

## ELECTRONIC DOCUMENTS DISCLAIMER

1. Electronic copies of the solicitation documents are made available on this website solely for the convenience of prospective bidders (whether as a prime contractor or sub-contractor) on the Project, and are not considered part of the Contract Documents. No representation or warranty is made, either expressed or implied, with regard to the accuracy or suitability of these electronic copies for any purpose whatsoever. In the event of discrepancies or conflicts between the County's originally published document(s) and any other version distributed or submitted by other parties, the County's original hard copy version shall prevail.
2. Miami-Dade County Department of Transportation and Public Works (DTPW) does not track or monitor downloads of Project documents from this website. Therefore, prospective bidders who choose to use this method of distribution shall also be responsible for monitoring the site and downloading any applicable addenda or supplemental information. DTPW will distribute hard copy addenda or supplemental information only to those persons or firms who we have purchased a hard copy of the original solicitation documents.
3. Miami-Dade County shall not be responsible for errors and omissions occurring in the transmission or downloading of any documents or specifications from this website. In the event of any discrepancy between information obtained from this website and the DTPW hard copy solicitation documents and specifications, the terms of the hard copy documents will prevail.
4. Miami-Dade County does not guarantee continuous, uninterrupted or secure access to this or other related websites. Operation of this website may be affected from time to time by numerous factors outside of our control. In the event that we are notified of any problems in a timely manner we will do our best to assist with those problems that fall within our control. For assistance, contact us at 305-375-2930. Solicitation documents are removed from this website as soon as possible after the due date.
5. DTPW does not accept facsimile or electronic bid responses of any kind. All bids must be submitted in writing, on the forms provided by the County, to the address designated in the bid package. It is the bidder's responsibility to ensure that their submittals are received at the designated location, complete and on time. Bids received after the due date will be rejected, even if the solicitation is still appearing on this site.
6. With regards to Miscellaneous Construction Contracts (MCC) 7040 Plan Request for Price Quotations:
  - a. Only bidders included on the Project's Bidders List, provided by the Internal Service Department, Procurement Management Division to the DTPW, can submit a bid.
  - b. Only timely bids received from bidders included in the Project's Bidders List will be considered.
7. These documents shall not be altered in any manner. Utilization or viewing of these electronic documents shall constitute implicit acknowledgement and acceptance of these provisions. Failure to comply with these provisions may result in rejection of your bid.

# CONTRACT SPECIFICATIONS

DEPARTMENT OF TRANSPORTATION  
& PUBLIC WORKS  
DESIGN AND ENGINEERING DIVISION

## BID DOCUMENTS

UPGRADE CHILLER UNITS AT  
WILLIAM LEHMAN CENTER  
CONTRACT NO. CICC 7360 PLAN

RPQ NO.: TP-0000017889

PROJECT NO.: IRP171

VOLUME I OF II

SOLICITATION DOCUMENTS

AUGUST 2023



RPQ NO.: TP-0000017889

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

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DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT

WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

INVITATION TO BID

**Department of Transportation and Public Works**

Capital Improvements Division  
111 NW 1st Street, Suite 1410  
Miami, FL 33128



**MIAMI-DADE COUNTY, FLORIDA  
REQUEST FOR PRICE QUOTATION (RPQ)**

Contract No: MCC 7360 Plan - CICC 7360-0/08  
RPQ No: TP-0000017889

**INVITATION TO BID**

A RPQ has been issued for the work identified below. If you are interested in submitting a bid for this project, please submit your bid via Sealed Envelopes, attention to Clerk of the Board at 111 North West 1st ST, 17th floor, Miami FL, 33128 - Clerk of the Board Office no later than 9/13/2023 at 02:00 PM . If you have any questions, contact Marco Movilla at 305-375-3267.

This RPQ is issued under the terms and conditions of the Miscellaneous Construction Contracts (MCC) Program MCC 7360 Plan.

**RPQ DETAILED BREAKDOWN**

Bid Due Date:	9/13/2023	Time Due:	02:00 PM	Submitted Via:	Sealed Envelopes	SBE-Con. Level:	N/A
Estimated Value:	\$1,550,036 (excluding Contingencies and Dedicated Allowances)						
Project Name:	Upgrade Chiller Units At William Lehman Center						
Project Location:	6601 NW 72 Avenue, Miami, Florida 33166						
License Requirements:	Primary:	General Mechanical, Master; General Engineering; General Building Contractor; Air Conditioning Unlimited					
Scope of Work:	(Contractor must obtain and submit all permits prior to performing any work). The purpose of this solicitation is to establish a contract for the removal and replacement of (2) existing Trane water cooled 110-ton, R-113, chiller, units with new magnetic bearing water-cooled chillers, (3) new chilled water pumps, and all related controls, (2) new condenser water pumps, hydronic piping, valves, wiring, accessories, including all necessary electrical upgrades to support the replacement as shown on the contract documents including additional goods, services, all permit fees (if necessary), mechanical contractor labor and design, if applicable, engineering and consultant fees, and extended warranty as described herein, for Miami-Dade County (County) on behalf of the Department of Transportation and Public Works (DTPW).						
Document Pickup:	Contact:	DTPW Capital Improvements Division	Phone No:	305 375-2930	Date:	8/10/2023	
	Location:	111 NW 1st. Street, Miami Florida 33128 Suite 1410					
Pre-Bid Meeting::	YES	Mandatory:	No	Date:	8/23/2023	Time:	10:00 AM
	Location:	(See Note Below) 6601 NW 72 Avenue, Miami, Florida 33166					
Site Meeting:	YES	Mandatory:	No	Date:	8/23/2023	Time:	10:00 AM
	Location:	(See Note Below) 6601 NW 72 Avenue, Miami, Florida 33166					
Bid shall be submitted to:	Contact:	Clerk of the Board					
	Address:	111 North West 1st ST, 17th floor, Miami FL, 33128 - Clerk of the Board Office					
	Email:	clerkbcc@miamidade.gov	FAX # :				
Type of Contract:	Single Trade		Method of Award:	Lowest Responsible Bidder			
Method of Payment:	Scheduled Monthly Payments		Insurance Required:	YES			
Additional Insurance Required:	YES	If Yes - Minimum Coverage:	\$1,000,000.00				
Performance & Payment Bond Required:	YES		Bid Bond Required:	YES			
Prevailing Wage Rate Required:	Building Construction	Davis Bacon:	NO	Maintenance Wages:	NO	AIPP:	NO
		Amount:					
SBE-Con. Requirements:	YES	Percentage:	10.00%	SBD Certificate of Assurance Form Required:	YES		
DBE Participation:	NO	Percentage:	0.00%	DBE Subcontractor Forms Required:	NO		
CWP Requirements:	NO	Percentage:	0.00%				
SBE-S Requirements	NO	Percentage:	0.00%				
SBE-G Requirements	NO	Percentage:	0.00%				
Liquidated Damages:	YES	\$\$ Per Day:	\$325.00				
Trade Set-a-side:	NO	If Yes, Trade =					
For RPQ's less than \$10,000, if no LD rate is specified, the County reserves the right to assess actual damages in lieu of LDs.							
Design Drawing Included:	YES	Shop Drawing Included:	NO	Specifications Included:	YES		
Anticipated Start Date:	1/22/2024		Calendar Days for Project Completion:	240			
Comments:	EMPLOY MIAMI-DADE PROGRAM In accordance with Section 5.02 of the Miami-Dade County Home Rule Amendment and Charter, Section 2-8.1 of the Code of Miami-Dade County, and Administrative Order No. 3-63, all contractors and subcontractors of any tier on (i) construction contracts valued in excess of one million dollars (\$1,000,000) for the construction, demolition, alteration and/or repair of public buildings, or public works; or (ii) contracts or leases valued in excess of one million dollars (\$1,000,000) for privately funded construction, demolition, alteration or repair of buildings, or						

improvements on County-owned land. The awarded Contractor is hereby notified that the County will consider whether the Contractor made its best reasonable efforts to promote Employ Miami-Dade on this contract, as defined in A.O. 3-63, as part of the County's evaluation and responsibility review of the Contractor for new County contract

#### RESIDENTS FIRST TRAINING AND EMPLOYMENT PROGRAM

In accordance with Section 2-11.17 of the Code of Miami-Dade County and Implementing Order No. 3-61, all contractors and subcontractors of any tier on (i) construction contracts valued in excess of \$1 million for the construction, demolition, alteration and/or repair of public buildings, or public works; or (ii) contracts or leases valued in excess of \$1 million for privately funded construction, demolition, alteration or repair of buildings, or improvements on County-owned land shall comply with the following: (i) prior to working on the project, all persons employed by the contractor or subcontractor on the project to perform construction have completed the OSHA 10-hour safety training course, and (ii) the contractor will make its best reasonable efforts to have 51% of all construction labor hours performed by Miami-Dade County residents.

Pursuant to Section 2-8.10 of the Code of Miami-Dade County, this Contract is subject to a user access fee under the County's User Access Program (UAP) in the amount of two percent (2%). All construction services provided under this contract are subject to the 2% UAP. This fee applies to all Contract usage whether by County Departments or by any other governmental, quasi-governmental or not-for-profit entity. From every payment made to the Contractor under this contract (including the payment of retainage), the County will deduct the two percent (2%) UAP fee provided in the ordinance and the Contractor will accept such reduced amount as full compensation for any and all deliverables under the contract. The County shall retain the 2% UAP for use by the County to help defray the cost of its procurement program. Contractor participation in this pay request reduction portion of the UAP is mandatory.

Provided, however, UAP shall not be applicable for total contract values, inclusive of contingency and allowance accounts, of less than five hundred thousand dollars (\$500,000.00).

#### LICENSE REQUIREMENTS:

1. At the time of Bid and pursuant to the requirements of Section 10-3 of the Code of Miami-Dade County, Florida and these Solicitation and Contract Documents, the Bidder must hold a valid, current, and active:

- a. Certificate of Competency from the County's Construction Trades Qualifying Board as General Mechanical or a General Engineering Contractor, Air Conditioning Unlimited, or;
- b. Certification, as a General Contractor or Mechanical Contractor provided by the State of Florida Construction Industry Licensing Board, pursuant to the provisions of Section 489.115 of the Florida Statutes (F.S.), or;

2. Proof of such Certificate(s) must be submitted at the time of initial response and maintained current throughout the contract period. The County may request proof of continued certification at any time during the contract period. Failure to provide such proof within five (5) working days from notification by the County shall result in the removal from the contract and the rejection of any current or future RPQ bid submissions.

#### EXPERIENCE REQUIREMENTS:

1. As per Miami Dade County Resolution R-1122-21, the Bidder must demonstrate that it has full-time personnel with the necessary experience to perform the Project's Scope of Work. This experience shall include work in successfully completed projects performed by the identified personnel whose bulk of work performed is similar in detail to the Project's Scope of Work described in these Solicitation Documents. Demonstrate the experience requirement by:

Providing a detailed description of at least three (3) projects similar in detail to the Project's Scope of Work described in these Solicitation Documents and in which the Bidder's identified personnel is currently engaged or has completed within the past five years. List and describe the aforementioned projects and state whether the work was performed for the County, other government clients, or private entities. The description must identify for each project:

1. The identified personnel and their assigned role and responsibilities for the listed project
2. The client's name and address including a contact person and phone number for reference
3. Description of work
4. Total dollar value of the contract
5. Contract duration
6. Statement or notation of whether Bidder's referenced personnel is/was employed by the prime contractor or subcontractor, and
7. For completed projects, provide letters of certification of final acceptance or similar project closure documentation issued by the client and available Contractor's performance evaluations; or

2. The County reserves the right to request additional information and/or contact listed persons pertaining to the bidder's experience.

#### INDEMNIFICATION AND INSURANCE REQUIREMENTS

The Contractor shall furnish to Department of Transportation and Public Works, 111 NW 1 Street, Miami Florida 33128, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

A. Automobile Liability Insurance covering all owned, non-owned and hired vehicles used in connection with the work, in an amount not less than \$1,000,000 combined single limit per occurrence for bodily injury and property damage.

B. Commercial General Liability Insurance in an amount not less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate, not to exclude Products and Completed Operations. Miami-Dade County must be shown as an additional insured with respect to this coverage.

C. Worker's Compensation Insurance for all employees of the contractor as required by Florida Statute 440.

D. Installation Floater on an "all risk" basis in an amount not less than one hundred percent (100%) of the replacement value of the structure(s), equipment and materials. The policy shall list Miami Dade County as a Loss Payee A.T.I.M.A.

E. Professional Liability Insurance in an amount not less than \$1,000,000 per claim.

All insurance policies required above shall be issued by companies authorized to do business under the laws of the State of Florida, with the following qualifications:

The company must be rated no less than "A-" as to management, and no less than "Class VII" as to financial strength, by Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey, or its equivalent, subject to the approval of the County Risk Management Division.

#### BID DOCUMENTS:

Bidding documents may be purchased from the Department of Transportation and Public Works, Capital Improvements Division, 111 NW 1st Street, 14th Floor, Miami, Florida 33128 for a non-refundable fee of One Hundred Dollars (\$ 100.00) per each complete set of documents. Payment shall be in the form of a company check, cashier's check, or money order payable to the "Department of Transportation and Public Works." Bid Documents can also be downloaded for free at the following link: <https://www8.miamidade.gov/Apps/ISD/DPMWW/SolicitationList.aspx>, and the project number TP-0000017889

#### ADDENDUMS - RFI'S:

All RFI requests should be e-mailed to [marco.movilla@miamidade.gov](mailto:marco.movilla@miamidade.gov) while copying the Clerk of the Board ([clerkbcc@miamidade.gov](mailto:clerkbcc@miamidade.gov)). Addendums and requests for information (RFI) will be sent to contractors who pick up documents at 111 NW 1st Street. Contractors who wish to download the solicitation and contract documents will be responsible to download the Addendums and RFI's. All Addendums, RFI's, and the document holders list (bidder's list) are available to view online at the following web address:

<https://www8.miamidade.gov/Apps/ISD/DPMWW/SolicitationList.aspx>

The Department will only be sending addendums and RFI's by e-mail and posting online at the aforementioned link. The bidders list will be updated every Friday during the advertisement phase of the contract. Please be aware that acknowledgment of receipt of all addendums and RFI's remain a requirement when submitting bids.

#### VENDOR REGISTRATION:

Due to the new Vendor Registration procedures of the Internal Services Department, Procurement Management Division, updated definitions along with the "Affirmation of Vendor Affidavits" has been added to the Bid Submittal Package. The successful bidder must be registered under this new procedure prior to award.

#### PRE-BID MEETING AND SITE VISIT MEETING:

Pre-Bid Meeting and Site Visit Meeting will be held on Wednesday, 10:00 A.M., August 23, 2023 at William Lehman Center, located at 6601 NW 72 Avenue, Miami, Florida 33166.

Site Visit will be held immediately after the Pre-Bid meeting.

#### BID SUBMITTAL DUE DATE:

Bid Submittal Time and Location: Wednesday, 2:00 P.M., September 13, 2023, at 111 NW 1 Street, 17th Floor, Clerk of the Board Office

Bid Opening immediately after Bid Submittal in the 18 Floor.



## **DISCLOSURE:**

- Contractor shall indemnify and hold harmless the County and its officers, employees, agents and instrumentalities from any and all liability, losses or damages, including attorneys' fees and costs of defense, which the County or its officers, employees, agents or instrumentalities may incur as a result of claims, demands, suits, causes of actions or proceedings of any kind or nature arising out of, relating to or resulting from the performance of this Agreement by the Contractor or its employees, agents, servants, partners principals or subcontractors. Contractor shall pay all claims and losses in connection therewith and shall investigate and defend all claims, suits or actions of any kind or nature in the name of the County, where applicable, including appellate proceedings, and shall pay all costs, judgments, and attorney's fees which may issue thereon. Contractor expressly understands and agrees that any insurance protection required by this Agreement or otherwise provided by the Contractor shall in no way limit the responsibility to indemnify, keep and save harmless and defend the County or its officers, employees, agents and instrumentalities as herein provided.

The Contractor shall furnish to **Department of Transportation and Public Works, Capital Improvements Division, 111 NW 1st Street, Suite 1410, Miami, FL 33128**, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

- A.** Worker's Compensation Insurance for all employees of the Contractor as required by Florida Statute 440.
  - a. If applicable should include coverage required under the U.S. Longshoremen and Harbor Workers' Act (USL&H) and/or Jones Act for any activities on or about navigable water.
- B.** Commercial General Liability in an amount not less than \$1,000,000 per occurrence, and \$2,000,000 in the aggregate. Miami-Dade County must be shown as an additional insured with respect to this coverage.
- C.** Automobile Liability Insurance covering all owned, non-owned and hired vehicles used in connection with the work, in an amount not less than \$1,000,000 combined single limit per occurrence for bodily injury and property damage.

\*Under no circumstances are Contractors permitted on the Aviation Department, Aircraft Operating Airside (A.O.A) at Miami International Airport without increasing automobile coverage to \$5 million. Only vehicles owned or leased by a company will be authorized. \$1 million limit applies at all other airports.

- 7360 RPQs are NOT SBE-Con 100% Set-aside solicitation, however the RPQ may be assigned a SBE-Con Trade set-aside and goal. The SBE-Con Trade-aside and goal if applicable will be stipulated on the RPQ and the Invitation to Bid or in the Project's Solicitation Documents.
- All Prime Contractors submitting a bid for RPQ/Project with a Small Business Measures (s) MUST submit the Small Business Development "CERTIFICATE OF ASSURANCE" form properly completed, signed and notarized with their bid document at the time of Bid Submittal. FAILURE TO SUBMIT THE REQUIRED CERTIFICATE OF ASSURANCE FORM AT THE TIME OF BID SUBMISSION SHALL RENDER THE BID NON COMPLIANT TO THE CONTRACT REQUIREMENT AND SECTION 10.33.02 OF THE CODE OF MIAMI-DADE COUNTY.
- 7360 RPQs Federally Funded may be subject to the Disadvantaged Business Enterprise (DBE) Program. The DBE goal will be stipulated on the RPQ and the Invitation to Bid or in the Project's Solicitation Documents.
- 7040 and 7360 RPQs with an estimated project value in excess of \$700,000.00 may be assigned a Small Business Enterprise Goods (SBE-G) or Small Business Services (SBE-S) program goal. The SBE-G or SBE-S goal if applicable will be stipulated on the RPQ and the Invitation to Bid or in the Project's Solicitation Documents.
- All RPQs with an estimated project value \$100,000 or above are subject to Responsible Wage Rates. The wage rate will be stipulated on the RPQ and the Invitation to Bid or in the Project's Solicitation Documents.
- All Projects, where price (Proposals/Bids) received are in excess of \$200,000 will require the submission of the Payment and Performance Bond as required by State of Florida Statute.

## **VERIFICATION OF EMPLOYMENT ELIGIBILITY (E-VERIFY):**

By entering the Contract, the Awarded Bidder becomes obligated to comply with the provisions of Section 448.095, Florida Statute, titled "Verification of Employment Eligibility." This includes but is not limited to utilization of the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of all newly hired employees by the Awarded Bidder effective, January 1, 2021, and requiring all Subcontractors to provide an affidavit attesting that the Subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Failure to comply may lead to termination of this Awarded Bidder, or if a Subcontractor knowingly violates the statute, the subcontract must be terminated immediately. Any challenge to termination under this provision must be filed in the Circuit Court no later than twenty (20) calendar days after the date of termination. If this Contract is terminated for a violation of the statute by the Awarded Bidder, the Awarded Bidder may not be awarded a public contract for a period of one year after the date of termination, and the Awarded Bidder may be liable for any additional costs incurred by the County resulting from the termination of the Contract. Public and private employers must enroll in the E-Verify System (<http://www.uscis.gov/e-verify>) and retain the I-9 Forms for inspection.

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

MINIMUM QUALIFICATIONS & REQUIREMENTS

## **LICENSE REQUIREMENTS:**

At the time of Bid and pursuant to the requirements of Section 10-3 of the Code of Miami- Dade County, Florida, the Bidder is preferred to hold a valid, current, and active:

- a. Certificate of Competency from the County's Construction Trades Qualifying Board as General Mechanical or a General Engineering Contractor, Air Conditioning Unlimited, or;
- b. Certification, as a General Contractor or Mechanical Contractor provided by the State of Florida Construction Industry Licensing Board, pursuant to the provisions of Section 489.115 of the Florida Statutes (F.S.), or;

2. Proof of such Certificate(s) must be submitted at the time of initial response and maintained current throughout the contract period. The County may request proof of continued certification at any time during the contract period. Failure to provide such proof within five (5) working days from notification by the County shall result in the removal from the contract and the rejection of any current or future RPQ bid submissions.

## **CONTRACTOR MUST MEET THE BELOW REQUIREMENTS:**

1. As per Miami Dade County Resolution R-1122-21, the Bidder must demonstrate that it has full- time personnel with the necessary experience to perform the Project's Scope of Work. This experience shall include work in successfully completed projects performed by the identified personnel whose bulk of work performed is similar in detail to the Project's Scope of Work described in these Solicitation Documents. Demonstrate the experience requirement by:
  - a) Providing a detailed description of at least three (3) projects similar in detail to the Project's Scope of Work described in these Solicitation Documents and in which the Bidder's identified personnel is currently engaged or has completed within the past five years. List and describe the aforementioned projects and state whether the work was performed for the County, other government clients, or private entities. The description must identify for each project:
    - 1) The identified personnel and their assigned role and responsibilities for the listed project
    - 2) The client's name and address including a contact person and phone number for reference
    - 3) Description of work
    - 4) Total dollar value of the contract
    - 5) Contract duration
    - 6) Statement or notation of whether Bidder's referenced personnel is/was employed by the prime contractor or subcontractor, and
    - 7) For completed projects, provide letters of certification of final acceptance or similar project closure documentation issued by the client and available Contractor's performance evaluations; or
2. The County reserves the right to request additional information and/or contact listed persons pertaining to bidder's experience.

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

FORMS FOR BIDDING

RPQ Bid Form - Attachment 5A

Bid Form

Surety Bid Bond

All Addendums (if applicable/Signed by Contractor)

Bid Submittal Check List Questionnaire Appendix“D”

Bidder's Statement of Qualifications and Business References

Scrutinized Company Affidavit

Non-Collusion Affidavit

Firm's Responsibility Combined Affidavit Responsible

Contractor Affidavit (Form RTFE 1) Contractor's Due

Diligence Affidavit

Certificate of Assurance

All bids must be received by the due date and time. The County will not consider bids received after the due date and time.

Bids are to be submitted sealed with all necessary affidavits and supporting documentation attached. Bids are to be delivered to the Clerk of the Board at 111 NW 1<sup>st</sup> Street, 17<sup>th</sup> Floor, Miami, Florida, 33128. **All envelopes must be stamped at the reception desk with the date and time. Failure to submit with your bid the forms stipulated above may render the bid non-responsive.**

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

RPQ BID FORM - ATTACHMENT 5A

Department of  
Transportation and Public  
Works  
Capital Improvements Division  
111 NW 1st Street, Suite 1410  
Miami FL., 33128



MIAMI-DADE COUNTY, FLORIDA  
REQUEST FOR PRICE QUOTATION (RPQ)  
Contract No: MCC 7360 Plan - CICC 7360-0/08  
RPQ No: TP-0000017889

**RPQ BID FORM – ATTACHMENT 5A**

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**RPQ Project Name:** UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

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**Price Proposal** (Cost to Perform the work **must** be stated here. State 'No Bid' if not submitting a price proposal)

\$ \_\_\_\_\_

**Bidder's Company Name:** \_\_\_\_\_

**Company Address:** \_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Telephone No:** \_\_\_\_\_ **Fax No:** \_\_\_\_\_ **E-Mail:** \_\_\_\_\_

THE EXECUTION OF THIS FORM CONSTITUTES THE UNEQUIVOCAL OFFER OF PROPOSER TO BE BOUND BY THE TERMS OF ITS PROPOSAL. FAILURE TO SIGN THIS SOLICITATION WHERE INDICATED BELOW BY AN AUTHORIZED REPRESENTATIVE SHALL RENDER THE PROPOSAL NON-RESPONSIVE. THE COUNTY MAY, HOWEVER, IN ITS SOLE DISCRETION, ACCEPT ANY PROPOSAL THAT INCLUDES AN EXECUTED DOCUMENT WHICH UNEQUIVOCALLY BINDS THE PROPOSER TO THE TERMS OF ITS OFFER.

**Name of Person Submitting Quote (Print):** \_\_\_\_\_

**Number of Addendums received:** \_\_\_\_\_ (if none' write "None")

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

**Date:** \_\_\_\_\_

**Note: Quotes must be submitted on this form. Quote envelope must state RPQ Number, date and time due and the Bidder's Name.** Use of any other form for submission of the price quotation shall result in the rejection of the price quotation. Late bids will not be opened. *Low bidder will be notified, in the Recommendation of Award, of the requirements to submit current copies of insurance certificates in accordance with the Contract Documents. By signature, the CONTRACTOR agrees to be bound by the terms set forth in the MCC 7360 Plan.*

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

BID FORM

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. TP-0000017889

RPQ NO. TP-0000017889

To: Miami-Dade County  
Department of Transportation and Public Works  
Miami, Florida

Bid Opening Date: \_\_\_\_\_  
Bid Opening Time: \_\_\_\_\_  
Local Time \_\_\_\_\_

Gentlemen:

We \_\_\_\_\_

Bidder's Name

have received, have examined and are familiar with the Contract Documents bearing the title **UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER- RPQ NO. TP-0000017889**, the forms for the Submittal of Bids and have included the cost of their provisions, in our Bid. We have examined, are familiar with, and do accept the conditions of the Work site and other conditions affecting the Work.

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Failure to acknowledge receipt of all addenda may cause the bid to be considered not responsive to the invitation, which would require rejection of the bid.



**UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER  
PROJECT No.: TP-0000017889**

**BID FORM**

IF THIS CONTRACT IS ACCEPTED, THE BIDDER AGREES TO COMPLETE ALL WORK UNDER THIS CONTRACT WITHIN 240 CALENDAR DAYS AFTER THE EFFECTIVE DATE OF NOTICE TO PROCEED. **PRICING SHALL BE INCLUSIVE OF ALL REQUIREMENTS TO COMPLETE THE SCOPE OF WORK AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.**

\*\*\*\*\* **TO BE COMPLETED BY BIDDER AT BID SUBMISSION** \*\*\*\*\*

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1	<b>General Conditions</b>	LS	1.0		
2	<b>Mobilization/Demobilization</b>	LS	1.0		
3	<b>Water Cooled Chillers &amp; Installation</b>	LS	1.0		
4	<b>Chilled Water Pumps &amp; Installation</b>	LS	1.0		
5	<b>Hydronic Piping, Valves, &amp; Accessories &amp; Installation</b>	LS	1.0		
6	<b>HVAC (FCU's, Fans, Ductwork) &amp; Installation</b>	LS	1.0		
7	<b>T&amp;B, Startup &amp; Commissioning</b>	LS	1.0		
8	<b>Demolition</b>	LS	1.0		
9	<b>Electrical</b>	LS	1.0		

**TOTAL BASE BID**      \$ \_\_\_\_\_

(Instructions: The spaces provided in the Total Price Column(s) for the Bid Line Item(s) must be filled in and no spaces left blank. The sum of the Bid Line Items must represent your Base Bid Total. Failure to submit a complete and accurate Bid Form may result in your bid found non-responsive.)

**A TEN PERCENT (10%) CONTINGENCY ALLOWANCE AND OTHER DEDICATED ALLOWANCES AS REQUIRED WILL BE ADDED TO THE BASE BID TOTAL AS STIPULATED IN THE SPECIAL PROVISIONS.**

LICENSE NO. \_\_\_\_\_ BIDDER'S NAME \_\_\_\_\_

BIDDER'S TELEPHONE NUMBER \_\_\_\_\_ BIDDER'S ADDRESS \_\_\_\_\_

BIDDER'S FEIN NUMBER \_\_\_\_\_ BIDDER'S SIGNATURE \_\_\_\_\_

THE BIDDER UNDERSTANDS AND AGREES THAT THE BASE BID TOTAL AND ALL APPLICABLE ALLOWANCES ARE INCLUSIVE OF ALL WORK NECESSARY TO COMPLETE THE SCOPE OF WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS, AND IF THIS PROPOSAL IS ACCEPTED, THE BIDDER AGREES TO ENTER INTO AND EXECUTE THE CONTRACT WITH THE NECESSARY BOND AND ACCEPT THE ABOVE BASE BID, INCLUSIVE OF ALL ALLOWANCES, AS FULL COMPENSATION FOR THE WORK PERFORMED UNDER THIS CONTRACT.

**\*YOU ARE REQUIRED TO TRANSFER TOTALS TO FORM APPENDIX 5A. FAILURE TO COMPLY WITH THIS REQUEST MAY RENDER THE PROPOSAL NON-RESPONSIVE.**

**LOCAL PREFERENCE CERTIFICATION:** For the purpose of this certification, a “local business” is a business located within the limits of Miami-Dade County that conforms with the provisions of Section 3.0 of the Special Provisions of this solicitation and contributes to the economic development of the community in a verifiable and measurable way. This may include, but not be limited to, the retention and expansion of employment opportunities and the support and increase to the County’s tax base.

Place a check mark here only if affirming bidder meets requirements for Local Preference. Failure to complete this certification at this time (by checking the box above) may render the vendor ineligible for Local Preference.

**LOCALLY-HEADQUARTERED BUSINESS CERTIFICATION:** For the purpose of this certification, a “locally-headquartered business” is a Local business whose “principal place of business” is in Miami-Dade County as defined in Section 3.0 of the Special Provisions of this solicitation.

Place a check mark here only if affirming bidder meets requirements for the Locally-Headquartered Preference (LHP). Failure to complete this certification at this time (by checking the box above) may render the vendor ineligible for the LHP. The address of the locally-headquartered office is \_\_\_\_\_

**LOCAL CERTIFIED WARTIME VETERAN BUSINESS ENTERPRISE CERTIFICATION:** A Local Certified Service-Wartime Veteran Business Enterprise is a firm that is (a) a local business pursuant to Section 2-8.5 of the Code of Miami-Dade County and (b) prior to bid submission is certified by the State of Florida Department of Management Services as a service-wartime veteran business enterprise pursuant to Section 295.187 of the Florida Statutes.

Place a check mark here only if affirming bidder is a Local Certified Service-Wartime Veteran Business Enterprise. A copy of the certification must be submitted with this proposal.

**A. WAIVER OF CONFIDENTIALITY AND TRADE SECRET TREATMENT OF BID:**

The Bidder acknowledges and agrees that the submittal of the Bid is governed by Florida’s Government in the Sunshine Laws and Public Records Laws, as set forth in Florida Statutes Section 286.011 and Florida Statutes Chapter 119. As such, all material submitted as part of, or in support of, the Bid will be available for public inspection after opening of bids and may be considered by the County in public.

**By submitting a bid pursuant to this solicitation, Bidder agrees that all such materials may be considered to be public records. The Bidder shall not submit any information in response to this solicitation which the Bidder considers to be a trade secret, proprietary or confidential.** In the event that the Bid contains a claim that all or a portion of the Bid submitted contains confidential, proprietary or trade secret information, the Bidder, **by signing below**, knowingly and expressly **waives** all claims made that the Bid, or any part thereof no matter how indicated, is confidential, proprietary or a trade secret and authorizes the County to release such information to the public for any reason.

**B. CONVICTION DISCLOSURE:**

Pursuant to Section 2-8.6 of the Code of Miami-Dade County, any individual, corporation, partnership, joint venture or other legal entity having an officer, director, or executive who has been convicted of a felony during the past ten (10) years shall disclose this information at the time of bid submittal.

Place a check mark here only if the Bidder has such conviction to disclose to comply with this requirement.

D. C. CERTIFICATE OF COMPETENCY NO \_\_\_\_\_ BIDDER'S NAME \_\_\_\_\_

BIDDER'S TELEPHONE NUMBER \_\_\_\_\_ BIDDER'S ADDRESS \_\_\_\_\_

BIDDER'S SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

BID BOND

BID BOND

STATE OF \_\_\_\_\_ ) ss.:

COUNTY OF \_\_\_\_\_ )

KNOW ALL MEN BY THESE PRESENTS, that we, \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are held and firmly bound unto Miami-Dade County in the penal sum of Dollars (\$ \_\_\_\_\_) lawful money of the United States, which sum represents five percent of the Base Bid Total, and 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 **RPQ NO. TP-0000017889** entitled, **UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER**

NOW THEREFORE, if the Principal shall not withdraw said Bid within 180 days after the Bid opening date, shall submit complete information required, and shall within 10 days after the prescribed forms are presented to him for signature, enter into a written Contract with Miami-Dade County, in accordance with the Bid as accepted, and give a Surety Performance and Payment Bond with good and sufficient surety or sureties and provide the necessary Insurance Certificates, as may be required, for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith, or in the event of withdrawal of said Bid within the period specified, or in the event of the failure to enter into such Contract and give such Bond within the time specified, if the Principal shall pay Miami-Dade County the difference between the amounts specified in said Bid and the amount for which Miami-Dade County may procure the required work and supplies, provided the latter amount be in excess of the former, then the above obligations shall be void and of no effect; otherwise, to remain in full force and virtue.

