

**PROJECT MANUAL
and
CONTRACT DOCUMENTS**

FOR

CP 1623: VRTC Bus Shelter Sprinkler System Replacement

JOHN J. TECKLENBURG, Mayor



Pre-Bid Meetings: at 11:00 AM, December 13, 2016
On-site at 375 Meeting Street, Charleston, SC 29403,
starting at the Visitors Center steps at Ann Street.

Bid Opening: at 2:00PM, January 4, 2017.
Department of Parks offices, 2nd Floor Conference Room

City of Charleston Department of Parks
Capital Projects Division
823 Meeting Street
Charleston, SC 29403
(843) 973-7239

Nate Yokoyama, P.E., Project Manager
YokoyamaN@charleston-sc.gov

November 7, 2016

**CP 1623 – VRTC Bus Shelter Sprinkler System Replacement
City of Charleston: Department of Parks**

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City of Charleston

Invitation for Construction Bids

The City of Charleston will be accepting bids for the VRTC Bush Shelter Sprinkler Replacement project. Work includes replacement of the existing sprinkler system.

PROJECT: CP -1623 VRTC Bus Shed Sprinkler System Replacement

BID SECURITY REQUIRED? YES
PERFORMANCE BOND REQUIRED? YES
PAYMENT BOND REQUIRED? YES

CONSTRUCTION COST RANGE \$50,000 to \$70,000

DESCRIPTION OF PROJECT: Replacement of the existing sprinkler system with a new dry-pipe sprinkler system. All bidders must be licensed contractors.

ARCHITECT CONTACT INFORMATION:

NAME: DWG, Inc
CONTACT: Kenny Minogue
ADDRESS: 1009 Anna Knapp Boulevard, Suite 202
PHONE: 843-849-1141
CITY: Mount Pleasant STATE: SC ZIP: 29464
E-MAIL: kminogue@dwginc.com

*Please do not contact consultant for construction documents.

BID DOCUMENTS MAY BE OBTAINED FROM: City of Charleston's BidLine
<http://www.charleston-sc.gov/Bids.aspx?CatID=18>

PRE-BID CONFERENCE? YES **MANDATORY ATTENDANCE? YES**

CONFERENCE DATE: Tuesday, December 13, 2016 TIME: 11:00 AM LOCATION: 375 Meeting Street, Charleston, SC 29403

BID OPENING DATE: Wednesday, January 4, 2017 TIME: 2:00 PM LOCATION: 823 Meeting St, 2nd floor, Charleston, SC 29403

BID DELIVERY ADDRESS:
City of Charleston
Department of Parks, Capital Projects Division
823 Meeting Street, 2nd Floor
Charleston, SC 29403

PROJECT MANAGER: Nate Yokoyama, P.E. PHONE: 843-973-7239 FAX: 843-724-7300

**City of Charleston
Instructions to Bidders**

1. RECEIPT AND OPENING OF BIDS

The City of Charleston (the "Owner"), will receive bids for the above Project at the Department of Parks, Capital Projects Division, until **2:00 pm local time on Wednesday, January 4, 2017**, where they shall be publicly opened and read aloud. The Owner may consider non-responsive any bid not prepared and submitted in accordance with these instructions and may waive any informality or reject any and all bids. Information not requested that is written on or attached to the Bid Form that could be considered a qualification of the Bid, may be cause for rejection of the Bid. The City shall be the sole judge as to whether Bids submitted meet all requirements contained in this solicitation. This solicitation does not commit the City of Charleston to award a Contract, to pay any costs incurred in the preparation of Bids submitted, or to procure or contract for the services. Any bid may be withdrawn prior to the above scheduled time or authorized postponement. Any bid received after the time and date specified shall not be considered. No Bidder may withdraw a bid within 60 days after the date of the bid opening.

2. CANCELLATION OF INVITATION FOR CONSTRUCTION BIDS

At any time prior to the issuance of the Notice to Proceed for this Project, the Contract may be cancelled for the convenience of the Owner.

3. PREPARATION OF BID

Bids must be submitted in writing on the attached City of Charleston Bid Form in whole dollar amounts. All blank spaces for bid prices must be filled in, in ink or typewritten, and the form must be fully completed and executed when submitted. Failure to provide all requested information as part of the submitted bid may be justification to deem the bid non-responsive, resulting in the rejection of the bid. Each bid must be submitted in a sealed envelope bearing on the outside the name and address of the Bidder and the name of the Project for which the bid is submitted and the Contractor's license number. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to the City of Charleston, Department of Parks, Capital Projects Division, 823 Meeting Street, Charleston, SC, 29403.

4. PRE-BID CONFERENCE

A mandatory PRE-BID Conference will be held on Tuesday, December 13, 2016 at 11:00 AM local time at 375 Meeting Street, Charleston, South Carolina 29403 starting at the Visitors Center steps at Ann Street. Only those prospective Bidders that are represented and are listed on the sign-in sheet will be allowed to submit bids.

5. SUBCONTRACTS

The Bidder is specifically advised that any person, firm or other party to whom it proposes to award a subcontract under this Contract must be acceptable to the Owner. In the event a subcontractor is found to be unacceptable by the Owner, the Owner may require the Bidder to

substitute the unacceptable subcontractor or reject the bid. The Bidder must perform a minimum of **30%** of the work with its own forces.

6. QUALIFICATIONS OF BIDDER

The Owner may make such investigations as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner in a timely manner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner of the Bidder's qualifications to perform the work.

7. BID SECURITY

If required, each bid must be accompanied by a Bid Security in the amount of not less than 5% of the Base Bid in the form of a certified cashiers check or a Bid Bond, made payable to the Owner and issued by a surety licensed to do business in the state of South Carolina. The Bid Bond must be accompanied by a certified and current Power of Attorney by the Attorney-in-Fact. The Owner shall have the right to retain the Bid Security of any or all Bidders until such time as one of the three conditions listed below have been met:

1. The Construction Contract has been executed and both Performance and Payment Bonds have been furnished, if required.
2. The specified time has elapsed so that bids may be withdrawn.
3. The Owner has rejected all bids.

8. FAILURE TO ENTER INTO CONTRACT

Failure of the Bidder to execute and deliver the Contract within ten (10) days after bid opening or failure to provide Performance and Payment Bonds and Certificate of Insurance within ten (10) days of receipt of a Notice of Award from the Owner, shall entitle the Owner to consider the Bidder non-responsive and to declare the Bid Security forfeited.

9. DATE OF COMMENCEMENT, COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work as specified in a Notice to Proceed from the Owner and to fully complete the Base Bid and any awarded Bid Alternates within **eighty (80) calendar days** after the Date of Commencement. Bidder must agree also to pay as liquidated damages the sum of **\$140.00 for each calendar** day thereafter that the Project fails to reach Substantial Completion within the time allowed.

10. ADDENDA AND INTERPRETATIONS

No oral interpretation of the meaning of the plans, specifications or other pre-bid documents will be made. Requests for clarification should be made in writing to the A/E or Project Manager identified in the Invitation for Construction Bids and to be given consideration must be received at least five (5) days prior to the date fixed for the opening of bids. Any interpretations, corrections or changes will be issued in the form of written addenda and will be transmitted to all who are known to have received a complete set of bidding documents by telephone, fax or other

appropriate means with immediate follow-up with written addenda. Should the original Bid Date be postponed, the new Bid Date shall be no earlier than the fifth (5th) calendar day after the date of issuance of the addendum postponing the original Bid Date. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under its bid as submitted. All addenda so issued shall become part of the Contract documents.

11. SUBSTITUTIONS

- A. The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.
- B. No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
- C. If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.
- D. No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

12. LAWS AND REGULATIONS

All applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

13. INTENT TO AWARD/EVALUATION OF BID ALTERNATES

It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder. When bidding documents include Bid Alternates, the Owner shall have the right to award the Contract to the apparent low bidder based on ANY COMBINATION of the BASE BID plus Bid Alternates or with no Bid Alternates, unless otherwise specifically provided in the Bid Documents. The Owner reserves the right to apply these Alternate prices in any combination or order for the overall benefit of the Project as defined by the Owner. All requested Alternates must be bid. The failure of the Bidder to indicate a price for a BID ALTERNATE shall render the Bid non-responsive. A BID ALTERNATE shall be bid by indicating either a dollar amount or the words "No Change", "Zero", or "0.00". A typed or printed "No Bid", or words of similar meaning, shall render the Bid non-responsive. Bidder must indicate whether the amount of the BID ALTERNATE is an "ADD" to or a "DEDUCT" from the amount of the base bid. The Bid may be determined non-responsive for failure of the Bidder to indicate the appropriate "ADD" or "DEDUCT" for each BID ALTERNATE.

14. OBLIGATION OF BIDDER

At the time of the opening of bids, each Bidder will be presumed to have inspected the site and the conditions relating to construction of the Project, and to have read and become thoroughly familiar with the plans and Contract documents, including all addenda. The failure or omission of any Bidder to visit the site or to examine any form, instrument or document shall in no way relieve any Bidder from any obligation with respect to his bid.

15. MINORITY/WOMEN BUSINESS ENTERPRISE (MBE) PROGRAM

- A. This Project is covered under the City of Charleston's Minority/Women Business Enterprise (MWBE) Program, administered by Theron Snype, MBR Manager, 75 Calhoun Street, Charleston SC, 29401, (843) 973-7247.
- B. MWBE Goals: The City has established goals for both Minority Business Enterprises (MBE) and Women Business Enterprises (WBE). An MBE is a small business owned and controlled by a minority. A WBE is a small business owned and controlled by a woman. The minority or woman must own fifty-one percent (51%) of the business and they must control the management and daily operations of the business in order to qualify. The goals for this Contract are a 20% combined MBE and WBE participation. These goals will be applied to the overall Contract.
- C. Certification of Eligibility of MBE/WBE: All MBE/WBE subcontractors must have a Certificate of Eligibility on file with the City's Minority Business Enterprise Office. A list of certified minority and women-owned firms can be found on the City of Charleston's web site www.charleston-sc.gov under "BIDLINE" link.
- D. Bidder's MBE/WBE Participation: All bidders must document the extent of their MWBE participation by completing the MWBE Compliance Provision Forms. Bidders must also complete Affidavits A and B or Affidavit C and attach the entire package to the Bid Form. Bidders who fail to submit these documents as required by the Procurement Office shall be deemed non-responsive and will be ineligible for award of the Contract.
- E. The Contractor shall perform the Contract in accordance with the representations made in the Minority/Women-Owned Business Enterprise Compliance Provisions (Affidavit A) and the Work to be Performed by Minority Firms (Affidavit B) submitted as part of the bid proposal.

16. LOCAL VENDOR RECOGNITION

This project is covered under the City of Charleston's Local Vendor Recognition Ordinance which states: The City of Charleston's Procurement Policy shall allow the lowest responsive and responsible local vendor ("Local Vendor") who meets the requirements set forth below the right to match the bid of the lowest responsive and responsible non-local bidder for goods and supplies and thereby be awarded the contract for goods and supplies subject to the following requirements:

- A. The total dollar amount of the lowest responsive and responsible bid for construction services is greater than \$20,000;
- B. The bid of the Local Vendor is within 4% or \$10,000, whichever is lower, of the bid amount of the lowest responsive and responsible non-local bidder;
- C. The Local Vendor has a valid City of Charleston business license which was issued at least 12 months prior to the bid opening date;
- D. The Local Vendor has a physical business address located within the City of Charleston and has been doing business in the corporate limits of the City of Charleston for a period of 12 months or more prior to the bid opening date;
- E. The Local Vendor provides proof of payment of all applicable City of Charleston licenses, taxes and fees with its bid;
- F. The Local Vendor must submit a City of Charleston Local Vendor Recognition Affidavit and a copy of its current City of Charleston business license with its bid. The form of the affidavit will be provided by the City and will be available in the bid documents for the solicitation of such goods and supplies.

