use or specified.

§ 10.1.4 Any hazardous materials brought to the workplace for use during the construction of the project shall be identified by Material Safety Data Sheets. Full responsibility and liability for storage and use of such hazardous materials shall be with the Contractor bringing such materials onto the project site.

§ 10.1.5 The Contractor shall submit certified letters to the Owner that there is no asbestos, lead or toxic substance in any materials installed on the Project.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.1.8.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located and maintaining an A.M. Best rating of A- or greater such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally

liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Subparagraph 11.1.1 shall be written for not less than the limits of liability shown on Exhibit B to the Agreement, specified in Subparagraph 11.1.2.1, or as required by law, whichever limit is greater. Coverages shall be maintained without interruption from the date of the commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment.

.1 the insurance required by Subparagraph 11.1.1, shall be written for not less than the following limits unless the limit provided herein is less than that required by applicable law, in which case the greater limit shall apply. All limits under the General Liability coverage shall apply on a per project basis:

Workers' Compensation:
(a) State: statutory requirement
(b) Federal: statutory

Commercial Contractors' General Liability:
(a) Bodily Injury and Property Damage:
\$1,000,000 per occurrence
\$2,000,000 aggregate (or under an umbrella policy)
(b) Products Completed Operations:
\$2,000,000 aggregate
(c) Contractually Assumed Liability for Bodily Injury and Property Damage:
\$2,000,000 per occurrence
\$4,000,000 aggregate

Liability coverage shall be written under an occurrence policy with all limits applying on a project basis:

(d) Personal Injury:
\$2,000,000 aggregate

Automobile Liability:
(a) Bodily Injury:
\$2,000,000 per person
\$2,000,000 per accident
(b) Property Damage:
\$2,000,000 per accident

.2 The Owner and the persons and entities identified on Exhibit B shall be named as additional insureds under the policies of insurance required under Subparagraphs 11.1.1.

.3 The Contractor shall purchase an Excess Liability policy of insurance providing no less than a five million dollar (\$5,000,000) limit of liability. The insurance required by Section 11.1.1 shall be written for not less

than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner and those persons and entities listed on Exhibit B- [ANYONE ELSE?] the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Optionally, the Owner may require the Contractor to purchase and maintain Owner's and Contractor's Protective Liability Insurance for protection against claims that may arise from operations under the Contract. Any such requirement shall be set forth in the Contract Documents, including any Addendum to the Bidding Documents issued by the Owner. The Contractor shall not be responsible for purchasing and maintaining this optional Owner's liability insurance unless specifically required by the Contract Documents.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain property insurance, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, ~~property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles.~~ Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 The Contractor shall be responsible for paying all costs not covered because of any deductibles required by the insurer or insurers underwriting the insurance required by Subparagraph 11.3.1 and incurred as a result of the Contractor's negligence or breach of contract. If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect

of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 The insurance required by this Paragraph 11.3 is not intended to cover machinery, tools or equipment owned or rented by the Contractor which are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment which shall be subject to the provisions of Subparagraph 11.3.6. If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site after written approval of Owner of the value of such off-site portions, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7-6 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8-7 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9-8 The Owner shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power. Any such objection is subject to the disputes clauses of these General and Supplementary Conditions. If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10-9 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate

Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

§ 13.3.1 Subject to the provisions of the Agreement, and unless the context clearly requires otherwise, all notifications and notice of whatever kind, must be written, notwithstanding the absence of explicit direction that notice be given in writing. Notice may be given by personal delivery to the person or entity for which it is intended, by certified or registered United States mail, or by internet email with a written confirmation placed in the regular mail following the email. Notice shall only be effective when received or refused.

§ 13.3.2 Should the Contractor suffer injury or damage to person or property because of an act or omission of the Owner or of any of the Owner's employees or agents for whose act the Owner is allegedly liable, the claim shall be made in writing to the Owner within ten (10) days after the first observance of such injury or damage, otherwise such claim shall be waived. This clause shall not allow claims for injury or damages which are otherwise precluded by these Contract Documents. Owner shall not be responsible for actions or inactions of others. Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.4.3 In the event Contractor shall breach any obligation imposed by the Contract Documents, in addition to all other damages, losses, costs and relief, whether in law or equity, which Owner may recover, Owner also shall be entitled to an award for any reasonable attorneys' fees incurred in attempting to enforce or recover upon the Contract Documents by reason of the Contractor's breach.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of