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

(CORPORATE SEAL)

\_\_\_\_\_  
(printed name of corporation)

\_\_\_\_\_  
(printed state of incorporation)

By: \_\_\_\_\_  
(signature of president or vice-president & capacity)

\_\_\_\_\_  
(printed name of president or vice- president & capacity)

By: \_\_\_\_\_  
(signature of secretary or assistant secretary & capacity)

\_\_\_\_\_  
(printed name of secretary or assistant secretary & capacity)

\_\_\_\_\_

\_\_\_\_\_  
(Business address of corporation)

ACKNOWLEDGEMENT:

STATE OF \_\_\_\_\_) ss.:

COUNTY OF \_\_\_\_\_)

Before me personally appeared \_\_\_\_\_, as President to me well known or has presented \_\_\_\_\_ as identification and  
(Type of identification)

\_\_\_\_\_ as Secretary, to me well known, or has presented \_\_\_\_\_ as identification and known to me to be individuals described  
(Type of identification)

in and who executed the foregoing instrument as \_\_\_\_\_ President and \_\_\_\_\_ Secretary of the above named \_\_\_\_\_ a Corporation, and severally acknowledged that they executed such instrument as such \_\_\_\_\_ President and \_\_\_\_\_ Secretary, respectively, of said corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that it was affixed to said instrument by due and regular corporate authority, and said instrument is the free act and deed of said corporation.

SUBSCRIBED AND SWORN TO (or affirmed) before me on \_\_\_\_\_  
(Date)

by \_\_\_\_\_ . He / She is personally known to me or has presented  
(Affiant)

\_\_\_\_\_ as identification.  
(Type of Identification)

\_\_\_\_\_  
(Signature of Notary)

\_\_\_\_\_  
(Serial Number)

\_\_\_\_\_  
(Print or Stamp Name of Notary)

\_\_\_\_\_  
(Expiration Date)

Notary Public \_\_\_\_\_  
(State)

Notary Seal:

=====

SURETY:

(CORPORATE SEAL)

\_\_\_\_\_  
(printed name of Surety)

\_\_\_\_\_

\_\_\_\_\_  
(address of Surety)

By: \_\_\_\_\_  
(Attorney-in-Fact)

By: \_\_\_\_\_  
(resident Florida agent)

\_\_\_\_\_  
(printed name of Attorney-in-Fact)

\_\_\_\_\_  
(printed name of agent)

Note: Copy of Resident Agent's current license as issued by State of Florida Insurance Commissioner must be attached.

(Power of Attorney must be attached)

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

ADDENDUM ACKNOWLEDGEMENT FORM  
(IF APPLICABLE/ SIGNED BY CONTRACTOR)



MIAMI-DADE COUNTY  
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS (DTPW)

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PROJECT: Upgrade Chiller Units at William Lehman Center  
Project No. TP-0000017889

**ACKNOWLEDGEMENT OF ADDENDA**

(Must be completed and submitted with required solicitation documents)

**Instructions:** Complete Part I or Part II, as applicable.

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**PART I:** Listed below are the dates of issue for each Addendum received in connection with this solicitation.

Addendum #1, Dated _____,	202__
Addendum #2, Dated _____,	202__
Addendum #3, Dated _____,	202__
Addendum #4, Dated _____,	202__
Addendum #5, Dated _____,	202__
Addendum #6, Dated _____,	202__
Addendum #7, Dated _____,	202__
Addendum #8, Dated _____,	202__
Addendum #9, Dated _____,	202__
Addendum #10, Dated _____,	202__

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**PART II:**

\_\_\_\_ No Addendum was received in connection with this solicitation.

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Authorized Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

BID SUBMITTAL CHECK LIST QUESTIONNAIRE

APPENDIX "D"

# QUESTIONNAIRE

## Appendix D



**IN ORDER TO PROVIDE INFORMATION NECESSARY IN DETERMINING THE QUALIFICATIONS OF THE PROPOSER, PLEASE PROVIDE THE INFORMATION LISTED BELOW**

#	QUESTION	ANSWER
1	Have you carefully read the Instruction To Prospective Contractors?	<input type="checkbox"/> YES <input type="checkbox"/> NO
2	Have you carefully reviewed the entire Contract Documents as identified within the Instruction To Prospective Contractors?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3	If identified in the Contract Documents, have you carefully inspected the site of the work?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
4	Have you requested, in writing, of the contact person identified in the Advertisement, any clarifications necessary to submit a responsive proposal? Have you received a written response of clarification?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
5	Are you licensed and certified to perform the work for which you are submitting this proposal?  License No.: Competency No.: FEIN No.: Qualifier's Name:	<input type="checkbox"/> YES <input type="checkbox"/> NO _____ _____ _____ _____
6	Are you registered with the Miami-Dade County Department of Procurement Management (DPM)?	<input type="checkbox"/> YES <input type="checkbox"/> NO
7	Have you made any changes or written any codicils to the Contract Proposal?	<input type="checkbox"/> YES <input type="checkbox"/> NO
8	How many previous Contracts with Miami-Dade County in the past five (5) years?	_____
9	Total dollar value of Contracts with Miami-Dade County in the past five (5) years?	_____
10	How many years has your Company been in business with the same Principals?	_____
11	Applicable Federal Requirement Certifications	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

BIDDER'S STATEMENT OF QUALIFICATIONS AND BUSINESS REFERENCES

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
TRANSIT ENGINEERING

BIDDER'S STATEMENT OF QUALIFICATIONS AND BUSINESS REFERENCES

This statement is an integral part of the Contractor's Bid, and must be completed as directed in the Instructions to Bidders. All references and information shall be current and traceable. If Bidder is a joint venture, a separate form must be prepared by each venturer (extra forms are available from the Engineer).

NAME OF BIDDER \_\_\_\_\_

PRINCIPAL OFFICE \_\_\_\_\_

(Street Address or P. O. Number)

\_\_\_\_\_  
(City)

(State)

(Zip Code)

\_\_\_\_\_  
(Area Code) (Telephone Number)

1. Are you registered to do business in Florida? \_\_\_\_\_ Registration No. \_\_\_\_\_ Classification \_\_\_\_\_
2. Do you hold a certificate of competency issued by Miami-Dade County, Florida? \_\_\_\_\_ Classification \_\_\_\_\_
3. Are you an individual \_\_\_\_\_, a partnership \_\_\_\_\_, a corporation \_\_\_\_\_ or a joint venture \_\_\_\_\_ (Check as applicable).

If a partnership, list names and addresses of partners; if a corporation, list names of officers and directors and State of incorporation; if a joint venture, list names and addresses of venturers and, if any venturer is a corporation, partnership or joint venture, list the same information for each such corporation, partnership and joint venturer.

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

4. How many years has your organization been in business as a contractor under your present business name? \_\_\_\_\_ years.

5. How many years of experience has your organization had in construction work similar to the work of this Contract?

(a) As a general contractor? \_\_\_\_\_

(b) As a subcontractor? \_\_\_\_\_

6. List all the projects which your organization has completed, which demonstrate qualifications to perform the work of this Contract. (For joint venture work show the sponsoring individual or company.)

YEAR	CONTRACT PRICE	KIND OF CONSTRUCTION	LOCATION OF WORK	NAME, ADDRESS, AND E-MAIL OF ENGINEER OR ARCHITECT

7. Have you or your organization, or any officer or partner thereof, failed to complete a Contract? \_\_\_\_\_

If so, give details \_\_\_\_\_  
\_\_\_\_\_

8. In what other lines of business are you financially interested?

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9. Name the persons with whom you have been associated in business as partners or business associates during the last five years.

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10. Give information about the construction experience of the principal individuals of your present organization.

Individual's Name	Present Position or Office in Your Organization	Years of Construction Experience	Magnitude and Type of Work	In What Capacity



11. List work, which you have currently underway.

Contract Price	Type of Construction	Location of Work	Percent Completed	Expected Completion Date	Name & Address of Engineer or Architect

12. List engineers, architects and owners, including public bodies, for whom you have done work:

NAME	ADDRESS	BUSINESS	TELEPHONE

13. Reference is hereby made to the following financial institutions as to the financial responsibility of the Bidder:

Name of Bank: \_\_\_\_\_

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

City and State: \_\_\_\_\_ Telephone: \_\_\_\_\_

Officer Familiar with Bidder's Account: \_\_\_\_\_

Name of Bank: \_\_\_\_\_

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

City and State: \_\_\_\_\_ Telephone: \_\_\_\_\_

Officer Familiar with Bidder's Account: \_\_\_\_\_

Name of Bank: \_\_\_\_\_

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

City and State: \_\_\_\_\_ Telephone: \_\_\_\_\_

Officer Familiar with Bidder's Account: \_\_\_\_\_

14. Reference is hereby made to the following surety company or companies as to the financial responsibility and general reliability of Bidder:

Name of Surety Company: \_\_\_\_\_

Name of Local Agent (if different): \_\_\_\_\_

Local Street Address: \_\_\_\_\_

City and State: \_\_\_\_\_ Telephone: \_\_\_\_\_

Person Familiar with Bidder's Account: \_\_\_\_\_

Name of Surety Company: \_\_\_\_\_

Name of Local Agent (if different): \_\_\_\_\_

Local Street Address: \_\_\_\_\_

City and State: \_\_\_\_\_ Telephone: \_\_\_\_\_

Person Familiar with Bidder's Account: \_\_\_\_\_

15. Is any litigation pending against your organization? \_\_\_\_\_

If so, give details \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. Is any litigation presently being prosecuted by your organization or on behalf of your organization? \_\_\_\_\_

If so, give details

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The undersigned certifies that he is legally authorized by the Bidder to make the statements and representations contained in this document, and represents and warrants that the foregoing information is true and accurate to the best of his knowledge, and intends that the Miami-Dade County, DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS Agency, rely thereon in awarding the Contract.

BIDDER'S NAME: \_\_\_\_\_

DATE OF SIGNING: \_\_\_\_\_

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

TITLE: \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

AFFIDAVIT

SCRUTINIZED COMPANIES

By executing the Scrutinized Companies with Activities in Sudan or Iran Petroleum Energy Sector Lists Affidavit through a duly authorized representative, the bidder certifies that the bidder is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, as those terms are used and defined in sections 287.135 and 215.473 of the Florida Statutes. In the event that the bidder is unable to provide such certification, the bidder shall execute the Affidavit through a duly authorized representative. In such event, the bidder shall furnish together with its bid a duly executed written explanation of the facts supporting any exception to the requirement for certification that it claims under Section 287.135 of the Florida Statutes. The bidder agrees to cooperate fully with the County in any investigation undertaken by the County to determine whether the claimed exception would be applicable. The County shall have the right to terminate any Contract resulting from this solicitation for default if the bidder is found to have submitted a false certification or to have been, or is subsequently during the term of the Contract, placed on the Scrutinized Companies for Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List.

**AFFIDAVIT  
SCRUTINIZED COMPANIES WITH ACTIVITIES IN SUDAN  
OR IRAN PETROLEUM ENERGY SECTOR LISTS  
FLORIDA STATUTES 215.473**

Pursuant to 287.135, F.S., the { \_\_\_\_\_ } (“Entity”) must disclose, if the Entity or any of its officers, directors, or executives are doing certain types of business in or with Sudan or Iran.

Indicate below if the above named Entity, as of the date of submission:

\_\_\_\_\_ has not engaged in commerce in any form in Sudan or Iran, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, or any other apparatus of business or commerce.

\_\_\_\_\_ has engaged in commerce with Sudan or Iran, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, or any other apparatus of business or commerce.

(CORPORATE SEAL)

**CONTRACTOR**

\_\_\_\_\_  
(Legal Name of Corporation)

**ATTEST:**

Secretary \_\_\_\_\_  
(Signature and Seal)

By: \_\_\_\_\_  
Contractor – Signature

\_\_\_\_\_  
(Type Name & Title)

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

\_\_\_\_\_  
(Type Name & Title)

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

NON COLLUSION AFFIDAVIT



**NON-COLLUSION AFFIDAVIT**

*(In accordance with [Sections 2-8.1.1](#) and [10-33.02.1](#) of the Code of Miami-Dade County)*

I, the undersigned, am over 18 years of age, have personal knowledge of the facts stated in the Non-Collusion Affidavit (*this Affidavit*) and I am an owner, officer, director, principal shareholder and/or otherwise authorized to bind the Bidder/Proposer of this solicitation.

A. I have reviewed the list of respondents attached to this Affidavit. I state that the Bidder/Proposer of this competitive solicitation (check one):

is **not related** to any of the other respondents submitting a Bid/Proposal in the competitive solicitation.

is **related** to the following respondents who submitted a Bid/Proposal in the competitive solicitation, which are identified and listed below:

B. I state that the Bidder/Proposer of this competitive solicitation:

1. has prepared this Bid/Proposal independently without consultation, communication, agreement or arrangement with any other Bidder/Proposer or competitor for the purpose of restricting competition;
2. has submitted the Bid/Proposal in its own behalf, and not in the interest or on behalf of any person not therein named;
3. has not, directly or indirectly, induced or solicited any other Bidder/Proposer to put in a sham proposal, or any other person, firm, or corporation to refrain from proposing;
4. has not in any manner sought by collusion to secure an advantage over any other Bidder/Proposer.

**Note:** Any person or entity that fails to submit this executed Affidavit shall be ineligible for contract award. In accordance with Section 2-8.1.1 of the Code of Miami-Dade County, where two or more related parties, as defined herein, each submit a Bid for any contract, such Bids shall be presumed to be collusive. The foregoing presumption may be rebutted by the presentation of evidence as to the extent of ownership, control and management of such related parties in preparation and submittal of such Bids. **Related parties** shall mean the Bidder/Proposer; the principals, corporate officers, and managers of a Bidder/Proposer; or the spouse, domestic partner, parents, stepparents, siblings, children or stepchildren of a Bidder/Proposer or the principals, corporate officers and managers thereof which have a direct or indirect ownership interest in another Bidder/Proposer for the same contract or in which a parent company or the principals thereof of one Bidder/Proposer have a direct or indirect ownership interest in another Bidder/Proposer for the same contract. Bid/Proposal found to be collusive shall be rejected. Bidder/Proposer who has been found to have engaged in collusion may be considered non-responsible, and may be suspended or debarred, and any contract resulting from collusive bidding may be terminated for default.

**Written Declaration:** Pursuant to §92.525, Florida Statutes, under penalties of perjury, I declare that I have read the foregoing Affidavit and that the facts stated in it are true, accurate, and complete.

Solicitation No.: \_\_\_\_\_ Solicitation Title: \_\_\_\_\_

By: \_\_\_\_\_  
Signature of Affiant

Date: \_\_\_\_\_ 20 \_\_\_\_

\_\_\_\_\_  
Printed Name of Affiant and Title

\_\_\_\_/\_\_\_\_/\_\_\_\_-\_\_\_\_/\_\_\_\_/\_\_\_\_/\_\_\_\_/\_\_\_\_  
Federal Employer Identification Number

\_\_\_\_\_  
Printed Name of Bidder/Proposer

\_\_\_\_\_  
Address of Bidder/Proposer

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

FIRM'S RESPONSIBILITY COMBINED AFFIDAVIT



**FIRM'S RESPONSIBILITY AFFIDAVIT**  
**"COMBINED AFFIDAVIT"**

STATE OF FLORIDA                    )  
  ) SS:  
COUNTY OF MIAMI-DADE         )

The undersigned, being first duly sworn, states as follows:

**GENERAL**

1. I am a duly authorized representative of the Firm submitting a bid, proposal or other document to Miami-Dade County with the intention of being awarded a contract (referred to in this affidavit as the "Respondent").
2. This Affidavit is made of my personal knowledge. I understand that Miami-Dade County will rely on the representations made in this affidavit in determining my eligibility and responsibility to enter into a contract with Miami-Dade County. By executing this affidavit, the Respondent agrees to provide to Miami-Dade County such documentation or other proof as Miami-Dade County may require verifying the accuracy and completeness of any of the representatives.
3. The Respondent is duly authorized to submit this bid or proposal, and if awarded the contract, to enter into the contract and perform the services or supply the goods contemplated in the contract.

**OWNERSHIP DISCLOSURE**

4. That in compliance with Section 2-8.1(d)(1) of the Miami Dade County Code, if the contract or business transaction is with a corporation, the full legal name and business address shall be provided for each officer and director and each stockholder who holds directly or indirectly five percent (5%) or more of the corporation's stock. If the contract or business transaction is with a trust, the full legal name and address shall be provided for each trustee and each beneficiary. All such names and addresses are (Post Office addresses are not acceptable). The full legal names and business address of any other individual (other than subcontractors, materialmen, suppliers, laborers, or lenders) that have, or will have, any interest (legal, equitable beneficial or otherwise) in the contract or business transaction with Miami-Dade County are (Post Office addresses are not acceptable). This information shall be supplied on the attached Ownership Disclosure form (Attachment "A") and signed by the Respondent.

Combined Affidavit Initial  
\_\_\_\_\_

**EMPLOYMENT DISCLOSURE**

5. The following information and attachments are provided and are in compliance with all items in County Ordinance No. 90-133, amending Section 2.8-1; Subsection (d) (2):

a. Does your firm have a collective bargaining agreement with its employees?  
 Yes                       No

b. Does your firm provide paid health care benefits for its employees?  
 Yes                       No

c. Provide a current breakdown (number of persons) of your firm’s work force and ownership as to race, national origin and gender:

White:	_____	Males:	_____	Females:	_____
Asian:	_____	Males:	_____	Females:	_____
Black:	_____	Males:	_____	Females:	_____
American					
Indian:	_____	Males:	_____	Females:	_____
Hispanics:	_____	Males:	_____	Females:	_____
Aleut					
(Eskimo):	_____	Males:	_____	Females:	_____
_____:	_____	Males:	_____	Females:	_____

**EMPLOYMENT DRUG FREE WORKPLACE**

6 . The Respondent provides a drug-free workplace in full compliance with Section 2-8.1.2 of the Code of Miami-Dade County.

**EMPLOYMENT FAMILY LEAVE**

7. That in compliance with Ordinance No. 91-142 of the Code of Miami-Dade County, Florida, the following information is provided and is in compliance with all items in the aforementioned Ordinance:

An employee who has worked for the above firm for at least one (1) year shall be entitled to ninety (90) days of family leave during any twenty-four (24) month period, for medical reasons, for the birth or adoption of a child, or for the care of a child, spouse or other close relative who has a serious health condition without risk of termination of employment or employer retaliation.

Combined Affidavit Initial  
\_\_\_\_\_

### **ARREARS WITH THE COUNTY**

8. That in compliance with Ordinance No. 95-178 and Section 2-8.1(c) of the Code of Miami-Dade County, the Proposer has paid all delinquent and currently due fees or taxes, including but not limited to real estate and personal property taxes, registered in the name of Proposer and which are collected in the normal course by the Miami-Dade County Tax Collector, and that County issued parking tickets for vehicles registered in the name of the above proposer, and which are collected in the normal course by the Miami-Dade Clerk of the Circuit and County Courts, have been paid.

That in compliance with Ordinance No. 99-162 and Section 2-8.1 of the Code of Miami-Dade County, the Proposer is not in arrears in any payment under contract, promissory note or other loan document with Miami-Dade County, or any of its agencies or instrumentalities, including the Public Health Trust, either directly or indirectly through a firm, corporation, partnership or joint venture in which the individual or entity has a controlling financial interest as that term is defined in Section 2-11.1(b)(8) of the Code of Miami-Dade County.

### **CODE OF BUSINESS ETHICS**

9. I, being duly sworn, hereby state and certify that this firm has adopted a Code of Business Ethics that is fully compliant with the requirements of Section 2-8.1(i) of the Code of Miami-Dade County as amended. I further acknowledge that failure to comply with the adopted Code of Business Ethics shall render any contract with Miami-Dade County voidable, and subject this firm to debarment from County work pursuant to Section 10-38 (h)(2) of the Code of Miami-Dade County as amended. I further acknowledge that failure to submit this affidavit shall render this firm ineligible for contract award.

### **NO CRIMINAL RECORD**

10. The Respondent has not been convicted of a felony during the past ten (10) years, nor does it, as of the date of the bid or proposal submission, have an officer, director or executive who has been convicted of a felony during the past ten (10) years as defined in Section 2-8.6 of the Code of Miami-Dade County.

### **PUBLIC ENTITY CRIME**

11. The respondent has not been convicted of a Public Entity crime as defined in Paragraph 287.133(1)(g) of the Florida Statutes. Violation of any State or Federal law with respect to the transaction of business with any public entity or with an agency or political subdivision of any State.

Combined Affidavit Initial

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**DEBARMENT AND SUSPENSION DISCLOSURE**

- 12 . The Respondent, and its officers, principals, stockholders, subcontractors or its affiliates are not debarred or suspended from contracting with Miami-Dade County as regulated by Section 10-38 of the Miami Dade County Code.

**NON -DISCRIMINATION BASED ON DISABILITY**

- 13 . The Respondent is in compliance with and agrees to continue to comply with and assure any subcontractor, or third party contractor under this project complies with all applicable laws forbidding discrimination based on disability including, but not limited to those provisions pertaining to employment, provision of programs and services, transportation, communications. Access to facility, renovations and new construction as set forth in the Americans with Disabilities Act of 1990 (ADA), the Rehabilitation Act of 1973, the Federal Transit Act and the Fair Housing Act.

**FAIR SUBCONTRACTING**

- 14 . Consistent with Section 2-8.8 of the Code of Miami-Dade County, the Respondent has adopted subcontracting policies and procedures which (a) notifies the broadest number of local subcontractors of the opportunity to be awarded a subcontract; (b) invites local subcontractors to submit bids in a practical, expedient way; (c) provides local subcontractors access to information necessary to prepare and formulate a subcontracting bid; (d) allows local subcontractors to meet with appropriate personnel of the Respondent to discuss the Respondent's requirements; and (e) awards subcontracts based on full and complete consideration of all submitted proposals and in accordance with the Respondent's stated objectives.

**RESPONSIBLE WAGE AND BENEFITS (IF APPLICABLE)**

- 15 . If applicable, the Respondent is in full compliance with Section 2-11.16 of the Code of Miami-Dade County, and should he or she be awarded the contract, understands his or her obligation to pay the project minimum wage rates set forth in that Section and the labor provisions of the contract documents.

Combined Affidavit Initial

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**CLEARINGHOUSE AFFIDAVIT**

- 16. That in compliance with Miami-Dade County Resolution Number R-1145-99, the Respondent agrees to comply with all requirements of the Clearinghouse Resolution and Job Request form for posting job opportunities. Making it a mandatory requirement for Respondents to post notice of job opportunities resulting from the construction of improvements on County property through the County's Clearinghouse process.

**I STATE NOTHING FURTHER IN THIS AFFIDAVIT.**

Signature: \_\_\_\_\_  
Position/Title: \_\_\_\_\_  
Name of Firm: \_\_\_\_\_

The foregoing was sworn and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ by \_\_\_\_\_, who is personally known to me or who has produced \_\_\_\_\_ as identification who being duly sworn, deposes and says that the above is true to the best of his knowledge, information and belief.

My Commission expires:

\_\_\_\_\_  
NOTARY PUBLIC  
STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

RESPONSIBLE CONTRACTOR AFIDAVIT (FORM RTFE 1)



DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT

WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

CONTRACTOR DUE DILIGENCE AFFIDAVIT

“The attention of the Contractor is hereby directed to the requirements of Resolution R-63-14 in that the award of this contract is conditioned on the Contractor providing the County, when required, with a “CONTRACTOR DUE DILIGENCE AFFIDAVIT”.



**Miami-Dade County  
Contractor Due Diligence Affidavit**

Per Miami-Dade County Board of County Commissioners (Board) Resolution No. R-63-14, County Vendors and Contractors shall disclose the following as a condition of award for any contract that exceeds one million dollars (\$1,000,000) or that otherwise must be presented to the Board for approval:

- (1) Provide a list of all lawsuits in the five (5) years prior to bid or proposal submittal that have been filed against the firm, its directors, partners, principals and/or board members based on a breach of contract by the firm; include the case name, number and disposition;
- (2) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has defaulted; include a brief description of the circumstances;
- (3) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

All of the above information shall be attached to the executed affidavit and submitted to the Procurement Officer overseeing this solicitation/contract/purchase order. The Vendor/Contractor attests to providing all of the above information, if applicable, to the County.

**Written Declaration:** Pursuant to Florida Statutes s. 92.525, under penalties of perjury, I declare that I have read the foregoing Contractor Due Diligence Affidavit and that the facts stated in it (attached to it) are true.

**Contract No. :**  **Federal Employer Identification Number (FEIN):**

**Contract Title:**

Printed Name of Affiant Printed Title of Affiant Signature of Affiant

Name of Firm Date

Address of Firm State Zip Code

**Notary Public Information**

Notary Public – State of \_\_\_\_\_ County of \_\_\_\_\_

**Subscribed and sworn to** (or affirmed) before me this \_\_\_\_\_ day of \_\_\_\_\_ by \_\_\_\_\_  
\_\_\_\_\_ He or she is personally known to me \_\_\_\_\_ or has produced identification

\_\_\_\_\_  
Signature of Notary Public Serial Number

\_\_\_\_\_  
Print or Stamp of Notary Public Expiration Date Notary Public Seal

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

CERTIFICATE OF ASSURANCE (COA)



SMALL BUSINESS DEVELOPMENT
CERTIFICATE OF ASSURANCE(COA)
SMALL BUSINESS PARTICIPATION ON COUNTY PROJECTS

This completed form must be submitted with bid documents by all bidders/proposers on a Miami-Dade County project with Small Business Enterprise ("SBE") program measure(s).

Project No.: TP-0000017889 Project Title: Upgrade Chiller Units At William Lehman Center

Bidder/Proposer: FEIN:

Address: City State ZIP

Phone Number: Email address:

The bidder/proposer is committed to meeting the established measure(s) assigned to this project: % SBE-A/E, 10.00% SBE-Cons, N Trade Set-aside SBE-Cons, % SBE-G, and/or % SBE-S. (For Goals, write in the percentage. For Set-aside, put Y or N.)

Print Prime Bidder's Name & Title Prime Bidder's Signature Date

To satisfy the requirements for Step 1 - Bid Submittal and Compliance with Small Business Enterprise Program(s), the following are required:

- 1. Acknowledgement of the SBE-Architecture & Engineering, SBE-Construction, SBE-Good and/or SBE-Service (non-construction, architecture or engineering) measure(s) established for this project via this Certificate of Assurance.
2. Agree to engage in the solicitation of approved Miami-Dade County Small Business Enterprise firm(s) to achieve the established measure(s) as indicated in the Project Documents (specifications).
3. Agree to select and submit the names of the certified SBEs to satisfy the measures via Miami-Dade County's Business Management Workforce System ("BMWS") within the specified timeframe, upon email notification from the Small Business Development ("SBD") Division or BMWS.

To satisfy the requirements for Step 2 - Bid Evaluation and Recommendation for Award, please attest that:

I understand that my company will be deemed non-compliant and not eligible for award if I fail to (1) submit this form with my bid/proposal documents and/or (2) submit my company's Utilization Plan which shall list all certified Miami-Dade County Small Business Enterprise firms whom will be subcontracted with to satisfy the project's established SBE measure(s) via BMWS, within the specified timeframe, upon email notification from SBD or BMWS. Each SBE subcontractor, subconsultant, and/or sub-vendor will also be required to confirm its contractual relationship via BMWS, within the specified timeframe, for final approval by SBD.

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

BEFORE ME, an officer duly authorized to administer oaths and take acknowledgement, personally appeared, who being first sworn deposes and affirms that the provided information statements are true and correct to the best of his/her knowledge information and belief.

Signature of Owner

SWORN TO and subscribed before me this day of, 20

Signature of Notary Public-State of Florida

My commission expires:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS BID  
DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

CONTRACT FORMS

Surety Performance and Payment Bond

Fair Wage Affidavit

Financial Documentation

DPM Requirement – Affirmation of Vendor Affidavits

Job Clearinghouse Form

Fair Subcontracting Practices

E-Verify Affidavit

Residents First Training and Employment Program/Community WorkForce Program/

Employ Miami-Dade Program Construction WorkForce Plan - Form RFTE 2

OSHA Safety Training Affidavit - Form RFTE 3

Residents First Training and Employment Program/Employ Miami-Dade Program

WorkForce Performance Report - RFTE 4

Certificate(s) of Insurance

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

SURETY PERFORMANCE AND PAYMENT BOND

## SURETY PERFORMANCE AND PAYMENT BOND

By this Bond, we \_\_\_\_\_, as Principal, whose principal business address is \_\_\_\_\_, as Contractor under the contract dated \_\_\_\_\_, 20\_\_\_\_\_, between Principal Miami-Dade County for the construction of **UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER**, RPQ/Project No. **RPQ NO. TP-0000017889** (herein after referred to as "Contract") the terms of which Contract are incorporated by reference in its entirety into this Bond and \_\_\_\_\_, a corporation, whose principal business address is \_\_\_\_\_ as Surety, are bound to Miami-Dade County (hereinafter referred to as "County") in the sum of \_\_\_\_\_ (U.S. dollars) \$ \_\_\_\_\_, for payment of which we bind Ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs all the work under the Contract, including but not limited to guarantees, warranties and the curing of latent defects, said Contract being made a part of this bond by reference, and in the times and in the manner prescribed in the Contract, including any and all damages for delay; and
2. Promptly makes payments to all claimants, as defined in Section [255.05\(1\)](#), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays County all losses, damages, including damages for delay, expenses, costs and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Contract, including but not limited to a failure to honor all guarantees and warranties or to cure latent defects in its work or materials within 5 years after completion of the work under the Contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the Contract, including all warranties and curing all latent defects within 5 years after completion of the work under the Contract;

then this bond is void; otherwise, it remains in full force.

If no specific periods of warranty are stated in the Contract for any particular item or work, material or equipment, the warranty shall be deemed to be a period of one (1) year from the date of final acceptance by the County. This Bond does not limit the County's ability to pursue suits directly with the Principal seeking damages for latent defects in materials or workmanship, such actions being subject to the limitations found in Section 95.11(3)(c), Florida Statutes.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

**SURETY PERFORMANCE AND PAYMENT BOND (Cont'd)**

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be executed by their appropriate officials as of the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_.

CONTRACTOR

\_\_\_\_\_  
(Contractor Name)

BY:

\_\_\_\_\_  
(President) (Managing Partner or Joint Venture)

(SEAL)

COUNTERSIGNED BY RESIDENT  
FLORIDA AGENT OF SURETY:

SURETY:

\_\_\_\_\_  
(Copy of Agent's current  
Identification Card as issued by  
State of Florida Insurance Commissioner must be attached)

By: \_\_\_\_\_  
Attorney-in-Fact

(CORPORATE SEAL)

(Power of Attorney must be attached)

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

FAIR WAGE AFFIDAVIT



**FAIR WAGE AFFIDAVIT**

Before me, the undersigned authority appeared \_\_\_\_\_ the  
(PRINT NAME)

\_\_\_\_\_ of \_\_\_\_\_,  
(PRINT TITLE) (PRINT NAME OF BIDDER OR PROPOSER)

who attests that \_\_\_\_\_ shall pay workers on  
(PRINT NAME OF BIDDER OR PROPOSER)

the project minimum wage rates in accordance with Responsible Wages and Benefits, Section 2-11.16 of the Code of Miami-Dade County and the Labor Provisions of the contract documents.

**State of FLORIDA**

**County of Miami-Dade**

Sworn to (or affirmed) and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_\_\_\_.

\_\_\_\_\_ Personally, known or \_\_\_\_\_ produced identification.

\_\_\_\_\_  
(Signature of Notary Public - State of Florida)

\_\_\_\_\_  
(Print, Type, or Stamp Commissioned Name of Notary Public)

Type of identification produced: \_\_\_\_\_



DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

FINANCIAL DOCUMENTATION

As a condition of award, the Contractor may be required to provide documentation that affirm its financial capacity to perform the work (i.e., Tax Returns, Financial Statements, Profit-and-Loss Statements, Cash Flow Statements, etc.).

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

DEPARTMENT OF PROCUREMENT MANAGEMENT (DPM)

AFFIRMATION OF VENDOR AFFIDAVITS

Bidders are required to affirm that all information submitted with the Vendor Registration Package is current, complete and accurate as a condition of award, by completing the provided Affirmation of Vendor Affidavit Form.



# New Vendor Registration and Bid/Proposal Contract Language

## 1.1. DEFINITIONS FOR VENDOR REGISTRATION

**Bid** – shall refer to any offer(s) submitted in response to this solicitation.

**Bidder** – shall refer to anyone submitting a Bid in response to this solicitation.

**Bid Solicitation** – shall mean this solicitation documentation, including any and all addenda.

**Bid Submittal Form** – defines the requirement of items to be purchased, and must be completed and submitted with Bid. The Bidder should indicate its name in the appropriate space on each page.

**County** – shall refer to Miami-Dade County, Florida

**DPM** – shall refer to Miami-Dade County's Department of Procurement Management.

**Enrolled Vendor** – shall refer to a firm that has completed the necessary documentation in order to receive Bid notifications from the County.

**Registered Vendor** – shall refer to a firm that has completed the Miami-Dade County Business Entity Registration Application and has satisfied all requirements to enter into business agreements with the County.