17. LICENSES

The successful Bidder shall obtain a City of Charleston Business License prior to beginning the work of the Contract. Bidder must also be licensed under the laws of the State of South Carolina and City of Charleston for the specific category of work to be performed.

19. PERFORMANCE AND PAYMENT BONDS

The successful Bidder, if required by the Owner, will provide Performance and Payment Bonds, each in the amount equal to 100% of the Contract Award, as a condition of execution of the Contract. Failure to supply such bonds as required by the Contract Documents shall result in forfeiture of the Bid Bond.

19. DRUG FREE WORK PLACE

All Bidders must certify that they will provide a "Drug-Free Workplace" as that term is defined in Section 44-107-30 of the SC Code of Laws, and shall comply with the requirements set forth in Title 44, Chapter 107.

END OF INSTRUCTIONS TO BIDDERS

City of Charleston Bid Form

BID SUBMITTED BY: Name:
Address:

FOR PROJECT: **CP 1623** - **VRTC Bus Shed Sprinkler System Replacement**
(Number) (Name)

OFFER

1. In response to the *Invitation for Construction Bids*, and in compliance with the *Instructions to Bidders* for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the City of Charleston ("Owner") in the form included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
2. Bidder has submitted Bid Security as follows in the amount and form requested by the Bidding Documents:

Bid Bond with Power of Attorney Cashier's Check
(Bidder check one)
3. Bidder, by submitting this Bid, affirms that it has carefully examined the Bidding Documents and the other related information and data identified in the Bidding Documents, has visited the actual location of the Work, has satisfied itself as to all conditions and understands that, in signing this Bid Form it waives all rights to plead any misunderstanding regarding same and agrees to be bound by the provisions of said Bidding Documents and all statements made therein.
4. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into its Bid:
ADDENDUM No.(s) _____
5. Bidder acknowledges that neither the Owner nor any of its employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project cancelled for any reason prior to the issuance of the Notice to Proceed.
6. By submitting this Bid, Bidder hereby agrees to all of the terms and conditions of the *Invitation for Construction Bids* and to all of the terms and conditions of the *Instructions to Bidders*. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of 60 days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner. Bidder understands that Bid Alternates that are not accepted in an initial award shall remain open for acceptance for the entire period set above and for such longer period as requested by Owner and agreed to by Bidder.
7. Bidder herewith submits its offer to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the construction work in accordance with the Bidding Documents:

7.1 BASE BID: \$ _____

Written: _____

7.2 ALTERNATE BID WORK (as indicated in the Bidding Documents and generally described as follows):
(Bidder shall STRIKE THROUGH "ADD" or "DEDUCT" so as to clearly indicate the price adjustment offered for each alternate)

ALTERNATE	_____	ADD/DEDUCT \$ _____
NO. 1:	_____	(to or from BASE BID)

ALTERNATE	_____	ADD/DEDUCT \$ _____
NO. 2:	_____	(to or from BASE BID)

ALTERNATE	_____	ADD/DEDUCT \$ _____
NO. 3:	_____	(to or from BASE BID)

ALTERNATE	_____	ADD/DEDUCT \$ _____
NO. 4:	_____	(to or from BASE BID)

8. BIDDER'S TAXPAYER IDENTIFICATION

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER: _____
OR
SOCIAL SECURITY NUMBER: _____

9. CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATIONS

_____	_____	_____
<i>(Classification)</i>	<i>(Subclassification)</i>	<i>(Limitations)</i>

<i>(SC Contractor's License Number)</i>		

SIGNATURE

(Legal Name of Person, Firm or Corporation Submitting Bid)

_____	_____
BY (Signature)	(Date)

_____	_____
(Title)	(Phone)

MWBE Compliance Provisions and Instructions Minority/Women Business Enterprise Program Forms

This Project is covered under the City of Charleston's Minority/Women Business Enterprise (MWBE) Program, administered by Theron Snype, MBE Manager, 145 King Street, Suite 104, Charleston SC, 29401, (843) 973-7247.

The City has established goals for both Minority Business Enterprises (MBE) and Women Business Enterprises (WBE). An MBE is a small business owned and controlled by a minority. A WBE is a small business owned and controlled by a woman. The minority or woman must own fifty-one percent (51%) of the business and they must control the management and daily operations of the business in order to qualify.

Charleston City Council has adopted a policy setting 20% as the guidelines for combined minority-owned and women-owned business enterprise participation for this project. This MWBE requirement for participation in this Contract for services shall be made a part of any contract resulting from this solicitation. These requirements shall also apply to all subcontracts issued by the successful bidder(s).

Bidder's MBE/WBE Participation: All bidders must document the extent of their MWBE participation by completing the MWBE Compliance Provision Forms. Bidders must complete Affidavits A and B or Affidavit C and attach the entire package to the Bid Form. Bidders who fail to submit these documents as required by the Procurement Office shall be deemed non-responsive and will be ineligible for award of the Contract.

All MBE/WBE subcontractors must have a Certificate of Eligibility on file with the City's Minority Business Enterprise Office. A list of certified minority and women-owned firms can be found on the City of Charleston's web site www.charleston-sc.gov under "BIDLINE" link or by contacting Theron Snype, MBE Manager, 145 King Street, Suite 104, Charleston, SC 29403, (843) 973-7247, snypet@charleston-sc.gov.

COMPLIANCE REQUIREMENTS:

1. The Bidder shall provide, **with their bid form submittal**, the following Affidavits properly executed which signify that the Bidder understands and agrees to abide by the City's MWBE Compliance Provisions.

Affidavit A - Listing of the Good Faith Effort to Identify & Secure Minority and Women-owned Business Participation.

AND

Affidavit B – Work to be Performed by Minority and/or Women-owned Firms

OR

Affidavit C – Intent to Perform Contract with Own Workforce, in making this certification the Bidder states that the Bidder does not customarily subcontract elements of this type of Project and will perform all elements of the work with his/her own current work forces.

2. All affidavits supplied by the Bidder shall become a part of any resulting Contract between the Bidder and the City of Charleston. Failure to comply with any of the statements, certifications, or intentions stated in the affidavits, or the MBE/WBE compliance provisions shall constitute a breach of the Contract. Any such breach may result in termination of the Contract in accordance with the termination provisions contained in the Contract. It shall be solely at the option of the City of Charleston whether to terminate the contract for breach. In addition to terminating the Contract, the bidder may be prohibited from participation in future solicitations as determined by the City of Charleston.

Name of Company: _____

Signature

Date

Print Name

Title

Witness

AFFIDAVIT A
Page 1 of 2

City of Charleston, South Carolina Listing of the Good Faith Effort

Affidavit of _____
(Name of Bidder)

I have made a good faith effort to comply with the City of Charleston's MWBE compliance provisions under the following checked areas:

(A minimum of 6 areas must be checked in order to have achieved a "good faith effort")

- 1. Contacted MWBE businesses that reasonably could have been expected to submit a quote and that were known to the Bidder, or available on Federal, State or local government maintained lists, at least 10 business days before the submittal date and notified them of the nature and scope of the work to be performed. **Complete Affidavit A, Page 2.**
- 2. Followed up with contacted MWBE subsequent to the initial contact and at least 72 hours prior to submittal deadline/bid opening either by phone, facsimile or in person.
- 3. Made the construction plans, specifications, and requirements available for review by prospective MWBE businesses, or providing these documents to them at least 10 business days before the submittal deadline/bid opening.
- 4. Itemized elements of the work or combined elements of the work into economically feasible units to facilitate MWBE participation.
- 5. Attended any pre-solicitation meetings scheduled by the City.
- 6. Provided MWBE assistance with getting required bonding or insurance requirements or provided alternatives to bonding or insurance.
- 7. Negotiated in good faith with interested MWBEs and did not reject them as unqualified without sound reasons based on their capabilities. ***(Any rejection of a minority or woman-owned business based on lack of qualifications shall include reasons for rejection documented in writing.)***
- 8. Provided MWBEs assistance with securing needed equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted MWBEs in obtaining the same unit pricing with the Bidder's suppliers in order to help such businesses in establishing credit.
- 9. Provided training or mentoring to at least two (2) MWBEs within 120 days prior to submittal deadline/bid opening. The training or mentoring program should be in conjunction with local trade groups, technical schools or community organizations that provide recruitment, education or skill levels.
- 10. Negotiated joint venture, partnership or other similar arrangements with MWBEs in order to increase opportunities for MWBE participation.
- 11. Provided quick pay agreements and policies to enable MWBE contractors and suppliers to meet cash-flow demands.

I hereby agree to enter into a formal agreement with the firms listed in Affidavit B Work to be performed by Minority Firms conditional upon execution of a contract with the Owner. Failure to abide by this provision will constitute a breach of the contract.

I hereby certify that I have read and agree to the terms of the Minority / Women-Owned Business Enterprise Program, and I am the Bidder or I am authorized to bind the Bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer (Print/Type): _____

Signature: _____

Title: _____

AFFIDAVIT A

Page 2 of 2

City of Charleston, South Carolina Minority/Women-Owned Business Participation Efforts

(Use as many sheets as necessary)

I, _____, hereby certify that on this project we contacted the following minority/women-owned business enterprises as subcontractors, vendors, suppliers, or providers of professional services.

1. Minority Firm Name and Contact	Minority Firm Address
Minority Firm Telephone Number _____ Minority Firm Fax Number _____ DBE Certification Number _____	Minority Group Type <input type="checkbox"/> (African American) <input type="checkbox"/> (Women) <input type="checkbox"/> (Asian American) <input type="checkbox"/> (Hispanic) <input type="checkbox"/> (American Indian) <input type="checkbox"/> (Other) <hr style="width: 50%; margin-left: 0;"/> <input type="checkbox"/> Follow up Verification
2. Minority Firm Name and Contact	Minority Firm Address
Minority Firm Telephone Number _____ Minority Firm Fax Number _____ DBE Certification Number _____	Minority Group Type <input type="checkbox"/> (African American) <input type="checkbox"/> (Women) <input type="checkbox"/> (Asian American) <input type="checkbox"/> (Hispanic) <input type="checkbox"/> (American Indian) <input type="checkbox"/> (Other) <hr style="width: 50%; margin-left: 0;"/> <input type="checkbox"/> Follow up Verification
3. Minority Firm Name and Contact	Minority Firm Address
Minority Firm Telephone Number _____ Minority Firm Fax Number _____ DBE Certification Number _____	Minority Group Type <input type="checkbox"/> (African American) <input type="checkbox"/> (Women) <input type="checkbox"/> (Asian American) <input type="checkbox"/> (Hispanic) <input type="checkbox"/> (American Indian) <input type="checkbox"/> (Other) <hr style="width: 50%; margin-left: 0;"/> <input type="checkbox"/> Follow up Verification
4. Minority Firm Name and Contact	Minority Firm Address
Minority Firm Telephone Number _____ Minority Firm Fax Number _____ DBE Certification Number _____	Minority Group Type <input type="checkbox"/> (African American) <input type="checkbox"/> (Women) <input type="checkbox"/> (Asian American) <input type="checkbox"/> (Hispanic) <input type="checkbox"/> (American Indian) <input type="checkbox"/> (Other) <hr style="width: 50%; margin-left: 0;"/> <input type="checkbox"/> Follow up Verification

I certify, under penalties of perjury, that I have examined the information in this affidavit, and to the best of my knowledge and belief, this information is true, correct and complete.

Date: _____ Name of Authorized Officer (Print/Type): _____

Sworn to before me this ____ day of _____, 20__.