when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract

with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- 1 shall institute proceedings or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Code or any similar or applicable federal or state law; or if a petition under any federal or state bankruptcy or insolvency law is filed against Contractor and such petition is not dismissed within sixty (60) days from the date of said filing; or if Contractor admits in writing its inability to pay its debts generally as they become due, or if it makes a general assignment for the benefit of its creditors, or if a receiver, liquidator, trustee or assignee is appointed on account of its bankruptcy or insolvency; or if a receiver of all or any substantial portion of Contractor's properties is appointed; or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- 2 abandons the Work; or if the Contractor fails to prosecute promptly and diligently the Work or to supply enough properly skilled workmen or proper materials for the Work; or fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- 3 submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified; or repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- 4 fails to make prompt payment to Subcontractors or for materials or labor or otherwise breaches their obligations under any subcontract with a Subcontractor; or if a mechanic's or materialman's lien or notice of lien is filed against any party of the Work or the site of the Project and not promptly bonded or insured over by Contractor in a manner satisfactory to the Owner; or
- 5 disregards any laws, statutes, ordinances, rules, regulations or orders of any governmental body or public or quasi-public authority having jurisdiction of the Work or the site of the Project; or
- 6 fails to demonstrate good-faith and compliance with the Contract Documents and commitments made in relation to any agreement entered into by the Owner; or
- 7 fails repeatedly to submit written requests for final construction decisions in connection with, or asserts claims against Owner for matters related to, delay, disruption or interference in the Contractor's Work; or
- 8 fails to submit information required in connection with Contractor's scheduling obligations; or
- 9 otherwise violates and is in material breach of any provision of the Contract Documents; then

the Owner, upon the occurrence of any of the events described above, may, after giving Contractor and the Surety under any Performance and Payment Bonds required seven (7) days' written notice, terminate the employment of Contractor and, in accordance with the Uniform Commercial Code, may enforce a Security Agreement by taking possession of and using all or any part of Contractor's materials, equipment, supplies and other property of every kind used by Contractor in the performance of the Work in the completion of the Work. If requested by Owner, Contractor shall remove any part or all of its equipment, machinery and supplies from the site of the Project within seven (7) days from the date of such request, and in the event of Contractor's failure to do so, the Owner shall have the right to remove or store such equipment, machinery and supplies at Contractor's expense. In case of such termination, Contractor shall not be entitled to receive any further payment for Work performed until the Work is fully performed. Owner may recover Owner's damages for breach of contract by setting off Owner's damages and the cost of finishing the Work against any payments otherwise due Contractor. The Owner's right to terminate the Owner-Contractor Agreement and recover damages pursuant to this Subsection 14.2.1 shall be in addition to and not in limitation of any rights or remedies available to Owner at law or in equity or existing pursuant to the Contract Documents, otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 If the unpaid balance of the Contract Sum exceeds all damages and costs incurred by the Owner related to Contractor's breach and to completion of the Work, then Contractor shall be paid for all Work performed by Contractor to the date of termination. If such costs to the Owner related to Contractor's breach and to completion of the Work exceed such unpaid balance, Contractor shall pay the difference to the Owner immediately upon Owner's demand. The damages and costs related to Contractor's breach and to completion of the Work shall include (but not

be limited to) the cost of any additional services by the Owner's representative, attorneys and other service providers, internal managerial and administrative services, any costs incurred in retaining another contractor or other subcontractors, any additional interest or fees which the Owner must pay by reason of a delay in completion of the Work, attorneys' fees and expense, and any other damage, costs and expenses the Owner may incur by reason of completing the Work and any delay thereof. The amount, if any, to be paid to Contractor shall be determined by the Owner in consultation with the Architect, upon application in the manner provided in Section 9.4, and this obligation for payment shall survive the termination of the Contract. When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 If the unpaid balance of the Contract Sum exceeds all damages and costs incurred by the Owner related to Contractor's breach and to completion of the Work, then Contractor shall be paid for all Work performed by Contractor to the date of termination. If such costs to the Owner related to Contractor's breach and to completion of the Work exceed such unpaid balance, Contractor shall pay the difference to the Owner immediately upon Owner's demand. The damages and costs related to Contractor's breach and to completion of the Work shall include (but not be limited to) the cost of any additional services by the Architect, Owner's Representative, attorneys and other service providers, internal managerial and administrative services, any costs incurred in retaining another contractor or other subcontractors, any additional interest or fees which the Owner must pay by reason of a delay in completion of the Work, attorneys' fees and expense, and any other damage, costs and expenses the Owner may incur by reason of completing the Work and any delay thereof. The amount, if any, to be paid to Contractor shall be determined by the Owner in consultation with the Architect, upon application in the manner provided in Section 9.4, and this obligation for payment shall survive the termination of the Contract. When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Section 14.2. If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 Upon a determination by a court of competent jurisdiction that termination of Contractor pursuant to Subsection 14.2.1 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Subsection 14.2.3 and Contractor's remedy for wrongful termination shall be limited to the recovery of the payments permitted for termination for convenience as set forth in Subsection 14.2.3.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS OF THE CONTRACTOR – GENERAL PROVISIONS

§ 15.1.1 The Contractor must give proper notice to the Owner and the Architect in accordance with the provisions of these General Conditions to initiate a Claim. The Contractor shall (90) days after the occurrence of the first event giving rise to such Claim or within ninety (90) days after Contractor first recognizes the condition giving rise to the Claim, whichever is earlier, to formally initiate and substantiate its claim. To initiate a claim, the Contractor must submit a Statement of the Claim within this ninety (90) day period, which shall constitute a contractual limitations period. Notwithstanding any other provision of the Contract Documents to the contrary, Contractor may not unilaterally defer compliance with this provision, by asserting that the Contractor may "reserve its rights" or by making a similar assertion. **DEFINITION**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 A Claim is a demand or assertion by the Contractor against the Owner seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question arising out of or relating to the Contract. Claims must satisfy both the requirements related to notice in Section 15.1 and the requirements that constitute a contractual limitations period. To satisfy the requirements of these Contract Documents regarding the contractual limitations period, Contractor must file on a timely basis a Statement of Claim. A Claim must include proposed Change Orders that are rejected by the Owner, and all rejected Change Orders shall be processed in accordance with the procedures set forth in this Section 15.1. The responsibility to substantiate Claims rests with the Contractor. **NOTICE OF CLAIMS**