**The Vendor Registration Package** – shall refer to the Business Entity Registration Application.

For additional information about on-line vendor enrollment or vendor registration contact the Vendor Assistance Unit at 111 N.W. 1<sup>st</sup> Street, 13<sup>th</sup> Floor, Miami, FL 33128, Phone 305-375-5773. Vendors can enroll online and obtain forms to register by visiting our web site at [www.miamidade.gov/dpm](http://www.miamidade.gov/dpm)

## 1.2. INSTRUCTIONS TO BIDDERS

### A. Bidder Qualification

It is the policy of the County to encourage full and open competition among all available qualified vendors. All vendors regularly engaged in the type of work specified in the Bid Solicitation are encouraged to submit Bids. Vendors may enroll with the County to be included on a notification list for selected categories of goods and services. To be eligible for award of a contract (including small purchase orders), Bidders must become a Registered Vendor. Only Registered Vendors can be awarded County contracts. Vendors are required to register with the County by contacting the Vendor Assistance Unit. The County endeavors to obtain the participation of all qualified small business enterprises. For information and to apply for certification, contact the Department of Small Business Development at 111 N.W. 1<sup>st</sup> Street, 19<sup>th</sup> Floor, Miami, FL 33128-1900, or telephone at 305-375-3111. County employees and board members wishing to do business with the County are referred to Section 2-11.1 of the Miami-Dade County Code relating to Conflict of Interest and Code of Ethics.

### B. Vendor Registration

To be recommended for award the County requires that vendors complete a Miami-Dade County Vendor Registration Package. Effective June 1, 2008, a new Vendor Registration Package, including a Uniform Affidavit Packet (Affidavit form), must be completed by vendors and returned to the Department of Procurement Management (DPM), Vendor Assistance Unit, within fourteen (14) days of notification of the intent to recommend for award. In the event the Vendor Registration Package is not properly completed and returned within the specified time, the County may in its sole discretion, award to the next lowest responsive, responsible Bidder. The Bidder is responsible for obtaining the Vendor Registration Package, including all affidavits by downloading from the DPM website at [www.miamidade.gov](http://www.miamidade.gov) or from the Vendor Assistance Unit at 111 N.W. 1<sup>st</sup> Street, 13<sup>th</sup> Floor, Miami, FL 33128.

Bidders are required to affirm that all information submitted with the Vendor Registration Package is current, complete and accurate, at the time they submit a response to a Bid Solicitation, by completing the provided Affirmation of Vendor Affidavit form.

In becoming a Registered Vendor with Miami-Dade County, the vendor confirms its knowledge of and commitment to comply with the following:

1. **Miami-Dade County Ownership Disclosure Affidavit**  
(Sec. 2-8.1 of the County Code)
2. **Miami-Dade County Employment Disclosure Affidavit**  
(County Ordinance No. 90-133, amending Section 2-8.1(d)(2) of the County Code)
3. **Miami-Dade County Employment Drug-free Workplace Certification**  
(Section 2-8.1.2(b) of the County Code)
4. **Miami-Dade Disability and Nondiscrimination Affidavit**  
(Article 1, Section 2-8.1.5 Resolution R182-00 Amending R-385-95)
5. **Miami-Dade County Debarment Disclosure Affidavit**  
(Section 10.38 of the County Code)
6. **Miami-Dade County Vendor Obligation to County Affidavit**  
(Section 2-8.1 of the County Code)
7. **Miami-Dade County Code of Business Ethics Affidavit**  
(Article 1, Section 2-8.1(j) and 2-11(b)(1) of the County Code through (6) and (9) of the County Code and County Ordinance No 00-1 amending Section 2-11.1(c) of the County Code)
8. **Miami-Dade County Family Leave Affidavit**  
(Article V of Chapter 11 of the County Code)

9. **Miami-Dade County Living Wage Affidavit**  
(Section 2-8.9 of the County Code)

10. **Miami-Dade County Domestic Leave and Reporting Affidavit**  
(Article 8, Section 11A-60 11A-67 of the County Code)

11. **Subcontracting Practices**  
(Ordinance 97-35)

12. **Subcontractor /Supplier Listing**  
(Ordinance 97-104)

13. **Environmentally Acceptable Packaging**  
Resolution (R-738-92)

14. **W-9 and 8109 Forms**

The vendor must furnish these forms as required by the Internal Revenue Service.

15. **Social Security Number**

In order to establish a file for your firm, you must provide your firm's Federal Employer Identification Number (FEIN). If no FEIN exists, the Social Security Number of the owner or individual must be provided. This number becomes your "County Vendor Number". To comply with Section 119.071(5) of the Florida Statutes relating to the collection of an individual's Social Security Number, be aware that DPM requests the Social Security Number for the following purposes:

- Identification of individual account records
- To make payments to individual/vendor for goods and services provided to Miami-Dade County
- Tax reporting purposes
- To provide a unique identifier in the vendor database that may be used for searching and sorting departmental records

16. **Office of the Inspector General**

Pursuant to Section 2-1076 of the County Code.

17. **Small Business Enterprises**

The County endeavors to obtain the participation of all small business enterprises pursuant to Sections 2-8.2, 2-8.2.3 and 2-8.2.4 of the County Code and Title 49 of the Code of Federal Regulations.

18. **Antitrust Laws**

By acceptance of any contract, the vendor agrees to comply with all antitrust laws of the United States and the State of Florida.

### C. PUBLIC ENTITY CRIMES

To be eligible for award of a contract, firms wishing to do business with the County must comply with the following:

Pursuant to Section 287.133(2)(a) of the Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a contract to provide any goods or services to a public entity, may not submit a Bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit Bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 of the Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.



Miami-Dade County
Department of Procurement Management
Affirmation of Vendor Affidavits

In accordance with Ordinance 07-143 amending Section 2-8.1 of the Code of Miami-Dade County, effective June 1, 2008 (for goods and services) and July 1, 2008 (for design and construction), vendors are required to complete a new Vendor Registration Package, including a Uniform Affidavit Packet (Vendor Affidavits Form), before being awarded a new contract. The undersigned affirms that the Vendor Affidavits Form submitted with the Vendor Registration Package is current, complete and accurate for each affidavit listed below.

Contract No. : \_\_\_\_\_ Federal Employer Identification Number (FEIN): \_\_\_\_\_

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

Affidavits and Legislation/ Governing Body

Table with 2 columns and 10 rows listing various Miami-Dade County affidavits and legislation, such as Ownership Disclosure, Employment Disclosure, Drug-free Workplace Certification, etc.

Printed Name of Affiant, Printed Title of Affiant, Signature of Affiant, Name of Firm, Date, Address of Firm, State, Zip Code

Notary Public Information

Notary Public - State of \_\_\_\_\_ County of \_\_\_\_\_

Subscribed and sworn to (or affirmed) before me this \_\_\_\_\_ day of, \_\_\_\_\_ 20 \_\_\_\_\_

by \_\_\_\_\_ He or she is personally known to me [ ] or has produced identification [ ]

Type of identification produced \_\_\_\_\_

Signature of Notary Public, Serial Number, Print or Stamp of Notary Public, Expiration Date, Notary Public Seal

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

SBD JOB CLEARINGHOUSE AFFIDAVIT

The attention of the Contractor is hereby directed to the requirements of Job Clearinghouse Code §2-1701 and Resolution No. R-1395-05.

**COUNTY'S CLEARINGHOUSE:** Pursuant to Miami-Dade County Resolution R-1145-99, Contractors involved in the construction of improvements on County property must post a notice of job opportunities with the Miami-Dade County Job Clearinghouse. For information regarding the Miami-Dade County's Clearinghouse program, please contact the County's Division of Small Business Development at (305) 375-3157.



*Delivering Excellence Every Day*

**JOB CLEARINGHOUSE AFFIDAVIT**  
Notice of Construction Job Opportunities

Project / Contract Number: \_\_\_\_\_

Pursuant to Miami-Dade County Resolution No. R-1395-05, there are \_\_\_ open position(s) to submit to the Job Clearinghouse for this project at this time. All open positions will be submitted to South Florida Workforce at <https://iapps.careersourcesfl.com/jchcwp/>.

\_\_\_\_\_  
(Signature of Affiant)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Printed Name of Affiant, Title, and Firm Name)

\_\_\_\_\_  
(Witness)

Sworn to and subscribed before me this

\_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_

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

\_\_\_\_\_  
Signature of Notary Public

Personally Known

Produced ID

Type of ID produced \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

FAIR SUBCONTRACTING PRACTICES

Consistent with Section 2-8.8 of the Code of Miami-Dade County, the Bidder has adopted subcontracting policies and procedures which (a) notifies the broadest number of local subcontractors of the opportunity to be awarded a subcontract; (b) invites local subcontractors to submit bids in a practical, expedient way; (c) provides local subcontractors access to information necessary to prepare and formulate a subcontracting bid; (d) allows local subcontractors to meet with appropriate personnel of the Respondent to discuss the Respondent's requirements; and (e) awards subcontracts based on full and complete consideration of all submitted proposals and in accordance with the Respondent's stated objectives.



**FAIR SUBCONTRACTING PRACTICES**  
**(Miami-Dade County Code, Section 2-8.8)**

In compliance with Miami-Dade County Code, Section 2-8.8 – *Fair subcontracting practices*, as a condition of award, the Bidder shall provide a detailed statement of its policies and procedures (use separate sheet if necessary) for awarding subcontracts. **Failure to provide the required statement shall preclude your firm from receiving the contract.**

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NO SUBCONTRACTORS WILL BE UTILIZED FOR THIS CONTRACT

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM

LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

E-VERIFY AFFIDAVIT

# Miami-Dade County

## E-Verify Affidavit

Executive Order 11-02 requires all Florida State agencies under the direction of the Governor to use E-Verify to confirm the employment eligibility of all current and prospective employees (including subcontractors) assigned to perform work pursuant to a state agency contract. Executive Order 11-116 clarifies that the requirement for state contractors to use E-Verify applies to "all contracts for the provision of goods and services to the state in excess of nominal value."

In accordance with the State requirement, Miami-Dade County requires all vendors doing business with the County who are awarded state-funded contracts to verify employee eligibility using the E-verify system. It is the responsibility of the awarded vendor to insure compliance with E-verify requirements at all times.

To enroll in E-Verify, employers should visit the E-Verify website (<http://www.uscis.gov/e-verify>) and follow the instructions. The employer must, as usual, retain the I-9 Forms for inspection.

By affixing your signature below you hereby affirm that you have complied with E-Verify requirements.

Federal Employer Identification Number (FEIN): \_\_\_\_\_

_____	_____	_____
Printed Name of Affiant	Printed Title of Affiant	Signature of Affiant
_____	_____	_____
Name of Firm		Date
_____	_____	_____
Address of Firm	State	Zip Code

### Notary Public Information

Notary Public -- State of \_\_\_\_\_ County of \_\_\_\_\_

Subscribed and sworn to (or affirmed) before me this \_\_\_\_\_ day of, \_\_\_\_\_ 20\_\_\_\_

by \_\_\_\_\_ He or she is personally known to me  or has produced identification

Type of identification produced \_\_\_\_\_

_____	_____
Signature of Notary Public	Serial Number
_____	_____
Print or Stamp of Notary Public	Expiration Date
_____	_____
	Notary Public Seal

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

RESIDENTS FIRST TRAINING AND EMPLOYMENT PROGRAM/COMMUNITY  
WORKFORCE PROGRAM/EMPLOY MIAMI-DADE PROGRAM CONSTRUCTION  
WORKFORCE PLAN - FORM RFTE 2

## Residents First Training and Employment Program/Community Workforce Program/Employ Miami-Dade Program Construction Workforce Plan (Miami-Dade County Code Sections 2-11.17, 2-1701 & A.O. 3-63) - Form RFTE 2

Contract No. \_\_\_\_\_ Prime Contractor: \_\_\_\_\_

§2-1701 Community Workforce Program     §2-11.17 Resident First Training and Employment Program     A.O. 3-63 Employ Miami-Dade Program

In accordance with Sections 2-11.17 & 2-1701 of the Miami Dade County-Code, this form must be submitted by the Prime Contractor within 15 business days of award notification and prior to issuance of a Notice to Proceed. The Prime Contractor should enter the word "NONE" where appropriate below and sign the form below. Please duplicate this form if additional space is needed.

- i. Specify the total number of persons that will be used by the Prime Contractor and all subcontractors to perform all of the construction trades and labor work of the contract, broken down by trade and labor category, minimum qualifications for each category, the number of persons to be utilized in each category, the number of positions to be hired by the contractor in each category which are not currently staffed, the number of positions to be filled from the Employ Miami-Dade Register and the number of employees which live within the project DTA. If the current workforce will not achieve the project goal of 51% construction labor hours performed by Miami-Dade County residents, include a Job Clearinghouse Affidavit or a statement on how Miami-Dade County residents will be recruited to fill the needed positions and meet the goal.

Contractor/Subcontractor Name	Trade/Category	Minimum Qualifications	# of Persons to be Utilized	# of Positions to be filled by Employ Miami Dade	# of Persons to be Hired	# of Persons who Reside in the DTA (if applicable)
<b>Total:</b>						

- ii. Identify by name, address and trade category of all persons proposed to perform work under the contract currently on the contractor's (or on any proposed subcontractor's) payroll who reside in Miami-Dade County only and marking the correct box for DTA residents. Two forms of identification must be provided for each DTA resident demonstrating one year of residency.

Employee Name	Address	Trade/Category Performing	DTA Resident (if applicable)

- iii. Attach a list of subcontractors that will be used on the project and executed Responsible Subcontractor Affidavits (Form RFTE 1) for each.  
iv. Attach a list of all employees currently employed by the contractor and each subcontractor at the time of award that includes the last four digits of their social security.

*I certify that the representations contained in this Construction Workforce Plan are to the best of my knowledge true and accurate.*

\_\_\_\_\_  
Signature of Affiant                                  Print Name                                  Print Title                                  Date

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

OSHA SAFETY TRAINING AFFIDAVIT (FORM RFTE 3)

**Residents First Training and Employment Program  
Occupational Safety & Health Administration (OSHA)  
10 Hour Safety Training Affidavit - Form RFTE 3**

In accordance with Section 2-11.17 of the Miami-Dade County Code, all contractors and subcontractors of any tier performing on a County Construction Contract, shall satisfy the requirements of the Miami-Dade County Residents First Training and Employment Program which requires: for (i) all persons employed by the contractor to perform construction shall have completed the Occupational Safety & Health Administration (OSHA) 10 Hour safety training course established by the Occupational Safety & Health Administration of the United States Department of Labor

The undersigned verifies that every employee reported on the payroll has completed the OSHA 10 Hour or OSHA 30 Hour Safety Training Course prior to working on the project.

\_\_\_\_\_  
**Project Number, Title**

\_\_\_\_\_  
**Printed Name of Affiant**

\_\_\_\_\_  
**Printed Title of Affiant**

\_\_\_\_\_  
**Signature of Affiant**

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

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Address of Firm**

\_\_\_\_\_  
**State**

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

**Notary Public Information**

Notary Public – State of \_\_\_\_\_ County of \_\_\_\_\_

Subscribed and sworn to (or affirmed) before me this \_\_\_\_\_ day of, \_\_\_\_\_ 20\_\_\_\_.

by \_\_\_\_\_ He or she is personally known to me  or has produced identification

Type of identification produced \_\_\_\_\_

\_\_\_\_\_  
**Signature of Notary Public**

\_\_\_\_\_  
**Serial Number**

\_\_\_\_\_  
**Print or Stamp of Notary Public**

\_\_\_\_\_  
**Expiration Date**

\_\_\_\_\_  
**Notary Public Seal**

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

RESIDENTS FIRST TRAINING AND EMPLOYMENT PROGRAM/EMPLOY MIAMI-  
DADE PROGRAM WORKFORCE PERFORMANCE REPORT - FORM RFTE 4





DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT

WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

CERTIFICATE(S) OF INSURANCE  
(TO BE PROVIDED BY CONTRACTOR)

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

SPECIAL PROVISIONS

APPENDIX A - TECHNICAL SPECIFICATIONS

APPENDIX B - SMALL BUSINESS DEVELOPMENT PROJECT WORKSHEET

APPENDIX C - RESPONSIBLE WAGES & BENEFITS

## 1.0 SCOPE OF WORK:

The purpose of this solicitation is to establish a contract for the removal and replacement of (2) existing Trane water-cooled 110-ton, R-113, chiller, units with new magnetic bearing water-cooled chillers, (3) new chilled water pumps, and all related controls, (2) new condenser water pumps, hydronic piping, valves, wiring, accessories, including all necessary electrical upgrades to support the replacement as shown on the contract documents including additional goods, services, all permit fees (if necessary), mechanical contractor labor and design, if applicable, engineering and consultant fees, and extended warranty as described herein, for Miami-Dade County (County) on behalf of the Department of Transportation and Public Works (DTPW).

## 2.0 COMMUNITY WORKFORCE PROGRAM:

Community Workforce Program (CWP) goal is not applicable for this project. Additional information is available at the County's website at <http://www.miamidade.gov/business/contract-requirements.asp#0>.

## 3.0 LOCAL PREFERENCE:

The attention of the Contractor is hereby directed to the requirements of the Code of MiamiDade County, Chapter 2, Article I, Section 2-8.5; **LOCAL PREFERENCE ORDINANCE**.

The award of this solicitation is subject to Section 2-8.5 of the County Code, which except where Federal or State law mandates to the contrary, allow preference to be given to a local business. For the purposes of the applicability of this Code section, "local business" means the bidder has a valid business tax receipt issued by Miami-Dade County at least one year prior to bid submission, and a physical business address located within the limits of MiamiDade County from which the vendor operates or performs business. A Post Office Box cannot be used to establish a physical address.

**"Pursuant to the general terms and conditions of the solicitation document, local preference is applicable to this solicitation. However, please be advised that the reciprocity agreement with Broward County expired September 30, 2017. Accordingly, local preference will only be afforded to a firm that meets the requirements for MiamiDade County in any solicitation with a due date after September 30, 2017."**

Additionally, a Locally-Headquartered Business shall mean a Local Business as defined above which has a "principal place of business" in Miami-Dade County. "Principal place of business" means *the nerve center or the center of overall direction, control, and coordination of activities of the bidder*. If the bidder has only one business location, such business location shall be its principal place of business.

- A. If the Low bidder is not a Local Business, then any and all responsive and responsible Local Businesses submitting a price within ten percent of the Low bid, the Low Bidder, and any and all responsive and responsible Locally-Headquartered Businesses submitting

a price within fifteen percent of the Low Bid, shall have an opportunity to submit a best and final bid equal to or lower than the Low Bid.

- B. If the Low Bidder is a Local Business which is not a Locally-Headquartered Business, then any and all responsive and responsible Locally-Headquartered Businesses submitting a price within five percent of the Low Bid, and the Low Bidder shall have an opportunity to submit a best and final bid equal to or lower than the Low Bid.

Ties in best and final bid shall be resolved in the following order of priority: Locally Headquartered Business, Local Business, other business.

#### **4.0 WARTIME VETERAN'S BUSINESS PREFERENCE PROGRAM:**

The attention of the Contractor is hereby directed to the requirements of the Wartime Veteran's Business Preference Program: Per Section 2-8.5.1 of the Miami-Dade County Code, a Local Certified Wartime Veteran Business Enterprise that submits a bid for a contract shall receive a bid preference of five percent of the price bid. These preferences will only be used for evaluating and awarding the bids and shall not affect the contract price. However, if a Local Certified Service-Wartime Veteran Business Enterprise is the lowest bidder as a result of a Best and Final Bid (also known as a BAFO), then the price submitted as part of the Best and Final Bid shall be the contract price.

At the time of bid or proposal submission, the firm must affirm in writing its compliance with the certification requirements of Section 295.187 of the Florida Statutes and submit this affirmation and a copy of the actual certification along with the bid or proposal submission.

#### **5.0 ALLOWANCE ACCOUNTS:**

- A. ***Contingency Allowance*** - A Contingency Allowance Account has been established for the exclusive use of the Department of Transportation and Public Works as a reserve account to cover unforeseeable and unavoidable costs associated with the Work. This Contingency Allowance account shall be calculated at ten percent (10%) of the base bid total for the Work. It is understood that any unspent portion of the contingency allowance account is to remain with the COUNTY.

#### **6.0 INSURANCE REQUIREMENTS:**

Contractor shall indemnify and hold harmless the County and its officers, employees, agents and instrumentalities from any and all liability, losses or damages, including attorneys' fees and costs of defense, which the County or its officers, employees, agents or instrumentalities may incur as a result of claims, demands, suits, causes of actions or proceedings of any kind or nature arising out of, relating to or resulting from the performance of this Agreement by the Contractor or its employees, agents, servants, partners principals or subcontractors. Contractor shall pay all claims and losses in connection therewith and shall investigate and defend all claims, suits or actions of

any kind or nature in the name of the County, where applicable, including appellate proceedings, and shall pay all costs, judgments, and attorney's fees which may issue thereon. Contractor expressly understands and agrees that any insurance protection required by this Agreement or otherwise provided by Contractor shall in no way limit the responsibility to indemnify, keep and save harmless and defend the County or its officers, employees, agents and instrumentalities as herein provided.

Contractor shall furnish to Miami-Dade County, Department of Transportation & Public Works, 111 NW 1st Street. Miami FL 33128-1987, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

- a. Automobile Liability Insurance covering all owned, non-owned and hired vehicles used in connection with the work, in an amount not less than \$1,000,000 combined single limit per occurrence for bodily injury and property damage.
- b. Commercial General Liability Insurance in an amount not less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate, not to exclude Products and Completed Operations. **Miami-Dade County must be shown as an additional insured with respect to this coverage.**
- c. Worker's Compensation Insurance for all employees of the contractor as required by Florida Statute 440.
- d. Installation Floater on an "all risk" basis in an amount not less than one hundred percent (100%) of the replacement value of the structure(s), equipment and materials. The policy shall list Miami Dade County as a Loss Payee A.T.I.M.A.
- e. Professional Liability Insurance in an amount not less than \$1,000,000 per claim.

All insurance policies required above shall be issued by companies authorized to do business under the laws of the State of Florida, with the following qualifications:

The company must be rated no less than "A-" as to management, and no less than "**Class VII**" as to financial strength, by Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey, or its equivalent, subject to the approval of the County Risk Management Division.

or

The company must hold a valid Florida Certificate of Authority as shown in the latest "List of All Insurance Companies Authorized or Approved to Do Business in Florida" issued by the State of Florida Department of Financial Services.

**NOTE: CERTIFICATE HOLDER MUST READ: MIAMI-DADE COUNTY  
111 NW 1<sup>ST</sup> STREET  
SUITE 2340  
MIAMI, FL 33128**

- A. Compliance with the foregoing requirements shall not relieve the vendor of his liability and obligation under this section or under any other section of the Contract.
- B. Contractor's qualification for inclusion in the Contract is contingent upon the receipt of the insurance documents within fifteen (15) calendar days after notification. If the insurance certificate is received within the specified time frame but not in the manner prescribed in this solicitation, the Contractor shall be verbally notified of such deficiency and shall not be placed in an active status until such time as a corrected certificate is submitted to the County. Contractors who are not or do not remain in compliance will be listed as inactive and will not remain inactive until all such defects are corrected. Any Contractor placed in an inactive status shall lose their current position in the established rotation and will be placed at the back of the current rotation upon correction of the deficiency and return to active status.
- C. The CONTRACTOR shall be responsible for assuring that the insurance certificates required in conjunction with this Section remain in force for the duration of the contractual period including any and all option years that may be granted to the CONTRACTOR in accordance with Section 2.5 of the Special Conditions.
- D. If insurance certificates are scheduled to expire during the contractual period, the CONTRACTOR shall be responsible for submitting new or renewed insurance certificates to the County at a minimum of thirty (30) calendar days in advance of such expiration. In the event that expired certificates are not replaced with new or renewed certificates which cover the contractual period, the County shall place the contractor in an inactive status until such time as the new or renewed certificates are received by the County in the manner prescribed in the solicitation. Any Contractor placed in an inactive status shall lose their current position in the established rotation and will be placed at the back of the current rotation upon correction of the deficiency and return to active status. If the contractor has an open work order or project when the insurance expires, the contractor will be issued a stop work order and be required to correct the deficiency immediately. No additional time will be allowed as a result of the stop work order and liquidated damages will be assessed. If a Payment and Performance Bond is available on the work, the Bondholder will be notified and given the opportunity to complete the work assignment.
- E. The County may, at its sole discretion require additional or supplemental insurance. Such requirements will be stated in any RPQ issued requiring insurance in addition to the requirements stated above.

## **7.0 PRE-BID MEETING:**

A Pre-Bid Meeting will be held as indicated in the Invitation to Bid (ITB)/Request for Price Quotation (RPQ). Please refer to the ITB/RPQ for instructions and additional information.

## **8.0 CONTRACTOR USE OF PREMISES:**

- 8.1** The Contractor's use of the premises is limited to the limits of construction. The Contractor will coordinate all work with the Project Manager and perform work in a manner which allows continuous use of adjoining facilities by DTPW. The Contractor shall maintain safe access to all project areas at all times.
- 8.2** The Contractor shall remain flexible with respect to his work schedule and if the Contractor is delayed due to the non-availability of the project site, his sole remedy for delay shall be limited to a contract time extension only, with no consideration for additional compensation for lost productivity. This remedy for delay (time extension only, no additional compensation) shall also apply to inclement weather conditions.
- 8.3** The Contractor and his subcontractors shall obtain all necessary Permits and provide copies to the Project Manager prior to commencement of work. At the completion of the project, the Contractor shall provide to the Project Manager as-built drawings, all equipment owner's manuals and related documentation provided by the Manufacturers and a copy of the permit(s) with all required inspections signed off.
- 8.4** The Contractor shall clean the area after each workday. In addition, the contractor shall clean the area, remove materials and equipment that would create a potential hazard to pedestrians and DTPW operations personnel.

## **9.0 EQUIPMENT:**

The contractor will provide equipment of sufficient size and capacity to meet project needs.

## **10.0 INSPECTIONS/MATERIAL TESTING:**

- A. **Inspections:** Daily inspections will be performed by the DTPW Representative. Inspections by the DTPW Representative shall not relieve the Contractor of his duties and obligations related to performance and/or quality of the Work.

The Contractor shall coordinate with the DTPW Representative the inspection of all pertinent work activities that may be deemed crucial to the completion of the Project. The pertinent work activities shall be defined by the DTPW Representative prior to installation. The Contractor will be responsible to schedule a meeting with the DTPW Representative to identify the pertinent work activities. Refer to technical specifications/notes provided in the project drawings. Installation Procedures recommended by manufacturer shall be submitted by the Contractor to



the DTPW Representative. Contractor to comply with Technical Specifications/Notes provided on the Contract Drawings.

B. **Materials:** As specified in the Scope of Work and Project Schedule of Values.

#### **11.0 MEASUREMENT AND PAYMENT:**

The Schedule of Values includes all costs required for the complete construction of the specified unit of work including cost of material, delivery; installation, testing, and labor including social security, insurance, and other required fringe benefits, workmen's compensation insurance, bond premiums, cost of the Inspector General random audits, rental of equipment and machinery, taxes, incidental expenses and supervision.

The Contractor shall be compensated based on percentage of work completed if a lump sum contract or by unit price quantities as agreed upon by the DTPW Representative. The Schedule of Values will be used for payment and negotiation of additions/deletions to scope. DTPW reserves the right to modify/adjust any of the unit item quantities at the same unit rate as specified on the Schedule of Values with no additional adjustment (compensation) for the reduction of work scope.

The Contractor shall comply with Resolution No. R-138-10, which mandates that SBE firms work be identified in the Schedule of Values, if applicable. In accordance with Resolution R-138-10, the Contractor is required as a condition subsequent to award and prior to the issuance of notice to proceed, that the scope of work to be performed by any SBE utilized to satisfy any SBE goal in the contract be separately identified in such schedule of values.

Payment requisitions for the scope of work of such SBE shall be accomplished by statements of completion of the work of the SBE and shall be accompanied by appropriate documentation including invoicing and checks reflecting payment of the SBE for the previous construction draw.

#### **12.0 TIME OF WORK:**

Refer to Technical Specification.

#### **13.0 PRE-CONSTRUCTION MEETING:**

A Pre-Construction Meeting will be scheduled prior to the NTP date. The DTPW Representative may require the Contractor to submit at the time of the Pre-Construction meeting a Project Schedule, Detailed Schedule of Values, Maintenance of Traffic (MOT) Plan, Shop Drawing Submittal Log, Emergency Contact List, and List of Subcontractors.

#### **14.0 CONSTRUCTION COORDINATION MEETINGS:**

The Contractor shall attend Construction Coordination meetings at the site, if required by the DTPW Representative. The DTPW Representative will advise the Contractor of the frequency of the meetings. The meetings shall be attended by the Contractors representative and the DTPW Representative at a time and location to be determined by the DTPW Representative.

#### **15.0 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK:**

TIME IS OF THE ESSENCE. The work to be performed under this Contract shall commence on the effective date of the Notice-to-Proceed and be completed and released to MDC upon completion of all punch list items within the time specified.

Completion of All Work: The Work must be Substantially Completed within 240 days after the date when the Contract Time commences to run, and all requirements of the Contract Documents completed to the Engineer's satisfaction, including the completion of all punch list items, delivery to the Engineer of all required deliverable, and completion of any remaining Site restoration; and be ready for final payment no later than 150 calendar days after NTP.

#### **16.0 LIQUIDATED DAMAGES:**

TIME IS OF THE ESSENCE and completing the work within the specified time is of the utmost importance to MDC. The following liquidated damages rate(s) have been determined based on the best information available at the time of bidding and represent a good faith effort by MDC to quantify the damages that MDC will incur if the contract duration is not achieved. Therefore, for failure to complete the work within the number of days stipulated in the Invitation to Bid, the Contractor and his/her sureties will be assessed Liquidated Damages as follows:

##### **Final Completion**

Liquidated Damages shall be assessed in the amount of \$325.00, per day for each day of delay, not as a penalty, but as Liquidated Damages for each day or fraction thereof of delay until the Final Completion Date is met, which will be paid to Miami-Dade County by the Contractor.

#### **17.0 METHOD OF AWARD:**

Award shall be made to the lowest responsive and responsible bidder. DTPW reserves the right to negotiate additional or deductive services related to this project with the low

bidder. DTPW reserves the right to reject all bids if deemed in the best interest of Miami Dade County.

#### **18.0 PERFORMANCE & PAYMENT BOND:**

The Contractor shall provide a Surety Performance and Payment Bond for 100% of the contract amount. NTP shall not be issued, and no work shall commence until a fully executed performance bond and required insurance are submitted and approved by Miami-Dade County's Risk Management Division. Failure to provide a Performance & Payment Bond within the time required inclusive of any time extensions granted by DTPW may be considered withdrawal of the bid and forfeiture of the Bid Bond. The Contractor will be reimbursed for the direct (actual) Surety Performance and Payment costs upon presentation of an invoice and paid receipt/cancelled check.

#### **19.0 COLLUSION AFFIDAVIT:**

In accordance with Sections 2-8.1.1 and 10-33.1 of the Miami-Dade County Code as amended by Ordinance No. 08-113, bidders/proposers on County contracts are requested to submit the Collusion Affidavit within five (5) days from notification of intent to award.

Failure to provide a Collusion Affidavit within 5 business days after the recommendation to award has been filed with the Clerk of the Board shall be cause for the contractor to forfeit their bid/proposal bond.

NTP shall not be issued, and no work shall commence until a fully executed Collusion Affidavit is submitted and approved by DTPW.

#### **20.0 JOB CLEARINGHOUSE:**

The Contractor is required to comply with the requirements of Job Clearinghouse Code §2-1701 and Resolution No. R-1395-05 amending Resolution Nos. 1145-99 & 937-98, by making it a mandatory requirement for contractors to post notice through the County's Clearinghouse process of job opportunities made available by construction improvements on County property.

The procedures direct the Contractor to forward a notice of job vacancy(s) created as a result of this construction work to the Director of the Division of Small Business Development (SBD), located at Stephen P. Clark Center, 111 N.W. 1st. Street, Contract Review and Compliance Section, 19th Floor, Miami, Florida, 33128. The job vacancy notice(s) should be delivered within ten (10) working days following award of contract. The SBD Director will in turn distribute said job announcements to all Miami-Dade County facilities participating in the notification requirements of Resolution No. 1395-05. For information regarding the Miami-Dade County's Clearinghouse program, please contact the SBD at (305) 375-3157.

## **21.0 SCRUTINIZED COMPANIES:**

By executing this proposal through a duly authorized representative, the bidder certifies that the bidder is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, as those terms are used and defined in sections 287.135 and 215.473 of the Florida Statutes. In the event that the bidder is unable to provide such certification but still seeks to be considered for award of this solicitation, the bidder shall execute the proposal through a duly authorized representative and shall also initial this space: \_\_\_\_\_. In such event, the bidder shall furnish together with its proposal a duly executed written explanation of the facts supporting any exception to the requirement for certification that it claims under Section 287.135 of the Florida Statutes. The bidder agrees to cooperate fully with the County in any investigation undertaken by the County to determine whether the claimed exception would be applicable. The County shall have the right to terminate any contract resulting from this solicitation for default if the bidder is found to have submitted a false certification or to have been, or is subsequently during the term of the contract, placed on the Scrutinized Companies for Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List.