Signature: _____

Notary Public for the State of _____

Title: _____

My Commission Expires: _____

Print Name: _____

Notary Seal:

Phone Number: _____

Address: _____

AFFIDAVIT B

**City of Charleston, South Carolina
Work to be Performed by Minority/Women-Owned Businesses**

Affidavit of _____ . I hereby certify that on the _____
(Name of Bidder)
_____ Daniel Island Shoreline Restoration _____, Total Project Amount \$ _____
(Project Name)

I will make a good faith effort to expend a minimum of _____% of the total dollar amount of the Contract with minority/women-owned business enterprises. Minority/women-owned businesses will be employed as subcontractors, vendors, suppliers, or providers of professional services. Such work will be subcontracted to the following businesses listed below:

(Attach additional sheets if needed)

Name and Phone Number	*Minority Code	Work Description	Dollar Value
			\$
			\$
			\$
			\$
			\$
			\$
			\$

Total MBE Participation: _____ % \$ _____

* Minority categories: African American (**B**); Hispanic (**H**); Asian American (**A**), American Indian (**I**); Woman Owned (**W**); Other (**D**)

I will enter into a formal Contract with the above minority/women-owned business enterprises for the work listed in the above schedule conditional upon execution of a Contract with the Owner.

I certify that I have read the terms of this commitment and I am the Bidder or authorized to bind the Bidder to the commitment set forth herein. I certify, under penalties of perjury, that I have examined the information in this affidavit, and to the best of my knowledge and belief, this information is true, correct and complete.

Date: _____ Name of Authorized Officer (Print/Type): _____

Signature: _____

Title: _____

Sworn to before me this ____ day of _____, 20__.

Notary Public for the State of _____

My Commission Expires: _____

Notary Seal:

Print Name: _____

Phone Number: _____

Address: _____

AFFIDAVIT C

**City of Charleston, South Carolina
Intent to Perform Contract with Own Workforce.**

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____
Daniel Island Shoreline Restoration contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type Project, and normally performs and has the capability to perform and will perform all the elements of the work on this Project with his/her own current work forces, and

The Bidder agrees to provide any additional information or documentation requested by the Owner in support of the above statement.

I hereby certify that I have read this certification and I am the Bidder or I am authorized to bind the Bidder to the commitments contained herein. I certify, under penalties of perjury, that I have examined the information in this affidavit, and to the best of my knowledge and belief, this information is true, correct and complete.

Date: _____ Name of Authorized Officer (Print/Type): _____

Signature: _____

Title: _____

Sworn to before me this ____ day of _____, 20__.
Notary Public for the State of _____
My Commission Expires: _____
Print Name: _____
Phone Number: _____
Address: _____

Notary Seal:

CITY OF CHARLESTON LOCAL VENDOR RECOGNITION AFFIDAVIT

Personally appeared before me _____ (the “Bidder seeking Local Vendor Recognition”) who, after being duly sworn, does hereby depose and certify that the Bidder seeking Local Vendor Recognition identified in this bid response and who signs below meets the following qualifications for local vendor recognition as provided in Sections C and E of the City of Charleston’s Procurement Policy:

1. The bid is for construction services or goods and supplies only and is greater than \$20,000;
2. Has a physical business address located within the City of Charleston and has been doing business in the City of Charleston for a period of 12 months or more prior to the bid opening date - (A post office box or temporary construction or office trailer will not be considered a place of business);
3. Has a valid City of Charleston business license which was issued at least 12 months prior to the bid opening date;
4. Provides a copy of its current City of Charleston business license with its bid;
5. Provides proof of payment of all applicable City of Charleston licenses, taxes and fees with its bid;
6. in compliance with any applicable federal, state and local requirements regarding the type of business in which the Local Vendor is engaged.

By submitting this Affidavit, the Bidder seeking Local Vendor Recognition understands that in addition to meeting the requirements set forth above, in order for the Bidder seeking Local Vendor Recognition to qualify for local vendor recognition, his bid must be within 4% or \$10,000, whichever is lower, of the bid amount of the lowest responsive and responsible non-local bidder for said construction services or goods and supplies, and he requests that the local vendor recognition as set forth in Sections C and E of the City’s Procurement Policy be exercised in consideration of the contract award of this bid. Failure to complete and return this Affidavit with the specified attachments set forth above with his bid will result in not being eligible to receive the benefits of the local vendor recognition.

BUSINESS NAME: _____

CHARLESTON STREET ADDRESS: _____

SIGNATURE: _____ TITLE: _____

By: _____
(Print Name)

Sworn to and subscribed before me at _____,
State of _____, this _____ day of _____, 20____.

_____(SEAL)
Notary Public for _____
My Commission Expires _____

FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, _____
(Name of Principal)

AS PRINCIPAL, AND _____, as SURETY
(Name of Surety)

are held and firmly bound unto The City of Charleston hereinafter called the "Owner", in the penal sum of _____ Dollars, lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying bid, dated _____, 20_____, for Project Name: VRTC Bus Shelter Sprinkler System Replacement and Project Number: CP1623 .

Now, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after the said opening, and shall within the period specified therefore, or, if no period be specified within ten (10) days after the prescribed forms are presented to him for signature, enter into a written contract with the Owner in accordance with the bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract; or in the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give such bond within the time specified, if the Principal shall pay the Owner the difference between the amount specified in said bid and the amount for which the Owner may procure the required work or supplies or both, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

The Surety, for value received, hereby agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extensions of the time within which the Owner may accept such BID; and said Surety does hereby waive notice of any such extensions.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals this _____ day of _____, 20_____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(SEAL) _____
(Name of Principal)

By: _____

(SEAL) _____
(Name of Surety)

By: _____

Sealed and delivered in the presence of:

At the Contractor's option, this form may be substituted with a Power of Attorney form from the Contractor's Surety Company. The Contractor is cautioned that all pertinent information included on this form shall be incorporated in the executed and submitted security form.

CERTIFICATE OF GRANTEE / BORROWER'S ATTORNEY

I, the undersigned, _____,
the duly authorized and acting legal representative of _____
_____, do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties' names thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

(Signature)

(Date)

At the Contractor's option, this form may be substituted with a Performance Bond and Power of Attorney form from the Contractor's Surety Company. The Contractor is cautioned that all pertinent information included on this form shall be incorporated in the executed and submitted security form.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that _____
(Name of Contractor)

at _____
(Address of Contractor)

a _____, hereinafter called "Principal",
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

at _____, hereinafter called "Surety", are held
(Address of Surety)

and firmly bound unto the City of Charleston Department of Parks, 823 Meeting Street, Charleston, SC, 29403, hereinafter called "Owner", in the penal sum of :

_____ Dollars(\$_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _____, 20__, a copy of which is hereto attached and made a part hereof for the construction of:

CP1623 **VRTC Bus Shelter Sprinkler System Replacement**
(Project #) (Project Name)

NOW, THEREFORE, is the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations or addition to the terms of the contract or to the work or to the specification.

PROVIDED FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the ___ day of _____, 20__ .

ATTEST:

(Principal) Secretary

(Principal)
By: _____

(SEAL)

(Witness as to Principal) (Address)

ATTEST:

(Surety) Secretary

(Surety)

(SEAL)

By: _____
(Attorney -in-fact)

(Address)

(Address)

NOTE: Date of bond must not be prior to date of Contract.
If Contractor is Partnership, all partners should execute bond.

Important: Surety companies executing bonds must appear on the Treasury Department most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

At the Contractor's option, this form may be substituted with a Payment Bond and Power of Attorney form from the Contractor's Surety Company. The Contractor is cautioned that all pertinent information included on this form shall be incorporated in the executed and submitted security form.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

that _____ at _____
(Name of Contractor) (Address of Contractor)

a _____, hereinafter called "Principal", and
(Corporation, Partnership or Individual)

_____ at _____
(Name of Surety) (Address of Surety)

herinafter called "Surety", are held and firmly bound unto the City of Charleston Department of Parks, 823 Meeting Street, Charleston, SC, 29403, hereinafter called "Owner", in the penal sum of _____ Dollars (\$ _____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _____, 2002, a copy of which is hereto attached and made a part hereof for the construction of:

CP1623 VRTC Bus Shelter Sprinkler System Replacement
(Project Name)

NOW, THEREFORE, is the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations or addition to the terms of the contract or to the work or to the specification.

PROVIDED FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the ____ day of __, 20__.

ATTEST:

(Principal) Secretary

(SEAL)

(Witness as to Principal)

(Principal)

By: _____

(Address)

(Surety)

ATTEST:

(Surety) Secretary

(SEAL)

(Address)

By: _____

(Attorney-in-Fact)

(Address)

NOTE: Date of bond must not be prior to date of Contract.
If Contractor is Partnership, all partners should execute bond.

Important: Surety companies executing bonds must appear on the Treasury Department most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

City of Charleston Construction Contract

THIS CONTRACT, made this ____ day of ____, 201__, by and between:

The Owner: City of Charleston and the Contractor:
Department of Parks
823 Meeting Street
Charleston, SC 29403

WHEREAS, the Owner requires the construction of the following project, identified as follows:

CP1623: VRTC Bus Shelter Sprinkler System Replacement

Whereas, the CONTRACTOR, whose South Carolina contractor's license is _____, is prepared and qualified to provide such Construction;

NOW THEREFORE, the Owner and Contractor agree to all of the following terms and conditions set forth in this Contract.

TIME OF PERFORMANCE:

THE EFFECTIVE DATE of this contract shall be the date written above.
THE DATE OF COMMENCEMENT shall be the date indicated in the Notice to Proceed.
THE DATE OF SUBSTANTIAL COMPLETION shall be 80 calendar days after the DATE OF COMMENCEMENT, subject to adjustment in accordance with the terms of this Contract.

PAYMENTS TO THE CONTRACTOR for acceptable work performed shall be as follows:

THE CONTRACT SUM OF \$_____ to be paid in response to the Contractor's Applications for Payment as certified by the A/E and subject to the terms of this Contract.

THE CONTRACT SUM is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner: N/A.

LIQUIDATED DAMAGES in the amount of \$140 per day shall be withheld from any amounts otherwise due to the Contractor for each day the Contractor fails to achieve SUBSTANTIAL COMPLETION within the time allowed.

ARCHITECT ENGINEER – The A/E of Record for this Project is: DWG, Inc

IN WITNESS WHEREOF, THE PARTIES HERETO HAVE ENTERED INTO THIS CONTRACT ON THE DAY AND YEAR FIRST WRITTEN ABOVE.

OWNER: City of Charleston CONTRACTOR: _____

BY: John J. Tecklenburg, Mayor (Signature of Contractor Representative)

(Name of Contractor Representative)

ITS: _____

General Conditions

ARTICLE 1 – CONTRACT DOCUMENTS

- A. The Contract Documents forming this agreement shall consist of the following:
1. a fully executed Construction Contract (this document) and any listed attachments thereto;
 2. the Project Manual dated November 7, 2016.
 3. Bid Addenda and dates as follows: _____
 4. the Contractor's completed Bid Form;
 5. all Change Orders and Change Directives;
 6. other documents as listed in Article 16.

ARTICLE 2 – GENERAL PROVISIONS

- A. The Contractor shall not incur any expense chargeable to the Owner until this Contract has been authorized and fully executed by both the Owner and the Contractor.
- B. The Contractor warrants to the Owner that:
1. it and its subcontractors (if any) are financially able to complete the work;
 2. it will perform all obligations, furnish all plant, material, equipment, tools, transportation, supplies and labor to complete the work assigned;
 3. it is authorized and licensed to do business in the State of South Carolina and the City of Charleston;
 4. it will perform the Work with care and diligence and in a professional and workmanlike manner;
 5. it has visited the work site and is reasonably apprised of the conditions in and around the work area.
- C. Contractor's Rights and Responsibilities
In addition to any other rights and responsibilities contained in this Agreement, the Contractor shall:
1. pay for required construction permits or business license fees, labor, materials, equipment, tools, transportation, supervision, testing, etc, as required for the performance of the Work;
 2. visit the work site and obtain information to assist in familiarization with the work site, its conditions and any limitations that would affect the performance of the Work;
 3. have the right to rely on information contained in the Contract Documents, but shall give prompt and timely notice to the Owner of any apparent deficiencies or inconsistencies in the information furnished by the Owner or its A/E;
 4. be responsible for all construction means, methods, techniques, procedures and safety measures in the performance of the Work;
 5. employ only persons skilled in the work for which it is to do, employ an experienced superintendent to supervise the work who shall be responsible for the acts or omissions of the Contractor's agents and employees or those of sub-contractors and their agents and employees acting on behalf of the Contractor;
 6. have, at the time of execution and for the duration of this Contract, all professional and business insurance, licenses and permits required to provide the required Services in the State of South Carolina, the City of Charleston and as required by this Contract.
- D. Owner's Rights and Responsibilities
In addition to any other rights and responsibilities contained in this Agreement, the Owner shall:
1. provide the contractor with available information regarding the Work and the work area;
 2. secure and pay for all design permits, assessments, and easements except as required by the Contract Documents;
 3. pay the Contractor for acceptable work performed, in accordance with the provisions of this Contract;
 4. if the Contractor fails to begin work within fourteen (14) calendar days of the DATE OF COMMENCEMENT as indicated in the Notice to Proceed, the Owner shall have the right to declare the Contractor in material breach of this Contract and terminate the Contract;
 5. act as the A/E in the absence of a licensed design professional.