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 The intention of these Contract Documents and this Section 15.1 is to assure the Owner of the prompt assertion of each Claim against the Owner upon the occurrence of the first event upon which the Claim is based. A Contractor who asserts a Claim against the Owner only at the conclusion of several events upon which the Claim is ultimately based, or at the realization of damages beyond initial damages will be conclusively deemed to have waived the Claim. Contractor shall specifically be prohibited from deferring the assertion of a Claim against the Owner on the basis that some or all of the damages have not been incurred. Contractor may not defer the filing of the Statement of the Claim by asserting that it is reserving or otherwise preserving its rights, since no right exists to defer the filing of the Statement. This Article 15 survives termination of the Agreement under Article 14.

CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make

payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 Claims must be promptly asserted against the Owner in order to provide the Architect and Owner with an opportunity to reduce or otherwise mitigate the potential cost and delay that would otherwise occur and to assure that Claims submitted have validity and are not the product of misrepresentation or fraud.

CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 Without regard to compliance by the Contractor with respect to notice, the failure of the Contractor to provide a Statement of Claim within the ninety (90) day period set forth in this subsection 15.1.5 shall conclusively constitute a waiver and abandonment of the Claim. This provision is to be interpreted and applied as a contractual limitations period, in lieu of any and all statutory periods of limitation provided in law. The Contractor agrees that the ninety (90) day period for the filing of a Statement of Claim shall be conclusively treated as reasonable.

CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

A Statement of Claim must include: (1) an identification of the basis set forth in the Contract Documents for payment of the Claim by the Owner; (2) an itemization of the damages that have been incurred and have accrued to the point in time when the Statement of Claim is prepared; (3) factual and documentary support for the proposition that the Owner is liable; and (4) factual and documentary support for the itemization of damages. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. Requests for extensions of construction time due to adverse weather conditions shall include U.S. Weather Bureau Climatological Reports the months involved, plus a report indicating the average precipitation, temperature, etc., for the past five (5) years from the nearest reporting station. The 5-year average will be the basis for determining the number of adverse weather days and the effect resulting therefrom on construction which Contractor would normally expect to encounter. Extensions of time may be due to adverse weather in excess of the normally expected lost time; provided, however, if Owner determines that the seasonal average of adverse weather days during construction is less than would be normally expected, no Change Order shall be issued and the request for extension of time shall be denied. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

15.1.7: Construction Acceleration Claims: No claim for an increase in the Contract Sum or change in the Contract Time shall be based on construction acceleration. Accordingly, no course of conduct or dealings between the parties, or any express or implied statements made by the parties, nor any express or implied acceptance of alterations to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the

Work, whether or not there is in fact any such unjust enrichment, shall be the basis for any claim to an increase in the Contract Sum or change in the Contract Time.