## **22.0 USER ACCESS PROGRAM:**

Pursuant to Miami-Dade County Budget Ordinance No. 03-192, this Contract is subject to a user access fee under the County's User Access Program (UAP) in the amount of two percent (2%). All construction services provided under this contract are subject to the 2% UAP. This fee applies to all Contract usage whether by County Departments or by any other governmental, quasi-governmental or not-for-profit entity. From every payment made to the Contractor under this contract (including the payment of retainage), the County will deduct the two percent (2%) UAP fee provided in the ordinance and the Contractor will accept such reduced amount as full compensation for any and all deliverables under the contract. The County shall retain the 2% UAP for use by the County to help defray the cost of its procurement program. Contractor participation in this pay request reduction portion of the UAP is mandatory.

## **23.0 CONTRACTOR DUE DILIGENCE AFFIDAVIT:**

The attention of the Contractor is hereby directed to the requirements of Resolution R6314 in that the award of this contract is conditioned on the Contractor providing the County, when required, with a "CONTRACTOR DUE DILIGENCE AFFIDAVIT".

## **24.0 RESIDENTS FIRST TRAINING AND EMPLOYMENT PROGRAM:**

In accordance with Section 2-11.17 of the Code of Miami-Dade County and Implementing Order No. 3-61 (copies attached or online at <http://www.miamidade.gov/smallbusiness/business-development-legislation.asp>), all contractors and subcontractors of any tier on (i) construction contracts valued in excess of \$1,000,000 for the construction, demolition, alteration and/or repair of public buildings or public works, or (ii) contracts or leases valued in excess of \$1,000,000 for privately funded construction, demolition, alteration or repair of buildings or improvements on County-owned land, shall comply with the following:

1. Bidders must:
  - a. Submit a completed Responsible Contractor Affidavit (Form RTFE 1) along with the Bid Submittal Package. The Responsible Contractor Affidavit shall verify that (i) prior to working on the project, all persons employed by the contractor on the project to perform construction have completed the OSHA 10 hour safety training course, and (ii) the contractor will make its best reasonable efforts to have fifty-one percent (51%) of all construction labor hours performed by Miami-Dade County residents.
  - b. The Contracting Officer shall provide to any contractor who fails to submit a Responsible Contractor Affidavit with its bid or proposal, a written notice that said contractor has forty-eight (48) hours from the time of notification to submit a Responsible Contractor Affidavit or its bid or proposal will be deemed non-responsive and disqualified.
2. Prior to the issuance of a Notice to Proceed, contractors must also submit: (i) a Construction Workforce Plan (Form RFTE 2) and supporting documentation; (ii) a list of all subcontractors to be used on the project; (iii) a Responsible Subcontractor Affidavit (Form RFTE 1) for each subcontractor; and (iv) a list of all employees currently employed by the contractor.
3. All certified payrolls submitted to the Contracting Officer shall include an OSHA Safety Training Affidavit (Form RFTE 3).
4. Within thirty (30) business days of completion of a project, the contractor must submit a Workforce Performance Report (Form RFTE 4).
5. Any lessee shall include requirements of Section 2-11.7 of the Code of Miami-Dade County and Implementing Order No. 3-61, including the right of the County to access the contractor's and subcontractors' records to verify compliance, in any contract, subcontract, or sublease. Lessee shall be responsible to the County for payment of compliance monitoring costs and any penalties found due.

## **25.0 EMPLOY MIAMI-DADE PROGRAM:**

Except where state or federal laws or regulations mandate to the contrary, all contractors and subcontractors of any tier performing on a County Construction Contract shall satisfy the requirements of this Article.

In accordance with Section 5.02 of the Miami-Dade County Home Rule Amendment and Charter, Section 2-8.1 of the Code of Miami-Dade County, and Administrative Order No. 3-63, all contractors and subcontractors of any tier on (i) construction contracts valued in excess of one million dollars (\$1,000,000) for the construction, demolition, alteration and/or repair of public buildings, or public works; or (ii) contracts or leases valued in excess of one million dollars (\$1,000,000) for privately funded construction, demolition, alteration or repair of buildings, or improvements on County-owned land:

A. The awarded Contractor is hereby notified that the County will consider whether the Contractor made its best reasonable efforts to promote Employ Miami-Dade on this contract, as defined in A.O. 3-63, as part of the County's evaluation and responsibility review of the Contractor for new County contract awards.

1. Referral Procedures:

- I. Career Source South Florida shall compile and maintain the Employ Miami-Dade Register.
- II. The Contractor will notify Career Source South Florida of the vacancy by completing a Job Opening Form on the Employ Miami-Dade website <https://iapps.careersourcesfl.com/employmd/>. The job order must contain a detailed description of the job responsibilities and qualifications.
- III. Career Source South Florida will then provide a list of qualified candidates available to the Contractor with copy to the Compliance Officer.
- IV. Contractor will review the resumes and qualifications of the candidates, conduct interviews with those candidates who satisfy the minimum competency requirements, and make a good faith effort to fill at least 20% of the labor workforce required per Contractor's Construction Workforce Plan from the Employ Miami-Dade Register through Career Source South Florida.
- V. Positions filled from the Employ Miami-Dade Register must be full-time, for at least 120 days, in order to be considered towards attainment of the 20% labor workforce threshold herein.
- VI. If the 20% labor workforce per Contractor's Construction Workforce Plan from Employ Miami-Dade is not met on the contract, the Contractor must provide the Compliance Officer with a detailed explanation of its efforts.
- VII. Career Source South Florida may have funds to pay a portion of the salaries for Employ Miami-Dade participants. It shall be the responsibility of the Contractor to contact Career Source South Florida directly to determine eligibility for, and make arrangements as applicable with, Career Source South Florida to pay a portion of the salaries for a specified period and/or during on the job training for the Employ Miami-Dade participants employed on the contract.

**26.0 SUBCONTRACTOR / SUPPLIER LISTING:**

Pursuant to Section 2-8.1 and 10.34 of the Miami-Dade County Code, for contracts valued at \$100,000 or more when subcontractor(s) and/or supplier(s) are utilized, the

Prime contractor/vendor/consultant shall report to Miami-Dade County the race, gender, and ethnic origin of all such first tier subcontractor(s) and supplier(s). The paper-based Subcontractor/Supplier Listing that was previously submitted at time of bid submission is no longer being used. The Prime contractor/vendor/consultant shall be required to identify its first tier subcontractor(s)/supplier(s) and provide demographic information for both their firm and each subcontractor/supplier on the contract as soon as reasonably available and in any event prior to final payment under the contract via Miami-Dade County's online Business Management Workforce System (BMWS).

#### **27.0 MONTHLY UTILIZATION REPORTS:**

Paper-based Monthly Utilization Reports (MURs) are no longer being accepted for construction, architecture, and engineering projects with measures. Also for architecture and engineering firms, pursuant to Implementing Order 3-39, primes and subconsultants are required to report payments monthly via Miami-Dade County's online Business Management Workforce System (BMWS). "Compliance Audits" will be created in Miami-Dade County's online Business Management Workforce System (BMWS) after Miami-Dade County pays the Prime contractor/vendor/consultant (approximately one month after). Miami-Dade County Departments will check the compliance audit status for each payment application to ensure that no audits are open for more than two (2) months. For construction contracts without measures, which only require reporting of cumulative subcontractor payments, a "Compliance Audit" shall only be verified prior to the final payment.

#### **28.0 PUBLIC RECORDS AND CONTRACTS FOR SERVICES PERFORMED ON BEHALF OF MIAMI-DADE COUNTY (HB 1309):**

HB 1309 re: governmental accountability has been signed into law by the Governor and was effective July 1. It generally applies only to state agencies, but there is one provision of HB 1309 that also applies to counties. This provision requires public agency contracts for services performed on behalf of the public agency to contain contract provisions clarifying the public record responsibilities of the contractor.

The Contractor shall comply with the Public Records Laws of the State of Florida, including but not limited to, (1) keeping and maintaining all public records that ordinarily and necessarily would be required by Miami-Dade County (County) in order to perform the service; (2) providing the public with access to public records on the same terms and conditions that the County would provide the records and at a cost that does not exceed the cost provided in Chapter 119, F.S., or as otherwise provided by law; (3) ensuring that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (4) meeting all requirements for retaining public records and transferring, at no cost, to the County all public records in possession of the Contractor upon termination of the contract and destroying any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements upon such transfer. In addition, all records stored

electronically must be provided to the County in a format that is compatible with the information technology systems of the County. Failure to meet any of these provisions or to comply with Florida's Public Records Laws as applicable shall be a material breach of the agreement and shall be enforced in accordance with the terms of the agreement.

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (305) 375-5773; [ISDVSS@MIAMIDADE.GOV](mailto:ISDVSS@MIAMIDADE.GOV); 111 NW 1 STREET, SUITE 1300, MIAMI, FLORIDA 33128.**

### **29.0 CONE OF SILENCE**

The attention of the Contractor is hereby directed to the requirements of Miami-Dade County Administrative Order No. 3-27 – Cone of Silence.

### **30.0 BID PROTEST**

The attention of the Contractor is hereby directed to the requirements of Miami-Dade County Implementing Order No. 3-21 – Bid Protest and Resolution R-1080-19 which updated the Bid Protest filing fees for contracts set-aside for bidding solely by certified Small Business Enterprises, and other relevant sections.

### **31.0 PROMPT PAYMENT**

The attention of the Contractor is hereby directed to the requirements of Miami-Dade County Administrative Order No. 3-19 – Prompt Payment.

### **32.0 ASSIGNABILITY/ASSIGNMENT**

**ASSIGNABILITY** - Department of Transportation and Public Works (DTPW) may assign its rights and obligations under the Contract to any successor to the rights and functions of DTW or to any governmental agency to the extent required by applicable laws or governmental regulations or to the extent that DTPW deems necessary or advisable under the circumstances.

**ASSIGNMENT** - The Contractor shall not assign, transfer, or otherwise dispose of this Contract, including any rights, title or interest therein, or their power to execute such Contract to any person, company or corporation without the prior written consent to DTPW. DTPW's consent for any assignment will not be unreasonably withheld.



### **33.0 SECTION 20.055 (5)**

The contractor/consultant/vendor agrees to comply with s.20.055 (5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s.20.055 (5), Florida Statutes.

#### **Section 20.055 (5):**

(5) It is the duty of every state officer, employee, agency, special district, board, commission, contractor, and subcontractor to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing pursuant to this section. Beginning July 1, 2015, each contract, bid, proposal, and application or solicitation for a contract shall contain a statement that the corporation, partnership, or person understands and will comply with this subsection.

### **34.0 ESTIMATED TIME CONTINGENCY**

This Contract contains a Contingency Allowance time extension not to exceed ten percent (10%) of the original Contract Duration. Pursuant to a written request by the Contractor for a time extension, that affects the critical path schedule of the Contract or any previously approved changes; written documentation that supports the justification of a time extension, review and concurrence by the COUNTY A/E, a Contract Contingency Allowance Expenditure Authorization will be created for execution by all parties. Once executed the time extension will adjust the scheduled completion date. The cumulative total of all Contingency Allowance time extensions shall not exceed ten percent (10 %) of the original Contract Duration rounded off to the next whole number.

### **35.0 LCP TRACKER**

Refer to the memo dated April 25, 2019 from the Director of Small Business Development Division for Implementation of LCPtracker.

### **36.0 RESOLUTION NO. 1181-18 / DIRECTIVE NO. 182536**

The Contractor is directed to the attached report regarding consideration of Contractor Safety Information as a Part of the Contractor Responsibility Review for Contract Award – Directive No. 182536 and the requirements of Resolution No. 1181-18, applicable to this Project.

Bidders may request a copy of any ordinance, resolution and/or administrative order cited in this bid solicitation, by contacting the Clerk of the Board at 305.375.5126.

### **37.0 DISCLOSURE OF ALLEGED DISCRIMINATION LAWSUITS**

In accord with Resolution No. R-828-19, the County reserves the right to request from any Bidder the disclosure of any lawsuits which include allegations of discrimination in the last ten years prior to date of solicitation, the disposition of such lawsuits, or statement that there are NO such lawsuits.”

### **38.0 E-VERIFY**

By entering the Contract, the Awarded Bidder becomes obligated to comply with the provisions of Section 448.095, Florida Statute, titled "Verification of Employment Eligibility." This includes but is not limited to utilization of the U.S. Department of Homeland Security’s E-Verify System to verify the employment eligibility of all newly hired employees by the Awarded Bidder effective, January 1, 2021, and requiring all Subcontractors to provide an affidavit attesting that the Subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Failure to comply may lead to termination of this Awarded Bidder, or if a Subcontractor knowingly violates the statute, the subcontract must be terminated immediately. Any challenge to termination under this provision must be filed in the Circuit Court no later than twenty (20) calendar days after the date of termination. If this Contract is terminated for a violation of the statute by the Awarded Bidder, the Awarded Bidder may not be awarded a public contract for a period of one year after the date of termination, and the Awarded Bidder may be liable for any additional costs incurred by the County resulting from the termination of the Contract. Public and private employers must enroll in the E-Verify System (<http://www.uscis.gov/e-verify>) and retain the I-9 Forms for inspection.

### **38.0 APPLICABLE LEGISLATION**

The selected Contractor will be required to abide by all applicable federal, state and local laws and ordinances, as amended. the applicable local laws and ordinances include, but are not limited to:

#### Florida Statute(s)

- [Section 119.07-](#) Inspection and Copying of Records; Photographing Public Records; Fees; Exemptions.
- [Section 119.0701](#) - Contracts; Public Records
- [Section 287.133](#) - Public Entity Crimes
- [Section 287.135](#) - Prohibition against contracting with scrutinized companies
- [Section 295.187](#) - Florida Veteran Business Enterprise Opportunity Act
- [Section 448.095](#) – Employment Eligibility

### Ordinance(s)

- 77-13 - Financial Disclosures Requirements
- 90-133 - Disclosure of Ownership, Collective Bargaining Agreement, and Employee Wages, Health Care Benefits, Race, National Origin and Gender
- [97-35](#) - Policy of Fair Subcontracting Practices
- [97-67](#) - Amending Chapter 11A Prohibiting Discrimination in Contracting, Procurement, Bonding and Financial Services
- [99-152](#) - False Claim Ordinance
- [03-107](#) - Ordinance Amending Section 2-11.1 (s) of the Conflict of Interest and Code of Ethics
- [07-65](#) - Sustainable Buildings Program (when applicable)
- [08-113](#) - Ordinance Amending Sections 2-8.1.1 and 10-33.1 of the Miami-Dade County Code relating to bids from related parties to include a prohibition on collusive bidding
- [11-90](#) - Ordinance Relating to the Collection of Data for a Disparity Study
- [14-79](#) - Sea-Level Rise Ordinance (when applicable)
- [21-22](#) - Buy American Iron and Steel Products Procurement Program

### Resolution(s)

- R-1049-93 - Affirmative Action Plan Furtherance and Compliance
- R-385-95 - Policy prohibiting contracts with firms violating the American with Disabilities Act (ADA) and other laws prohibiting discrimination on the basis of disability ADA requirements, are a condition of award, as amended by Resolution R-182-00
- [R-531-00](#) - Prohibition of contracting with individuals and entities while in arrears with the County
- [R-183-00](#) - Family Leave Requirements
- [R-185-00](#) - Domestic Violence Leave
- [R-273-05](#) - Public Involvement Planning
- [R-63-14](#) - Contractor Due Diligence
- [R-828-19](#) – Disclosure of Alleged Discrimination Lawsuits
- [R-1106-15](#) - Aspirational Policy of Miami-Dade County
- [R-1011-15](#): Requiring Vendors to Provide Addresses of Local Offices Administrative Order(s)

### Administrative Order(s)

- [03-27](#) - Cone of Silence
- [3-53](#) – Miscellaneous Construction Contracts Program
- [10-10](#) - Duties and Responsibilities of County Departments for Compliance with the Americans with Disabilities Act (ADA) Implementing Order(s)
- [3-19](#) – Prompt Payment

Implementing Order(s)

- [3-21](#) - Bid Protest Procedure
- [3-24](#) – Responsible Wages and Benefits for County Construction Contracts
- [3-37](#) – Community Workforce Program
- [3-61](#) – Residents First Training and Employment Program
- [3-63](#) – Employ Miami-Dade Program
- [7-7](#) – Policies and Procedures Establishing a Public Service Honor Code for Elected and Appointed County Officials and County Employees

Miami-Dade County Code(s)

- [Section 2-8.1](#) - Contracts and Purchases
- [Section 2-8.1.5](#) – Nondiscrimination
- [Section 2-8.4](#) - Protest Procedures
- [Section 2-8.5](#) – Procedure to provide preference to local business in county contracts
- [Section 2-8.5.1](#) - Procedure to Provide Preference to Local Certified Veteran Business Enterprises in County Contracts
- [Section 2-8.8](#) - Fair Subcontracting Practices
- [Section 2.11.1](#) - Conflict of Interest and Code of Ethics
- [Section 10-34](#) - Listing of Subcontractors Required
- [Section 2-8.2.6.1](#) - Buy American Iron and Steel Products Procurement Program

**39.0 BUY AMERICAN IRON AND STEEL PRODUCTS PROCUREMENT PROGRAM**

The attention of the Contractor is hereby directed to the requirements of Miami-Dade County Ordinance No. 21-22 and Miami-Dade County Code 2-8.2.6.1 – Buy American Iron and Steel Products Procurement Program, applicable to this project.

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT

WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

LCP TRACKER

# Memorandum



**Date:** April 25, 2019

**To:** Department Directors

**From:** Gary T. Hartfield, Director  
Small Business Development (SBD) Division

**Subject:** Implementation of LCPtracker

A handwritten signature in blue ink, appearing to read "G. Hartfield", written over a light blue grid background.

On April 10, 2018, the Board of County Commissioners adopted Ordinance No. 18-33, which amended several Miami-Dade County Code sections to mandate use of the County's web-based system, the Business Management Workforce System (BMWS), to comply with Small Business Enterprise (SBE), Wage, and Workforce program requirements. The implementation of BMWS will soon be complete with the "go live" of LCPtracker on May 1, 2019.

LCPtracker is a new web-based system for firms to submit certified payroll and workforce program documentation, replacing our current paper-based reporting requirements at no cost to the firms. As part of the implementation of LCPtracker, Small Business Development (SBD), a division of the Internal Services Department, reviewed all active Miami-Dade County contracts in BMWS subject to Responsible Wages and Benefits, Living Wages and federally-funded contracts at Miami Dade County International Airport with Davis Bacon Wages. Based on the contract status, over three hundred existing contracts have been selected to go into LCPtracker. Attached is the latest report listing the projects by department. In addition to these identified projects, all County contracts subject to the above-mentioned wage requirements and awarded on or after April 1, 2019 will be synced to LCPtracker for the electronic submission of certified payrolls and workforce documentation.

Beginning with the May 2019 reporting period, all prime contractors/vendors and their subcontractors at every tier level participating on a contract that was added to LCPtracker must submit certified payrolls via the system by the 10<sup>th</sup> day of the month for work performed in the previous month. Therefore, all certified payrolls for work performed in the month of May 2019 must be submitted electronically by **June 10, 2019**. At which point, the department should no longer collect or accept paper certified payrolls for these projects.

SBD will provide department staff with access to LCPtracker to view certified payrolls by project, firm, and reporting period. Prior to approving a firm's pay application/invoice, departments must log into LCPtracker to verify certified payrolls have been submitted for all firms on the project, regardless of tier, for the period of the pay application.

Attached are the steps to generate the LCPtracker report titled "Certified Payroll Report (CPR) Status Report" for a project and period of a pay application/invoice under review. This report will list all received, rejected, pending and delinquent certified payrolls for a project for the period requested. For any delinquent certified payrolls listed on the report, the departments should:

- 1) Provide written notice to the prime contractor/vendor (and SBD, if the prime contractor/vendor is a certified SBE or any of the subcontractors are certified) that the review and approval of its pay application/invoice is on hold until all firms that worked during the period of the pay application/invoice have submitted their certified payrolls via LCPtracker.

- 2) Provide the prime contractor/vendor with a copy of the CPR Status Report, or provide the report to the firm(s) listed under the delinquent section of the report, the week ending date for the missing payroll(s), and a deadline to submit the missing certified payroll(s) via LCPtracker.

LCPtracker user accounts for department staff on existing applicable contracts will be automatically created. For any additional staff requiring access, the department's SBD Liaison should provide their name and email address to Alecia Anderson, SBD Section Manager, at [Alecia.Anderson@miamidade.gov](mailto:Alecia.Anderson@miamidade.gov) or Shawn Gannon, Special Projects Administrator, at [Shawn.Gannon@miamidade.gov](mailto:Shawn.Gannon@miamidade.gov).

As always, SBD will continue to work closely with departments to ensure compliance with the legislated changes and offer monthly hands-on training opportunities for department staff and firms. Should you have any questions, please do not hesitate to contact Alice Hidalgo-Gato, SBD Section Chief, at (305) 375-3153.

#### Attachments

- c. Office of the Mayor Senior Staff  
Tara C. Smith, ISD Director  
SBD Liaisons  
Procurement Liaisons

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

SAFETY DIRECTIVE 182536 / RESOLUTION NO. 1181-18



# Memorandum



**Date:** February 26, 2019

Agenda Item No. 2(B)2  
March 19, 2019

**To:** Honorable Chairwoman Audrey M. Edmonson  
and Members, Board of County Commissioners

**From:** Carlos A. Gimenez  
Mayor

A handwritten signature in blue ink, appearing to read "Carlos A. Gimenez", written over a white background.

**Subject:** Report Regarding Consideration of Contractor Safety Information as a Part of the  
Contractor Responsibility Review for Contract Award – Directive No. 182536

This report is in response to Resolution No. R-1181-18, approved at the November 8, 2018 meeting of the Board of County Commissioners (Board), directing the County Mayor or the County Mayor's designee to provide a status report describing the processes, procedures and actions taken to consider safety records of prospective contractors and first-tier subcontractors for public construction projects.

The County reviews contractor responsibility prior to award for all construction contracts. Pursuant to Resolution No. R-187-12, and in accordance with procurement guidelines, staff currently performs due diligence reviews as a part of the process to determine a contractor's responsibility. This review includes checking the contractor's corporate status, lists for convicted, debarred and suspended vendors, excluded parties, and internal County reports for small business compliance, evaluations and delinquent contractors.

County staff will require contractors and proposed first-tier subcontractors to submit the following items for the previous three years from the United States Department of Labor Occupational and Safety Health Administration (OSHA):

1. The OSHA Form 300 containing a list of the company's work-related injury and illness data; and
2. OSHA inspection data.

A copy of this memorandum and Resolution No. R-1181-18 will be forwarded to each of the department directors who manage capital programs across the County. Confirmation that safety due diligence was performed and any instance when a safety record affects the contractor responsibility will be included in any memorandum to the Board recommending an award or ratification of award of a construction project.

Pursuant to Ordinance No. 14-65, this memorandum will be placed on the next available Board Meeting agenda. Should you require additional information, please contact Tara C. Smith, Director, Internal Services Department, at 305-375-1135.

- c: Abigail Price-Williams, County Attorney  
Geri Bonzon-Keenan, First Assistant County Attorney  
Office of the Mayor Senior Staff  
Tara C. Smith, Director, Internal Services Department  
Department Directors  
Linda L. Cave, Acting Director, Clerk of the Board  
Eugene Love, Agenda Coordinator  
Yinka Majekodunmi, Commission Auditor

## MEMORANDUM

Agenda Item No. 11(A)(1)

**TO:** Honorable Chairman Esteban L. Bovo, Jr.  
and Members, Board of County Commissioners

**DATE:** November 8, 2018

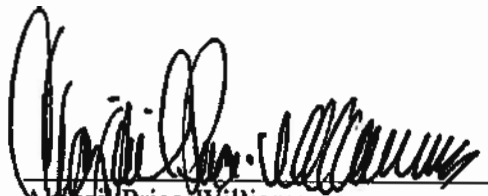
**FROM:** Abigail Price-Williams  
County Attorney

**SUBJECT:** Resolution directing the County Mayor to: (1) consider safety records of prospective contractors and first-tier subcontractors for public construction projects; (2) confirm the safety records of recommended contractors and first-tier subcontractors were considered and report any instance where the safety record may adversely affect a finding of contractor responsibility in award memorandum to the Board; and (3) provide a report to the Board within 60 days

Resolution No. R-1181-18

**This item was amended at the 10-17-18 Government Operations Committee to add language in Section 1 specifying that the OSHA related safety information required to be considered in the resolution shall be initially provided by the prospective contractors and first-tier subcontractors bidding on County construction projects.**

The accompanying resolution was prepared and placed on the agenda at the request of Prime Sponsor Commissioner Daniella Levine Cava.

  
Abigail Price-Williams  
County Attorney

APW/lmp




# MEMORANDUM

(Revised)

**TO:** Honorable Chairman Esteban L. Bovo, Jr.  
and Members, Board of County Commissioners

**DATE:** November 8, 2018

**FROM:**   
Abigail Price-Williams  
County Attorney

**SUBJECT:** Agenda Item No. 11(A)(1)

**Please note any items checked.**

- "3-Day Rule" for committees applicable if raised**
- 6 weeks required between first reading and public hearing**
- 4 weeks notification to municipal officials required prior to public hearing**
- Decreases revenues or increases expenditures without balancing budget**
- Budget required**
- Statement of fiscal impact required**
- Statement of social equity required**
- Ordinance creating a new board requires detailed County Mayor's report for public hearing**
- No committee review**
- Applicable legislation requires more than a majority vote (i.e., 2/3's \_\_\_\_, 3/5's \_\_\_\_, unanimous \_\_\_\_ ) to approve**
- Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required**

Approved \_\_\_\_\_ Mayor  
Veto \_\_\_\_\_  
Override \_\_\_\_\_

Agenda Item No. 11(A)(1)  
11-8-18

RESOLUTION NO. R-1181-18

RESOLUTION DIRECTING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO: (1) CONSIDER SAFETY RECORDS OF PROSPECTIVE CONTRACTORS AND FIRST-TIER SUBCONTRACTORS FOR PUBLIC CONSTRUCTION PROJECTS; (2) CONFIRM THE SAFETY RECORDS OF RECOMMENDED CONTRACTORS AND FIRST-TIER SUBCONTRACTORS WERE CONSIDERED AND REPORT ANY INSTANCE WHERE THE SAFETY RECORD MAY ADVERSELY AFFECT A FINDING OF CONTRACTOR RESPONSIBILITY IN AWARD MEMORANDUM TO THE BOARD; AND (3) PROVIDE A REPORT TO THE BOARD WITHIN 60 DAYS

**WHEREAS**, we live in a large, heavily-populated and diverse metropolitan area with constantly expanding public infrastructure needs and demands; and

**WHEREAS**, Miami-Dade County's infrastructure, including its public buildings, roads and bridges, mass transit facilities, airports and seaport, fuel supply facilities, medical and nursing care facilities, recreational facilities, sporting facilities and water and wastewater facilities, constantly require significant new construction and on-going improvements and upgrades; and

**WHEREAS**, consequently, to meet these infrastructure demands, Miami-Dade County (the "County") enters into significant construction contracts for public buildings, structures and other public works; and

**WHEREAS**, a substantial number of the County's public construction projects are large complex projects requiring a large of number of workers to complete the project; and

**WHEREAS**, many of these County projects occur in densely populated areas where members of the public may be directly exposed to the dangers of a construction site; and

**WHEREAS**, the tragic loss of life caused by the collapse of the Florida International University pedestrian bridge reminds this community that the safety of members of the public and workers relating to public construction projects is of paramount importance; and

**WHEREAS**, this Board wants to ensure that a contractor's safety record be fully considered in the selection and contracting of construction companies for public infrastructure projects,

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA**, that this Board:

**Section 1.** Directs the County Mayor or County Mayor's designee to consider the safety records of prospective contractors and their first-tier subcontractors as part of the due diligence investigation performed to determine contractor responsibility for the construction or improvement of a public building, structure or other public construction project that will be presented to this Board for contract award or ratification of an award. Such investigation shall include reviewing available relevant information from the United States Department of Labor Occupational Safety and Health Administration (OSHA) such as OSHA logs of work-related injuries and illnesses (Form 300) and OSHA inspection data >>which shall be initially provided by the prospective contractors and first-tier subcontractors<<<sup>1</sup>. The OSHA information shall be reviewed for at least the previous three (3) years to the extent that such information is available for that period. In addition, County staff may use other sources to investigate the safety records

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<sup>1</sup> Committee amendments are indicated as follows: Words stricken through and/or [[double bracketed]] are deleted, words underscored and/or >>double arrowed<< are added.

of prospective contractors and their first-tier subcontractors for public construction projects in determining contractor responsibility.

**Section 2.** Directs the County Mayor or County Mayor’s designee to include in his or her memorandum to this Board recommending an award or ratification of an award of a County public construction project confirmation that the safety record was considered by the County as part of the due diligence required pursuant to Resolution R-187-12, including reporting to this Board any instance where the safety record may adversely affect a finding of contractor responsibility.

**Section 3.** Directs the County Mayor or County Mayor’s designee to submit a report to this Board within 60 days of the effective date of this resolution describing the processes, procedures and actions taken to comply with Sections 1 and 2 of this resolution and place the completed report on an agenda of the Board pursuant to Ordinance No. 14-65.

The Prime Sponsor of the foregoing resolution is Commissioner Daniella Levine Cava. It was offered by Commissioner **Dennis C. Moss**, who moved its adoption. The motion was seconded by Commissioner **Sally A. Heyman** and upon being put to a vote, the vote was as follows:

	Esteban L. Bovo, Jr., Chairman	aye	
	Audrey M. Edmonson, Vice Chairwoman	aye	
Daniella Levine Cava	aye	Jose "Pepe" Diaz	aye
Sally A. Heyman	aye	Eileen Higgins	aye
Barbara J. Jordan	aye	Joe A. Martinez	aye
Jean Monestime	aye	Dennis C. Moss	aye
Rebeca Sosa	aye	Sen. Javier D. Souto	aye
Xavier L. Suarez	aye		

The Chairperson thereupon declared this resolution duly passed and adopted this 8<sup>th</sup> day of November, 2018. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this resolution and the filing of this approval with the Clerk of the Board.



MIAMI-DADE COUNTY, FLORIDA  
BY ITS BOARD OF  
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

**Linda L. Cave**

By: \_\_\_\_\_  
Deputy Clerk

Approved by County Attorney as  
to form and legal sufficiency.

A handwritten signature in black ink, appearing to read "EWG", is written over a horizontal line.

Eduardo W. Gonzalez

A handwritten mark, possibly a stylized number "4" or a signature, is located at the bottom center of the page.



TECHNICAL SPECIFICATIONS  
UPGRADE CHILLER UNITS AT  
WILLIAM LEHMAN CENTER

**APPENDIX A**

**TECHNICAL SPECIFICATIONS**





**MIAMI-DADE COUNTY  
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS (DTPW)  
UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER**

**RPQ No. TP-0000017889**

**IRP171**

**6601 NW 72ND AVE MIAMI, FL, 33166**

**TECHNICAL SPECIFICATIONS**

**BID SET SUBMITTAL**

**JANUARY 2023**

**WO-EDP-MT-IRP171**

**FOLIO # 30-3014-031-0010**

**Prepared For:**



Department of Transportation & Public Works  
701 NW 1 CT STE 1700  
Miami, FL, 33136

**Prepared By:**



C.A. No. 2429  
6303 Blue Lagoon Drive, Suite 305  
Miami, FL 33126

**MIAMI-DADE COUNTY DTPW**

**WILLIAM LEHMAN CENTER CHILLED WATER PLANT REPLACEMENT**

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**MIAMI-DADE COUNTY DTPW**

**WILLIAM LEHMAN CENTER CHILLED WATER PLANT REPLACEMENT**

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**DIVISION 29-31 – NOT USED**

SECTION 01 14 00  
SITE AND WORK RESTRICTIONS

1.01 DESCRIPTION:

- A. This section includes specifications for the general requirements and procedures for access to the various areas within the site to perform the required construction operations to complete the facilities as depicted in the Contract documents. The Contractor is to coordinate through DTPW on access and coordination issues. It is important that Contractors do not interfere with DTPW operations. As a result, there are restrictions on access and times of work; made part of this contract.

2.01 SUBMITTAL REQUIREMENTS:

- A. The construction schedule submitted by the Contractor under section 01 32 16 shall take the restrictions described herein and in the Contract Documents into account for the planning of the work. The schedule of work activities needs to take into account the site and work restrictions identified herein and shall demonstrate the sequencing of the work so as not to impact the Contract duration.
- B. The Contractor shall submit any required notice, request for access and any other procedural documents, as contained herein or referenced herein per the minimum lead times indicated in these procedures.
- C. Contractor is to ensure that DTPW customers are properly informed of all work contemplated within the facility by preparing and submitting all necessary documents and notices to DTPW for dissemination at least 2 weeks prior to beginning the work.
- D. Barricades and signing necessary to direct public and the vehicles through the construction zone is required as part of the submittal process. Provide, erect, and maintain effective barricades, danger sign or any other visual warnings for the protection of the Work and the safety of the public throughout the area for the duration of the Contract.
- E. The Contractor shall coordinate all construction schedule activities with DTPW's Construction Manager to minimize or eliminate disruptions.