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E. A/E's Rights and Responsibilities

In addition to any other rights and responsibilities contained in the Agreement, the A/E shall:

1. represent the Owner during the construction process through final completion of the project, and as requested during the warranty period. The A/E will act on behalf of the Owner only to the extent provided in the Contract Documents or otherwise agreed by the Owner;
2. make periodic visits to the site during construction administration to become familiar with the progress and quality of the Work and to determine if the Work is being performed in a manner indicating that the Work is generally progressing in accordance with the Contract Documents;
3. make recommendations to the Owner as to the acceptance or rejection of the Work and communicate the Owner's decision to the Contractor;
4. review and approve or reject shop drawings and samples submitted by the Contractor;
5. respond promptly to all requests for information or clarification from the Owner or the Contractor;
6. make the initial interpretation and decision on matters concerning performance under, and the requirements of, the Contract Documents, upon written request of either the Owner or Contractor. The interpretation or decision of the A/E shall be final, subject to the dispute resolution provisions of this Contract;
7. not be responsible for construction means, methods, techniques, procedures and safety measures in the performance of the work or acts of omission of the Contractor, Subcontractors or any other entity performing work on the site;
8. review periodic requests for payment, and approve or reject the request, in whole or in part;
9. prepare Change Orders or Change Directives as directed by the Owner.

ARTICLE 3 – CONSTRUCTION ADMINISTRATION

A. Shop Drawings and Samples

1. The Contractor shall review and approve Shop Drawings and Samples prior to their submission to the A/E. The Contractor's review shall be for compliance with the requirements of the Contract Documents and to ensure complete coordination of the Work.
2. The Contractor shall submit the number of sets as specified in the Contract Documents, or in the absence of a specification, submit enough copies for the Owner to retain two copies plus the number desired to be returned to the Contractor.
3. The A/E will review the shop drawings and samples with reasonable promptness but only for conformity with the design.
4. The Contractor shall submit samples as required by the Contract Documents. The final installed product shall match the approved sample.

B. Materials and Workmanship

1. The Contractor shall not allow the use of any asbestos-containing product.
2. The Contractor shall not use or allow the use of lead material in public water application. Lead-free solder, flux and pipe must be used in all public drinking water and wastewater applications. Lead-free solder and flux is defined as containing less than 0.2% lead while valves, pipes and appurtenances must contain less than 8.0% lead.
3. The Contractor warrants that unless otherwise specified or permitted by the Contract Documents, all material shall be new, in first class condition, and installed using workmanship of the highest quality in accordance with the Contract Documents.

C. Inspection and Testing of Materials

1. The Contractor shall have performed and documented all inspections and tests required by the Contract Documents, including those required by building officials.
2. The Contractor shall leave uncovered all areas of work that are called out in the Contract Documents to be left uncovered, or the A/E requests to be left uncovered prior to being inspected. The Contractor shall give adequate notice to the A/E of the time requested for an inspection of these areas.

D. Substitutions

1. Wherever the Contract Documents specify a particular product, article, appliance, equipment, or material and it is designated by manufacturer and model number, it is the intent to designate a

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- level of quality, finish, appearance, function, or other factor that was desirable to have incorporated into the design. Equivalent products of alternate manufacturers may be used, but must meet or exceed the specification for the original product and must be approved by the A/E.
2. The Contractor shall not substitute any product, article, appliance, equipment, or material that is specified without prior written approval from the A/E, which shall be granted only with the concurrence of the Owner.
- E. Changes in the Work
1. Only the Owner may authorize changes in the scope of the Contract. Such changes shall be made by issuing either a Change Order or a Construction Change Directive, and the Contractor shall execute the changed work promptly.
 2. The Contractor shall provide supporting information as requested by the A/E or the Owner to document the cost of any changed work.
 3. The Contractor shall prepare its cost proposal including labor and material cost breakdown with overhead and profit added as follows:
 - a. For the Contractor or subcontractor on work performed by its own forces:

Overhead (%)	Profit (%)	Commission (%)
10	7	0
 - b. For the Contractor or subcontractor on work performed by its subcontractors:

Overhead (%)	Profit (%)	Commission (%)
10	0	3
 - c. To a first tier subcontractor on work performed by its subcontractors:

Overhead (%)	Profit (%)	Commission (%)
10	0	3
 - d. No more than three levels of overhead, profit, and commission shall be allowed regardless of the number of subcontractor tiers ("commission" is defined as profit on work performed by others). The Contractor or subcontractor shall not be allowed overhead or commission on the overhead, profit, and/or commission received by its subcontractors. Changes to the Work that decrease the Contract Sum, i.e., deleted work, shall include Overhead, Profit, and Commission.
 4. In the absence of a total agreement concerning the item(s) for a Change Order, a Construction Change Directive shall be issued and the Contractor shall proceed diligently with performance of the work required.
- F. Receiving and Storing Materials and Equipment
1. The Contractor shall have an authorized person or persons to receive all items and shall properly unload, check for completeness of shipments, and in-transit damage.
 2. The Contractor shall properly handle and store materials, supplies, equipment etc. in accordance with the Delivery Order or manufacturer's printed instructions of each product.
- G. Reports
1. The Contractor shall prepare Daily Progress Reports on a form provided by the Owner. Reports shall be submitted to the Owner on a weekly basis.
- H. Time for Completion
1. Requests for time extensions shall be made promptly. Delays of the work due to circumstances beyond the control of the Contractor shall be adequately documented and submitted to the Owner with any request for an extension of the time of Completion.
 2. The time allowed for Substantial Completion includes five (5) calendar days per calendar month for delays due to inclement weather. Delays due to weather beyond the five days may be requested as a time extension to the time for completion. The Contractor shall submit job site weather data supporting the claim for an extension of time.
 3. Should completion of the Project extend past the original or amended contract substantial completion date, the Owner will retain as liquidated damages and not as a penalty the amount listed on Page 1 and reduce the Contractor's final payment by that amount.
- I. Guarantees and Warranties
1. The Contractor shall remedy and make good all defects in material and workmanship at no additional cost to the Owner and pay for any damage to other work or property resulting from

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- such defects for a period of one year from the date of Substantial Completion, excepting damage that is caused by misuse or abuse by the Owner. All warranties may be assigned by the Owner at no cost to the Owner and without the approval of the Contractor.
2. Where guarantees and/or warranties are required in the technical sections of the specifications, or as noted on the drawings, exceeding the one-year guarantee period, the extended warranty period will govern.
- J. Use of the Site
1. The Contractor shall confine its operations to areas permitted by laws and ordinances, and as defined in the Contract Documents. The site must be maintained in a reasonably clean condition, free of trash and debris. The Contractor shall, on a regular basis or as specifically requested by the Owner, remove from the site all trash, debris, tools and equipment no longer needed for the work.
 2. The Contractor shall provide access to the work in progress for representatives of the Owner, the A/E and for all authorities having jurisdiction over the Work.
- K. Taxes
1. The Contractor shall include in its Bid and pay for, all taxes in effect or scheduled to go into effect at the time of bidding or at the completion of negotiations.
 2. The Contractor's attention is directed to Title 12, Chapter 8, of the SC Code of Laws, as amended, concerning withholding of tax for non-residents, employees, contractors and subcontractors.

ARTICLE 4- PAYMENTS

- A. The Owner shall make payments no more often than monthly to the Contractor for acceptable work, as scheduled on page 1 and in accordance with Title 29, Chapter 6 of the SC Code of Laws, as amended.
- B. The Contractor shall make payments to Subcontractors and suppliers for acceptable work performed and materials furnished in accordance with Title 29, Chapter 6 of the SC Code of Laws, as amended.
- C. Accompanying each Application for Payment, the Contractor shall submit to the A/E a Schedule of Values allocating all the various portions of the Work, and a Construction Schedule, to be used by the architect as a basis for reviewing the Application for Payment. The Owner shall make progress payments to the Contractor for acceptable work completed based on the approved Schedule of Values and the A/Es' evaluation of the Contractor's Application for Payment. The Owner shall retain ten (10) percent of the completed work until the Final Application for Payment is paid.
- D. The Contractor's Final Application for Payment may be submitted when the following have occurred:
 1. The Contractor has fully performed the Work of the Contract, including the acceptable completion of all punch list items; and,
 2. The Contractor furnishes a Consent of Surety to Final Payment (for bonded projects) and Releases of Lien from subcontractors and suppliers; and,
 3. The Contractor has furnished to the satisfaction of the A/E and the Owner all operating and maintenance manuals, product information, supplier warranties and guarantees and all other project completion documents; and,
 4. The Contractor has completed all training and other startup/turnover support activities with the Owner staff.
- E. If the work is completed to the satisfaction of the A/E, the A/E shall certify the application and the Owner shall make final payment.

ARTICLE 5 – CLAIMS

- A. Each party may assert a Claim requesting an adjustment of the Contract Sum, a change in the Contract Time for completion, or other relief with respect to the terms of the Contract.
- B. Claims under this Contract shall be submitted by written notice that a Claim is being asserted. The responsibility to substantiate a Claim rests with the party making the Claim.
- C. Claims arising prior to the date final payment is due must be initiated within twenty-one (21) days after occurrence of the event giving rise to such Claim or within twenty-one (21) days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. By failing to give

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written notice of a Claim within the time required by this paragraph a party expressly waives its claim.

- D. Pending a resolution of the Claim, including any dispute resolution under this Contract, the Contractor shall proceed to perform as required by the Contract and the Owner shall continue to make payments in accordance with this Contract.

ARTICLE 6 – DISPUTE RESOLUTION

The parties agree to attempt in good faith to resolve their disputes arising from a claim or controversy arising out of or relating to the Contract. To the extent that the parties are unable to reach a resolution, the parties agree that any suit, action or proceeding arising out of or relating to the Contract shall be instituted and maintained only in a state or federal court located in Charleston County. The Contractor agrees that any act by the Owner regarding the Contract is not a waiver of either the State's sovereign immunity or the State's immunity under the Eleventh Amendment of the United States Constitution. As used in this paragraph, the phrase "the State" includes any governmental entity transacting business with the Contractor pursuant to the Contract (including the Owner).

ARTICLE 7 - SUSPENSION OR TERMINATION OF THE CONTRACT

- A. Owner's Right of Termination
1. The Owner may, at any time, terminate the Contract, in whole or in part, with or without cause for the Owner's convenience, upon seven (7) days written notice to the Contractor.
 2. The Owner may, upon written consent of the Contractor, reinstate the terminated portion of this Contract in whole or in part if it is determined that it is necessary or advantageous to the Owner. Compensation shall be equitably negotiated by agreement between the Owner and Contractor.
- B. Contractor's Right of Termination
1. The Contractor may terminate the Contract if work is stopped through no fault of the Contractor, or other persons performing work either directly or indirectly for the contractor, for a period of time exceeding sixty (60) consecutive calendar days due to a court order or other public authority having jurisdiction; or a National emergency which requires the work to be stopped.
 2. The Contractor may, upon seven (7) days written notice to the Owner and the A/E, terminate the Contract for the reasons stated above and be compensated for work completed and materials stored in accordance with the Contract Documents.
- C. Owner's Right of Suspension
1. The Owner may, at any time, suspend the work, in whole or in part, with or without cause for such period of time as determined by the Owner;
 2. The Contract Sum and Contract Time will be adjusted for increases in cost to the Contractor due to the delay or interruption except that no increase will be granted for delays or interruptions that are, or would have been, the responsibility of the Contractor or an equitable adjustment covered under other provisions of the Contract.