§ 15.2 PROCEDURES FOR REVIEW OF THE CONTRACTOR'S CLAIMS INITIAL DECISION

§ 15.2.1 The Owner may allow Contractor additional time to ascertain or compile information, documents, and other supporting data, including those required by subsection 15.6. Specifically, Owner may allow the Statement of Claim to be amended and modified to include additional information arising after the filing of the Statement of Claim initially. Any decision of Owner to allow an additional period of time for the submission of written supporting data relates solely to the administration of pending claims and disputes and is not intended to, nor shall it be interpreted as waiving any requirements related either to notice or to filing the Statement of the Claim under the Contract Documents. Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 Receipt of a Statement of Claim by the Owner and Architect and consideration of the Claim under this Article 15 do not constitute a waiver of Owner's right to the performance of Contractor's obligations under the Contract Documents. The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 Following the submittal of the Claim to the Owner and Architect, or the re-submittal of the Claim after its rejection by the Owner, as the case may be, Owner shall render its formal decision on a dispute with a Contractor in writing within a reasonable time after receipt of all written supporting documents, information and other data ("supporting data") from the Contractor and review of documents and information obtained by Architect. The Owner may require the Contractor and his representatives to appear at a meeting called with reasonable notice. In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 The formal decision of the Owner shall be the first-step in the administrative processes governing claims and disputes that are properly between Contractor and the Owner. The Owner's first-step decision can be rendered by any representative of the Owner. If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The rendering of a formal, first-step decision by Owner with respect to any such Claim, dispute, or other matter is a condition precedent to any further action under this Article 15. Such decision shall be final and binding upon Contractor unless Contractor notifies Owner in writing, with copy to the Architect and the Owner's Representative, of Contractor's exception to such decision within thirty (30) days of Contractor's receipt of the decision thereon. The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Contractor shall continue to prosecute the Work and adhere to the approved Construction Schedule during all disputes or disagreements relating to any claim or dispute under the Contract Documents. No Work shall be delayed or postponed pending resolution of any claims, disputes or disagreements. Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 Contractor agrees that compliance by Contractor with this Article 15 shall be a condition precedent to the rendering by the Owner of a formal, first-step decision on a claim or dispute. If Contractor fails to comply with the requirements of this section 15.2, or fails to provide documents, information and supporting data requested by Owner or Architect for the purpose of evaluating the Claim, the Claim shall be waived and forfeited. The failure to submit supporting data or the failure to continue to prosecute the Work, shall constitute a waiver and forfeiture of the Claim for the purpose of securing both first and second-step relief and for the purpose of the submittal of any claim in court. In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 The Architect or the Owner's Representative as the Owner elects will attempt to resolve all claims and disputes between Owner and Contractor, both before and after the rendering of a formal, first-step decision by the Owner. Should Contractor not be satisfied with the Owner's formal, first-step decision regarding a claim or dispute, Contractor may request a second-step administrative determination within thirty (30) days of the decision. Owner shall, within thirty (30) days of a demand for such an administrative determination or on its own initiative, designate an individual to serve as Claims Administrator. Owner and all affected Contractors will attend administrative conferences at the call of the Claims Administrator. Owner and Contractor will cooperate fully in the administrative investigation conducted by the Claims Administrator at the administrative conferences and at such other times as the Claims Administrator shall determine, and shall furnish documents and other information required by the Claims Administrator. The failure of Contractor to provide supporting documentation in advance of and during the administrative conferences sufficient to constitute prima facie evidence of the Claim shall constitute bad faith and shall result in the dismissal and forfeiture of the Claim. Within thirty (30) days of the completion of the administrative investigation, the Claims Administrator will render a decision and recommendation to Owner and Contractor. The decision and the recommendation will be binding on neither party and will not be admissible in any proceeding. Unless the decision and recommendation are accepted by both Owner and Contractor, and provided the claim or dispute has not been waived or forfeited by Contractor, the aggrieved party may submit its claim in court. If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

ATTACHMENT C

DISCLOSURE FORMS

City-Related Agency Disclosure Forms
DRWC Conflict of Interest Disclosure Certificate
Solicitation for Participation and Commitment Form

Disclosure Forms

Directions:

1. Please read the following information regarding the completion of these disclosure forms. Please review the definitions prior to completing any form.
2. Date and initial the top of each form after you have completed it and sign the form on the last page.
3. NOTE: There are two different types of campaign contribution disclosure forms: one for those who are applying as individuals and one for those applying as businesses. Only fill out one type of form. (If you have used a consultant with respect to applying for this non-competitively bid contract you will have to fill out a campaign contribution disclosure form for them as well.)

Getting Started

There are five sets of disclosure forms enclosed in this packet. You must provide information for each disclosure form. The information you must disclose includes:

1. Any contributions (defined as a provision of money, in-kind assistance, discounts, forbearance or any other valuable thing) made during the two years prior to the application deadline for this non-competitively bid contract opportunity;
2. The name of any consultant(s) you used to help in obtaining the non-competitively bid contract and any campaign contributions they have made during the two years prior to the application deadline;
3. Any subcontractors you are planning to use if awarded this contract;
4. Whether a City of Philadelphia or Delaware River Waterfront Corporation employee or official asked you to give money, services, or any other thing of value to any individual or entity; and
5. Whether a City of Philadelphia or Delaware River Waterfront Corporation employee or official gave you any advice on how to satisfy any minority, women, disabled or disadvantaged business participation goals.

More information on Disclosing Campaign Contributions

Applicants for contract opportunities must disclose any contributions they made to:

- A candidate for nomination or election in any public office in the Commonwealth of Pennsylvania
- An incumbent in any public office in the Commonwealth of Pennsylvania
- A political committee or state party in the Commonwealth of Pennsylvania
- A group, committee, or association organized in support of any candidate, office holder, political committee or state party in the Commonwealth of Pennsylvania

Attribution Rules. In addition to disclosing contributions made directly by the applicant, the applicant will be asked to supply information on other types of contributions. The campaign contribution disclosure forms will include questions that specifically ask for information on these other types of contributions. These contributions will be attributed to the individual or business and will be used to determine the applicant's eligibility to be awarded a contract.

Businesses (i.e. corporation, limited liability company, partnership association, joint venture, or any other legal entity) have to disclose contributions made by the following:

- Applicant business
- Parent, subsidiary, or otherwise affiliated entity of the applicant business ("affiliate")
- An individual or business that is then reimbursed by the applicant business or affiliate
- Officers, directors, controlling shareholders, or partners of the for-profit applicant business or for-profit affiliate
- Political action committee controlled by applicant business or affiliate
- Political action committee controlled by officer, director, controlling shareholder, or partner of the for-profit applicant business or for-profit affiliate

Individuals have to disclose contributions made by the following:

- Applicant individual
- Member of individual's immediate family (i.e., spouse, life partner, or dependent child living at home), when contributions are in excess of \$2600

In addition to direct contributions to candidates, incumbents, or political committees in the Commonwealth of Pennsylvania, applicants are also required to disclose:

1. Contributions not directly given to a candidate, incumbent, or political committee but made with the intent that the contribution will benefit the candidate, incumbent, or political committee;
2. Solicitation of contributions on behalf of a candidate, incumbent, or political committee, including the hosting of or solicitation at fundraising events (required to disclose details regarding the date of event and amount raised); and
3. Contributions not made directly by the individual/business to a candidate, incumbent, or political committee but furnished by the individual / business (as an "intermediary").