1. Definitions:

- a. *Engineer-of-Record (EOR)* – The engineering design firm and all designated representatives who were involved in the preparation of all the Contract Documents.
- b. *DTPW representative* – The authorized, on site DTPW representative(s) responsible for coordinating all Metrorail tract related activities.

2. Authority:

The safety of Bus and Rail patrons and property shall be a primary consideration during the prosecution of the work. Therefore, any direction given by the duly designated DTPW representative regarding train traffic or train safety shall be considered final and is to be followed immediately. If the Contractor has an objection to the request, the Contractor shall obey the request and subsequently seek relief under the applicable Contract Sections.

3. Delays in Vacating Premises:

It is absolutely essential that work operations are not disrupted. All Contractor personnel (including suppliers, sub-contractors, vendors, etc.) shall cease work within fifteen (15) minutes after receipt of directions by the EOR and/or DTPW authorized representative.

4. Special Events: N/A

Certain special events require extended and/or more frequent service (football games, concerts, etc....) and may force work to revise the revenue service schedule and time constraints heretofore cited in this section. The Contractor shall expect and plan for these special events and reflect the impact of these special events in the project schedule and phasing plan.

5. Work Conditions and Access Requirements:

Access to any given site must be accompanied by proper documentation permits and paid fees. This request shall also include written details, including but not limited to, placement of cranes, materials, form work, personnel, and equipment; the sequence and timing of the work, and any other factor which may be construed by the DTPW Construction Manager, upon consultation with DTPW representative, to affect transit safety or revenue service.

6. Special work Protection:

Any work over and near the guideway and/or near the Bus stops, which could potentially cause damage or in any way endanger the safety of the transit patrons or the public, at the sole discretion of the DTPW Construction Manager, shall require protection such as barriers, nets, tarps, plywood, etc. The Special work Protection must reflect the Contractor's work activities and shall be designed by a Professional Engineer and submitted to work for approval. A minimum of six (6) weeks prior to performing any such work, the Contractor shall present this plan for the Special work Protection to the DTPW Construction Manager, for approval.

7. Access to Controlled Areas:

Contractor access to areas requiring track allocation is prohibited unless prior approval is granted by the DTPW representative.

8. Foreign Objects on Existing Guideway:

At no time will the Contractor be allowed to throw or discard any objects, construction materials, debris, scaffolds, etc.... onto the Guideway.

9. End of Day Inspections and Other Inspections of Site work :

The Contractor is required to on a daily basis, conduct an inspection of the active site work after completion of work and immediately remove any foreign objects, clean, and secure the site and materials that may pose danger. No materials, attachments, anchorage systems, formwork or obstructions will be allowed to be left scattered or not cleaned. Contractor is responsible to maintain a clean and organize construction area. Prior to any hurricanes or other major storms, the Contractor and DTPW shall inspect the Contractor's work site and the Contractor shall immediately secure any materials that in the sole opinion of work may pose a danger to Transit facilities.

10. Emergencies:

Notwithstanding any of the above, in the event of an emergency, the Contractor maybe instructed to vacate the work area by DTPW the Construction Manager or DTPW representative. Any such direction shall require immediate action by the Contractor. Prior to vacating the work area, the Contractor shall clear the work area of all materials, equipment, etc.

11. Contractor shall provide and be responsible for all barricading of work areas to complete this project.

END OF SECTION

SECTION 01 26 13

REQUEST FOR INFORMATION (RFI)

PART 1: GENERAL

1.01 DESCRIPTION

- A. This section covers Request for Information (RFI) from the Contractor. RFI in this section is defined as: the solicitation by the Contractor for clarifications, interpretations, verifications and/or corrections of the Contract Documents.
- B. The Contractor shall comply with this section for all such requests for information. All costs incurred by the Contractor in preparing these requests shall be borne by the Contractor and are part of this contract.
- C. Any delays or impacts caused by the Contractor's failure to conform to the requirements of this section shall be solely the Contractor's responsibility and shall not be cause for any time extension and/or additional compensation.

PART 2: PRODUCTS

2.01 MATERIALS

NONE REQUIRED

PART 3: EXECUTION

3.01 REQUEST FOR INFORMATION REQUIREMENTS

- A. The Contractor is responsible for reviewing all Contract documents related to a particular work product well in advance of the performance of such work in accordance with Article 2: INTERPRETATIONS of the General Conditions. This review shall be planned to allow sufficient time to obtain resolution of any required RFI, as defined in this section.

- B. RFI Requirements

All RFI's shall be submitted to the Project Engineer in the format with this section or in a pre-approved format equivalent to this section inclusive of the information identified on the specified form.

All RFI's shall be signed by the Contractor's Project Manager or by a designated alternate (i.e., the Quality Assurance Representative).

- a. Date submitted.
- b. Contract number and title.

- c. Contractor's name.
- d. Description of the request, including any supportive drawings, sketches, or additional information.
- e. List of schedule activities which may be impacted by the request and a brief explanation as to why there would be a schedule impact and specific date constraints.
- f. Clear description of what response the Contractor is expecting.

All RFIs shall be signed by the Contractor's project manager.

C. RFI Processing Procedure.

- 1. Upon receipt of the RFI, the Project Engineer shall promptly date stamp the request. The Project Engineer is required to keep a log of all RFIs including receipt date and date returned to the Contractor.
- 2. The Project Engineer shall review the request to determine if further information is required from the Contractor, once the RFI is resubmitted by the Contractor, the RFI shall be restamped. The Project Engineer will coordinate a response and transmit the answer to the RFI to the Contractor.

D. Time allowed for processing RFIs.

Although every attempt will be made to expeditiously resolve all RFIs, DTPW shall have ten working days to respond to an RFI, from the date the RFI is received by the Engineer, including all necessary information needed to formulate a response. Failure by the Contractor to allow sufficient time for DTPW to formulate a response to an RFI, as specified in this section, shall not constitute grounds for a delay claim from the Contractor.

#### PART 4: MEASUREMENT AND PAYMENT

##### 4.01 MEASUREMENT

Work under this Section will not be separately measured for payment.

##### 4.02 PAYMENT

Work under this section will be paid for as part of the Contract lump sum bid price for Pay Item #1, General Requirements.

END OF SECTION





**METRO-DADE TRANSIT AGENCY  
REQUEST FOR INFORMATION (RFI)**

DATE: \_\_\_\_\_

RFI No. \_\_\_\_\_

CONTRACT No. \_\_\_\_\_ CONTRACT TITLE: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

**DESCRIPTION OF REQUEST:**  
(ATTACH ADDITIONAL SHEETS AS REQUIRED)

DRAWING No. \_\_\_\_\_

SPEC REFERENCE: \_\_\_\_\_

**CPM ACTIVITIES OF POTENTIAL IMPACT & TIME CONTRAINTS:**

**END PRODUCT REQUESTED:**

SUBMITTED BY: \_\_\_\_\_  
(CONTRACTOR - PROJECT MANAGER)

\_\_\_\_\_  
DATE

REVIEWED BY: \_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

DATE RETURNED TO CONTRACTOR: \_\_\_\_\_

**\* BY HIS SIGNATURE, THE CONTRACTOR AFFIRMS THAT HE HAS REVIEWED THE CONTRACT DOCUMENTS AND THAT THE INFORMATION REQUESTED CANNOT BE OBTAINED FROM SUCH A REVIEW.**

DC204.pm5, 7-13-85

## SECTION 01 29 73

### SCHEDULE OF VALUES

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. This Specification establishes the requirements for breakdown of Lump Sum Payment Items.

##### 1.02 SUBMITTAL REQUIREMENTS

- A. Submit to the DTPW a Preliminary Schedule of Values to include all portions of the work within 15 working days after NTP.
- B. Submit to the DTPW a Baseline Schedule of Values within 15 working days after receipt of DTPW comments on the Preliminary Schedule of Values. The Baseline Schedule of Values shall incorporate all comments associated with Contractor's Preliminary Schedule of Values submittals.
- C. Submit Documentation to support the values with data which will substantiate their accuracy.
- D. Upon acceptance by the DTPW, the Schedule of Values shall be used as the only basis for the Contractor's Applications for Payment. Acceptance of the Contractor's Preliminary/Baseline Schedule of Values is a condition precedent to processing all applications for payment other than payment for start-up costs during the first two months.
- E. The Schedule of Values shall correspond to each of the Payment Items. The breakdown of the lump sum Payment Items shall be in accordance with the approved Work Breakdown Structure and each line item shall correspond with an activity in the Construction Schedule.

##### 1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. The Schedule of Values shall be labeled with identifying information such as: title of contract and location, contract number, name and contact information of Contractor, and date of submission.
- B. The Schedule of Values shall list the installed value of the component parts of the WORK in sufficient detail to serve as the basis for computing values for progress payments during construction.
- C. Identify and list the title and number of the Specifications Section that is associated with the work.
- D. Deviations from the Schedule of Values form and content must be submitted and approved by the DTPW.
- E. Lump Sum Payment Items:

1. Payments for lump sum activities will be based upon physical progress (percent complete) for each related activity in the Progress Schedule.
  2. The dollar value allocated to lump sum activities shall be representative of the Contractor's actual costs for performing the work including overhead and profit and shall be balanced to ensure that sufficient funds are allocated for each portion of the work and shall be subject to acceptance by the DTPW.
  3. In the case of a disagreement between DTPW and Contractor's, the DTPW shall have the right to make final determination of activity dollar amounts contained in the Schedule of Values.
- F. Each Payment Item shall include a directly proportional amount of the Contractor's overhead and profit.
- G. A new Payment Item will be added to the Schedule of Values for approved Change Order Work. For payment for Time & Materials Change Order Work, the Contractor shall hold a Pre-Work Change Order Meeting with the DTPW, prior to executing the Work.
- H. The sum of all Payment Items listed in the Schedule of Values shall equal the total Contract Price.

#### 1.04 SUB-ACCOUNTS

- A. Include a breakdown of major Payment Items into sub-accounts on which progress payments will be requested. The sub-account breakdown shall include elements for Payment Items as appropriate and show the weight of the sub-accounts equal to 100 percent of major account (Payment Item).
- B. Contractor's Schedule of Values shall list the delivered value of the products, manuals, and services provided under the various Specification Sections. The lists shall be sufficiently detailed to serve as a basis for computing values for progress payments during the construction period.
- C. Copies of paid invoices for component material shall be included with the payment request in which the material first appears.

#### PART 2 - PRODUCTS

NOT USED

#### PART 3 - EXECUTION

NOT USED

END OF SECTION

## SECTION 01 31 19

### PROJECT MEETINGS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

A. This Section includes specifications for project meetings. The Contractor, along with Contractor's superintendent, project manager, superintendents of major subcontractors, and on-site safety representative, as a minimum, shall attend meetings scheduled by DTPW and shall:

1. Collect and disseminate information related to the Contract.
2. Advise about Contract related Safety information, Safety meetings, and Safety related issues.

1.02 SPECIAL MEETINGS: Special meetings between DTPW and the Contractor will be scheduled and conducted by DTPW throughout the course of construction as DTPW deems necessary.

##### 1.03 PRECONSTRUCTION MEETING

A. A pre-construction meeting will be scheduled and conducted by DTPW not more than 15 working days after the effective date of the Notice of Contract Award. Contractor's Project Manager, superintendent, safety representative, Quality Control Supervisor, EEO Officer, subcontractor representatives, and community relations representative shall attend. DTPW will provide Contractor written notice of this meeting not less than five working days or one calendar week prior to the date of the meeting.

B. DTPW will discuss the following at this meeting:

1. Introduce representatives of DTPW, governmental agencies, public and private utilities.
2. Explain and discuss the responsibilities and authorities of the Engineer.
3. Discuss Equal Employment Opportunity (EEO), Disadvantaged Business Enterprise (DBE), and affirmative action requirements along with the Community Relations functions. DTPW will be handling all of the community relations functions with coordination from the Contractor as needed.
4. Discuss Contractor's construction control requirements, as specified in Section 01 45 00, Contractor Construction Control Requirements.
5. Define and establish requirements for safety, first aid, emergency actions, security, and full-time safety representatives.
6. Explain and discuss selected laws, codes, traffic regulations, and permit requirements of public agencies and their regulations.
7. Discuss procedures for processing change notices, change orders, correspondence, RFIs, shop drawings, submittals, product data, and samples.
8. Discuss monthly progress payments.

9. Discuss final payments.
  10. Discuss project schedule.
- C. The Contractor shall discuss the following at this meeting:
1. Introduce Contractor's representatives, and briefly describe each person's responsibilities.
  2. Distribute and discuss the list identifying major Small Business and Disadvantaged Business Enterprises (SBE and DBE) subcontractors including their areas of responsibility.
  3. Discuss use of office, streets, right-of-way, haul routes, storage areas, staging areas, construction areas, and temporary easements.
  4. Define housekeeping procedures.
  5. Discuss construction means and methods.
  6. Describe general worksite layout, erosion and sedimentation control plans, haul routes, noise abatement, air and water pollution control, temporary street closings, and street restoration.
  7. Discuss coordination and notifications required for utility work and services.
  8. Discuss deliveries and priorities of major equipment.
  9. Discuss breakdown of schedule of values lump sum items.
  10. Discuss construction progress schedule.
  11. Discuss public safety measures.

#### 1.04 CONSTRUCTION PROGRESS MEETINGS

- A. Construction progress meetings will be scheduled and conducted by the Engineer and held each week during the period of performance of the Contract for the competent and timely execution of the Contract. Progress meetings shall include representatives of subcontractors who are or will be performing Work during the current and following month.
- B. The Contractor shall distribute notices of these meetings before such meetings to subcontractors.
- C. The agenda for construction progress meetings will be prepared by the Engineer and will generally include the following:
1. Introduce new attendees and areas of responsibility.
  2. Review minutes of previous meetings, amend minutes if necessary, and accept minutes.
  3. At the first meeting of each month, analyze Work accomplished since previous meeting, offsite fabrication problems, product delivery problems, submitted schedule slippages, proposed changes, and circumstances that might affect progress of work.

4. At each meeting, display and discuss the status of the Critical Path activities. If they are behind schedule describe the methods intended to be used to bring these activities back on schedule. Discuss corrective measures to maintain progress.

5. Discuss the Two-Week Look-Ahead Schedule submitted as specified in Section 01 32 16, Construction Contract Schedules, and last Work plan for the previous period showing activities accomplished and those not completed in accordance with the prior submittal. Discuss the reasons for failure to complete the Work as shown in the schedule and the methods to be implemented to complete the unfinished activities.

6. Discuss Work quality observations, problems, and employee Work standards.

7. Discuss coordination of utility work.

8. Discuss Work by outside parties.

9. Discuss changed conditions, time extension, and any subjects as they affect the work.

10. Discuss status of Contract changes: new changes, status of negotiations & complete changes.

11. Discuss SBE/DBE, and any Apprenticeship Program issues.

D. Each of the Contractor's inquiries, requests for information or requests for solutions of problems presented during such meetings shall be answered, when possible, during the meeting; those not answered during the meeting will be answered, the answer documented and presented by the Contractor at the next meeting. Answers provided orally at the meetings shall be recorded in the minutes.

E. Review the minutes of the meeting prepared by DTPW and submit any requested corrections. Minutes will be prepared in action-item format with named responsible parties and dates for completion indicated for each item.

1.05 PROGRESS PAYMENT MEETINGS: The Contractor and the Engineer shall meet to discuss the monthly progress payment.

1.06 CHANGE ORDER MEETINGS: Every 2 weeks or as necessary the Contractor and the Engineer shall meet to negotiate change orders.

PART 2 – PRODUCTS (Not Used.)

PART 3 – EXECUTION (Not Used.)

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

A. Work under this Section will not be separately measured for payment.

4.02 PAYMENT:

A. Work under this Section will be paid for as part of the Design-Build Contract lump sum price for Pay Item No. 1000.00, General Requirements.

END OF SECTION

ATTACHMENT 1

BASELINE NARRATIVE FORM FOR BAR CHART SCHEDULES

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

Contract No.: \_\_\_\_\_

Contractor: \_\_\_\_\_

Baseline and/or Update No.: \_\_\_\_\_

1. **Contractor's general approach for completing the work** (Including but not limited to any additional or unusual requirements not clearly represented in the schedule, the basis for the contractor's determination of durations for major work items and his approach for meeting the interim and final completion dates in his schedule.) **Use additional sheets if necessary.**

2. **Equipment to be used** (Including time that the equipment is to be on-site.) **Use additional sheets if necessary.**

ATTACHMENT 1

BASELINE NARRATIVE FORM FOR BAR CHART SCHEDULES

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

Contract No.: \_\_\_\_\_

Contractor: \_\_\_\_\_

Baseline and/or Update No.: \_\_\_\_\_

3. Anticipated delivery dates for material/equipment. Use additional sheets if necessary.

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4. Crews and Crew Sizes. Use additional sheets if necessary.


5. Rates of Production and Estimated Quantities. Use additional sheets if necessary.



ATTACHMENT 1

BASELINE NARRATIVE FORM FOR BAR CHART SCHEDULES

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

Contract No.: \_\_\_\_\_

Contractor: \_\_\_\_\_

Baseline and/or Update No.: \_\_\_\_\_

6. Workdays per week/Hours per Shift. Use additional sheets if necessary.

7. Non-Work Periods assumed in the planning of the work (Including holidays, rain days and any other non-work period assumed by the contractor.) **Use additional sheets if necessary.**

8. Activities which may be expedited by the use of overtime or additional shifts. Use additional sheets if necessary.

ATTACHMENT 1

BASELINE NARRATIVE FORM FOR BAR CHART SCHEDULES

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

Contract No.: \_\_\_\_\_

Contractor: \_\_\_\_\_

Baseline and/or Update No.: \_\_\_\_\_

9. **Sequencing and other restraints affecting the work** (Including manpower, material, and equipment restraints.) **Use additional sheets if necessary.**

ATTACHMENT 2

MONTHLY SCHEDULE UPDATE NARRATIVE FORM FOR BAR CHART SCHEDULES

Contract Title: \_\_\_\_\_  
Contract No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Baseline and/or Update No.: \_\_\_\_\_

1. **Progress This Period** (Including all activities started, completed or in progress and signed material delivery tickets indicating when material was delivered on-site or to the fabrication plant as applicable). **Use additional sheets if necessary.**

2. **Planned Progress for Next Period.** **Use additional sheets if necessary.**

ATTACHMENT 2

MONTHLY SCHEDULE UPDATE NARRATIVE FORM FOR BAR CHART SCHEDULES

Contract Title: \_\_\_\_\_  
Contract No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Baseline and/or Update No.: \_\_\_\_\_

3. **Problems and Solutions** (Including a listing of all delayed activities, the reasons for delay and proposed recovery actions.) **Use additional sheets if necessary.**

4. **Changes Since Last Period.** **Use additional sheets if necessary.**

**ATTACHMENT 2**

**MONTHLY SCHEDULE UPDATE NARRATIVE FORM FOR BAR CHART SCHEDULES**

**Contract Title:** \_\_\_\_\_  
**Contract No.:** \_\_\_\_\_  
**Contractor:** \_\_\_\_\_  
**Baseline and/or Update No.:** \_\_\_\_\_

**5. Special Concerns and/or Questions regarding the Schedule. Use additional sheets if necessary.**

## SECTION 01 32 16 PROJECT SCHEDULE

### PART 1: GENERAL

#### 1.01 DESCRIPTION

A. This section covers the preparation of a schedule in the form of a bar chart. (The Contractor will be allowed to use his preferred scheduling system, if approved by the Engineer. If the Contractor wishes to propose his own system, he shall so request prior to the required submittal timetables listed in this section.)

#### B. Final Schedule:

1. A bar chart schedule shall be used by the Contractor to control the progress and time fixed for completion of this project. This system shall be implemented by the Contractor. Prior to approval of the final construction schedule, the Contractor shall provide DTPW with letters from all his subcontractors and suppliers indicating that they have reviewed the Contractor's schedule and concur with the sequence of events, activity durations and rates of production implied therein.

2. All work shall be done in accordance with the schedule and all costs incurred by the Contractor to correctly implement the schedule shall be borne by the Contractor and are a part of his contract.

3. The schedule must be updated monthly and submitted with the Contractor's pay request. No payment will be made to the Contractor unless this monthly updated schedule and progress report is submitted with the Contractor's pay request. Even if no invoice is submitted in a particular month, the Contractor shall submit monthly schedule updates and progress reports to the satisfaction of the Engineer.

### PART 2: PREPARATION

#### 2.01 PREPARATION OF FINAL SCHEDULE:

#### A. Preparation:

1. Within 15 working days after the date of Notice to Proceed (NTP), the Contractor shall develop and submit a comprehensive and detailed Final Schedule, hereinafter referred to as the final schedule. Work performed prior to NTP shall not be allowed under this Contract.

2. When completed, the bar chart diagram shall represent the Contractor's own plan for the project as well as the sequence of each operation and all the involved parties. The schedule shall also identify the project's critical path. It shall be the responsibility of the Contractor to ensure that all of this work is described by the diagram and that the diagram does correctly represent the sequence in which he plans to do his work and the time in which he expects to do it.

3. As a minimum, the final schedule will cover the following areas:

A. Shop drawing preparation, review, and approval.

- B. Procurement of major equipment or material.
- C. Permit acquisition activities.
- D. Material samples.
- E. Material delivery.
- F. All major work elements, as approved by the Engineer.
- G. Punch list activities.
- H. Rates of Production.

4. The final schedule will be printed on a 11" x 17" sheet suitable for reproduction. The Contractor will submit 3 copies of this schedule.

5. A written narrative on separate 8 1/2" x 11" sheets will be included with the contractor's final schedule. This narrative will describe the contractor's general approach for performing the work and any additional or unusual requirements not clearly represented in the schedule including, but not limited to, equipment to be used and the time equipment is to be on-site, anticipated delivery dates for material and/or equipment, crews, and crew sizes, estimated quantities and rates of production. The narrative shall explain the basis for the contractor's determination of durations for major work items and describe his approach for meeting the interim and final completion dates in his schedule. The narrative shall also address workdays per week, hours per shift, rain days, holidays, or any other non-work periods that the contractor is assuming in the planning of the work. Activities which may be expedited by the use of overtime or additional shifts shall be identified. Sequencing and other restraints such as manpower, material or equipment shall be identified and explained. A form to be used by the Contractor to prepare his baseline narrative is included as Attachment 1 to this section.

6. When completed, the final schedule shall be submitted to the Engineer for approval. The Contractor shall incorporate the Engineer's schedule review comments within 10 days after receipt. The Engineer shall be the final authority in deciding the acceptability of the schedule. Upon approval by the Engineer, this shall become the Final Schedule for the contract. No deviations from the final schedule will be allowed without the approval of DTPW.

7. The Contractor shall identify all available float or slack time in his schedule in a format suitable to the Engineer. Float or slack time is not for the exclusive use or benefit of either the Contractor or DTPW. Float or slack time is considered project float as it is for the benefit of both parties. As such, it is not to be used exclusively by either party but is to be used by the party that needs it first. No more than 15% to 25% of the activities in the contractor's schedule may be on or near the critical path. ("Near the critical path" is defined as any activity having float of 10 days or less)

## 2.02 MONTHLY SCHEDULE UPDATES

1. The Contractor shall submit monthly schedule updates to show progress, as applicable, on all activities in progress. Such progress shall be shown in a format suitable to the Engineer. Three 11" x 17" copies of the updated schedule shall be submitted by the Contractor.
2. The Contractor shall submit an updated narrative in the form of monthly progress reports in a format acceptable to the Engineer. Such reports shall include sections for describing "progress this period", "planned progress for next period", "problems and solutions" (including a listing of all delayed activities, the reasons for delay and proposed recovery actions) and "changes since last period". Any special concerns and or questions regarding the schedule should also be included in the progress report. As applicable, signed material delivery tickets indicating when material was delivered on-site or to the fabrication plant will be provided with the narrative on a monthly basis. A form to be used by the Contractor to prepare his monthly update narrative is included as Attachment 2 to this section.
3. The Contractor shall submit on a weekly basis a simplified two-week look-ahead bar chart schedule showing all anticipated work scheduled to take place during the next 14 calendar days. This two-week look-ahead schedule shall be based on the approved baseline schedule.

### PART 3: PAYMENT

#### 3.01 PAY REQUESTS

1. The Contractor's pay request shall include an update of the final schedule. The contractor will not be eligible to receive payment until his contract baseline schedule and schedule of values is approved and no payment will be made to the Contractor unless this schedule update and schedule of values is submitted with the pay request. Refer to Section 2.6 of the Special Terms & Conditions.
2. All Contractor pay requests will be submitted in a form suitable to DTPW based on a County approved schedule of values.

#### 3.02 FINAL PAYMENT

Final payment shall be made in accordance with Article the terms and conditions of the Miscellaneous Construction Contract with Miami Dade County.

### PART 4: MEASUREMENT AND PAYMENT

#### 4.01 MEASUREMENT

Work under this Section will not be separately measured for payment.

#### 4.02 PAYMENT

Work under this section will be paid for as part of the Contract lump sum price for Pay Item #1, General Requirements.

END OF SECTION



SECTION 01 33 10  
SUBMITTALS

1.01 DESCRIPTION:

- A. This section includes specifications for the general requirements and procedures for preparing and submitting design and construction information and data for information and review. Other requirements for submittals are specified under applicable sections of the Contract Documents.

2.01 SUBMITTAL REQUIREMENTS:

- A. Schedule of Submittals: Within fifteen (15) days after the effective date of Notice to Proceed (NTP), the Contractor shall submit a completed submittal schedule and list of products for all items requiring the Engineer-of-Record's (EOR) review and approval, as follows:
  - 1. Design Drawings and Specifications.
  - 2. Submittal Schedule.
  - 3. Shop Drawings, including description of the items and name of manufacturers, trade names, and model numbers.
  - 4. Contract Specification Reference.
  - 5. Intended Submission & Resubmission Date(s).
  - 6. Order Release Dates.
  - 7. Lead Times to Delivery and Anticipated Delivery Date(s).
  - 8. Highlight items that require expedited review to meet the project schedule and are within the critical path of the schedule.
- B. The County will withhold acceptance of submittals which depend on other submittals not yet submitted or not yet reached a status of "No Exceptions Taken".
- C. These schedules shall be presented in a form that is readily reproducible and shall be updated and sent to DTPW and EOR on a monthly basis. Identify all submittals that are required by the Contract Documents and determine the date on which each submittal will be submitted in conformance with the schedules specified under this contract.
- D. Provide a title block for drawings containing the following information:
  - 1. Date and Revision Date(s).
  - 2. Contract Title and Number.
  - 3. The names of the Contractor, Sub-Contractors, Suppliers, and Manufacturers as applicable.
  - 4. Identification of product by description, model number, style number, serial number, or lot number.
  - 5. Subject identification by Contract Drawing or Specification Reference.
- E. Professional Engineer's Seal Required:

Submittals involving engineering expertise, such as excavation support structures, framework for concrete, civil and structural designs (i.e., final details of metal canopy), load calculations and operating systems engineering final design shall be sealed and signed by a professional

engineer, currently registered in the State of Florida, for the discipline involved and in accordance with Florida law.

F. Submittal Stamps and Action Block Space:

Include a 5-inch square blank space, in the lower right corner, just above the title block, in which the professional engineer may indicate the action taken.

G. Review Period:

1. Prepare submittals sufficiently in advance so that review may be given before commencement of related work.
2. Allow thirty (30) calendar days after receipt by the EOR for review of each submittal.
3. The Contractor shall be responsible for determining whether or not certain governmental entities and utility companies will require longer review periods. The EOR will assist in this effort. Where longer review periods are required, the Contractor shall schedule the work accordingly, so that the work and construction schedules are not adversely impacted.

H. Submittal Delivery:

Ship submittals prepaid (FedEx, etc...) or deliver by hand directly to the DTPW and EOR's office.

I. Transmittal Form:

Accompany all submittals with a transmittal form, including a brief description of the items that have been included.

J. Changes in Reviewed Submittals:

Changes in reviewed submittals will not be permitted unless those approved submittals with changes have been resubmitted and reviewed, in the same manner as the original submittal.

K. Supplemental Submittals:

Supplemental submittals initiated by the Contractor for consideration of corrective procedures shall contain sufficient data for review. Make supplemental submittals in the same manner as initial submittals.

L. Incomplete submittal packages will be returned without review.

3.01 CONTRACTOR'S RESPONSIBILITIES:

A. Contractor's Review:

1. Each submittal shall be reviewed, stamped, and signed as reviewed and approved by the Contractor before submission.
2. If the submittal is designated to be sent to the EOR for information, approval by the designated approval authority shall take place before submission to the EOR.
3. The Contractor shall coordinate each submittal with the requirements of the work, placing particular emphasis upon ensuring that each submittal of one trade is compatible with other submittals of that trade and with the submittals of other trades. Ensure submittal is complete with all relevant data required for review.

4. Review of drawings and associated calculations by the EOR shall not relieve the Contractor from the responsibility for errors or omissions in the drawings and associated calculations, or from deviations from the Contract Documents, unless submittals containing such deviations were submitted to the EOR and the deviations were specifically called to the attention of the EOR in the letter of transmittal and approved by the EOR as a Contract Change.
5. The Contractor's liability to work, in case of deviations in the submittals from the requirements of the Contract Documents, is not relieved by the EOR's review of submittals containing deviations, unless the EOR expressly approves the deviations by issuing a Contract Change Order.
6. The Contractor shall be responsible for the correctness of the drawings, for shop fits and field connections, and for the results obtained by the use of such drawings.

B. Submittal Quantities:

Unless noted otherwise, Contractor shall submit seven (7) copies of all submittals and electronic files in a form acceptable to DTPW and the EOR. Where permits and licenses and other such documents are obtained in name of Department of Transportation and Public Works, submit the original and six (6) copies.

C. Distribution of Submittals after Review:

Distribute prints or copies of reviewed submittals, bearing the EOR's or designated approval authority's stamp and signature, to affect and concerned sub-contractors, suppliers, and fabricators; and to affected and concerned members of the Contractor's workforce.

D. Maintain at the job site a complete up-to-date, organized file of all past and current submittals including an index and locating system which identifies the status of each submittal:

1. Assign a sequential number to each submittal, which shall indicate the applicable specification section for which the submittal is required.
2. Assign a revision number, using an alphanumeric sequence (i.e., 15, 15A, 158, etc.) to all submittals.

4.01 ENGINEER'S REVIEW:

- A. Submittals will be reviewed for conformance with requirements of the Contract Documents. Review of a separate item will not constitute review of an assembly in which the item functions. Review will not relieve the Contractor from Contractor's responsibility for accuracy of submittals, for conformity of submittals to requirements of Contract Documents, for compatibility of described product with contiguous products and the rest of the system, or for prosecution and completion of the Contract in accordance with the Contract Documents.
- B. The EOR will indicate in its reviews of submittals and the action taken by means of their submittal stamp. The submittal stamp will be affixed by the EOR within the action block and the stamp will be signed and dated.
- C. The submittal stamp action block marks will have the following meanings:

1. The mark "NO EXCEPTIONS TAKEN" means that every illustration and description appear to conform to the respective requirements of the Contract Documents; that fabrication, assembly, manufacture, installation, application, and erection of the illustrated and described product may proceed; and that the submittal need not be resubmitted.
  2. The mark "EXCEPTIONS AS NOTED - RESUBMISSION NOT REQUIRED" means that every illustration and description appear to conform to the respective requirements of the Contract Documents upon incorporation of the reviewer's corrections, and that fabrication, assembly, manufacture, installation, application, and erection of the illustrated and described product may proceed. Submittals so marked need not be resubmitted unless the Contractor challenges the review/s exception.
  3. The mark "EXCEPTIONS AS NOTED - RESUBMISSION REQUIRED" means that every illustration and description appear to conform to the respective requirements of the Contract Documents, and that fabrication, assembly, manufacture, installation, application, and erection of the illustrated and described product may proceed after incorporation of the reviewers' corrections and verification by the EOR that the reviewer's corrections have been properly incorporated in the submittal. Resubmission is also required if the Contractor challenges the reviewer's corrections.
  4. The mark "REJECTED" means that the submittal is deficient to the degree that the reviewer cannot correct the submittal with a reasonable degree of effort, has not made a thorough review of the submittal, and that the submittal needs revision and is to be corrected and resubmitted.
- D. Review stamps or other approval methods of the various designated approval authorities may not be the same as those described herein. The Contractor shall coordinate (through the EOR) with the various designated approval authorities and shall obtain approvals in the clearest and most straight forward manner possible.
  - E. Contractor shall attend meetings as requested by DTPW and EOR to address issues related to the review of submittals.
  - F. The EOR will return submittals to the Contractor within thirty (30) calendar days after submittals have been received.
  - G. Contractor shall include at least thirty (30) days in the project schedule for the EOR to review submittals.
  - H. Allow thirty (30) days for review by the EOR of all re-submittals.

#### 5.01 MEASUREMENT AND PAYMENT

- A. No separate measurement or payment will be made for submittals, and this will be paid for as part of the overall Contract for that particular item of work.