ARTICLE 8 – PROTECTION OF PERSONS AND PROPERTY

- A. The Contractor is responsible for job-site safety and the protection of persons and property within the work site. The Contractor shall comply with all applicable laws, rules and regulations regarding safety.
- B. If during the course of executing the Work, the Contractor encounters material believed to be hazardous or of archeological significance, then the Contractor shall immediately stop work in the affected area and report the conditions to the Owner and the A/E in writing. Except by written agreement of the Owner and Contractor, the Contractor shall not resume work until the material has been rendered harmless, removed or protected.
- C. This Article shall apply only to hazardous, toxic or radioactive materials or substances subject to the regulations of agencies having jurisdiction such as, but not limited to, the S.C. Department of Health and Environmental Control (SCDHEC), the U.S. Environmental Protection Agency (USEPA) and the U.S. Nuclear Regulatory Commission (USNRC).

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- D. For the purposes of this Contract, the term "rendered harmless" shall be interpreted to mean that measured levels of verified hazardous, toxic or radioactive materials or substances are less than the applicable standards established by authorities having jurisdiction. In no event, however, shall the Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor, any material supplier, or any entity for whom any of them is responsible, unless such materials or substances were expressly required by the Contract Documents. The Contractor agrees not to use any fill or other materials to be incorporated into the Work that are hazardous, toxic, or radioactive, or made up of any items that are hazardous, toxic, or radioactive.

ARTICLE 9 – INSURANCE AND BONDS

- A. The Contractor shall purchase and maintain insurance to protect against claims that may arise out of the Contractor's operations under the work of this Contract. The limits shall be for not less than the limits set forth in this Article, shall be written on an occurrence basis and shall be in force for the duration of the Contract.
- B. The Contractor's Liability Insurance shall include all major divisions of coverage and is to be based on a Commercial basis including the following:
1. Premises – Operations.
 2. Independent Contractor's Protective.
 3. Products and Completed Operations.
 4. Personal and Advertising Injury.
 5. Contractual, including specified provisions for Contractor's obligations.
 6. Broad Form Property Damage, including Completed Operations.
 7. Owned, Non-Owned and Hired Vehicles.
- C. The Insurance required by this Article shall be written for not less than the following limits or greater if required by law or other provisions in the contract:
1. Commercial General Liability:
 - a. General Aggregate (per project) \$ 1,000,000
 - b. Products/Completed Operations \$ 1,000,000
 - c. Personal and Advertising Injury \$ 1,000,000
 - d. Each Occurrence \$ 1,000,000
 - e. Fire Damage \$ 50,000
 - f. Medical Expense (any one person) \$ 5,000
 2. Business Auto Liability (including all owned, non-owned, and hired vehicles):
 - a. Combined Single Limit \$ 1,000,000

-OR-

 - b. Bodily Injury & Property Damage (each) \$ 1,000,000
 3. Workers Compensation
 - a. State Statutory
 - b. Employer's Liability \$ 100,000 Per Accident
\$ 500,000 Disease, Policy Limit
\$100,000 Disease, Each Employee
- D. The aggregate Limits of the Contractor's Insurance shall apply, in total for this Contract. This shall be indicated on the Certificate of Insurance as "Per Project", or in an attached policy amendment.
- E. The Owner shall be listed as the certificate holder of the Contractor's Liability Insurance.
- F. Certificates of Insurance shall be in the form of the latest edition of the ACORD 25S and shall be filed with the Owner prior to commencement of the Work. In addition to Certificates of Insurance, the Contractor shall supply a written endorsement to the Contractor's general liability insurance policy that names the Owner as an additional insured. The endorsement shall provide that the Contractor's liability insurance policy shall be primary, and that any liability insurance of the Owner shall be secondary and noncontributory. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior written notice has been given to the Owner.

CP1623: VRTC Bus Shelter Sprinkler System Replacement

- G. In no event shall any failure of the Owner to receive certified copies or certificates of policies required under this Article or to demand receipt of such certified copies or certificates prior to the Contractor's commencing the Work be construed as a waiver by the Owner of the contractor's obligations to obtain insurance pursuant to this Article. The obligation to procure and maintain any insurance required by this Article is a separate responsibility of the Contractor and independent of the duty to furnish a certified copy or certificate of such insurance policies. Cancellation of insurance shall be grounds for termination of the contract.
- H. Bonds
If required by the Contract Documents, and prior to being issued a Notice to Proceed, the Contractor shall deliver to the Owner properly executed Performance and Payment Bonds. Failure to provide the Bonds may indicate that the Contractor is in material breach of its responsibilities under the Contract.
1. Bonds shall each be in the amount of 100% of the amount of the Contract.
 2. The Surety providing the Bonds shall have, at a minimum a "Best Rating" of "A" as stated in the most current publication of "Best's Key Rating Guide, Property-Casualty". In addition, the Surety shall have a minimum "Best Financial Strength Category" of "Class V" and in no case less than five (5) times the contract amount. The Bonds shall:
 - a. be issued by a surety company licensed to do business in South Carolina; and,
 - b. be accompanied by a current power of attorney and certified by the attorney-in-fact who executes the bond on the behalf of the surety company; and,
 - c. remain in effect for a period not less than one (1) year following the date of Substantial Completion or the time required to resolve any items of incomplete Work and the payment of any disputed amounts, whichever time period is longer; and,
 - d. display the Surety's' Bond Number.
- I. Property Insurance
The Contractor shall purchase and maintain Builder's Risk insurance in the amount of the Contract Sum and all subsequent modifications on a replacement cost basis. The Contractor shall be responsible for any deductibles. Such insurance shall be maintained until final payment has been made.

ARTICLE 10 – CORRECTION OF WORK

- A. The Contractor shall promptly and with due diligence, correct work rejected by the A/E or the Owner for failure to conform to the requirements of the Contract, whether such defective work is observed before or after Final Completion. The Contractor shall pay for correcting the deficient work including additional testing and inspections and any compensation for A/E services and expenses involved.
- B. If the Contractor fails to carry out the work in accordance with the Contract Documents, and fails within a seven (7) day period after receipt of 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 they may have, proceed to correct such deficiencies. In such case, an appropriate Construction Change Directive shall be issued deducting from payments to the Contractor the reasonable cost of correcting such deficiencies including the Owners expenses, and compensation to the A/E, if necessary.
- C. The Contractor and the Surety (if the Contract is bonded) remain liable for any excess cost or damages resulting from actions set forth in this Article.

ARTICLE 11 – CONSTRUCTION BY OWNER

- A. The Owner reserves the right to do work with its own forces or award separate contracts for work on the same project.
- B. The Contractor agrees to allow access to the site by the Owner's work force or separate contractor(s), and agrees to assist in coordinating the progress of the work with the Owner.
- C. The Owner shall have the responsibility to coordinate the activities of the various contractors working at the project location.

ARTICLE 12 – SUBCONTRACTORS

CP1623: VRTC Bus Shelter Sprinkler System Repalcement

If the Contractor engages subcontractors to provide work on the Contract, then the Contractor shall include, or cause to be included, in the agreement with those entities, all provisions contained in the Contract. Subcontractors and sub-subcontractors shall be bound by the same provisions as the Contractor and shall preserve and protect the rights of the Owner.

ARTICLE 13 – COMPLETION AND CLOSEOUT

- A. The Contractor shall have completed the unfinished and defective work listed in the "punch list" and notify the A/E of its completion. The A/E will schedule a Final Inspection and require the Contractor to demonstrate that all equipment and systems operate as designed. The Owner may elect to have other persons, firms or agencies participate in the inspections.
- B. Failure of the Contractor to achieve completion within the allowed time shall entitle the Owner to consider the Contractor in breach of the Contract.
- C. If more than one Final Inspection is required, the Contractor shall reimburse the Owner for all costs associated with the re-inspection, if any.
- D. Final Payment shall not be due, nor shall retained funds be released, until the Contractor complies with the requirements of Article 4.

ARTICLE 14 – MISCELLANEOUS PROVISIONS

- A. The Contractor and Owner each bind themselves, their partners, directors, officers, successors, executors, administrators, assigns and legal representatives in respect to all provisions of this contract. Neither party shall assign, sublet or transfer their interest in this Contract without the written consent of the other party.
- B. This Contract represents the entire and integrated agreement between the Owner and Contractor. It supersedes any and all prior and contemporaneous communications, representations and agreements, whether written or oral relating to the subject matter of this Contract.
- C. Nothing in this Contract shall be construed to give any rights, contractual relationship or benefit to a third party against either the Owner or the Contractor.
- D. Unless otherwise included in the Contract, nothing shall require the Contractor to discover, handle, remove or dispose of any hazardous or toxic materials in any form at the project site.

ARTICLE 15 – GOVERNING LAW

- A. This contract shall be governed by the laws of the State of South Carolina.

ARTICLE 16 – OTHER PROVISIONS (if any)

- A. The Contractor shall indemnify and save harmless the Owner and the Owner's agents and employees, from and against all losses and claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description brought or recovered against them by reason of any act, omission, or default of the Contractor, its agents, or employees in the execution of this Contract. When the City submits notice, Contractor shall promptly defend any aforementioned action at no cost to the Owner. This obligation shall survive the suspension or termination of this Contract. The limits of insurance coverage required herein shall not serve to limit this indemnity obligation. The recovery of costs and fees shall extend to those incurred in the enforcement of this indemnity.

City of Charleston
CONTRACTOR'S REQUEST FOR CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT: CP 1623 VRTC Bus Shelter Sprinkler System Replacement
(number) *(name)*

This is Part One of a two-part form. It is to be completed by the Contractor and delivered to the A/E. Part Two, Certificate of Substantial Completion, is to be completed by the A/E and submitted to the City for approval.

CERTIFICATION

I hereby certify that Substantial Completion has been accomplished in conformance with the requirements of the Contract. This certification declares that:

- A. The remaining work is not disruptive to the function of the facility and is limited to items minor in scope and nature.
- B. The required Contractor's Punch List is attached. *(Failure to include incomplete work does not relieve the Contractor of the responsibility to complete or correct the Work.)*
- C. All other requirements of the Contract have been accomplished, including delivery of all operational and maintenance manuals, record drawings, maintenance training, warrantee certificates and start-up activities.

SPECIAL CONDITIONS OR STIPULATIONS CONCERNING THE COMPLETION OF PUNCH LIST ITEMS OR EXPLANATIONS OF PARTIAL SUBSTANTIAL COMPLETION:

CONTRACTOR: _____
(Signature of Contractor Representative) *(Print or Type Name of Contractor Rep)* *Date*

INSTRUCTIONS TO THE CONTRACTOR:

Forward this completed form with all required attachments to the A/E for approval, with copy to the City.

ATTACHMENTS:

- 1. Contractor's Punch List.
- 2. Acceptance letters by other agencies/entities having approval authority (water supply, waste water treatment, fire and licensing etc.)
- 3. Other attachments per Contract Documents

A/E: I concur do not concur that the Work is ready for inspection and testing.

(Signature of A/E Representative) *(Print or type Name of A/E Rep)* *(Date)*

INSTRUCTIONS TO THE A/E:

- 1. If concur, return this completed form to the Contractor, with a copy to the City, and schedule a date for inspection mutually agreeable to Contractor, A/E and City.
- 2. If not concur, state reason(s) below. Attach additional sheets if needed. Return completed form to the Contractor with copy to the City.