Eligibility Restrictions

If an individual makes contributions totaling over \$2,600 in one calendar year to a candidate for City elective office or to an incumbent, the individual is not eligible to receive a non-competitively bid contract during that candidate's or incumbent's term of office.

If a business makes contributions totaling over \$10,600 in one calendar year to a candidate for City elective office or to an incumbent, the business is not eligible to receive a non-competitively bid contract during that candidate's or incumbent's term of office.

Although individuals and businesses have to disclose campaign contributions made during the two years prior to the deadline for completing these forms, the eligibility restrictions take into consideration only those contributions made on or after January 1, 2006.

→ **Note on Eligibility:** If a candidate for any City elective office contributes \$250,000 or more from his or her personal resources to his or her campaign, then the eligibility thresholds for individuals and businesses shall double with respect to contributions to all candidates for that same elective office (i.e. \$5,200 for individuals and \$21,200 for businesses).

Definitions

Affiliate	A parent, subsidiary, or otherwise affiliated entity of a business
Applicant	An individual or business who has filed an application to be awarded a non-competitively bid contract
Business	A corporation, limited liability company, partnership, association, joint venture or any other legal entity (including non-profit organizations) that is not an Individual
Candidate	Any individual who seeks nomination or election to public office, other than a judge of elections or inspector of elections, whether or not such individual is nominated or elected. An individual shall be deemed to be seeking nomination or election to such office if he or she has (1) received a contribution or made an expenditure or has given his consent for any other person or committee to receive a contribution or make an expenditure, for the purpose of influencing his or her nomination or election to such office, whether or not the individual has made known the specific office for which he or she will seek nomination or election at the time the contribution is received or the expenditure is made; or (2) taken the action necessary under the laws of the Commonwealth of Pennsylvania to qualify himself or herself for nomination or election to such office.
Consultant	A person used by an applicant to assist in obtaining a non-competitively bid contract through direct or indirect communication by such individual or business with any City agency or City officer or employee or any Delaware River Waterfront Corporation officer or employee, if the communication is undertaken by such individual or business in exchange for, or with the understanding of receiving, payment from the applicant; provided, however, that "Consultant" shall not include a full-time employee of the applicant.
Contributions	The provision of money, in-kind assistance, discounts, forbearance or any other valuable thing, during the two years prior to the deadline for the filing of the application for the contract opportunity, to any of the following: <ul style="list-style-type: none"> – a candidate for nomination or election to any public office in the Commonwealth of Pennsylvania; – an incumbent in any public office in the Commonwealth; – a political committee or state party in the Commonwealth; or – a group, committee or association organized in support of any candidate, office holder, political committee or state party in the Commonwealth.
Immediate family	A spouse or life partner residing in the individual's household or minor dependent children
Incumbent	An individual who holds elective office
Intermediary	A person, who, other than in the regular course of business as a postal, delivery or messenger service, delivers a contribution from another individual or business to the recipient of such contribution
Non-Competitively Bid Contract	A contract for the purchase of goods or services to which the City or City Agency is a party that is not subject to the lowest responsible bidder requirements of Section 8-200 of the Home Rule Charter, including, but not limited to, a Professional Services Contract, and any renewal of such a contract (other than a renewal term pursuant to an option to renew contained in an executed contract)
Person	An individual, corporation, limited liability company, partnership, association, joint

	venture, or any other legal entity
Political committee	Any committee, club, association or other group of persons which receives money or makes expenditures for purposes of influencing any election
Professional Services Contract	A contract to which the City or a City Agency is a party that is not subject to the lowest competitive bidding requirements of Section 8-200 of the Home Rule Charter because it involves the rendition of professional services, including any renewal of such a contract (other than a renewal term pursuant to an option to renew contained in an executed contract)
Solicit a Contribution	Requesting or suggesting that a person make a contribution. The sponsoring or hosting of a fundraising event is considered soliciting a contribution from the attendees of the event. Any contributions raised at such event are counted as a contribution made by the host of the event.

Date: _____

Initials: _____

If Applying as an Individual:
Campaign Contribution Disclosure Form

Please read through the directions and definitions before filling out this disclosure form to make sure that each question is answered appropriately and thoroughly. Note that you must provide information for the two years prior to the application deadline.

	Yes	No
Have you made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>
Have you solicited or served as an intermediary for any contributions?	<input type="checkbox"/>	<input type="checkbox"/>
Has a member of your immediate family made any contributions over and above \$2,600?	<input type="checkbox"/>	<input type="checkbox"/>
Has a member of your immediate family solicited or served as an intermediary for contributions over and above \$2,600?	<input type="checkbox"/>	<input type="checkbox"/>
<i>Check here to certify that no contributions were made.</i>	<input type="checkbox"/>	

Additional information on every contribution must be disclosed.
Please use the table provided on the next page.