END OF SECTION

## SECTION 01 33 23

### SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

#### PART 1: GENERAL

##### 1.01 DESCRIPTION:

- A. This section specifies preparing and submitting shop drawings, product data, and samples required under the contract.
- B. Dates for submission, and dates on which approved shop drawings, product data, and samples for each product will be needed, shall be designated in the Contractor's Schedule.

##### 1.02 SHOP DRAWINGS:

“Shop Drawings” are defined as drawings, diagrams, illustrations, schedules of materials, catalog cuts, brochures and other data prepared by the Contractor or subcontractor, manufacturer, supplier, or distributor, which illustrates how specific portions of the work shall be fabricated and/or installed.

Furnish all shop drawings that are necessary to complete the scope of work in compliance with the design shown on the plans. Prepare all shop drawings using the same units of measure as those used in the contract drawings.

Shop drawings provided by the Contractor with each submittal shall be original drawings, sharp, clear, and distinct, suitable for reproduction.

Shop drawings minimum sheet size: 11 X 17 inches.

Changes in products, for which shop drawings have been accepted, will not be permitted unless those changes have been accepted, in writing by the Engineer, as provided in Section 01 62 00, SUBSTITUTIONS AND PRODUCT OPTIONS.

As a minimum, the following shop drawings shall be submitted by the Contractor for review by the EOR and DTPW project manager:

1. All shop drawings being submitted to RER for permitting.

##### 1.03 QUALITY ASSURANCE:

Shop drawings shall be prepared to a high standard of quality, and to the satisfaction of the County. Drawing level control shall be established and implemented to ensure documentation is controlled for specified applications on contract.

##### 1.04 PRODUCT DATA:

- A. Provide original documents or clearly legible photographic or xerographic copies of documents other than drawings, such as trade literature, catalogue information, calculations, manuals, etc. Clearly label and number each sheet in the submittal to indicate the total number of sheets in the series (i.e., 1 of 12, 2 of 12, ... 12 of 12).

Prepare all documents using the same units of measure as those used in the contract drawings. Bind and submit all documents with a cover sheet. List on the cover sheet the complete Contract number, a title referencing the submittal item(s), the name of the firm and person(s) responsible for the preparation of the document, the contractor's approval stamp with the data and initials, and, when applicable, the signature and embossed seal of the Specialty Engineer.

- B. Manufacturers' standard schematic drawings shall be modified to delete information which is not applicable to the project. Standard information shall be supplemented to include additional information applicable to the project.
- C. Manufacturers' standard catalog cuts, brochures, diagram, schedules, performance charts, illustrations, calculations, and other descriptive data shall be modified to delete information which is not applicable to the project. Dimensions, clearances, reference standards, performance characteristics and capacities, and wiring and piping diagrams and controls, component parts, finishes shall be shown.
- D. Certificates of Compliance shall be submitted for those products for which no samples and test results are specified. Certificates shall state that the product complies with the requirements of the respective specification section and shall be signed by a representative of the product manufacturer. A copy of the certificate shall accompany the product for which the certificate is prepared.

#### 1.05 SAMPLES:

- A. Samples shall be of sizes and quantities to clearly illustrate full color range and functional characteristics of products and materials and shall clearly show attachment devices. After review and approval by the Engineer, samples may be used in construction of the project if samples are not damaged and are properly dispositioned for use. Changes in products for which samples have been accepted will not be permitted unless those changes have been approved, in writing, by the Engineer.
- B. Samples and sample installation shall be erected at the job site at locations acceptable to the Engineer and shall remain in place or available until completion of the project.

#### 1.06 DADE COUNTY PRODUCT CONTROL APPROVAL:

The Contractor shall submit all required Dade County Product Approvals, as applicable, in accordance with this section and the Florida Building Code.

#### 1.07 CONTRACTOR RESPONSIBILITIES:

Shop drawings, product data, and samples shall be reviewed, stamped, and signed as approved, by the Contractor's designated authority prior to submission to the Engineer. Each submittal shall be coordinated with the requirements of the work. Returned marked-up submittals shall be reviewed and those requiring changes shall be changed and shall be resubmitted.

- A. Field measurements, catalog numbers, and similar data shall be verified.
- B. Work, for which submittals are required, shall not be started until submittals bearing the Engineer's stamp and signature indicating review and approval has been received.
- C. Before submitting samples, assure that products of which samples will be submitted will be available in the quantities required by the project.
- D. The responsibility for errors and omissions in submittals shall not be relieved by the Engineer's review and approval of submittals.
- E. Responsibility for deviations in submittals from requirements of the Contract Documents shall not be relieved by the Engineer's review and approval of those submittals unless the Engineer gives written approval of specific deviations.
- F. The Contractor shall verify that the product or system submitted for review has been approved by Dade County Product Control, if applicable, prior to making the initial submittal. Products which require Dade County Product Control approval and are not so approved shall be rejected by the Engineer. Product approval shall not be requested or initiated during the shop drawing review process but shall be requested and obtained prior to the Contractor's bid submittal.

#### 1.08 SUBMISSION REQUIREMENTS:

Submittals, excepting test results, shall be made in not less than 30 days before work covered by the submittals is scheduled to be performed. Allow 20 calendar days for review of shop drawing submittal by the Engineer. Test results shall be submitted within five days after each test has been completed. Office samples shall be shipped prepaid. Submittals require approval of the Engineer prior to work covered by the submittals being scheduled to be performed.

- A. Quantities to be submitted shall be as follows:
  - 1. Shop drawings provided by the Contractor with each submittal shall be original drawings, sharp, clear, and distinct, suitable for reproduction, until approved by the Engineer. If shop drawings are not approved, the marked-up drawing(s) will be returned.
  - 2. Shop drawings minimum sheet size: 11 X 17 inches.
  - 3. Three copies of manufacturers' standard schematic drawings.
  - 4. Three copies of manufacturers' calculations and three copies of manufacturers' standard data.

5. Three samples as specified in each of the specification sections, unless otherwise specified.
  6. Three copies of each test result.
  7. Three copies of each Certificate of Compliance.
  8. Three copies of the Dade County Product Control Notice of Acceptance, if applicable.
- B. Submittals shall be accompanied by two transmittal forms containing the following information:
1. Date submitted to the Engineer.
  2. Project title and Contract Number.
  3. Supplier's, manufacturer's and subcontractor's name, address, and telephone number.
  4. Number and title of each shop drawing, product data, and sample submitted.
  5. Notification of known deviations from the drawings and the specification sections.
  6. Dade County Product Approval number, if applicable.
  7. Other pertinent data.
- C. Submittals shall include a white space, three by four inches, in the lower right corner just above the title block, in which the Engineer may indicate the action taken. Submittals, as applicable, shall show as a minimum the following information:
1. Date and revision dates.
  2. Project title, drawing title and number and DTPW Contract Number.
  3. The names of the Contractor's engineer, Subcontractor, lower tier Subcontractor, supplier, manufacturer and the name of the detailer or person(s) responsible for the drawing.
  4. Consecutively number each sheet in the submittal series and indicate the total number in the series (i.e., 1 of 12, 2 of 12, ... 12 of 12).
  5. Identification of product by description, model number, style number, serial number, or lot number.
  6. Location of the item(s) within the project.
  7. Relation to adjacent structure or materials.
  8. Field dimensions clearly identified as such.



9. Applicable specification section numbers.
10. Applicable standards, such as ASTM number and Federal Specification number.
11. Identification of known deviations from the drawings and specification sections.
12. Contractor's stamp, signed, and dated certifying review of submittal, verification of field measurements, and approval for compliance with the drawings and specification sections, and, when applicable, the signature and embossed seal of the Specialty Engineer.
13. Include in submittals a reference to supporting Subcontract drawing.
14. The Engineer will request a re-submittal when any of this minimum information is not included.

#### 1.09 RESUBMISSION REQUIREMENTS:

Resubmittals shall be submitted by the Contractor so as to avoid delays to the project.

- A. Initial Shop Drawings: Shall be revised as required and resubmitted as specified for initial submittal. Changes which are made, other than those requested by the Engineer, shall be so indicated.
- B. New Product Data and Samples: Shall be resubmitted as specified for initial submittal.

#### 1.10 DISTRIBUTION OF SUBMITTALS AFTER REVIEW:

Approved shop drawings and product data bearing the Engineer's stamp and signature will be distributed by the Engineer to the Contractor's field office. The Contractor shall distribute copies to concerned lower tier subcontractors, suppliers, and fabricators; and to concerned members of the Contractor's work force.

#### 1.11 ENGINEER'S DUTIES:

- A. Submittals will be reviewed and marked.
- B. Submittals will be reviewed for conformance to the requirements of the Drawings and Specification sections. Review will not relieve the contractor from his responsibility for the accuracy of the submittals or for the conformity of the submittals to the requirements of the drawings and specification sections. Review will not relieve the contractor of the responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Engineer in writing of such deviation at the time of submission and the Engineer has given written approval to the specific deviation, nor shall the Engineer's approval relieve the Contractor from responsibility for errors or omissions in the shop drawings, product data sheets or samples.

- C. Review of a separate item shall not constitute review/approval of an assembly in which the item functions.
- D. Stamp, date, and signature will be affixed, and will certify that the submittal has been reviewed.
- E. The Engineer will return to the Contractor the shop drawings or product data within the time frames specified in Article 1.08, SUBMISSION REQUIREMENTS, for the Contractor's use and distribution.

#### PART 2: PRODUCTS

##### 2.01 PRODUCTS:

No products are required except as indicated in PART I: GENERAL.

#### PART 3: EXECUTION

##### 3.01 EXECUTION:

No execution is required except as indicated in PART I: GENERAL.

#### PART 4: MEASUREMENT AND PAYMENT

##### 4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

##### 4.02 PAYMENT:

Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 1, General Requirements.

END OF SECTION

## SECTION 01 33 30

### WORKING DRAWINGS

#### PART 1: GENERAL

##### 1.01 DESCRIPTION:

This Section specifies the preparation and submission of working drawings and associated calculations required by the specifications sections or to erect temporary structures to facilitate construction.

##### 1.02 WORKING DRAWINGS:

Working drawings shall be identified by reference to drawing page numbers and specification section numbers. Working drawings shall be prepared, seal-stamped, dated, and signed by the Contractor's engineer, of the involved discipline, registered as a professional engineer in the State of Florida.

##### 1.03 QUALITY ASSURANCE:

All working drawings shall be prepared to a high standard of quality, and to the satisfaction of the County. Drawing level control shall be established and implemented to ensure documentation is controlled for specified applications on contract.

##### 1.04 ASSOCIATED CALCULATIONS:

Calculations shall be prepared, seal-stamped, dated, and signed by the Contractor's engineer, of the involved discipline, registered as a professional engineer in the State of Florida. Calculations shall be identified by reference to Contract Drawing page numbers and specification section numbers.

##### 1.05 CONTRACTOR RESPONSIBILITIES:

Working drawings and associated calculations prepared by any subcontractor shall be reviewed, signed, and dated as approved by the Contractor, prior to submission. Each submittal shall be coordinated with the requirements of the work.

- A. Field measurements and field construction criteria shall be verified by the Contractor.
- B. Work, for which working drawings and associated calculations are required, shall not begin until those drawings and calculations bearing the stamp and signature, indicating Contractor Engineer's review, have been received.
- C. Submittals shall not relieve the Contractor of the responsibility for safe and effective design of structures for which the working drawings and associated calculations are submitted. DTPW and the Engineer shall in no way be liable to the Contractor and others for any

consequences arising from work described in this section and shall not review and or approve the working drawings.

1.06 SUBMISSION REQUIREMENTS:

- A. Working drawings and associated calculations shall be submitted in sufficient time and not less than 15 days before work represented by those drawings and calculations is scheduled to be performed.
- B. Submittals shall be accompanied by two Transmittal Forms containing the following information:
  - 1. Submittal date.
  - 2. Project title and number.
  - 3. Contractor's name and address.
  - 4. Number of each working drawing and associated calculation submitted.
  - 5. Notification of known deviations from Construction Documents.
  - 6. Other pertinent data.

PART 2: PRODUCTS

2.01 PRODUCTS:

No products are required except as indicated in PART 1: GENERAL.

PART 3: EXECUTION

3.01 EXECUTION:

No execution is required except as indicated in PART 1: GENERAL.

PART 4: MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

4.02 PAYMENT:

Work under this Section will be paid for as part of the pay item unit price requiring the work specified in this section under Pay Item #1, General Requirements, in the Bid Form.

END OF SECTION

## SECTION 01 35 29

### HEALTH, SAFETY AND SECURITY PLAN REQUIREMENTS

#### 1.01 DESCRIPTION:

- A. This section includes specifications for complying with applicable laws and regulations related to worker safety and health. It is not the intent of DTPW to develop or manage the safety and health programs of the Contractor, its subcontractors, or suppliers, or in any way assume the responsibility for the safety and health of their employees. The work Construction Safety Manual (CSM) is a Contract Document that specifies minimum requirements for the Contractor's Site Safety Plan. The Contractor shall adhere to the DTPWCSM and applicable federal, state, and local safety and health standards.

#### 2.01 REGULATORY REQUIREMENTS:

United States Code (USC)

Federal Occupational Safety and Health Act (USC 651 et seq.)

Code of Federal Regulations (CFR)

OSHA General Health and Safety Standards (29 CFR 1910)

OSHA Construction Safety and Health Standards (29 CFR 1926)

Emergency Planning and Community Right-to-Know (40 CFR 300)

DOT Rail Fixed Guideway Systems - Traffic Safety (49 CFR 659)

Florida State Statute or Code

#### 3.01 SUBMITTAL REQUIREMENTS:

- A. Submit to work for review and approval a Construction Site Safety Plan (CSSP) that meets the requirements of the DTPW CSM, within thirty (30) days after receipt of Notice of Award of Contract and prior to start of any work. DTPW Construction Safety Manual (DTPW CSM), requires the Contractor to assure that all employees, visitors, sub-contractors, and their suppliers and vendors, while on the work site comply with the provisions and the minimum standards set forth under the William-Steiger Occupational Safety and Health Act of 1970 and as amended, the Construction and General Industry Standards (29CFR1926/1910), and all other applicable federal, state, and local laws. The Contractor shall become familiar with the contents applicable to their operations. Non-compliance with the DTPW CSM will be treated the same as non-compliance with any Contract provision.

- B. The DTPW CSM shall be used as a guideline and establish the basis in developing the Contract specific Contractor's Construction Site Safety Plan as well as the Contractor's Accident Prevention Program. The Contractor shall assume full responsibility for compliance with all code mandated safety regulations and for complying with the DTPW CSM during the performance of all activities and in all phases of construction, installation, testing and final turnover to work.
- C. The Contractor's plan shall incorporate such programs and activities as may be necessary to comply with the work Construction Site Safety Manual and all known regulatory and code requirements. The Plan shall include site specific procedures in the event of fire, injury, accident, or other emergency conditions. A copy of this plan shall be made available at all construction offices. The plan shall include, at a minimum, the following elements:
1. Emergency planning, response procedures and contact numbers.
  2. Accident Prevention Program, accident and injury reporting and follow up.
  3. Traffic control, signage, graphics, and maintenance of way.
  4. Adverse weather plans and hurricane preparedness.
  5. Excavation, trenching, shoring, and underpinning.
  6. Demolition and teardown plans, procedures and permits.
  7. Electrical safety assured grounding and lock/out - tag/out procedures.
  8. Hoisting, rigging, conveyors, materials handling, and storage.
  9. Fire prevention and protection including welding, cutting and hot work.
  10. First Aid Plan, on site providers and ongoing medical surveillance.
  11. Hazard materials communications, handling, transportation, and storage.
  12. Sanitation and housekeeping.
  13. Personal protective equipment utilization.
  14. Safety orientation for new hires and continuing education.
  15. Weekly toolbox safety meetings.
  16. Job Hazard Analysis including remedial measures.
  17. worksite safety inspection checklists and reporting procedures.
  18. Confined spaces training and permit procedures.
  19. Fall protection plans, training, equipment, and inspection.
  20. Safety incentive program.
  21. Drug and alcohol-free program.

- D. In addition, the Contractor is required to employ a full-time safety supervisor whose sole responsibility shall be construction site safety. Assigned safety supervisor shall not have any conflicting duties or be utilized for non-construction related activities.
- E. The Contractor's Site Safety Plan (CSSP) will be submitted for review, but not approved. DTPW verify that the minimum requirements are met. Comments will indicate whether or not the CSSP contains the minimum necessary information as indicated herein. The Contractor shall be solely responsible for all aspects of construction site safety and security.

#### 4.01 SAFETY PRECAUTIONS:

- A. All products and materials used in connection with this work shall remain asbestos-free.
- B. Immediately notify DTPW and EOR if, during the course of the Contract, there should be a discovery of any undetermined substance.
- C. Adhere to the applicable regulations for the entire duration of the Contract.
- D. Perform electrical work (if required) within this Contract in accordance with the requirements of NFPA 70.
- E. The Contractor shall take responsibility for the health and safety of the Contractor's employees, sub-contractors, vendors, and other individuals within the job site or who may be impacted by the work in progress.

#### 5.01 ACCIDENTS AND INJURIES:

- A. In the case of accident or injury, the Contractor shall provide such equipment and facilities as are necessary or required in order to provide for first aid service to anyone who may be injured in the progress of the work. The Contractor shall have a standing arrangement for the transportation and hospital treatment of any person who may be injured or may become ill.
- B. Report immediately to DTPW, EOR and area safety manager (if one is available) for every accident, injury, or damage to property; and furnish the required reports in writing within the times specified in the DTPW CSM. An accident, injury, or illness is any occurrence that results in a bruise, breaking the skin, or loss of time of more than fifteen (15) minutes of work time; an impairment of vision or mobility; or that adversely affects job performance as a result of equipment, material, vapors, lighting liquid, or solid materials. The report shall include full information, including testimony of witnesses regarding any and all accidents.

#### 6.01 CONTRACTOR CONSTRUCTION SITE SECURITY PLAN:

- A. The Contractor is required to submit for work review and approval a Contract specific Construction Site Security Plan as herein defined. This Plan shall provide guidelines to implement security procedures and describe the Contractors' commitments and specific actions proposed to provide a secure project site. The Plan shall include, at a minimum:
1. Security personnel, roles, and responsibilities, contact numbers.
  2. Procedure for performing background checks of Contractor key personnel.
  3. Security awareness, training, drills, and continuing education.
  4. Incident response, reporting, investigation, follow up and lessons learned.
  5. Critical Assets, Threat and Vulnerability Analysis and countermeasures.
  6. Perimeter protection, security doors, fencing, gates, signage, barriers, lighting.
  7. Access control, authorized site personnel, badge issuance, vehicle identification.
  8. Intrusion detection, surveillance devices, alarms, and central monitoring.
  9. Theft prevention, lock and key control, tool cages, storage boxes, lay down areas.
  10. Procedure for conducting periodic security meetings, surveillance, and audits.
  11. Contraband identification, deterrence, denial, detection, and disposal.
  12. Response to Department of Homeland Security threat advisories, bulletins, levels.

#### 7.01 MEASUREMENT AND PAYMENT:

- A. No separate measurement or payment will be made for Health, Safety and Security Plan requirements and this will be paid for as part of the overall Contract for that particular item of work.

END OF SECTION



## SECTION 01 41 26

### PERMITS

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. The Contractor shall identify, apply for, and obtain all required permits. The Contractor shall make sure all the necessary permits and licenses are in place prior to commencement of the WORK.
- B. The Contractor shall keep copies of these permits on the project site at all times. The Contractor shall familiarize themselves with, and comply with, all requirements of these permits.
- C. The Contractor particular attention is called to any Special Conditions of the permits relating to construction procedures, excavation and backfill requirements, open trench restrictions, turbidity control and all other general and special conditions, including flowable fill and pavement details. In the event any of the conditions of the permits are in conflict with the requirements of these Specifications, the more stringent conditions shall take precedence. The Contractor is to conform to all regulations of the governmental agencies having jurisdiction over this work, whether or not included in the permit.
- D. Any deviations from the Plans, Specifications or permits appended thereto, must first be approved by the DTPW even if approval for the change has been given by the permitting agency.
- E. The Contractor shall assume throughout the life of the Contract all obligations and responsibilities imposed as permitted of the above-mentioned permits. All expenses necessary for compliance with the regulations and requirements of each permitting agency and its permit shall be borne by the Contractor and shall be included in the overall price. All surveying required by the Project permits shall be done by the Contractor's Florida Registered Land Surveyors.
- F. Preparation of the permits and submittals are to be assumed by the contractor and to be included under all items of work. However, permits fees, inspection fees and cost of permits will be reimbursed to the contractor at invoice cost from a dedicated allowance account.

PART 2 – PRODUCTS (NOT USED.)

PART 3 – EXECUTION (NOT USED.)

END OF SECTION

## SECTION 01 43 00

### QUALITY ASSURANCE REQUIREMENTS

#### 1.0: QUALITY ASSURANCE

The Contractor shall develop an effective Quality Assurance Plan (QAP) to assure adequate quality throughout all phases of the Contract Work and shall describe the methods used and means employed for the implementation of the plan. The Contractor's QAP shall, at minimum contain the fifteen (15) quality elements of the FTA Quality Management System (QMS) Guidelines (FTA-PA-27-5194-12.1) as revised. The QAP shall ensure compliance with the requirements of the contract documents within the Contractor's, subcontractor's, and supplier's organizations.

A QAP template shall be attached to the contract documents to be used in the development of the Contractor's QAP.

#### 2.0: ORGANIZATION

2.1 Personnel performing Quality Assurance/Quality Control (QA/QC) functions shall have sufficient, well-defined responsibility, authority, and the organizational freedom to identify and evaluate quality problems, and to initiate, recommend or provide solutions.

2.2 The Contractor's QAP shall be subject to the Department of Transportation and Public Works (DTPW) verification at any time. Verification may include but not be limited to:

1. Surveillance of the operations.
2. Auditing of records and activities.
3. Inspection to measure quality of items and/or works to ensure compliance with requirements.
4. Review of Quality Records to ensure proper records keeping of activities affecting quality. These records shall be available for review by the DTPW at any time.

#### 3.0: APPLICABILITY

The responsibility for providing QA/QC disciplines to verify that the work is performed in accordance with the Contract document rests with the Contractor. The Contractor's QAP shall be used to control quality throughout the duration of the project. Any inspections, audits or tests provided by the Department of Transportation and Public Works (DTPW), or designee shall not relieve the Contractor of the responsibility of providing work that strictly complies with the Contract requirements.

#### 4.0: REQUIREMENTS

The Contractor's QAP shall be in-line with the FTA QMS Guidelines (FTA-PA-27-5194-12.1) and shall also include:

4.1 An organizational chart indicating lines of authority and reporting relationship including QA/QC personnel.

4.2 Detailed Quality Procedures and Inspection Forms.

1. The QAP and associated quality procedures and inspection forms should be submitted to the Department of Transportation and Public Works (DTPW) within five (5) days after Notice to Proceed (NTP) for review and approval.

Note: All work undertaken by the Contractor before the approval of the Contractor's QAP will be at the Contractor's risk and expense.

4.3 Records for all material tests, audits, and inspections performed, including data on conforming as well as nonconforming items shall be maintained by the Contractor at the job site current, up to date, and available for the DTPW inspection at any time throughout the contract work.

4.4 The Contractor's Daily Inspection Reports (DIR) is required by this Section and shall be available for review by the DTPW.

4.5 Test Records and Calibration Identification status of testing equipment required for the project shall be maintained by the Contractor and available for inspection by the DTPW at any time throughout the contract work.

#### 5.0: NONCONFORMANCE AND REPAIR ACTION

5.1 The Contractor shall maintain an effective system for controlling nonconforming material, including procedures for its identification, segregation, and disposition.

5.2 All nonconforming material shall be positively identified to prevent unauthorized use, shipment, or intermingling with conforming material. Disposition for the use or repair of nonconforming material shall require the approval of the DTPW.

5.3 The Contractor shall be responsible for all costs associated with the removal of components and/or devices, the shipping charges to and from the Contractor's facilities and the costs associated with their reinstallation and/or repair.

END OF SECTION

## SECTION 01 45 00

### CONSTRUCTION CONTROL REQUIREMENTS

#### PART 1: GENERAL

##### 1.01 DESCRIPTION

- A This Section specifies the Contractor's requirements for defining and controlling in-process Work. The Contractor is responsible for implementing and maintaining a program that will define how the Work is to be performed and who is responsible to ensure Work meets Contract Document requirements. This shall be detailed by Construction Work Plans (CWP) for each phase of the Work to be performed.
- B DTPW may impose hold points in CWPs to verify compliance with Contract Documents during any phase of the Work and the Contractor may not proceed with the Work until a hold point has been released by DTPW.
- C The Contractor shall identify all safety-critical submittals associated with the Contract Specifications and Standard Specifications Section Article numbers referenced in the submittals.
- D DTPW will have access to areas where Work is performed under the Contract to conduct audits, surveillance, inspections, and tests to verify compliance with the Contract requirements. Access includes on-site and off-site Work areas of the Contractor, Subcontractors, manufacturers, and suppliers.

#### PART 2: PRODUCTS

##### 2.01 SUBMITTALS

- A The Contractor shall develop a list of Construction Work Plans within 45 days after Notice to Proceed.
- B Construction Work Plans required by the Contract Specifications shall be submitted a minimum of 30 days prior to commencement of each phase of the Work.
- C Commissioning Plan within 45 days after Notice to Proceed.
- D List of material suppliers and fabricators shall be submitted within 45 days after Notice to Proceed.
- E Responses to Nonconformance Reports
- F Names and qualifications of personnel performing Special Processes.
- G Contractor shall annotate all safety-critical submittals as such on the "Master Submittal List" submittal and on the Contractor's submittal transmittal documents.

##### 2.02 CONSTRUCTION WORK PLANS

- A Construction Work Plans are detailed descriptions of a specific Work activity. DTPW, in consultation with the Contractor, will determine which Work activities require submission and approval of a CWP. The Contractor shall prepare and submit a list of CWPs to DTPW. DTPW may add CWPs to the list. Upon approval of the CWP list, the Contractor shall prepare and submit a CWP for each of these Work activities. No Work shall begin without DTPW acceptance of a CWP. As a minimum, each CWP shall include:

Scope of Work.

- List of persons responsible for supervision of the Work.
- List of required submittals, drawings, and job hazard analysis.
- Planned start-work date, progress rate expected, and Work hours.
- Sequence of events and construction methods for performing the Work. Include DTPW hold points and inspection requirements.
- Tests required by Contractor and/or DTPW.
- Prerequisite activities and related construction safety issues.
- Off-site activities and locations.
- Procedures for controlling hazardous materials as applicable.
- Actions defined as “Special Events”, which may expose the general public to danger or inconvenience, and which may require a third party to be notified.
- Safety-critical installations, inspections, and tests.

PART 3: EXECUTION

3.01 READINESS REVIEW

- A Upon approval of a CWP and before beginning associated Work activities, DTPW will conduct a Readiness Review Meeting with Contractors, Subcontractors, and applicable third-party representatives to discuss all elements contained in the CWP. DTPW will document the meeting with an agenda and minutes of the meeting including an attendance record.

TESTING

1. Control of Inspection, Testing, and Monitoring Equipment: Contractor and its Testing Laboratory shall calibrate and certify all testing equipment and monitoring devices. Calibration and certification requirements shall include the following:
  - a. Calibration to known national standards.
  - b. List the current status of calibration, and date re-calibration or certification is required.
  - c. List on a log that guideways all calibration and certifications.  
The guideways log shall identify the testing equipment or monitoring devices by name and serial number and shall show the date of calibration, date of next calibration, name of person or agency conducting the certification or

calibration and shall contain a brief description of use. All testing equipment and monitoring devices shall be stored in a safe and secure location. They shall be maintained throughout the Contract and shall only be used for testing or monitoring Work for which they are designed.

2. Re-issue is required if equipment is suspected of being out of calibration, broken, dismantled, or damaged.
3. Requirements apply to Subcontractors, Suppliers, and all others performing tests.
4. Test Reports: Test reports are considered Contract Record documents and shall be submitted to DTPW. Test records shall contain as a minimum:
  - Contract or Project identification number.
  - Identification of items tested.
  - Quantity.
  - Date test was conducted.
  - Name of technician.
  - Acceptance criteria.
  - Results.
  - Location where sample was taken (i.e., Coordinates, stationing, and landmarks.)
  - Reference to Contract or Standard Specifications requirement or test procedure.
  - Quantity of item tested Authorized signature.
5. Contractor-performed tests are subject to verification by DTPW.
6. Testing conducted by DTPW's, or any other approved testing laboratory does not relieve the Contractor of the responsibility to meet the requirements of the Contract Documents.

#### INSPECTION

1. DTPW is responsible for performing Quality Control Inspection for Work identified in the Contract Documents unless otherwise stated. Provide 48-hour notice to DTPW for inspection coverage of Work activities.

#### SUPPLIER CONTROL

1. Submit a list of all suppliers and fabricators that will be used to supply materials and items referenced in the Contract Documents. The list shall include:
  - Name of the supplier or fabricator
  - Address and telephone number of the supplier or fabricator.

- Description of material or fabricated item to be procured from the supplier or fabricator.
- Contract Specifications Section, Article number and/or drawing references of the material or item to be purchased.

#### CONTROL OF MATERIALS

1. Submit a CWP for Control of Materials. The CWP shall include provisions to ensure materials, equipment, parts, and components processed through the Contractor's receiving operations are identified, free from damage, traceable to acceptance criteria, and meet Contract requirements.
2. Handling, storage, and maintenance of materials/equipment shall be in accordance with manufacturer's recommendations.
3. All materials, equipment, parts, and components are subject to receipt inspection by DTPW.

#### CONTROL OF SPECIAL PROCESSES

1. Submit CWPs for Control of Special Processes (e.g., welding, soldering, and HDPE installation.)
2. Contractor or Subcontractor personnel performing special processes shall be qualified in accordance with applicable codes, standards, and manufacturers recommendations. Qualification records of personnel performing special processes shall be current and maintained in the Worksite files.
3. Submit qualification records of personnel performing special processes to DTPW before they start work on the Project.

#### CONTROL OF NON-CONFORMING ITEMS

1. The Contractor will document nonconforming items on a Non-Conformance Report (NCR). DTPW may issue a Non-Conformance Report if the Contractor fails to issue the Non-Conformance Report in a timely manner.
2. DTPW will be responsible for controlling Non-Conformance Reports through use of a sequential numbering system and updated by use of a Non-Conformance Log.
3. Upon receipt of a Non-Conformance Report, the Contractor shall be responsible for investigating and describing the root cause of the nonconformance and recommending a disposition by means of a Corrective Action Report (CAR). The Quality Assurance Requirements shall reflect this procedure. The following disposition codes shall be used for determining disposition:
  - "USE AS IS" - allows the use of an item that does not meet specified Contract requirements without the need for corrective action.
  - "REPAIR/REWORK" - item must be reworked or repaired to bring it into conformance with the requirements of the Contract.

- “REJECT” - item is unsuitable for its intended use, is economically or physically incapable of being reworked or repaired and must be replaced to bring it into conformance with the Contract Requirements.
4. Nonconforming items disposed as “USE AS IS” or “REPAIR/REWORK,” require review and approval of DTPW.

#### DOCUMENT CONTROL

1. Submit a CWP for Document Control detailing the control of receipt, status, maintenance, and transmittal of Project records and documents.
2. The Contractor shall establish a document control system to store and record the large quantity of correspondence, drawings, progress reports, technical reports, specifications, Contract Documents, Submittals, calculations, and administrative documents generated under the Contract. The Contractor shall establish correspondence routing, filing, control, and retrieval methods that are compatible with the system currently in use by DTPW or as approved otherwise by DTPW.
3. Technical document control, storage, and retrieval methods shall include the use of both hard copies and electronic records. Technical document control methods shall be capable of handling documents being developed (progress), finalized documents (for construction) and documents representing as-built conditions.
4. All correspondence of the Contractor to and from DTPW and its representatives (including DTPW) shall be serialized, and the Contractor shall maintain separate incoming and outgoing correspondence logs.
5. Within 5 Workdays of issuance of the Notice to Proceed, the Contractor and DTPW shall each designate, in writing, their respective authorized representatives to receive copies of all or specified correspondence. All correspondence shall include the Project Name, Contract Name, and Contract Number, along with the specific subject of the letter. All replies shall refer specifically to prior correspondence to which it relates.
6. Do not change or alter Contract records or documents without DTPW’s written approval.
7. Ensure current revisions of procedures, instructions, drawings, and other documents are provided at Work locations.
8. Identify and maintain records and documents in an organized manner. Make records available to DTPW upon request.
9. Protect records and documents from damage, deterioration, and loss. Keep records in fireproof cabinets at the Contractor's Work site or maintain a duplicate set at another location.

#### RECORDS

1. Records are defined as documentation required by the Contract. Record documents include, but are not limited to, correspondence, submittals, test reports, Contract



and shop drawings, schedules, certificates of compliance, pay requests, change documents, requests for information, and schedules.

2. All records shall be maintained and retained in accordance with the Contractor's Document Control CWP.
3. All record documentation shall be made available and is subject to audit by DTPW or its designee.