City of Charleston
CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT: CP 1623 VRTC Bus Shelter Sprinkler System Replacement
(Number) (Name)

This is Part Two of a two-part form. The Contractor Request for Certificate of Substantial Completion is to be completed by the Contractor and delivered to the A/E or design professional. The Certificate of Substantial Completion is to be completed by the A/E and submitted to the City for approval.

CERTIFICATION

I hereby certify that Substantial Completion has been accomplished in conformance with the requirements of the Contract. This certification declares that:

- A. The remaining work is not disruptive to the function of the facility occupants and is limited to items minor in nature and scope. *(Examples are minor repairs to finishes, electrical device cover plates, and hardware and window adjustments.)*
- B. The Contractor's Request for Certificate of Substantial Completion and all attachments thereto have been reviewed and any exceptions are noted.
- C. The composite A/E's Punch List is attached, with the status of each item noted.
- D. All other requirements of the Contract related to Substantial Completion have been accomplished, including delivery of all operational and maintenance manuals, record drawings, maintenance training, warrantee certificates and start up activities.

DATE FOR SUBSTANTIAL COMPLETION:

(This is also the date for the commencement of warranties required by the Contract.)

(DATE)

SPECIAL CONDITIONS OR STIPULATIONS CONCERNING THE COMPLETION OF PUNCH LIST ITEMS OR EXPLANATIONS OF PARTIAL SUBSTANTIAL COMPLETION.

A/E's CERTIFICATE BY:

(Signature of A/E Representative)

(Print or Type Name of A/E Rep)

ITS: _____

(Date)

INSTRUCTIONS TO THE A/E:

Forward both the Contractors Request and this form with attachments to the City for review and approval.

CITY ACCEPTANCE:

(Signature of City Representative)

(Print or Type Name of City Rep)

ITS: _____

(Date)

City of Charleston
SUBSTANTIAL COMPLETION AGREEMENT

PROJECT: CP 1623 VRTC Bus Shelter Sprinkler System Replacement
(Number) (Name)

Instructions: The items checked below are required to be completed, operational and documented in order for the project to be declared Substantially Complete. If Partial Substantial Completion is anticipated the sequence and portions of the project shall be identified and the selected items below will be required for each partial substantial completion area.

ARTICLE 1 – CITY REQUIREMENTS

In addition to the requirements of the Construction Documents, a Substantial Completion requires the following certifications and documents to be fully completed, executed, approved and delivered attached to this form.

1. Approval by South Carolina Department of Health & Environmental Control for:
 - a. Potable water
 - b. Sewer and waste water system
 - c. Air emissions
 - d. Food Service
 - e. Facility Licensing
 - f. Other (*list*): _____

2. Certification from the Site Civil Engineer and /or Landscape Architect of Record that:
 - a. Plantings and grassing have been inspected and are in accord with specifications and regulations.
 - b. Site drainage and storm water retention system have been inspected and are in accord with specifications and regulations.
 - c. Other (*list*): _____

3. Certification from the Mechanical Engineer of Record that:
 - a. Fire suppression system has been tested and is operational.
 - b. Condensate lines and drains are as designed and operational.
 - c. HVAC system has been tested and balanced.
 - d. Fuel gases system inspected and in accord with regulations.
 - e. Boiler systems tested and certified in accordance with regulations.
 - f. Plumbing systems are as designed and operational.
 - g. Laboratory/medical gas systems tested and operational.
 - h. Other (*list*): _____

4. Certification from the Electrical Engineer of Record that:
 - a. Electrical system has been tested and operates in accord with codes.
 - b. Fire alarm system has been tested and operates in accord with codes.
 - c. Smoke detection system has been tested and operates in accord with codes.
 - d. Smoke evacuation system has been tested and operates in accord with codes.
 - e. All lights and switches, receptacles are function as designed.
 - f. Emergency illumination is operational as designed.
 - g. Other (*list*): _____

5. Construction Inspection Services
- a. Copies of all inspection reports are provided and corrections are documented as satisfactory.
 - b. Building Official has provided Certificate of Occupancy or written approval of the project.
 - c. Other (*list*): _____
-
6. Letter or Certificate of Approval from the local Fire Official.
- a. Fire protection services can be provided.
 - b. Access for fire fighting equipment is acceptable.
 - c. Fire extinguishers and their locations are acceptable.
 - d. Exit paths are maintained clear and with little or no fire exposure.
 - e. Other (*list*): _____
-
7. Certification from Fire Marshal that:
- a. Sprinkler system test and inspection report is acceptable.
 - b. Stand pipes are satisfactorily installed and operational.
 - c. Range hood and fire suppression system is installed and operational.
 - d. Other (*list*): _____
-
8. Other: _____
-

ARTICLE 2 – A/E REQUIREMENTS

Substantial Completion requires the following certifications and documents are fully completed, executed, approved and delivered attached to this form. The Punch List of incomplete or unacceptable work may not include any fire and life safety items.

1. Contractor has furnished the final punch list as required by General Conditions
- a. Building egress and exit paths are clear of construction materials and equipment.
 - b. All building systems are functional and correctly operating.
 - c. Other (*list*): _____
-
2. Contractor has furnished the required Documents and Manuals:
- a. Field-record drawings with "as built" markings.
 - b. Building system operations and maintenance manuals.
 - c. Spare parts and extra materials stocks as per specifications.
 - d. Other (*list*): _____
-
3. Other: _____
-

ARTICLE 3 – CONTRACTOR’S REQUIREMENTS

In addition to the requirements of the Construction Documents, Substantial Completion requires the following certifications and documents are fully completed, executed, approved and delivered attached to this form.

1. City intends to occupy the facility as defined in the Contract and as follows:
 - a. When facility is finally complete (one date).
 - b. When identified portions of the facility are complete (multiple dates as attached).
 - c. In phases (as per City schedule attached).
 - d. Other (*list*): _____

2. Sub-contractors have furnished the required documents, training and manuals.
 - a. City facility personnel have been trained as per specifications.
 - b. Building system operations and maintenance manuals delivered to the Contractor.
 - c. Building keying is completed for delivery to City.
 - d. Other (*list*): _____

3. Consent of Surety to the:
 - a. Release of Retainage.
 - b. Final Payment.
4. Other:
 - a. This project requires a Certificate of Substantial Completion.
 - b. Warranties begin on a date other than the Substantial Completion date(s)
(*Explain below.*)
 - c. Other (*list*): _____

This agreement becomes part of the Contract for Construction by attachment to the Contract and Standard Supplementary Conditions governed by Paragraph 9.8. This agreement does not change the provisions of the Contract except to establish a mutual understanding of the terms and expectations of "Substantial Completion". The signing parties for the City, A/E and Contractor have authority to act on behalf of their organizations and in this capacity. This agreement is executed on the date indicated below. (*It is required that this form be attached to the Bid Documents and executed at the earliest opportunity or at the preconstruction conference. Consultants, subcontractors, code inspectors, and other parties who have an interest in or are mentioned in this document should be so informed by receiving copies of the executed document.*)

BY: _____ (Signature of City Representative) _____ (Name of City Representative)

ITS: _____ DATE _____

BY: _____ (Signature of A/E Representative) _____ (Name of A/E Representative)

ITS: _____ DATE _____

By: _____ (Signature of Contractor Representative) _____ (Print or Type Name of Contractor Rep)

ITS: _____ DATE _____

City of Charleston
CERTIFICATE OF FINAL COMPLETION

PROJECT: CP 1623 VRTC Bus Shelter Sprinkler System Replacement
(Number) (Name)

CONTRACTOR'S NOTIFICATION AND CERTIFICATION

I hereby notify the A/E and the City that the Work for the above Project is or will be fully completed on the date stated below. All items of punch-list and all items required by the Construction Documents have been completed and all Work is in conformance with the Contract Documents. The Facility is or will be ready for FINAL INSPECTION and TESTING on _____.
(Date)

CONTRACTOR: _____

BY: _____
(Signature of Contractor Representative)

(Print or type Name of Contractor Representative)

ITS: _____

A/E's CERTIFICATE AND CITY ACCEPTANCE OF FINAL COMPLETION

The A/E and City agree that the Project is complete and the Final Inspection of the Project was acceptable. Final Completion of the Project is hereby declared to be effective on the date stated below.

SPECIAL CONDITIONS OR STIPULATIONS CONCERNING FINAL COMPLETION

A/E's CERTIFICATION:

BY: _____
(Signature of A/E Representative)

(Print or Type Name of A/E Rep)

ITS: _____

Date of Final Completion

CITY ACCEPTANCE:

BY: _____
(Signature of City Representative)

(Print or Type Name of City Rep)

ITS: _____

Date of Acceptance

CP1623: VRTC BUS SHED DRY PIPE SPINKLER SYSTEM REPLACEMENT

Scope of Work:

1. Replacement of the existing sprinkler system will be performed in accordance with CHS VRTC Shed Dry Pipe Sprinkler System Replacement Fire Protection Narrative prepared by DWG, Inc., dated October 14, 2016 and Specification section 211316 Dry-Pipe Sprinkler System, prepared by DWG, Inc., dated October 20, 2016, included herein.
2. Contractor is to perform work outside of normal work hours as not to impact the operation of the facility. The owner's hours of operation from January 1, 2017 to March 31, 2017 are 8:00 am to 5:00 pm and 8:00 am to 5:30 pm from April 1, 2017 to November 1, 2017. Work by the contractor should not commence sooner than 30 minutes after the end of each day's operation and should be completed at least 30 minutes prior to the beginning of each day's operation by the owner.
3. Work will not be permitted on the following dates due to events scheduled within the facility by the owner:
 - Friday, January 6, 2017
 - Saturday, January 28, 2017
 - Thursday, February 16, 2017
 - Friday, February 17, 2017
 - Saturday, February 18, 2017
 - Tuesday, March 21, 2017
 - Monday, March 27, 2017
 - Friday, April 21, 2017

*Additional dates maybe added by the owner.

4. Any storage of material on-site should be coordinated with the owner as not to impact the owner's daily operations of the facility.
5. The owner's restroom facilities will not be accessible by the contractor. Contractor is responsible for providing facilities. Coordinate location with owner's representative. Facilities should be locked when contractor is not present on-site. Water and electricity will be available on site at no cost to the contractor.

GENERAL

The purpose of the project is to replace a failing dry pipe sprinkler system and related equipment including air compressor and unit heater. All piping and equipment shall be seismically restrained in accordance with code requirements.

CODES & STANDARDS

- 2015 International Existing Building Code
- 2015 International Fire Code
- NFPA 13, 2013 Edition: Standard for the Installation of Sprinkler Systems
- NFPA 25, 2014 Edition: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- NFPA 70, 2014 Edition: National Electrical Code
- NFPA 72, 2013 Edition: National Fire Alarm and Signaling Code
- ASCE/SEI 7, 2010 Edition: Minimum Design Loads For Buildings and Other Structures

FIRE PROTECTION SCOPE

A new dry-pipe sprinkler system shall be provided for the VRTC bus shed in accordance with NFPA 13 to replace an existing failing system. The scope of work shall begin at the service entrance flange at ground level in the riser room in the bus shed, and shall include the replacement of the 6" dry pipe valve, tamper and pressure switches, air compressor, and all piping, hangers, supports, and sprinkler heads. The existing air compressor on the platform above the riser room shall be disconnected and demolished. New and replacement tamper switches and dry pipe valve shall be connected to the existing fire alarm system. Spaces served by the system shall be provided with upright sprinkler heads listed for corrosion resistance, and shall be either PTFE (base bid) for standard corrosion resistance or electroless nickel PTFE (Bid Alternate #1) for improved corrosion resistance.