Date: _____

Initials: _____

If Applying as an Individual:
Campaign Contribution Disclosure Form

For relationship, please indicate whether the contributor was the Individual or Family Member.

Name of Contributor	Relationship <small>(to individual or business completing this form)</small>	Name of Recipient	Date of Contribution	Amount of Contribution

Please use additional pages as needed.

Date: _____

Initials: _____

**If Applying as a Business:
Campaign Contribution Disclosure Form**

Please read through the directions and definitions before filling out this disclosure form to make sure that each question is answered appropriately and thoroughly. Where “non-profit” is an option, indicate whether the business is a non-profit; non-profits are not required to disclose contribution information on these questions. Note that you must provide information for the two years prior to the application deadline.

	Yes	No	Non-Profit
Has the business made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has the business solicited or served as an intermediary for any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of the business made any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has an officer, director, controlling shareholder, or partner of the business solicited or served as an intermediary for any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has an affiliate of the business made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an affiliate of the business solicited or served as an intermediary for any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of a for-profit affiliate of the business made any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of a for-profit affiliate of the business solicited or served as an intermediary for any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
Has the business or an affiliate of the business reimbursed another individual or business for a contribution that the individual or business has made?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of a for-profit business, or of a for-profit affiliate of the business, reimbursed another individual or business for a contribution that the individual or business has made?	<input type="checkbox"/>	<input type="checkbox"/>	
Has a political committee controlled by the business or by an affiliate of the business made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has a political committee controlled by an officer, director, controlling shareholder, or partner of the for-profit business, or of a for-profit affiliate of the business, made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Check here to certify that no contributions were made.</i>		<input type="checkbox"/>	

Note: Applicants must disclose all contributions to candidates or incumbents which are attributed to an immediate family member of an officer, director, controlling shareholder or partner of the for-profit Applicant or the for-profit affiliate of the Applicant. Please disclose the full amount of the contribution, although only the amount above \$2600 will be attributed to the officer, director, controlling shareholder or partner (and, by extension, the Applicant business).

Additional information on every contribution must be disclosed.
Please use the table provided on the next page.

Date: _____

Initials: _____

If Applying as a Business:
Campaign Contribution Disclosure Form

For relationship, indicate whether the contributor was the Business, Affiliate, Controlled Political Committee, Controlling Shareholder, Director, Officer, Parent, Partner, Reimbursed Contributor, Solicited Contributor, Subsidiary, or Other.

Name of Contributor	Relationship <small>(to individual or business completing this form)</small>	Name of Recipient	Date of Contribution	Amount of Contribution

Please use additional pages as needed.

Date: _____

Initials: _____

Use of Consultant Disclosure Form

Please list all consultant(s) used in the year prior to the application deadline for this contract opportunity and the corresponding information for that consultant in the space provided below.

Please note that a Consultant, for the purposes of the required disclosures, is defined as an individual or business used by an applicant or contractor to assist in obtaining a non-competitively bid contract through direct or indirect communication by such individual or business with a City agency or City employee or official or Delaware River Waterfront Corporation or any Delaware River Waterfront Corporation officer or employee, if the communications is undertaken in exchange for, or with the understanding of receiving, payment from the applicant or contractor or any other individual or business (however, "Consultant" shall not include a full-time employee of the Applicant or Contractor).

Check here to certify that no consultant(s) was used in the year prior to the application deadline for this contract opportunity.	<input type="checkbox"/>
Consultant Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid	
Consultant Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid	
Consultant Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid	
Consultant Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid	

Date: _____

Initials: _____

Consultant: Individual Campaign Contribution Disclosure Form

Use this form if the Consultant used is an Individual. Please read through the directions and definitions before filling out this disclosure form to make sure that each question is answered appropriately and thoroughly. Note that you must provide information for the two years prior to the application deadline.

	Yes	No
Has the Consultant made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>
Has the Consultant solicited or served as an intermediary for any contributions?	<input type="checkbox"/>	<input type="checkbox"/>
Has a member of the Consultant's immediate family made any contributions over and above \$2,600?	<input type="checkbox"/>	<input type="checkbox"/>
Has a member of the Consultant's immediate family solicited or served as an intermediary for contributions over and above \$2,600?	<input type="checkbox"/>	<input type="checkbox"/>
<i>Check here to certify that no contributions were made.</i>	<input type="checkbox"/>	

Additional information on every contribution must be disclosed.
Please use the table provided on the next page.

Date: _____

Initials: _____

Consultant: Individual Campaign Contribution Disclosure Form

Use this form if the Consultant used is an Individual. For relationship, please indicate whether the contributor was the Individual or Family Member.

Name of Contributor	Relationship to Consultant	Name of Recipient	Date of Contribution	Amount of Contribution

Please use additional pages as needed.

Date: _____

Initials: _____

Consultant: Business Campaign Contribution Disclosure Form

Use this form if the Consultant used is a Business. Please read through the directions and definitions before filling out this disclosure form to make sure that each question is answered appropriately and thoroughly. Where “non-profit” is an option, indicate whether the business is a non-profit; non-profits are not required to disclose contribution information on these questions. Note that you must provide information for the two years prior to the application deadline.