#### AUDITS

1. DTPW may perform audits and surveillances on and off site during any phase of the Work. Audits are multi-day functions, which include scheduled reviews of the Contractor's Work activities as required by the Contract, including formal notification, audit entrance/exit meetings, an audit plan, performance of the audit, and issuance of an audit report. Surveillance is unscheduled review of the Contractor's Work activities and generally focuses on a specific activity. Surveillance does not include formal notification, entrance/exit meetings or written plan, but is documented in a surveillance report. The Contractor shall facilitate audits/surveillance by providing access to its facilities, personnel, and records.

#### PART 4: MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for Contractor Construction Control Requirements, and this will be paid for as part of the overall Contract Lump Sum for that particular item of Work, listed in the BID FORM, as applicable.

END OF SECTION

## SECTION 01 60 00

### PRODUCTS MATERIAL AND EQUIPMENT REQUIREMENTS

#### 1.01 DESCRIPTION:

- A. This section includes specifications for general requirements for materials and equipment, including the packaging, handling, delivery, and storage thereof. Additional requirements are included in the general requirements and technical specifications.

#### 2.01 QUALITY CONTROL:

- A. Provide products, materials, and equipment of the same generic kind from a single source. Where products or materials, by nature, are available only from sources that do not individually comprise sufficient quantity for the total project requirement, select products and materials from those individual sources that are most nearly equal and uniform in the indicated qualities.

#### 3.01 PRODUCT SCHEDULE

- A. Prepare a schedule listing the principal products (by generic names) required for the work. For each product show the proprietary product names and manufacturer names proposed for incorporation in the work.
- B. Submit the product listing schedule within thirty (30) calendar days of the NTP.
- C. The list of products is not a substitute for required submittals, acceptance of products or a vehicle for submitting substitutions to products specified.

#### 4.01 PROCEDURES FOR SELECTING PRODUCTS:

- A. The specified requirements for individual products indicated in the Contract are multiple in nature and may include generic, descriptive, proprietary, performance, prescriptive, proscriptive, compliance with standards, compliance with codes, conformance with graphic details, and other similar forms of requirements.

Provide products conforming to all specified requirements unless otherwise directed. Other products will be considered only if requested as substitution.

Contractor's options: Where an option or choice is indicated, provide only one of the options. The choice of an option is the Contractor's. Where submittals are required, state which option has been chosen.

An option is not a consideration of whether a product or method shall be provided, but which of the several indicated products or methods shall be provided.

Non-compliance of a named product: If it is known that a named product or product source does not comply with requirements or is no longer available, advise the Engineer before proceeding.

Equivalent materials and equipment: Whenever a material or article is specified or described by using the name of a proprietary product or the name of a particular

manufacturer or vendor, the specific item mentioned is understood as establishing type, function, dimension, appearance, and quality desired.

- B. The Contractor's options for selecting products are limited by the specified requirements and governing regulations. Following are some of the various selection procedures for specified requirements:

Qualities or Performance Requirements:

Provide products that comply with the specific qualities indicated, and which are recommended or certified in writing by manufacturer for the specific use indicated. General performance of a product is implied where product is specified for specific performances.

Prescriptive Requirements:

Provide products produced in accordance with the prescriptive requirements, using the specified ingredients and components, and complying with the specified requirements for mixing, fabricating, curing, finishing, testing, and similar operations.

Standards, codes, and regulations:

Provide product that complies with the specified standards, codes, and regulations and with the other requirements.

Or Equal:

Where named products or sources are accompanied by the term "or equal" or other language of similar effect, provide one of the specified products, or submit a request for substitution for a product not named, in accordance with the requirements of Section 01 62 00 – Substitutions and Product Options, which the Contractor judges to be of equal or better quality.

Product names:

Unless otherwise indicated, products identified by name mean a manufacturer's product as recorded in published literature, of latest issue preceding the date of Contract Documents. Submit request for substitution in order to use products of a later or earlier model.

Visual Matching:

Where matching an established sample is required, the Engineer of Record and DTPW Construction/Project Manager will make final judgment of whether a product proposed by Contractor matches the sample satisfactorily.

The County shall be sole judge of equality, based on the best interests of the County, and its decision in this regard shall be final.

Visual Selection:

Where product requirements include "... as selected from manufacturer's standard colors, patterns, textures..." or words of similar effect, the selection of manufacturing source and basic product, which complies with the requirements, is the Contractor's option, but the selection of color, pattern and texture is the Engineer of Record's responsibility.

C. Non-Conforming Products:

Use of a product not conforming to specified requirements may only be approved by means of a request for substitution as specified elsewhere.

D. Precedence of Specification by Qualities, Reference Standard, and Source:

If it occurs that a product cannot be supplied to meet all requirements, the following order of precedence will be followed:

Qualities:

For product specified by qualities or description, and also by reference standard or by source and name, the specified qualities or description shall take precedence.

Reference standards:

For product specified by reference to a published standard, and by source or name, the reference standard shall take precedence over the source.

5.01 PRODUCT REQUIREMENTS:

- A. Where available, provide standard products of types that have been produced and used previously and successfully on other projects, and in similar applications.

6.01 MANUFACTURERS' INSTRUCTIONS:

- A. When the Contract Documents require that installation of work comply with manufacturers' instructions, obtain, and distribute copies of such instructions to parties involved in the installation and seven (7) copies to the EOR. Maintain one set at the site until installation is complete.
- B. Handle, install, connect, clean, condition, and adjust products in strict compliance with the instructions and specified requirements. Should job conditions or specified requirements conflict with the manufacturers' instructions, notify the EOR. Handle all equipment in strict accordance with the manufacturer's written handling instructions.
- C. Perform work in accordance with the manufacturer's instructions. Do not omit any steps unless specifically modified or exempted by the Contract Documents.

7.01 HANDLING OF MATERIALS:

- A. Handle all materials and equipment to be incorporated in the work in a manner that will prevent misalignment of parts or the occurrence of damage of any kind.
- B. Protect all materials and equipment at all times from all environmental conditions that might cause damage in a secure and dry storage facility.
- C. Verify with the manufacturer all information regarding scheduling, delivery, and preparations necessary for installation.
- D. Verify that equipment and installation supplied under other Contracts, but required for the work in this Contract, are compatible.

- E. Contractor shall ensure that each item is marked in accordance with referenced codes and standards.
- F. Ship each unit securely wrapped, crated, or packaged, and labeled for safe handling in shipment and to avoid damage or distortion.
- G. Supply all necessary supervision and coordination information to accommodate the installations of equipment.
- H. Adhere to manufacturer's handling requirements when off-loading equipment and materials at the jobsite.

8.01 STORAGE OF MATERIALS AND EQUIPMENT:

- A. All equipment and materials shall be stored in accordance with the manufacturer's recommendations, or as specified in the Contract Documents to preserve their quality and fitness for the work. Stored equipment and materials, although determined acceptable for the work upon delivery or during storage, must again be inspected by the Contractor before their incorporation into the work. Stored equipment and materials shall be located and arranged to facilitate inspection by DTPW.
- B. Work-furnished materials or materials paid for before incorporation shall be stored in secure locations approved by DTPW in a manner that will preserve their full value. Such materials shall be prominently labeled as property of work and shall not be co-mingled with non-work materials. If necessary, storage shall be in controlled environment buildings.

9.01 MEASUREMENT AND PAYMENT:

- A. No separate measurement or payment will be made for Product Requirements, and this will be paid for as part of the overall Contract for that particular item of work.

END OF SECTION

## SECTION 01 62 00

### SUBSTITUTIONS AND PRODUCT OPTIONS

#### PART 1: GENERAL

##### 1.01 DESCRIPTION:

This Section specifies the procedures to be followed for preparing, submitting, amending, and updating of lists of products proposed to be incorporated in the work.

##### 1.02 SELECTED PRODUCTS:

Within 15 days after the effective date of Notice to Proceed, submit five copies of the list of selected products. Arrange the list in the order of each Section's appearance in the specification.

- A. For products specified only by reference standards, any product satisfying those standards may be selected. Show name and address of manufacturer; trade name, model number or catalog designation of the product; manufacturer's reference standards and pertinent performance and test data.
- B. For products specified by naming one product or by naming several products, this establishes a product standard unless otherwise noted. Any other product, which is equal in the opinion of the Engineer may be furnished. A request must be submitted to the Engineer of Record as required for substitutions, for acceptance of products not specifically named.
- C. Amend and update list as changes concerning the information become known.

##### 1.03 LIST OF SUBSTITUTE PRODUCTS AND METHODS:

Formal requests from the Contractor will be considered by the Engineer of Record for substitution of products and methods in place of those specified, but only if these requests are submitted within 30 days after effective date of Notice to Proceed. No substitutions request will be considered after 30 days. Acceptance of substitute products and methods shall be only for the characteristics and use named in the acceptance and shall be interpreted neither as a modification to the Specification and Drawing requirements nor to establish acceptance of products and methods for other portions of the DTPW System. The Engineer of Record and DTPW Construction/Project Manager shall judge the quality and suitability of the substitute product and method and his decision shall be final. Where use of a substitute product and method involves redesign of other parts of the Work, the cost and time required to affect that redesign will be considered in evaluating the suitability of the substitute product and method.

- A. Submit five copies of list of substitute products and methods, including the following information:
  - 1. Complete data substantiating compliance of the proposed substitution with the requirements of the Specifications and Drawings.
  - 2. For products:
    - a. Product identification, including manufacturer's name and address.

- b. Manufacturer's literature, including product description, performance and test data and pertinent reference standards.
  3. For construction methods:
    - a. Detailed description of proposed method.
    - b. Working drawings illustrating methods.
  4. Itemized comparison of proposed substitution with product specified. Comparison shall include cost, differences in estimated life, estimated maintenance, availability of spare parts and repair services, energy consumption, performance capacity, salvageability, manufacturer's warranties and other material differences.
  5. Data relating to changes in construction schedule.
  6. Accurate cost data on proposed substitution in comparison with product and method specified except that cost data will not be required on substitutes proposed as equal, equivalent, or superior to specified brand names and for which no request is made for price adjustment to the Subcontract.
  7. Equitable adjustment and credit that the Contractor proposes to offer DTPW if the substitutions are not equal, equivalent, or superior to specified brand names.
- B. In making request for substitution, Contractor shall verify:
  1. That the Contractor has personally investigated the proposed product and method and that to the best of their knowledge, information and belief, the product and method is either equivalent or superior to that product and method specified and that they will update information as new or different data become known to them.
  2. That the Contractor will furnish the same guarantee for substitution as they would for the product and method specified.
  3. That the Contractor will coordinate installation of the accepted substitution into the Work and will make those changes required for the Work to be complete and operable.
  4. That cost data is complete and includes related costs and excludes cost of engineering redesign.
  5. That the Contractor waives claims for additional time and costs related to the substitution, which become apparent.
- C. Amend and update list as changes concerning information on the list become known to the Contractor.
- D. Substitutions will not be considered, if indicated or implied on Shop Drawings or Product Data submittal for which no formal request for substitution has been submitted. Requests for substitutions will not be considered if acceptance will require substantial revisions of drawings and specifications or both.

## PART 2: PRODUCTS

### 2.01 PRODUCTS:

No products are required except as indicated in PART 1: GENERAL.

## PART 3: EXECUTION

### 3.01 EXECUTION:

No execution is required except as indicated in PART 1: GENERAL.

## PART 4: MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

### 4.02 PAYMENT:

Work under this Section will be paid for as part of the pay item unit price requiring the work specified in this section under Pay Item #1, General Requirements, in the Bid Form.

END OF SECTION



## SECTION 01 71 13

### MOBILIZATION

#### 1.01 DESCRIPTION:

- A. This section specifies the mobilization of the construction equipment at the worksites for material and supplies necessary for the prosecution of the work, but not to be incorporated in the work, for temporary storage of equipment and material at the site and for demobilization of the construction equipment. Mobilization should also include the costs of bonds and insurance required by the Contract Documents.
- B. Construction equipment, material, supplies, and other items necessary for mobilization shall be available at the work site at the times they are to be built, used, installed, or operated.

#### 2.01 SUBMITTALS:

- A. Submit within seven days after the effective date of NTP, a layout of the proposed construction plan site including fences, parking, and storage areas.

#### 3.01 EQUIPMENT:

- A. Construction equipment shall be of the capacity, type, quality, function and in the quantity necessary for the timely prosecution of the work.

#### 4.01 MEASUREMENT:

- A. Work under this section will not be separately measured for payment.

#### 5.01 PAYMENT:

- A. Work under this Section will be paid for as part of the lump sum price under Pay item No. 2, Mobilization, of the Bid Form.

END OF SECTION

## SECTION 01 73 00

### OPERATING AND MAINTENANCE DATA

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. Prepare Operating and Maintenance (O & M) Manual covering all equipment and systems provided under this project.
- B. Instruct DTPW's personnel in the operation of equipment and maintenance provided under this project.
- C. This Section covers the services of the manufacturer's representatives and special coordinating services required of the Design-Builder that shall apply during construction, facilities startup, and training of the DTPW's personnel for facilities operation.
- D. The Design-Builder shall inform all subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to DTPW.

##### 1.02 FORM, FORMAT AND SUBMITTALS CONTENTS

- A. Operating and Maintenance manuals will be used for use by Miami-Dade Transit DTPW personnel in the operation and maintenance of the various systems.
- B. The DTPW shall be furnished with one set of any special tools required for servicing for each type of equipment actually furnished.
- C. Prepare data in the form of an instructional manual for use by DTPW's personnel. Format:
  - 1. Size: 8½ in. x 11 in.
  - 2. Paper: 20-pound minimum, white, for typed pages.
  - 3. Text: Manufacturer's printed data or neatly typewritten.
  - 4. Drawings:
    - a. Provide reinforced punched binder tab, bind in with text.
    - b. Fold larger drawings to the size of the text paper.
  - 5. Provide flyleaf for each separate product, or each piece of operating equipment.
    - a. Provide typed description of product, and major component parts of equipment.
    - b. Provide indexed tabs.
  - 6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
    - a. Title of Project.
    - b. Identify of separate structure as applicable.
    - c. Identity of general subject matter covered in the manual.

D. Binders:

1. Commercial quality three-ring binders with durable and cleanable plastic covers.
2. Maximum ring size: As required (Minimum 1½-inches).

E. Content of Manual:

1. Neatly typewritten table of contents, arranged in a systematic order.
  - a. Design-Builder, name of responsible principal, address, and telephone number.
  - b. A list of each product required to be included, indexed to the content of the volume.
  - c. List, with each product, the name, address, and telephone number of:
    - i. Sub Design-Builder or installer.
    - ii. Maintenance Design-Builder, as appropriate.
    - iii. Identify the area of responsibility of each.
    - iv. Local source of supply for parts and replacement.
  - d. identify each product-by-product name and other identifying symbols as set forth in Contract Documents.

F. Product Data:

1. Include only those sheets which are pertinent to the specific product.
2. Annotate each sheet to:
  - a. Clearly identify the specific product or part installed.
  - b. Clearly identify the data applicable in the installation.
  - c. Delete references to inapplicable information.

G. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:
  - a. Relations of component part of equipment and system.
  - b. Control wiring, schematic wiring, and flow diagram.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

H. Written text, as required to supplement product data for the particular installation:

1. Organize in a consistent format under separate headings for different procedures.
2. Provide a logical sequence of instructions for each procedure.

I. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for DTPW's personnel, give:
  - a. Proper procedures in the event of failure.
  - b. Instances which might affect the validity of warranties or bonds.

1.03 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Content, for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.

- a. Function, normal operating characteristics, and limiting conditions.
  - b. Performance curves, engineering data and tests.
  - c. Complete nomenclature and commercial number of all replaceable parts.
2. Operating Procedures:
- a. Start-up, break-in, routine, and normal operating instructions.
  - b. Regulation, control, stopping, shutdown, and emergency instructions.
  - c. Special operating instructions.
3. Maintenance Procedures:
- a. Routine operations.
  - b. Guide to "trouble shooting".
  - c. Disassembly, repair, and reassembly.
  - d. Alignment, adjusting, and checking.
4. Servicing and lubrication schedule.
- a. List of lubricants required.
5. Manufacturer's printed operating and maintenance instructions.
6. Description of sequence of operation by control manufacturer.
7. Original manufacturer's parts list, illustration, as drawings and diagrams required for maintenance.
- a. Predicted life of parts subject to wear.
  - b. Items recommended to be stocked as spare parts.
8. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
9. Other data as required under pertinent sections of specifications.
- a. Prepare and include additional data when the need for such data becomes apparent during instruction of DTPW's personnel.
  - b. Additional requirements for operating and maintenance data: The respective sections of Specifications.

#### 1.04 POSTED OPERATING INSTRUCTIONS

- A. General: Operating instructions and diagrams shall be prepared for posting near the equipment. Posted operating instructions shall be photographic or equal non-fading reproductions framed under glass encased in non-discoloring plastic and shall be mounted in location directed. Copies of the posted operating instructions shall also be used with the operating and maintenance manuals as a basis in training employees in the operation and maintenance of systems and related equipment installed.
- B. Contents: Posted operating instructions shall consist of simplified, consolidated equipment, control and power diagrams graphically representing the entire system and actual equipment installed, including concise written instructions on how to start and stop systems, what settings and conditions are to be observed and what control adjustments are to be made or maintained by the operation.

1.05 MANUFACTURER'S NAMEPLATES

- A. Each major component of equipment to have manufacturer's name, address, model number and rating on a plate securely affixed in a conspicuous place. Nameplate of a distributing agent will not be acceptable in lieu of manufacturer's nameplate.
- B. Nameplate shall be die-stamped, engraved, or etched to guarantee long term legibility.

1.06 GUARANTY/WARRANTY

- A. The Installing Contractor shall guarantee that all new equipment has the capacity specified and that it will operate without excess noise or vibration.
- B. Installing Contractor shall furnish a written guarantee covering all workmanship and materials for a period of one (1) year, from the date of acceptance. This shall include an agreement to repair or replace, at his expense, all defects that may appear in that time, which in the opinion of the DTPW, are due to defective workmanship or materials.
- C. Copies of factory warranties on all equipment furnished shall be submitted with the above described, written guarantee period, and included in maintenance manuals.

1.07 OPERATION AND MAINTENANCE RESPONSIBILITY

- A. Installing contractor shall provide all required service and maintenance on all equipment installed under this contract as described in Section 2.9 of the Special Terms & Conditions. The starting date of one (1) year service period shall be determined by the DTPW. Included in the service and maintenance to be provided during shall be all required lubrication, adjusting belt tensions, eliminating excessive noise and vibration, correcting all electrical and mechanical faults, recording all permanent installed gauge meter and temperature readings, and other general service items, including the answering of service calls. Provide extended warranty as outlined in section 2.9 of special terms and conditions.
- B. Services During Construction:
  - 1. General: Competent and experienced technical representatives shall represent the manufacturers of all equipment and systems as many days as may be necessary to resolve assembly or installation problems at the worksite which are attributable to, or associated with, the equipment furnished. This requirement applies to manufacturers of all equipment furnished, whether or not specifically set forth in the Technical Specifications.
  - 2. Manufacturer's Certificate of Proper Installation: Where called for in the Technical Specifications, the manufacturer's representative shall provide a certificate stating that the equipment or system has been installed in accordance with the manufacturer's recommendation and has been inspected by a manufacturer's authorized representative, that it has been serviced with the proper initial lubricants, that applicable safety equipment has been properly installed, and that the proper electrical and mechanical connections have been made.

C. Functional Testing Assistance:

1. Where functional (or run) testing is called for on the Technical Specifications, the manufacturer's representative shall assist with the initial test, which shall include checking for proper rotation, alignment, speed, excessive vibration, and noisy operation. Initial equipment and system adjustment and calibrations shall be performed in the presence of and with the assistance of the manufacturer's representative. The previously specified Manufacturer's Certificate of Proper Installation shall include the statement that proper adjustment has been made and that the equipment or system is ready for plant startup and operation.
2. The Design-Builder, as applicable to the equipment furnished, shall state in writing that all necessary hydraulic structures, piping systems, and valves have been successfully tested; that all necessary equipment systems and subsystems have been checked for proper installation, started, and successfully tested to indicate that they are all operational; that the systems and subsystems are capable of performing their intended functions; and that the facilities are ready for startup and intended operation.

D. Training of DTPW's Personnel

1. Where called for in the Specifications, the manufacturer's representative shall provide detailed instructions to the DTPW's personnel for operation and maintenance of the specified equipment. These training services shall include pre-startup classroom and on site equipment instruction and/or post-startup classroom and on site equipment instruction, as stated in the Specifications.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

SECTION 01 73 29  
CUTTING AND PATCHING

PART 1: GENERAL

1.01 REQUIREMENTS INCLUDED:

- A. Contractor responsibility: All cutting, fitting, and patching, including attendant excavation and backfill required to complete the work to:
  - 1. Make its several parts fit together properly.
  - 2. Uncover portions for the work to provide for the installation of ill-timed work.
  - 3. Remove and replace defective work.
  - 4. Remove and replace work not conforming to requirements of Contract Documents.
  - 5. Remove samples of installed work as specified for testing.
  - 6. Remove routine penetrations of non-structural surfaces for installation of piping and electrical conduits.

1.02 SUBMITALS:

- A. Submit a written request to the Engineer well in advance of executing any cutting or alteration which affects:
  - 1. Work of the Owner or any separate contractor.
  - 2. Structural value or integrity of any element of the Project.
  - 3. Integrity or effectiveness of weather-exposed or moisture resistant elements or systems.
  - 4. Efficiency, operational life, maintenance, or safety of operational elements.
  - 5. Visual qualities of sight-exposed elements.
- B. Include with each request:
  - 1. Identification of the Project.
  - 2. Description of affected work.
  - 3. The necessity for cutting alteration or excavation.
  - 4. Effect on work of Owner or any separate contractor, or on structural or weatherproof integrity of Project.
  - 5. Description of proposed work:
    - a. Scope of cutting, patching, alteration, or excavation.
    - b. Trades who will execute the work.
    - c. Products proposed to be used.

- d. Extent of refinishing to be done.
- 6. Alternatives to cutting and patching.
- 7. Cost proposal, when applicable.
- 8. Written permission of any separate contractor whose work will be affected.
- C. Should conditions of Work or the schedule indicate a change of Products from original installation, submit request for substitution.
- D. Submit written notice to the Engineer designating the date and time the work will be uncovered.

## PART 2: PRODUCTS

### 2.01 MATERIALS:

- A. Comply with specifications and standards for each specific product involved.

## PART 3: EXECUTION

### 3.01 INSPECTION:

- A. Inspect existing conditions of Project, including elements subject to damage or movement during cutting or patching.
- B. After uncovering work, inspect conditions affecting installation of Products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in Writing; do not proceed with work until the Engineer has provided further instruction.

### 3.02 PREPARATION:

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work and maintain excavations far from water.

### 3.05 PERFORMANCE:

- A. Execute cutting and demolition by methods which will prevent damage to other work, and which will provide proper surfaces to receive installation of repairs.
- B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.
- C. Employ original Installer or Fabricator to perform cutting and patching for:



1. Weather-exposed or moisture-resistant elements.
  2. Sight-exposed finished surfaces.
- D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- E. Restore work which has been cut or removed, install new products to provide complete work in accord with requirements of Contract Documents.
- F. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetration through surfaces.
- G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
1. For continuous surfaces, refinish to nearest intersection.
  2. For an assembly, refinish entire unit.

#### PART 4: MEASUREMENT AND PAYMENT

##### 4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

##### 4.02 PAYMENT:

Work under this Section will be paid for as part of the pay item unit price requiring the work specified in this section under Pay Item #1, General Requirements, in the Bid Form.

END OF SECTION

## SECTION 01 74 00

### CLEANING

#### PART 1: GENERAL

##### 1.01 DESCRIPTION:

This Section specifies the maintenance of the work site in a clean, orderly hazard-free condition.

##### 1.02 QUALITY ASSURANCE:

- A. Conduct cleaning and disposal operations in accordance with local ordinances and anti-pollution laws. Rubbish, volatile wastes, and other construction wastes shall be neither burned nor buried on the work site, and shall not be disposed of into storm drains, sanitary drains, streams, or other waterways.
- B. Final cleaning shall be accomplished either by workmen experienced in cleaning operations or by professional cleansers.

#### PART 2: PRODUCTS

##### 2.01 CLEANING MATERIALS:

- A. Cleaning materials shall be as recommended by the manufacturer of the surface to be cleaned.

#### PART 3: EXECUTION

##### 3.01 SAFETY REQUIREMENTS:

- A. Maintain work site in accordance with local ordinances and anti-pollution laws applicable to work site cleanliness, and in a neat, orderly, and hazard-free condition until final acceptance of the work. Catwalks, accessible underground structures, work site sidewalks and walkways adjacent to the work site shall be kept free from hazards caused by construction activities.
- B. No volatile substances are to be used on the job site.
- C. Prevent accumulation of waste, which creates hazardous conditions.
- D. Artificially ventilate spaces, which are not naturally ventilated when noxious substances are being used in those spaces.

##### 3.02 INTERIM CLEANING:

- A. Perform cleaning every workday for duration of the work. Structures, ground, and areas of the work site and public and private properties shall be maintained free from accumulations of waste materials and rubbish caused by construction operations on the work site. Waste material will be removed from the work site daily.
- B. Remove or secure loose material on open decks and on other exposed surfaces at end of each day's work or more often to maintain work site in hazard-free condition. Prevent dislodgment of materials due to wind and other forces.
- C. Empty on-site waste containers whenever necessary so that trash overflow does not occur. Legally dispose of contents at either public or private dumping areas.
- D. Control the handling of materials, debris, and rubbish; do not drop or throw from heights.
- E. Immediately remove spillages of construction-related materials from hauling routes.
- F. Perform cleaning operations such that dust and other contaminants resulting from cleaning processes will not fall on structures or pedestrian traffic below.

### 3.03 FINAL CLEANING:

- A. In preparation for substantial completion, conduct final inspection of exposed interior and exterior surfaces and of concealed spaces.
- B. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from finished surfaces.
- C. Maintain cleaning operations until project has been finally accepted.

### 3.04 DAMAGE TO EXISTING FINISHES:

- A. Repair any concrete damaged.
- B. Repaint to match existing areas of damaged paint due to Contractor's operation.

## PART 4: MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

### 4.02 PAYMENT:

Work under this Section will be paid for as part of the pay item unit price requiring the work specified in this section under Pay Item #1, General Requirements, in the Bid Form.

END OF SECTION

SECTION 01 78 00

CONTRACT CLOSE-OUT

PART 1: GENERAL

1.01 SUBSTANTIAL COMPLETION:

- A. Substantial Completion shall be determined in accordance with Article 8 of the General Conditions and this Section. Should a conflict arise between the General Conditions and this Section, the General Conditions shall take precedence.

1.02 FINAL CONSTRUCTION REVIEW:

- A. When Contractor considers work is complete, he shall submit a written certification that work is acceptable and that:
  - 1. Contract Documents have been reviewed.
  - 2. Work has been reviewed for compliance with Contract Documents.
  - 3. Work has been completed in accordance with Contract Documents.
  - 4. Equipment and systems have been tested in the presence of the Engineer and are operational.
  - 5. Work is completed and ready for final Construction Review.
- B. The Engineer will make a Construction Review to verify status of completion with reasonable promptness after receipt of such certification.
- C. Failure of the Engineer to Reject Work During Construction: If, during construction operations or during inspections for substantial or final completion, the Engineer should fail to reject defective Work or materials, whether from lack of discovery of such defect or for any other reason, such initial failure to reject shall in no way prevent his later rejection when such defect is discovered, or obligate the Owner to final acceptance, and the Contractor shall make no claim for losses suffered due to any necessary removals or repairs of such defects.

1.03 CONTRACTOR'S CLOSE-OUT SUBMITTALS:

- A. Upon receipt of notice of acceptability from the Engineer, the Contractor shall furnish evidence of compliance with requirements of governing authorities and Contract Documents to the Engineer, as follows:

1. As-built drawings and other project record Documents: As specified in Section 01 78 39.
2. Operating and Maintenance Data, Instructions to Owners Personnel: As specified and in accordance with the requirements of the individual Sections of the Specifications.
3. Warranties and Bonds: As specified in Section 01 78 33 and in accordance with the requirements of the individual Sections of the Specifications.
4. Spare parts and Maintenance Materials: To requirements of various Sections.
5. Evidence of Payment to subcontractors, material men and equipment suppliers and releases of liens.

1.04 FINAL ADJUSTMENTS OF ACCOUNTS:

- A. Final Payment shall be determined in accordance with this contract's requirements.

1.05 FINAL CHANGE ORDER:

- A. The Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

PART 2: PRODUCTS

2.01 PRODUCTS:

No products are required except as indicated in PART 1: GENERAL.

PART 3: EXECUTION

3.01 EXECUTION:

Prior to final payment, the Contractor shall complete and execute the Close-Out forms in Attachment "A" and "B" to the General Conditions.

PART 4: MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

4.02 PAYMENT:

Work under this Section will be paid for as part of the pay item unit price requiring the work specified in this section under Pay Item #1, General Requirements, in the Bid Form.

END OF SECTION

SECTION 01 78 33

WARRANTIES AND BONDS

PART 1: GENERAL

1.01 DESCRIPTION OF WORK

- A. The warranties provided by the Contractor shall be for the longest period, starting on the date of final acceptance, of those specified on paragraphs 1-01 A., 1 through 3 below and in accordance with Section 2.9 of the Special Terms & Conditions:
  - 1. Minimum one year from final acceptance on all the work as specified in the General Conditions and Section 2.9 of the Special Terms & Conditions, (or)
  - 2. Warranty period(s) as specified by the approved material or equipment manufacturers as specified in the General Conditions and Section 2.9 of the Special Terms & Conditions, (or)
  - 3. Longer warranty period(s) as specified in the Technical Specifications or as specified in the General Conditions and Section 2.9 of the Special Terms & Conditions.
- B. The Contractor shall provide certifications and other commitments, extended warranties, and agreements for continuing services as specified elsewhere in the Contract Documents.
- C. Reinstated warranty as applicable, see 1-04, B.

1.02 DISCLAIMERS AND LIMITATIONS

Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.03 DEFINITIONS

Standard product warranties are reprinted written warranties published by the individual manufacturers for particular products and are specially endorsed by the manufacturer to the Owner.

1.04 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove, and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace, or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner Recourse: Written warranties made to the owner are in addition to implied warranties, and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
- E. Rejection of Warranties: The COUNTY/DTPW reserves the right to reject warranties and to limit selections to products with acceptable warranties and to limit selections to products with warranties not in conflict with requirements of the contract Documents.
- F. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- G. All warranties including standard one year warranty, shall start at date of substantial completion of the Contract, or when work of an area is substantially completed, accepted, and taken over for use by the Owner. Ensure that all warranties comply with this stipulation prior to submission of same.
- H. The Owner will give prompt notice in writing to the Contractor of any defects noted during the warranty periods requesting him to promptly remedy such defects.
- I. Prior to final acceptance, the Contractor shall formally assign to the Owner all extended warranties given by subcontractors for their work on the project, and such subcontractor shall be formally advised of the assignment.

#### 1.05 SUBMITTALS

- A. Submit written warranties to the Engineer prior to the date of the final acceptance inspection.
- B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier, or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Engineer for approval prior to final execution.

- C. Submit a list of all warranty items within 90 days after notice to proceed Refer to individual Sections of Division 2 through 16 for specific content requirements, and particular requirements for submittal of specific warranties.
- D. Prior to final acceptance compile two copies of each required warranty, and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual and submit under Section 01 78 39 - Project Record Documents.
- E. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 inch by 11-inch paper.
- F. Provide heavy paper dividers with celluloid covered tabs for each separate warranty Mark the tab to identify the product or installation Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.
- G. Identify each binder on the front and the spine with the typed or printed title, "WARRANTIES AND BONDS", the project title or name, and the name of the Contractor.
- H. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

## PART 2: PRODUCTS

### 2.01 PRODUCTS:

No products are required except as indicated in PART 1: GENERAL.

## PART 3: EXECUTION

### 3.01 EXECUTION:

No execution is required except as indicated in PART 1: GENERAL.

## PART 4: MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT:

Work under this Section will not be separately measured for payment.

### 4.02 PAYMENT:

Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 1, General Requirements.

END OF SECTION



SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section specifies the maintaining, marking, recording, and submitting of project record documents.

B. DEFINITIONS:

1. Conformed Contractor Contract Documents: The conformed documents provided to the Contractor Firm at the time the Contractor contract was executed, prior to the start of the Contractor Contract.

2. Contractor Document Transmittal (CDT): Reviewed and approved drawings, catalog cuts, samples or other documents submitted by the Contractor Firm for County review showing in detail how the Contractor proposes to carry out the work.

3. As-Builts: During construction, a set of released for construction drawings and specifications, kept current by marking in red all "as-built" construction conditions and changes arising out of RFIs, clarifications, directed field changes and sketches. At the conclusion of construction activities, the information contained in these blue lines and specifications shall be incorporated into the Compact Disk (CD) containing the latest conformed drawings including revisions made by the Contractor Firm's Engineer of Record during construction. (Changes to specifications are typically only affected through change orders. However, on some occasions clarifications may require a modification to the specifications). The revised CADD drawings which include the information incorporated from the blue lines and specifications become As-Builts.