Base bid: PTFE coated sprinkler heads

Bid Alternate #1: Electroless nickel PTFE coated sprinkler heads

Fire Sprinkler Piping

The piping shall be either Schedule 40 black steel (equal to the existing piping) or Schedule 40 galvanized steel for improved corrosion resistance (Bid Alternate #2), and fittings shall be cut-groove with ductile couplings (galvanized for use with galvanized piping). Schedule 10 piping with roll-groove couplings shall not be permitted due to the negative impact on water retention and subsequent internal pipe corrosion. As a bid alternate (#3), the piping will be required to be painted with corrosion-resistant alkyd enamel paint.

Base bid: Unpainted Schedule 40 black steel piping

Bid Alternate #2: Unpainted Schedule 40 galvanized steel piping in lieu of black steel piping

Bid Alternate #3: Add alkyd enamel paint with three coats (primer, intermediate coat, and topcoat; color selected by the City of Charleston Project Manager)

Dry Pipe System Air Compressor

A UL Listed packaged air compressor, coalescing filter, manual desiccant dryers, and air maintenance device shall be provided by the Contractor, with piping to the dry pipe valve field installed. The air compressor shall be controlled by the pressure switch. The air compressor package shall be installed in

the elevated platform above the riser room, and the Contractor shall size the unit appropriately for the total volume of the system up to 1 hp nominal size. Request directive from the Engineer of Record if the system size requires a larger air compressor than 1 hp. Provide with accessory drum drip drain valves at the ends of mains and at low points in the system. Provide new hub drain and hot-dip galvanized steel drain piping and fittings, painted with alkyd enamel paint with three coats (primer, intermediate coat, and topcoat; color selected by the City of Charleston Project Manager) for air compressor/nitrogen generator discharge, routed down the exterior of the building on the side of the building adjacent the street, and terminate at grade. As a bid alternate (#4), a packaged industrial duty nitrogen generator with air maintenance device will be provided in lieu of the packaged air compressor and dryer, sized appropriately for the total volume of the system up to 1 hp nominal size, utilizing membrane technology and with up to 99.8% purity. Package will include air compressor with bypass, air dryer, nitrogen membrane, air tank, nitrogen gas tank, UL listed control panel, and air maintenance device. Provide with accessory self-purging valves at remote points in the system. Required power to the air compressor package (Base Bid) or the nitrogen generator system (Bid Alternate #4) shall be provided. The two 20 amp single pole breakers currently serving the air compressor shall be disconnected and removed, and replaced with a 20 amp double pole breaker. Replace circuit up to the new packaged air compressor or nitrogen generator.

Base Bid: Packaged tank mounted air compressor, coalescing filter, and manual desiccant dryers and accessories. Basis of Design: General Air OLT Plus Series, F3500 filter, AD3400 dessicant dryers (dryers in quantity necessary for size of the system), and AMD-1 air maintenance device.

Bid Alternate #4: Packaged nitrogen generator and dryer and accessories. Basis of Design: Potter NGP Series.

Riser Room Heater

A new electric unit heater and circuit shall be provided to replace the existing failed unit heater. The electrical requirements shall match those of the existing heater.

General Project Requirements

The Contractor is required to perform the work outside of normal working hours so as not to impact the day to day operation of the facility, with the exact times to be coordinated with the City of Charleston Project Manager.

The vehicular staging portion of the facility, the equipment area containing the air compressor, and the riser room shall be Ordinary Hazard Group 1, while the office shall be Light Hazard.

Refer to specifications for the results of a hydrostatic fire flow test performed by Charleston Water System.

Hydraulic calculations and shop drawings shall be provided by the installing contractor. The fire protection system shall be designed in accordance with NFPA 13, 2013 edition. The fire sprinkler system seismic restraints shall be designed with a minimum component importance factor of 1.5 as designated by the IBC. The short period response parameter (S_s) for seismic bracing design shall be 1.121.

SECTION 211316 - DRY-PIPE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipes, fittings, and specialties.
 - 2. Fire-protection valves.
 - 3. Fire-department connections.
 - 4. Sprinkler specialty pipe fittings.
 - 5. Sprinklers.
 - 6. Alarm devices.
 - 7. Control panels.
 - 8. Pressure gages.

1.3 DEFINITIONS

- A. Standard-Pressure Sprinkler Piping: Dry-pipe sprinkler system piping designed to operate at working pressure 175 psig maximum.

1.4 SYSTEM DESCRIPTIONS

- A. Dry-Pipe Sprinkler System: Automatic sprinklers are attached to piping containing compressed air. Opening of sprinklers releases compressed air and permits water pressure to open dry-pipe valve. Water then flows into piping and discharges from sprinklers that are open.

1.5 PERFORMANCE REQUIREMENTS

- A. Standard-Pressure Piping System Component: Listed for 175-psig minimum working pressure.
- B. Delegated Design: Design sprinkler system(s), including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
 - 1. Available fire-hydrant flow test records indicate the following conditions:
 - a. Date: 09/16/2016.
 - b. Time: 9:25 a.m.

- c. Performed by: Charleston Water System (L. Owens & M. Easterlin).
 - d. Location of Residual Fire Hydrant R: 270' east of King St. on Ann St.
 - e. Location of Flow Fire Hydrant F: 80' west of Wragg Square on Ann St.
 - f. Static Pressure at Residual Fire Hydrant R: 42 psi.
 - g. Measured Flow at Flow Fire Hydrant F: 1574 gpm.
 - h. Residual Pressure at Residual Fire Hydrant R: 40 psi.
- C. Sprinkler system design shall be approved by authorities having jurisdiction.
1. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers.
 2. Sprinkler Occupancy Hazard Classifications:
 - a. Vehicular Parking/Staging Areas: Ordinary Hazard, Group 1.
 - b. Equipment Platform: Ordinary Hazard, Group 1.
 - c. Riser Room: Ordinary Hazard, Group 1.
 - d. Office: Light Hazard.
 3. Minimum Density for Automatic-Sprinkler Piping Design:
 - a. Light-Hazard Occupancy: 0.10 gpm over 2535 sq. ft. area.
 - b. Ordinary-Hazard, Group 1 Occupancy: 0.15 gpm over 2535 sq. ft. area.
 4. Maximum Protection Area per Sprinkler: Per UL listing.
 5. Total Combined Hose-Stream Demand Requirement: According to NFPA 13 unless otherwise indicated:
 - a. Light-Hazard Occupancies: 100 gpm for 30 minutes.
 - b. Ordinary-Hazard Occupancies: 250 gpm for 60 minutes.
- D. Seismic Performance: Sprinkler piping shall withstand the effects of earthquake motions determined according to NFPA 13, 2013 edition, and ASCE/SEI 7, 2010 edition. $S_s = 1.121$.

1.6 ACTION SUBMITTALS

- A. Submittal process must be in accordance with the Fire Protection Sprinkler Systems Act, SCCL Title 40 Chapter 10. Submittal must be approved prior to installation.
- B. Fire sprinkler contractor shall be responsible for preparing all required submittals to authorities having jurisdiction for permitting and any other required submittals or approvals. Fire sprinkler shop drawings, product data, hydraulic calculations, and seismic calculations shall be submitted to the Engineer of Record for review. Contractor shall address all comments by the Engineer of Record and resubmit until preliminary review is complete. The Engineer of Record will attach the Fire Sprinkler System Specification Sheet (FSSSS) and Certificate of Compliance (CoC) to the attachments, and the contractor shall forward them to the authority having jurisdiction for approval and permitting. Contractor shall address comments and resubmit until approval is granted.

- C. Product Data: For each type of product to be incorporated in the system.
- D. Shop Drawings: For dry-pipe sprinkler systems. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Wiring Diagrams: For power, signal, and control wiring.
- E. Delegated-Design Submittal: For sprinkler systems indicated to comply with performance requirements and design criteria, including analysis data signed by the qualified sprinkler system designer responsible for their preparation.
- F. Welding certificates.
- G. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping." Furnish at project completion for project closeout and Owner's records.

1.7 INFORMATIONAL SUBMITTALS

- A. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable.
- B. Fire-hydrant flow test report, if additional is provided.
- C. Field quality-control reports.

1.8 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For sprinkler specialties to include in emergency, operation, and maintenance manuals.
- B. Record Drawings: During construction operations, the Fire Sprinkler contractor shall faithfully make a record of all approved changes from the contract drawings, including accurate dimensions where applicable. At completion of the work, all such changes shall be updated in the fire sprinkler shop drawings. Two hard copies of the shop drawings and a USB thumb drive containing the shop drawings, material product data, hydraulic calculations, seismic calculations, test reports, material certificates, warranty, and operation and maintenance manuals shall be provided to the City of Charleston Project Manager.

1.9 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Sprinkler Cabinets: Finished, wall-mounted, steel cabinet with hinged cover, and with space for minimum of six spare sprinklers plus sprinkler wrench. Include number of

sprinklers required by NFPA 13 and sprinkler wrench. Include separate cabinet with sprinklers and wrench for each type of sprinkler used on Project.

- B. National Fire Protection Association Pamphlet No. 25, 2014 edition, left wrapped in plastic in the riser room.

1.10 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. NFPA Standards: Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with the following:
 - 1. NFPA 13, "Standard for the Installation of Sprinkler Systems."
 - 2. NFPA 24, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances."
 - 3. NFPA 25, "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection System."

1.11 PROJECT CONDITIONS

- A. Work Hours: All work shall be completed after normal operating hours, nominally 7:00 am to 9:00 pm. Contractor shall coordinate acceptable working hours with Owner's representative and limit sections of work to only that which can be completed in a single shift.
- B. Interruption of Existing Sprinkler Service: Do not interrupt sprinkler service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary sprinkler service or a fire watch at the Contractor's expense.
 - 1. Notify City of Charleston Project Manager or his/her designated representative no fewer than five working days in advance of proposed interruption of sprinkler service.
 - 2. Do not proceed with interruption of sprinkler service without City of Charleston Project Manager's written permission.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, and fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 STEEL PIPE AND FITTINGS

- A. Standard Weight, Galvanized-Steel Pipe: ASTM A 53/A 53M, Type E, Grade B. Pipe ends may be factory or field formed to match joining method.

- B. Galvanized-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, standard-weight, seamless steel pipe with threaded ends.
- C. Grooved-Joint, Galvanized Steel-Pipe Appurtenances:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Anvil International, Inc.
 - b. Tyco Fire & Building Products LP.
 - c. Victaulic Company.
 - 2. Pressure Rating: 175 psig minimum.
 - 3. Galvanized, Grooved-End Fittings for Steel Piping: ASTM A 47/A 47M, malleable-iron casting or ASTM A 536, ductile-iron casting; with dimensions matching steel pipe.
 - 4. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213, rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts.

2.3 PIPING JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8 inch thick or ASME B16.21, nonmetallic and asbestos free.
 - 1. Class 125, Cast-Iron and Class 150, Bronze Flat-Face Flanges: Full-face gaskets.
 - 2. Class 250, Cast-Iron and Class 300, Raised-Face Flanges: Ring-type gaskets.
- B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.

2.4 LISTED FIRE-PROTECTION VALVES

- A. General Requirements:
 - 1. Valves shall be UL listed or FM approved.
 - 2. Minimum Pressure Rating for Standard-Pressure Piping: 175 psig.
- B. Ball Valves:
 - 1. Standard: UL 1091 except with ball instead of disc.
 - 2. Valves NPS 1-1/2 and Smaller: Bronze body with threaded ends.
 - 3. Valves NPS 2 and NPS 2-1/2: Bronze body with threaded ends or ductile-iron body with grooved ends.
 - 4. Valves NPS 3: Ductile-iron body with grooved ends.
- C. Check Valves:
 - 1. Standard: UL 312
 - 2. Pressure Rating: 250 psig minimum.
 - 3. Type: Swing check.

4. Body Material: Cast iron.
5. End Connections: Flanged or grooved.

D. Bronze OS&Y Gate Valves:

1. Standard: UL 262.
2. Pressure Rating: 175 psig.
3. Body Material: Bronze.
4. End Connections: Threaded.

E. Iron OS&Y Gate Valves:

1. Standard: UL 262.
2. Pressure Rating: 250 psig minimum.
3. Body Material: Cast or ductile iron.
4. End Connections: Flanged or grooved.