	Yes	No	Non-Profit
Has the Consultant business made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has the Consultant business solicited or served as an intermediary for any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of the Consultant business made any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has an officer, director, controlling shareholder, or partner of the Consultant business solicited or served as an intermediary for any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has an affiliate of the Consultant business made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an affiliate of the Consultant business solicited or served as an intermediary for any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of a for-profit affiliate of the Consultant business made any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of a for-profit affiliate of the Consultant business solicited or served as an intermediary for any contributions? <i>See note below.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
Has the Consultant business or an affiliate of the business reimbursed another individual or business for a contribution that the individual or business has made?	<input type="checkbox"/>	<input type="checkbox"/>	
Has an officer, director, controlling shareholder, or partner of the for-profit Consultant business, or of a for-profit affiliate of the Consultant business, reimbursed another individual or business for a contribution that the individual or business has made?	<input type="checkbox"/>	<input type="checkbox"/>	
Has a political committee controlled by the Consultant business or by an affiliate of the business made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
Has a political committee controlled by an officer, director, controlling shareholder, or partner of the for-profit Consultant business, or of a for-profit affiliate of the Consultant business, made any contributions?	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Check here to certify that no contributions were made.</i>		<input type="checkbox"/>	

Note: Consultants must disclose all contributions to candidates or incumbents which are attributed to an immediate family member of an officer, director, controlling shareholder or partner of the for-profit Consultant or the for-profit affiliate of the Consultant. Please disclose the full amount of the contribution, although only the amount above \$2500 will be attributed to the officer, director, controlling shareholder or partner (and, by extension, the Consultant business).

Additional information on every contribution must be disclosed.
Please use the table provided on the next page.

Date: _____

Initials: _____

Consultant: Business Campaign Contribution Disclosure Form

Use this form if the Consultant used is a Business. For relationship, indicate whether the contributor was the Consultant Business, Affiliate, Controlled Political Committee, Controlling Shareholder, Director, Officer, Parent, Partner, Reimbursed Contributor, Solicited Contributor, Subsidiary, or Other.

Name of Contributor	Relationship to Consultant	Name of Recipient	Date of Contribution	Amount of Contribution

Please use additional pages as needed.

Date: _____

Initials: _____

Use of Subcontractor Disclosure Form

Please list all subcontractor(s) you are planning to use if awarded this non-competitively bid contract by filling out the appropriate information in the space provided below.

Check here to certify that no subcontractor(s) are to be used.	<input type="checkbox"/>
Subcontractor Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid, or Percentage to be Paid	
Subcontractor Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid, or Percentage to be Paid	
Subcontractor Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid, or Percentage to be Paid	
Subcontractor Name	
Address 1	
Address 2	
City, State, Zip	
Phone	
Amount Paid or to be Paid, or Percentage to be Paid	

Date: _____

Initials: _____

Employee Request Disclosure Form

Please list any City of Philadelphia or Delaware River Waterfront Corporation employees or officers who have asked you (the Applicant), any officer director, or management employee of the Applicant, or any person representing the Applicant to give money, services, or any other thing of value (other than contributions as defined above) during the two years prior to the application deadline for this contract opportunity.

Check here to certify that no City of Philadelphia or Delaware River Waterfront Corporation employees or officers who have asked you (the Applicant), any officer director, or management employee of the Applicant, or any person representing the Applicant to give money, services, or any other thing of value (other than contributions as defined above) during the two years prior to the application deadline for this contract opportunity.	<input type="checkbox"/>
Name of Employee/Officer	
Title	
Money Services, or Thing of Value Requested	
Money, Services, or Thing of Value Given (If none, write "none")	
Date Requested	
Date of Payment	
Name of Employee/Officer	
Title	
Money Services, or Thing of Value Requested	
Money, Services, or Thing of Value Given (If none, write "none")	
Date Requested	
Date of Payment	
Name of Employee/Officer	
Title	
Money Services, or Thing of Value Requested	
Money, Services, or Thing of Value Given (If none, write "none")	
Date Requested	
Date of Payment	

Date: _____

Initials: _____

Employee Participation Advice Disclosure Form

Please list any City of Philadelphia or Delaware River Waterfront Corporation employees or officers who gave you (the Applicant), any officer director, or management employee of the Applicant, or any person representing the Applicant advice that a particular individual or business could be used by the Applicant to satisfy any goals established in the contract for the participation of minority, women, disabled, or disadvantaged business enterprises during the two years prior to the application deadline for this contract opportunity.

Check here to certify that no City of Philadelphia or Delaware River Waterfront Corporation employees or officers gave you (the Applicant), any officer director, or management employee of the Applicant, or any person representing the Applicant advice that a particular individual or business could be used by the Applicant to satisfy any goals established in the contract for the participation of minority, women, disabled, or disadvantaged business enterprises during the two years prior to the application deadline for this contract opportunity.	<input type="checkbox"/>
Name of Employee/Officer	
Title	
Date of Advice	
Individual or Business Recommended to Satisfy Participation Goals	
Name of Employee/Officer	
Title	
Date of Advice	
Individual or Business Recommended to Satisfy Participation Goals	
Name of Employee/Officer	
Title	
Date of Advice	
Individual or Business Recommended to Satisfy Participation Goals	
Name of Employee/Officer	
Title	
Date of Advice	
Individual or Business Recommended to Satisfy Participation Goals	

Date: _____

Initials: _____

Signature Page

In order for the submission of these disclosure forms to be considered valid, they must be properly signed below by the respondent. Disclosure forms **that are not signed will be rejected**. By signing your name and title in the signature space below, you, as the applicant, signify your intent to sign these disclosure forms. The signatory hereby declares and certifies themselves to be the applicant, declares and certifies that they are properly authorized to execute these disclosure forms, and represents and covenants that all of the information and disclosures provided to the best of their knowledge are true and contain no material misstatements or omissions. Breach of such representation and covenant may render any subsequent contract voidable, and entitle Delaware River Waterfront Corporation to all rights and remedies provided by law or equity.