F. Indicating-Type Butterfly Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Anvil International, Inc.
 - b. Milwaukee Valve Company.
 - c. NIBCO INC.
 - d. Tyco Fire & Building Products LP.
 - e. Victaulic Company.
2. Standard: UL 1091.
3. Pressure Rating: 175 psig minimum.
4. Valves NPS 2 and Smaller:
 - a. Valve Type: Ball or butterfly.
 - b. Body Material: Bronze.
 - c. End Connections: Threaded.
5. Valves NPS 2-1/2 and Larger:
 - a. Valve Type: Butterfly.
 - b. Body Material: Cast or ductile iron.
 - c. End Connections: Flanged, grooved, or wafer.

2.5 TRIM AND DRAIN VALVES

A. General Requirements:

1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
2. Pressure Rating: 175 psig minimum.

2.6 SPECIALTY VALVES

A. General Requirements:

1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
2. Pressure Rating:
 - a. Standard-Pressure Piping Specialty Valves: 175 psig minimum.
3. Body Material: Cast or ductile iron.
4. Size: Same as connected piping.
5. End Connections: Flanged, threaded, or grooved.

B. Dry-Pipe Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Reliable Automatic Sprinkler Co., Inc.
 - b. Tyco Fire & Building Products LP.
 - c. Victaulic Company.
 - d. Viking Corporation.
2. Standard: UL 260
3. Design: Differential-pressure type.
4. Include UL 1486, quick-opening devices, trim sets for air supply, drain, priming level, alarm connections, ball drip valves, pressure gages, priming chamber attachment, and fill-line attachment.
5. Air-Pressure Maintenance Device:
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) General Air
 - 2) Reliable Automatic Sprinkler Co., Inc.
 - 3) Tyco Fire & Building Products LP.
 - 4) Victaulic Company.
 - 5) Viking Corporation.
 - b. Standard: UL 260.
 - c. Type: Automatic device to maintain minimum air pressure in piping.
 - d. Include shutoff valves to permit servicing without shutting down sprinkler piping, bypass valve for quick filling, pressure regulator or switch to maintain pressure, strainer, pressure ratings with 14- to 60-psig adjustable range, and 175-psig outlet pressure.
6. Air Compressor:

- a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Gast Manufacturing Inc.
 - 2) General Air Products, Inc,
 - 3) Victaulic Company.
 - 4) Viking Corporation.
 - 5) Potter Electric Signal Company.
- b. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
- c. Power: 208-V ac, 60 Hz, single phase.

C. Automatic (Ball Drip) Drain Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Reliable Automatic Sprinkler Co., Inc.
 - b. Tyco Fire & Building Products LP.
 - c. Viking Corporation.
2. Standard: UL 1726.
3. Pressure Rating: 175 psig minimum.
4. Type: Automatic draining, ball check.
5. Size: NPS 3/4.
6. End Connections: Threaded.

2.7 SPRINKLER SPECIALTY PIPE FITTINGS

- A. General Requirements for Dry-Pipe-System Fittings: UL listed/FM approved for dry-pipe service.
- B. Sprinkler Inspector's Test Fittings:
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. AGF Manufacturing Inc.
 - b. Tyco Fire & Building Products LP.
 - c. Victaulic Company.
 - d. Viking Corporation.
 2. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
 3. Pressure Rating: 175 psig minimum.
 4. Body Material: Cast- or ductile-iron housing with sight glass.

5. Size: Same as connected piping.
6. Inlet and Outlet: Threaded.

2.8 SPRINKLERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Reliable Automatic Sprinkler Co., Inc.
 2. Tyco Fire & Building Products LP.
 3. Victaulic Company.
 4. Viking Corporation.
- B. General Requirements:
 1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.
 2. Pressure Rating for Automatic Sprinklers: 175 psig minimum.
- C. Automatic Sprinklers with Heat-Responsive Element:
 1. Standard: UL 199.
 2. Characteristics: Nominal 1/2-inch orifice with discharge coefficient K of 5.6, and for "Ordinary" temperature classification rating unless otherwise indicated or required by application.
- D. Special Coatings:
 1. UL listed corrosion-resistant PTFE coating.

2.9 ALARM DEVICES

- A. Alarm-device types shall match piping and equipment connections.
- B. Electrically Operated Alarm Bell:
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Fire-Lite Alarms; a Honeywell company.
 - b. Notifier; a Honeywell company.
 - c. Potter Electric Signal Company.
 2. Standard: UL 464.
 3. Type: Vibrating, metal alarm bell.
 4. Size: 6-inch minimum diameter.
 5. Finish: Red-enamel factory finish, suitable for outdoor use.
- C. Pressure Switches:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Potter Electric Signal Company.
 - b. System Sensor; a Honeywell company.
 - c. Tyco Fire & Building Products LP.
 - d. Viking Corporation.
2. Standard: UL 346.
3. Type: Electrically supervised water-flow switch with retard feature.
4. Components: Single-pole, double-throw switch with normally closed contacts.
5. Design Operation: Rising pressure signals water flow.

D. Valve Supervisory Switches:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Fire-Lite Alarms; a Honeywell company.
 - b. Kennedy Valve; a division of McWane, Inc.
 - c. Potter Electric Signal Company.
 - d. System Sensor; a Honeywell company.
2. Standard: UL 346.
3. Type: Electrically supervised.
4. Components: Single-pole, double-throw switch with normally closed contacts.
5. Design: Signals that controlled valve is in other than fully open position.

2.10 PRESSURE GAGES

- A. Standard: UL 393.
- B. Dial Size: 3-1/2- to 4-1/2-inch diameter.
- C. Pressure Gage Range: 0 to 100 psig minimum.
- D. Water System Piping Gage: Include "WATER" or "AIR/WATER" label on dial face.
- E. Air System Piping Gage: Include retard feature and "AIR" or "AIR/WATER" label on dial face.

2.11 CORROSION-RESISTANT PAINT

- A. Description: Alkyd enamel paint recommended for use on steel substrates in marine/coastal environments. With anti-corrosive primer recommended for substrate, intermediate coat, and topcoat.
- B. Basis of Design: Sherwin Williams SeaGuard 1000 Marine Alkyd Enamel or equal.

PART 3 - EXECUTION

3.1 SERVICE-ENTRANCE PIPING

- A. Connect sprinkler piping to water-service piping for service entrance to building.
- B. Install shutoff valve, pressure gage, drain, and other accessories indicated at connection to water-service piping.

3.2 PIPING INSTALLATION

- A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.
 - 1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
- B. Piping Standard: Comply with requirements in NFPA 13 for installation of sprinkler piping.
- C. Install seismic restraints on piping. Comply with requirements in NFPA 13 for seismic-restraint device materials and installation.
- D. Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
- E. Install unions adjacent to each valve in pipes NPS 2 and smaller.
- F. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.
- G. Install "Inspector's Test Connections" in sprinkler system piping, complete with shutoff valve, and sized and located according to NFPA 13.
- H. Install sprinkler piping with drains for complete system drainage.
- I. Install sprinkler control valves, test assemblies, and drain risers adjacent to standpipes when sprinkler piping is connected to standpipes.
- J. Install automatic (ball drip) drain valves to drain piping between fire-department connections and check valves. Drain to floor drain or to outside building.
- K. Connect compressed-air supply to dry-pipe sprinkler piping.
- L. Connect air compressor to the following piping and wiring:
 - 1. Pressure gages and controls.
 - 2. Electrical power system.
 - 3. Fire-alarm devices, including low-pressure alarm.

- M. Install alarm devices in piping systems.
- N. Install hangers and supports for sprinkler system piping according to NFPA 13. Comply with requirements in NFPA 13 for hanger materials.
- O. Install pressure gages on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Include pressure gages with connection not less than NPS 1/4 and with soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and install where they will not be subject to freezing.
- P. Drain dry-pipe sprinkler piping.
- Q. Pressurize and check dry-pipe sprinkler system piping and air compressors.
- R. Install sleeves for piping penetrations of walls, ceilings, and floors.
- S. Install escutcheons for piping penetrations of walls, ceilings, and floors

3.3 JOINT CONSTRUCTION

- A. Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.
- B. Install unions adjacent to each valve in pipes NPS 2 and smaller.
- C. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.
- D. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- E. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
- F. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.
- G. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
- H. Steel-Piping, Cut-Grooved Joints: Cut square-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe joints.
- I. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems.

3.4 VALVE AND SPECIALTIES INSTALLATION

- A. Install listed fire-protection valves, trim and drain valves, specialty valves and trim, controls, and specialties according to NFPA 13 and authorities having jurisdiction.
- B. Install listed fire-protection shutoff valves supervised open, located to control sources of water supply except from fire-department connections. Install permanent identification signs indicating portion of system controlled by each valve.
- C. Specialty Valves:
 - 1. General Requirements: Install in vertical position for proper direction of flow, in main supply to system.
 - 2. Dry-Pipe Valves: Install trim sets for air supply, drain, priming level, alarm connections, ball drip valves, pressure gages, priming chamber attachment, and fill-line attachment.
 - a. Install air compressor and compressed-air supply piping.
 - b. Air-Pressure Maintenance Device: Install shutoff valves to permit servicing without shutting down sprinkler system; bypass valve for quick system filling; pressure regulator or switch to maintain system pressure; strainer; pressure ratings with 14- to 60-psig adjustable range; and 175-psig maximum inlet pressure.

3.5 IDENTIFICATION

- A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.
- B. Identify system components, wiring, cabling, and terminals.

3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 - 1. Leak Test: After installation, charge systems and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 3. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.
 - 4. Energize circuits to electrical equipment and devices.
 - 5. Start and run air compressors.
 - 6. Coordinate with fire-alarm tests. Operate as required.
 - 7. Verify that equipment hose threads are same as local fire-department equipment.
- C. Sprinkler piping system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

3.7 CLEANING

- A. Clean dirt and debris from sprinklers.
- B. Remove and replace sprinklers with paint other than factory finish.

3.8 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain specialty valves.

3.9 PIPING SCHEDULE

- A. Standard-pressure, dry-pipe sprinkler system, shall be one of the following as indicated in the Fire Protection Narrative:
 - 1. Schedule 40, black-steel pipe with cut-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.
 - 2. Schedule 40, galvanized-steel pipe with cut-grooved ends; galvanized, grooved-end fittings for steel piping; galvanized grooved-end-pipe couplings for steel piping; and grooved joints.

3.10 SPRINKLER SCHEDULE

- A. Use sprinkler types in subparagraphs below for the following applications:
 - 1. Rooms without Ceilings: Upright sprinklers.
 - 2. Rooms with Suspended Ceilings: Upright or pendent sprinklers.
- B. Provide sprinkler types in subparagraphs below with finishes indicated in the Fire Protection Narrative.
 - 1. Upright and Pendent Sprinklers: PTFE or electroless nickel PTFE finish.

3.11 PAINTING

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, rust, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.
- E. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized metal by mechanical methods to produce clean surfaces that promote adhesion of subsequently applied paints.

3.12 PAINT APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations.
1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
 3. For dry-pipe sprinkler system equipment, do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates. For dry-pipe system piping and couplings, only paint after the installation has been approved by the AHJ.
 4. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections.
- E. Paint the following work where exposed to view:
1. Uninsulated metal piping.

3.13 PAINTING FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Continually inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.14 PAINTING CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.15 PAINTING SCHEDULE

- A. Steel Substrates:
 - 1. Alkyd System:
 - a. Prime Coat: Primer, alkyd, anticorrosive for metal.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel.
- B. Galvanized-Metal Substrates:
 - 1. Alkyd System:
 - a. Prime Coat: Primer, galvanized metal, as recommended in writing by topcoat manufacturer for exterior use on galvanized-metal substrates with topcoat indicated.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel.

END OF SECTION 211316