If these disclosure forms are being submitted by an INDIVIDUAL, PARTNERSHIP, LIMITED LIABILITY COMPANY OR MANAGED LIMITED LIABILITY COMPANY, sign the forms here:

Signature

Date

Name

Title

If these disclosure forms are being submitted by a CORPORATION, sign the forms here, with signatures by (a) President or Vice-President of the corporation AND (b) Secretary, Assistant Secretary, Treasurer or Assistant Treasurer of the corporation. If the disclosure forms are not signed by the above mentioned, you hereby certify that you are authorized pursuant to a certified corporate resolution to sign in place of such officers.

Signature

Date

Name

President/Vice President, if other, please specify

Signature

Date

Name

**Secretary/Asst. Secretary/Treasurer/Asst. Treasurer
If other, please specify**

**DELAWARE RIVER WATERFRONT CORPORATION
CONFLICT OF INTEREST DISCLOSURE CERTIFICATION**

The Delaware River Waterfront Corporation (“DRWC”) exists to promote redevelopment along the Delaware River waterfront to benefit the City of Philadelphia and all of its citizens, regardless of race or economic status.

To effectively carry out this mission, the DRWC and its Directors, Officers, and Employees have an absolute obligation to uphold the public trust. In connection with its operations and activities, the DRWC is open, transparent and accountable to the public and to the City of Philadelphia. It strives to earn a reputation for honesty, fairness, and judicious use of public and private funds.

To that end, DRWC requests that the respondent/bidder certify that it does not have any professional engagements (including, but not limited to contracts or grants), relationships (including, but not limited to fiduciary, familial, marital, property or any other relationship that might result in a conflict of interest), conflicts of interest, or potential conflicts of interest with any DRWC Director, Officer, or Employee.

If the respondent/bidder is uncertain whether or not a relationship could be considered to be a conflict of interest or potential conflict of interest, the matter in question should be disclosed. Disclosure of a conflict of interest or potential conflict of interest will not necessarily preclude the respondent/bidder from consideration.

To the best of our knowledge, no conflict of interest or potential conflict of interest exists that would impact our involvement in this project.

A conflict of interest or potential conflict of interest is disclosed and more fully reported in the proposal/bid under the “Disclosure Statement” section.

Company Name

Date

Authorized Signature

Title

Print Name

SOLICITATION FOR PARTICIPATION AND COMMITMENT FORM (RFP) <i>Minority (MBE), Women (WBE), and Disabled (DSBE) Business Enterprises</i>				DELAWARE RIVER WATERFRONT CORPORATION						
RFP TITLE		Name of Respondent		RFP Submission Date						
List below ALL MBE/WBE/DSBEs that were solicited regardless of whether a commitment resulted therefrom. - Photocopy this form as necessary.										
<input type="checkbox"/>	MBE	<input type="checkbox"/>	WBE	<input type="checkbox"/>	DSBE	Work to be Performed	Date Solicited	Commitment Made		Give Reason(s)
Company Name						By Phone	By Mail	Yes (If Yes, give date)	NO	If No Commitment
Address										
Contact Person						Quote Received		Amount Committed To		
Telephone Number		Fax #				YES	NO	Dollar Amount		
MBEC CERTIFICATION #								\$		
						Percent of Total Bid				
						%				
<input type="checkbox"/>	MBE	<input type="checkbox"/>	WBE	<input type="checkbox"/>	DSBE	Work to be Performed	Date Solicited	Commitment Made		Give Reason(s)
Company Name						By Phone	By Mail	Yes (If Yes, give date)	NO	If No Commitment
Address										
Contact Person						Quote Received		Amount Committed To		
Telephone Number		Fax #				YES	NO	Dollar Amount		
MBEC CERTIFICATION #								\$		
						Percent of Total Bid				
						%				
<input type="checkbox"/>	MBE	<input type="checkbox"/>	WBE	<input type="checkbox"/>	DSBE	Work to be Performed	Date Solicited	Commitment Made		Give Reason(s)
Company Name						By Phone	By Mail	Yes (If Yes, give date)	NO	If No Commitment
Address										
Contact Person						Quote Received		Amount Committed To		
Telephone Number		Fax #				YES	NO	Dollar Amount		
MBEC CERTIFICATION #								\$		
						Percent of Total Bid				
						%				

¹ MBE/WBE/DSBEs listed above must be certified by the MBEC prior to proposal submission date.

² Failure to give reason may result in rejection of your proposal. Use additional pages if necessary.