4. Shop Drawings: Final CAD files to be provided in AutoCAD as well as 11x17 PDF's. See Contractor Firm Document Transmittals.

1.02 SUBMITTALS

A. Upon completion of the work, the Contractor Firm shall submit the As-Builts to the DTPW Construction Manager in time to be used for the final inspection and acceptance and for verification. Availability of As-Builts shall be prerequisite to scheduling a final inspection of this Contractor Contract. Non-availability of As-Builts or inaccuracies therein may be grounds for cancellation and postponement of any scheduled final inspection by the DTPW Construction Manager until such time as the discrepancy has been corrected. Upon completion of the work, the As-Builts shall become the property of MDC. The Contractor Firm will transmit the As-Builts to the DTPW Construction Manager with an attached Project Records "As-Built" Drawings Index Form uniquely identifying and describing each document. Specifically, the following documents shall be submitted by the Contractor after construction is completed, but prior to submitting the request for final inspection:

B. The Contractor shall submit two CDs labeled "As-Builts," one in PDF format and the other in CADD format. The Contractor shall date and mark each drawing as "As-Built" using the revision block, and each drawing should be electronically signed by the Contractor certifying the accuracy and validity of the information contained therein. The Contractor Firm shall also submit two printouts from the CD containing the As-Builts, and one set of blue lines and specifications to reflect change notices, change orders, requests for information and field changes in red. The information regarding field conditions/changes is to be maintained in the set of blue line record drawings and a set of specifications during construction. At the end of construction the "as-built" conditions are incorporated into the latest conformed drawings. These final CADD drawings become As-Builts.

C. The Contractor Firm's Engineer shall sign each red line drawing certifying the accuracy and validity of the as-built information contained therein.

### 1.03 QUALITY ASSURANCE

A. Project record documents shall conform to a high standard of quality, similar to that set forth in the National CADD Standard ANSI and ISO, or other relevant lower tier specification defining drafting quality and electronic file formatting.

## PART 2 - PRODUCTS

NOT USED

## PART 3 - EXECUTION

### 3.01 MAINTENANCE OF DOCUMENTS:

A. The Contractor shall maintain at field office, one copy of each of the following:

B. Contractor Contract Documents

1. Conformed Contractor Contract Drawings and Conformed Specifications.
2. Construction Safety Manual.
3. Change Orders, Change Notices, and other modifications to the Contractor Contract.
4. Engineer Field Order or written instruction.
5. Approved shop drawings, product data and samples.
6. Field test reports/records.
7. Updated set of record drawings (blue lines) marked in red to show field changes.
8. Request for information (RFI).
9. All directed Field Changes and sketches.

C. Equal Employment and Affirmative Action Records.

### 3.02 RECORDING "AS-BUILT" DRAWINGS

A. A flowchart explaining this process is included with this section.

B. Record information concurrently with construction progress on a conformed set of blue lines and specifications. During construction, this set of blue lines and specifications are known as “As-Built” drawings.

C. Do not conceal any work until the required information is recorded.

D. Drawings: legibly mark in red to record actual construction depicting the as-constructed configurations resulting from field and/or design changes:

1. Horizontal and vertical location of underground utilities and appurtenances, referenced by dimensions to permanent, visible, and accessible features of the structure.

2. Location of internal utilities, electrical conduits, and appurtenances, referenced by dimensions to permanent, visible, and accessible features of the structure.

3. Field changes of dimension and detail.

4. Details not on original conformed Contractor Contract Drawings.

5. Changes made by Change Notice or by Change Order.

E. Legibly mark up each section of specifications to record:

1. Manufacturer, trade name, catalogue number, and supplier of each product and item of equipment actually installed.

2. Changes made by Change Notice or by Change Order.

F. Any changes due to RFIs, clarifications and field sketches shall be incorporated into the record drawings by affixing sketches and other 8 1/2” x 11” sheets to the blue lines. This information will be incorporated into the CD containing the latest conformed drawings once construction is complete.

G. Do not use the record drawing set for construction progress purposes.

### 3.03 DOCUMENT MAINTENANCE:

A. Provide files and racks for storage of documents to maintain in clean, dry, and legible condition.

B. Do not use record documents for construction purposes.

C. Make documents available for inspection by the DTPW Construction Manager, MDC, Federal Government and State Government.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

A. Work under this Section will not be separately measured for payment.

### 4.02 PAYMENT

A. Work under this Section will be paid for as part of the Contractor Contract lump sum price for Pay Item No. 1 General Requirements.

END OF SECTION

## SECTION 02 05 00

### DEMOLITION AND MAINTENANCE OF SERVICE DURING CONSTRUCTION

#### **PART 1 - GENERAL**

##### 1.01 DESCRIPTION

###### A. Scope of Work:

1. This Section includes furnishing all labor, materials, permits, notifications, equipment and incidentals required for the demolition and disposal of all materials and equipment designed for removal. Such materials and equipment include pumps, pipe, valves, supports, control panels, blower for exhaust fans, and other related appurtenances.
2. These Specifications call attention to certain activities necessary to maintain and facilitate operation during and immediately following construction and do not purport to cover all of the activities necessary. The Contractor shall exercise due care to maintain continuous operation of the existing facilities and minimize operation inconvenience. In accordance with this requirement, a Demolition and Removal Plan shall be developed and submitted in accordance with Paragraph 1.06 herein and Section 013216 – Project Schedules.
3. Demolition includes, but is not limited to:
  - a. Existing Water Cooled Chillers, Chilled and Condenser Water Pumps, Accessories, Hydronic piping, Valves, Supports and Hangers, and associated controls. The existing system shall remain completely operational until all new equipment has been delivered to the site.
  - b. Throughout the project: Piping, electrical conduits, wiring, control panels, junction boxes, pavement, and other items as shown on the Drawings, no longer needed to support system operation, or necessary to complete the Project.
  - c. Disposal of non-salvageable and excess unacceptable material as specified below.
  - d. Off-site disposal of excess and unacceptable materials.
4. The Contractor shall examine the Contract Documents, visit the project site and determine the extent of the work affected therein, and all conditions under which the work will be performed.

##### 1.02 PERMITS AND NOTICES

- ###### A. Permits and Licenses:
- Contractor shall obtain all necessary permits and licenses for performing the work and shall furnish a copy of same to the Owner prior to commencing the Work. The Contractor shall comply with the requirements of the permits.

### 1.03 CONDITIONS AND STRUCTURES

- A. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable, however, minor variations within the structure may occur prior to the start of demolition work.

### 1.04 RULES AND REGULATIONS

- A. The Florida Building Code and applicable codes shall control demolition, modification, or alteration of the existing buildings or structures.

### 1.05 DISPOSAL OF MATERIAL

- A. All equipment on the contract documents shall be transported and disposed of by the Contractor.
- B. Concrete, concrete block, and unsalvageable bricks shall be hauled to a waste disposal site by the Contractor.
- C. The storage of or sale of removed items on the site shall not be allowed.

### 1.06 SUBMITTALS

- A. Submit to the Engineer of Record within twenty (20) days after the Notice-to-Proceed for approval, five (5) copies of the proposed Demolition and Removal Plan for the structures and modifications as shown on the Drawings or as specified herein prior to the start of Work. Include a detailed schedule showing the coordination of bypassing, shutoff, capping and continuation of utility service as required. The Demolition and Removal Plan shall include as a minimum, the following:
  - 1. A detailed sequence of demolition and removal work to ensure the continued service and compliance with regulatory agency requirements, as well as the expeditious completion of the Contractor's work.
  - 2. A list of all activities, including Owner activities, bypass activities and shutdowns, required to complete the work.
  - 3. The sequence of demolition and renovation of existing facilities shall be in accordance with the approved Demolition and Removal Plan as specified in this Section. The Contractor is solely responsible for construction and demolition sequencing of the Work.

### 1.07 TRAFFIC AND ACCESS

- A. Conduct demolition and modification operations, and the removal of equipment and debris to ensure minimum interference roadways, on-site and off-site and to ensure minimum interference with occupied or used facilities.
- B. The Contractor shall at all times maintain safe and convenient access to the existing site.
- C. Do not close or obstruct roadways or walks without permission from the Owner and Engineer of Record. Provide alternate traffic routes around closed or obstructed access ways.

- D. Special attention is directed towards maintaining safe and convenient access to the existing facilities remaining in service by Department personnel. Relocation of the Contractor's materials or equipment due to uncoordinated interruption will be at the Contractor's expense.

#### 1.08 DAMAGE

- A. Promptly repair damage caused to adjacent facilities by demolition operations at no cost to the Owner.

#### 1.09 UTILITIES

- A. Maintain existing utilities to remain in service and protect against damage during demolition operations.
- B. Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the Owner and the Engineer of Record. Provide temporary service during interruptions to existing utilities as acceptable to the Owner.
- C. The Contractor shall cooperate with the Owner to shut off utilities serving structures as required by demolition operations.
- D. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance or interruption of all public and private utilities or services under the jurisdiction of the utility companies.
- E. All utilities being abandoned shall be disconnected and terminated at the service mains in conformance with the requirement of the utility companies or the municipality owning or controlling them.

#### 1.10 POLLUTION CONTROL

- A. Take all necessary measures and means to provide dust, dirt, debris and paint abatement methods to prevent damage to surrounding properties, on-site structures, and private property.
- B. Clean on-site structures and improvements of all dust, dirt and debris caused by demolition operations as directed by the Engineer. Clean or repair all off-site property as shown on the Drawings and specified herein. Return areas to conditions existing prior to the start of work.

#### 1.11 QUALITY CONTROL

- A. Protect all existing materials and equipment to be salvaged or reused from damage.
- B. No above-ground pipes, junction boxes, conduits, or wires are to be left abandoned.
- C. Leave all exposed ends of all pipe and conduit or junction boxes covered and safe.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 SEQUENCE OF WORK**

- A. The sequence of demolition and renovation of existing facilities shall be in accordance with the approved demolition and removal plan.
- B. The Contractor shall have a basic understanding of the operation of the existing facility before preparation of the Demolition and Removal Plan to maintain facility operation and reliability during the demolition process.
- C. Show the complete sequence of construction by activity and by structure.

### **3.02 REMOVAL OF EXISTING EQUIPMENT, PIPING, AND APPURTENANCES**

- A. Subject to the constraints of maintaining the existing facility in operation, existing equipment appurtenances not necessary for the operation of the new equipment shall be removed as shown or indicated on the Drawings.
- B. All existing equipment, piping, and appurtenances to remain in the mechanical room shall be cleaned, flushed, and drained. All valves shall be left in the open position.

### **3.03 PAYMENT:**

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 8 Demolition.

END OF SECTION

## SECTION 23 05 13

### COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

- A. Section includes single- and three-phase motors for application on equipment provided under other sections **and for motors furnished loose to Project.**
- B. Related Sections:
  - 1. Section 260553 - Identification for Electrical Systems.

##### 1.02 REFERENCES

- A. American Bearing Manufacturers Association:
  - 1. ABMA 9 - Load Ratings and Fatigue Life for Ball Bearings.
- B. National Electrical Manufacturers Association:
  - 1. NEMA MG 1 - Motors and Generators.
- C. International Electrical Testing Association:
  - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

##### 1.03 SUBMITTALS

- A. Section 013300 - Submittals: Submittal procedures.
- B. Product Data: Submit catalog data for each motor furnished loose. Indicate nameplate data, standard compliance, electrical ratings and characteristics, and physical dimensions, weights, mechanical performance data, and support points.
- C. Test Reports: Indicate procedures and results for specified factory and field testing and inspection.

##### 1.04 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Testing Agency: Company member of International Electrical Testing Association and specializing in testing products specified in this section with minimum three years documented experience.



## 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 Product Material and Equipment Requirements: Product storage and handling requirements.
- B. Lift only with lugs provided. Handle carefully to avoid damage to components, enclosure, and finish.
- C. Protect products from weather and moisture by covering with plastic or canvas and by maintaining heating within enclosure.
- D. For extended outdoor storage, remove motors from equipment and store separately.

## PART 2 - PRODUCTS

### 2.01 PRODUCT REQUIREMENTS FOR MOTORS FURNISHED WITH EQUIPMENT

- A. Motors 3/4 hp and Larger: Three-phase motor as specified below.
- B. Three-Phase Motors: NEMA MG 1, Design B, energy-efficient squirrel-cage induction motor, with windings to accomplish starting methods and number of speeds as indicated on Drawings.
  - 1. Voltage: As indicated on Drawings.
  - 2. Service Factor: 1.15
  - 3. Enclosure: Meet conditions of installation unless specific enclosure is indicated on Drawings.
  - 4. Design for continuous operation in 40 degrees C environment, with temperature rise in accordance with NEMA MG 1 limits for insulation class, service factor, and motor enclosure type.
  - 5. Insulation System: NEMA Class F.
  - 6. Motor Frames: NEMA Standard T-Frames of steel, aluminum, or cast iron with end brackets of cast iron or aluminum with steel inserts.
  - 7. Thermistor System (Motor Frame Sizes 254T and Larger): Three PTC thermistors embedded in motor windings and epoxy encapsulated solid state control relay with wiring to terminal box.
  - 8. Bearings: Grease lubricated anti-friction ball bearings with housings equipped with plugged provision for relubrication, rated for minimum ABMA 9, L-10 life of 200,000 hours. Calculate bearing load with NEMA minimum V-belt pulley with belt center line at end of NEMA standard shaft extension. Stamp bearing sizes on nameplate.
  - 9. Sound Power Levels: Conform to NEMA MG 1.

- C. Single Phase Motors:
  - 1. Permanent split-capacitor type where available, otherwise use split-phase start/capacitor run or capacitor start/capacitor run motor.
  - 2. Voltage: As shown on drawings.
- D. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated.

## 2.02 SOURCE QUALITY CONTROL

- A. Test motors in accordance with NEMA MG 1, including winding resistance, no-load speed and current, locked rotor current, insulation high-potential test, and mechanical alignment tests.

## **PART 3 - EXECUTION**

### 3.01 EXISTING WORK

- A. Disconnect and remove abandoned motors
- B. Maintain access to existing motors and other installations remaining active and requiring access. Modify installation or provide access panel.

### 3.02 INSTALLATION

- A. Install securely on firm foundation. Mount ball bearing motors in accordance with motor manufacturer's requirements.
- B. Install engraved plastic nameplates in accordance with Section 230553.
- C. Ground and bond motors.

### 3.03 FIELD QUALITY CONTROL

- A. Section 014500 and 017800 Contract Closeout Field inspecting, testing, adjusting, and balancing.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.15.

### 3.04 PAYMENT:

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 6 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION

## SECTION 23 05 23

### GENERAL-DUTY VALVES FOR HVAC PIPING

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

###### A. Section Includes:

1. Globe valves.
2. Ball valves.
3. Butterfly valves.
4. Check valves.

###### B. Related Sections:

1. Section 230503 - Pipes and Tubes for HVAC Piping and Equipment: Product and installation requirements for piping materials applying to various system types.
2. Section 230529 - Hangers and Supports for HVAC Piping and Equipment: Product and installation requirements for pipe hangers and supports.
3. Section 230700 - HVAC Insulation: Product and installation requirements for insulation for valves.
4. Section 232113 - Hydronic Piping: Product and installation requirements for piping used in hydronic piping systems.
5. Section 232116 - Hydronic Piping Specialties: Product and installation requirements for piping specialties used in hydronic piping systems.

##### 1.02 REFERENCES

###### A. ASTM International:

1. ASTM A216/A216M - Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service.
2. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
3. ASTM D4101 - Standard Specification for Propylene Injection and Extrusion Materials.

###### B. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP 67 - Butterfly Valves.
2. MSS SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.

3. MSS SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
  4. MSS SP 78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
  5. MSS SP 80 - Bronze Gate, Globe, Angle and Check Valves.
  6. MSS SP 85 - Cast Iron Globe & Angle Valves, Flanged and Threaded.
  7. MSS SP 110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
- C. Underwriters Laboratories Inc.:
1. UL 842 - Valves for Flammable Fluids.

#### 1.03 SUBMITTALS

- A. Section 013323 – Shop Drawings: Requirements for submittals.
- B. Product Data: Submit manufacturers catalog information with valve data and ratings for each service.
- C. Manufacturer's Installation Instructions: Submit hanging and support methods, joining procedures.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.04 CLOSEOUT SUBMITTALS

- A. Section 017800 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of valves.
- C. Operation and Maintenance Data: Submit installation instructions, spare parts lists, exploded assembly views.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- C. Provide temporary protective coating on cast iron and steel valves.

#### 1.07 ENVIRONMENTAL REQUIREMENTS

- A. Section 016000 - Product Requirements: Environmental conditions affecting products on site.

1.08 WARRANTY

- A. Section 017833 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish five year manufacturer warranty for valves excluding packing.

1.09 EXTRA MATERIALS

- A. Section 017800 - Execution and Closeout Requirements: Requirements for extra materials.
- B. Furnish two packing kits for each size valve.

**PART 2 - PRODUCTS**

2.01 GLOBE VALVES

- A. Manufacturers:
  - 1. Nibco.
  - 2. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.
- B. GL-1 - 2 inches and Smaller: MSS SP 80, Class 125, bronze body, bronze trim, union bonnet, hand wheel, teflon composition disc, solder or threaded ends.
- C. **GL-2** - 2-1/2 inches and Larger: MSS SP 85, **Class 125**, cast iron body, bronze trim, hand wheel, outside screw and yoke, flanged ends. Furnish chain-wheel operators for valves 4 inches and larger mounted over 8 feet above floor.

2.02 BALL VALVES

- A. Manufacturers:
  - 1. Nibco.
  - 2. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options .
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.
- B. BA-1 - 2 inches and Smaller: MSS SP 110, 400 psi WOG, two piece bronze body, type 316 stainless steel ball, full port, teflon seats, blow-out proof stem, solder or threaded ends with union, locking lever handle with balancing stops.

## 2.03 BUTTERFLY VALVES

### A. Manufacturers:

1. Nibco.
2. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options.
3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.

### B. **BF-1** 2-1/2 inches and Larger: MSS SP 67, **Class 150**.

1. Body: Cast or ductile iron, wafer ends, stainless steel stem, extended neck.
2. Disc: stainless steel.
3. Seat: Resilient replaceable EPDM.
4. Handle and Operator: 10 position lever handle.

## 2.04 CHECK VALVES

### A. Manufacturers:

1. Nibco.
2. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options.
3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.

### B. Horizontal Swing Check Valves:

1. CK-1 - 2 inches and Smaller: MSS SP 80, Class 150, bronze body and cap, bronze seat, **teflon** disc, **solder or threaded** ends.

### C. Spring Loaded Check Valves:

1. CK-6 -2 inches and Smaller: MSS SP 80, Class 250, bronze body, in-line spring lift check, silent closing, teflon disc, integral seat, solder or threaded ends.
2. CK-7 - 2-1/2 inches and Larger: MSS SP 71, Class 125 wafer style, cast iron body, bronze seat, center guided bronze disc, stainless steel spring and screws, flanged ends.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Verify piping system is ready for valve installation.

### **3.02 INSTALLATION**

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- C. Install 3/4 inch ball valves with cap for drains at main shut-off valves, low points of piping, bases of vertical risers, and at equipment.
- D. Install valves with clearance for installation of insulation and allowing access.
- E. Provide access where valves and fittings are not accessible.
- F. Refer to Section 230529 for pipe hangers.
- G. Refer to Section 230700 for insulation requirements for valves.

### **3.03 VALVE APPLICATIONS**

- A. Install shutoff and drain valves at locations indicated on Drawings in accordance with this Section.
- B. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- C. Install ball or globe valves for throttling, bypass, or manual flow control services.
- D. Install spring loaded check valves on discharge of water pumps.
- E. Install lug end butterfly valves adjacent to equipment when functioning to isolate equipment.
- F. Install ball and butterfly valves in chilled and condenser water systems for shut-off service.
- G. Install calibrated ball and globe valves in chilled and condenser water systems for throttling service.

### **3.04 PAYMENT:**

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 5 Hydronic Piping, Valves, & Accessories & Installation.

END OF SECTION

## SECTION 23 05 29

### HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

A. Section Includes:

1. Pipe hangers and supports.
2. Hanger rods.
3. Inserts.
4. Flashing.
5. Sleeves.
6. Formed steel channel.
7. Firestopping and accessories for HVAC Work.

B. Related Requirements:

1. Section 230548 - Vibration and Seismic Controls for HVAC: Coordination with installation of rigid pipe anchors.
2. Section 230700 - HVAC Insulation: Piping and accessory insulation as required by this Section.

##### 1.02 DEFINITIONS

- A. Firestopping (Through-Penetration Protection System): The material used to seal or stuff or an assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire-rated construction.

##### 1.03 REFERENCE STANDARDS

A. American Welding Society:

1. AWS D1.1/D1.1M - Structural Welding Code - Steel.

B. ASME International:

1. ASME B31.1 - Power Piping.
2. ASME B31.5 - Refrigeration Piping and Heat Transfer Components.
3. ASME B31.9 - Building Services Piping.

C. ASTM International:



1. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
  2. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems.
  3. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.
  4. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers.
- D. FM Global:
1. FM - Approval Guide.
- E. Intertek Testing Services (Warnock Hersey Mark):
1. WH-ETL - Product Directory.
- F. Manufacturers Standardization Society of the Valve and Fittings Industry:
1. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation.
- G. UL:
1. UL - Fire-resistance-rated Systems and Products.
  2. UL 263 - Fire Tests of Building Construction and Materials.
  3. UL 1479 - Fire Tests of Through-Penetration Firestops.
  4. UL 2079 - Tests for Fire Resistance of Building Joint Systems.
- 1.04 PREINSTALLATION MEETINGS
- A. Section 013119 Project Meetings: Requirements for preinstallation meeting.
  - B. Convene minimum one week prior to commencing Work of this Section.
- 1.05 SUBMITTALS
- A. Section 013323 – Shop Drawings: Requirements for submittals.
  - B. Product Data:
    1. Hangers and Supports: Submit manufacturer's catalog information, including load capacity.
    2. Firestopping: Submit information on product characteristics, performance, and limitations.
  - C. Shop Drawings:
    1. Indicate system layout with location, including critical dimensions and sizes.

2. Indicate pipe hanger and support locations, and detail of trapeze hangers.
- D. Firestopping Schedule: Submit schedule of opening locations and sizes, penetrated items, and specified design numbers to seal openings to maintain fire-resistance rating of adjacent assembly.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Delegated Design Submittals:
1. Submit signed and sealed Shop Drawings with design calculations and assumptions for load-carrying capacity of trapeze, multiple-pipe, and riser support hangers.
  2. Submit sizing methods and calculations sealed by a registered professional engineer (P.E.).
  3. Firestopping Engineering Judgments: For conditions not covered by UL or WH-ETL listed designs, submit judgments by licensed P.E. suitable for presentation to authority having jurisdiction for acceptance as meeting fire protection code requirements.
- G. Manufacturer Instructions:
1. Hangers and Supports: Submit special procedures and assembly of components.
  2. Firestopping: Submit preparation and installation instructions.
- H. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- I. Qualifications Statements:
1. Submit qualifications for manufacturer, installer, and licensed professional.
  2. Submit manufacturer's approval of installer.
  3. Welders: Qualify procedures and personnel according to AWS D1.1/D1.1M.

#### 1.06 QUALITY ASSURANCE

- A. Through-Penetration Firestopping of Fire-Rated Assemblies:
1. Comply with UL 1479 or ASTM E814.
  2. Positive Pressure Differential:
    - a. As required to achieve fire F-ratings and temperature T-ratings as indicated on Drawings, but not less than one hour.
    - b. Minimum 0.10 inch wg.
  3. Wall Penetrations: Fire F-ratings as indicated on Drawings, but not less than one hour.

4. Floor and Roof Penetrations:
  - a. Fire F-ratings and temperature T-ratings as indicated on Drawings, but not less than one hour.
  - b. Floor Penetrations within Wall Cavities: T-rating not required.
- B. Through-Penetration Firestopping of Non-fire-rated Floor and Roof Assemblies:
  1. Materials: Resist free passage of flame and products of combustion.
  2. Noncombustible Penetrating Items: Connecting maximum three stories.
  3. Penetrating Items: Materials approved by authorities having jurisdiction for connecting maximum two stories.
- C. Fire-Resistive Joints in Fire-Rated Floor, Roof, and Wall Assemblies:
  1. Comply with ASTM E1966 or UL 2079.
  2. As required to achieve fire-resistance rating as indicated on Drawings for assembly in which joint is installed.
- D. Fire-Resistive Joints between Floor Slabs and Exterior Walls:
  1. Comply with ASTM E119.
  2. Positive Pressure Differential:
    - a. As required to achieve fire F-ratings and temperature T-ratings as indicated on Drawings for floor assembly.
    - b. Minimum 0.10 inch wg.
- E. Surface-Burning Characteristics:
  1. Maximum 25/450 flame-spread/smoke-developed index.
  2. Testing: Comply with ASTM E84.
- F. Welding of Hanger and Support Attachments to Building Structure: Comply with AWS D1.1/D1.1M.
- G. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards

#### 1.07 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience and approved by manufacturer.
- C. Welders: AWS qualified within previous 12 months for employed weld types.

- D. Licensed Professional: P.E. experienced in design of specified Work and licensed at Project location.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 Product Material and Equipment Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Store materials according to manufacturer instructions.
- D. Protection:
  - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
  - 2. Provide additional protection according to manufacturer instructions.

#### 1.09 AMBIENT CONDITIONS

- A. Section 015200 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.
- B. Minimum Conditions:
  - 1. Do not apply firestopping materials if temperature of substrate material and ambient air is below 60 degrees F.
  - 2. Maintain this minimum temperature before, during, and for minimum three days after installation of firestopping materials.
- C. Provide ventilation in areas to receive solvent cured materials.

#### 1.10 EXISTING CONDITIONS

- A. Field Measurements:
  - 1. Verify field measurements prior to fabrication.
  - 2. Indicate field measurements on Shop Drawings.

#### 1.11 WARRANTY

- A. Section 017800 - Contract Closeout: Requirements for warranties.
- B. Furnish five-year manufacturer's warranty for pipe hangers and supports.

### **PART 2 - PRODUCTS**

#### 2.01 PIPE HANGERS AND SUPPORTS

- A. Hydronic Piping:

1. Comply with ASME B31.9.
2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches:
  - a. Material: Malleable iron.
  - b. Type: Adjustable swivel and split ring.
3. Hangers for Cold Pipe, Sizes 2 Inches and Larger:
  - a. Material: Carbon steel.
  - b. Type: Adjustable; clevis.
4. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
5. Multiple or Trapeze Hangers for Hot Pipe, Sizes 6 Inches and Larger:
  - a. Steel channels with welded spacers and hanger rods.
  - b. Roll: Cast iron.
6. Wall Support for Pipe Sizes 3 Inches and Smaller: Cast-iron hooks.
7. Wall Support for Pipe Sizes 4 Inches and Larger: Welded steel bracket and wrought steel clamp.
8. Vertical Support: Steel riser clamp.
9. Floor Support for Cold Pipe:
  - a. Pipe Saddle: Cast iron; adjustable.
  - b. Support: Concrete pier or steel column.
  - c. Furnish lock nut, nipple, and floor flange.
10. Copper Pipe Support: Copper-plated carbon-steel ring.

B. Accessories:

1. Hanger Rods: Mild steel threaded both ends.

2.02 INSERTS

A. Description:

1. Malleable iron case with galvanized steel shell and expander plug for threaded connection.
2. Lateral adjustment, top slot for reinforcing rods, and lugs for attaching to forms.
3. Size: To suit threaded hanger rods.

## 2.03 FLASHING

- A. Metal Flashing:
  - 1. Material: Galvanized steel.
  - 2. Thickness: 26 gage.
- B. Metal Counterflashing:
  - 1. Material: Galvanized steel.
  - 2. Thickness: 22 gage.
- C. Sheet Lead Flashing:
  - 1. Waterproofing: 5 psf.
  - 2. Soundproofing: 1 psf.
- D. Flexible Flashing:
  - 1. Material:
    - a. Sheet butyl.
    - b. Compatible with roofing.
  - 2. Thickness: 47 mils.
- E. Caps:
  - 1. Material: Steel.
  - 2. Minimum Thickness:
    - a. 22 gage.
    - b. 16 gage at fire-resistive elements.

## 2.04 SLEEVES

- A. Pipes through Non-fire-rated Floors:
  - 1. Material: Galvanized steel.
  - 2. Thickness: 18 gage.
- B. Pipes through Non-fire-rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe or 18-gage galvanized steel.
- C. Sealant:
  - 1. Material: Acrylic.

## 2.05 FORMED STEEL CHANNEL

- A. Description:
  - 1. Material: Galvanized 12-gage steel.
  - 2. Thickness: 12 gage.
  - 3. Hole Spacing: 1-1/2 inches o.c.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Section 017800 - Contract Closeout: Requirements for installation examination.
- B. Verify that openings are ready to receive sleeves.
- C. Verify that openings are ready to receive firestopping.

### 3.02 PREPARATION

- A. Section 017800 - Contract Closeout: Requirements for installation preparation.
- B. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that may affect bond of firestopping material.
- C. Remove incompatible materials that may affect bond.
- D. Install backing materials to arrest liquid material leakage.
- E. Obtain permission from Owner before using powder-actuated anchors.
- F. Do not drill or cut structural members.

### 3.03 INSTALLATION

- A. Inserts:
  - 1. Install inserts for placement in concrete forms.
  - 2. Install inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
  - 3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe 4 inches and larger.
  - 4. If concrete slabs form finished ceiling, locate inserts flush with slab surface.
  - 5. If inserts are omitted, drill through concrete slab from below and provide through bolt with recessed square steel plate and nut recessed into and grouted flush with slab.
- B. Pipe Hangers and Supports:

1. Comply with ASME B31.9.
  2. Support horizontal piping as scheduled.
  3. Minimum Hanger Spacing: 1/2 inch between finished covering and adjacent Work.
  4. Place hangers within 12 inches of each horizontal elbow.
  5. Minimum Vertical Hanger Adjustment: 1-1/2 inches.
  6. Support vertical piping at every floor.
  7. If piping is installed in parallel and at same elevation, provide multiple-pipe or trapeze hangers.
  8. Support riser piping independently of connected horizontal piping.
  9. Provide copper-plated hangers and supports for copper piping.
  10. Design hangers for pipe movement without disengagement of supported pipe.
  11. Painting and Coating:
    - a. Prime coat exposed steel hangers and supports.
    - b. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
  12. Insulation:
    - a. Provide clearance in hangers and from structure and other equipment for installation of insulation.
- C. Flashing:
1. Provide flexible flashing and metal counterflashing where piping and ductwork penetrate weatherproofed or waterproofed walls, floors, and roofs.
- D. Sleeves:
1. Exterior Watertight Entries: Seal with mechanical sleeve seals.
  2. Set sleeves in position in forms and provide reinforcing around sleeves.
  3. Sizing:
    - a. Size sleeves large enough to allow for movement due to expansion and contraction.
    - b. Provide for continuous insulation wrapping.
  4. Spaces:



- a. If piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent Work with firestopping insulation and caulk airtight.
- b. Provide close-fitting metal collar or escutcheon covers at both sides of penetration.
- c. Install stainless-steel escutcheons at finished surfaces.

E. Firestopping:

- 1. Install material at fire-rated construction perimeters and openings containing penetrating sleeves, piping, ductwork, and other items requiring firestopping.
- 2. Apply primer where recommended by manufacturer for type of firestopping material and substrate involved, and as required for compliance with required fire ratings.
- 3. Apply firestopping material to uniform density and texture and in sufficient thickness to achieve required fire and smoke rating.
- 4. Placement: Compress fibered material to maximum 40 percent of its uncompressed size.
- 5. Dam Material: Remove after firestopping material has cured.
- 6. Fire-Rated Surfaces:
  - a. Seal opening at floor, wall, and roof.
  - b. Install sleeve through opening and extending beyond minimum of 1 inch on both sides of building element.
  - c. Size sleeve allowing minimum of 1 inch void between sleeve and building element.
  - d. Pack void with backing material.
  - e. Seal ends of sleeve with UL-listed fire-resistive silicone compound to meet fire rating of structure being penetrated.
- 7. Nonrated Surfaces:
  - a. Seal opening through non-fire-rated walls and roof openings.
  - b. Install sleeve through opening and extending beyond minimum of 1 inch on both sides of building element.
  - c. Size sleeve allowing minimum of 1 inch void between sleeve and building element.
  - d. Install type of firestopping material as recommended by manufacturer.

3.04 FIELD QUALITY CONTROL

- A. Section 017800 - Contract Closeout: Requirements for testing, adjusting, and balancing.
- B. Inspect installed firestopping for compliance with specifications and submitted schedule.

3.05 CLEANING

- A. Section 017800 - Contract Closeout: Requirements for cleaning.
- B. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

- A. Section 017800 - Contract Closeout: Requirements for protecting finished Work.
- B. Protect adjacent surfaces from damage by material installation.

3.07 ATTACHMENTS

- A. Pipe Hanger Spacing:
  - 1. Pipe Material: Copper tube.
    - a. Size: 1-1/4 inches and smaller.
    - b. Maximum Hanger Spacing: 6 feet.
    - c. Hanger Rod Diameter: 1/2 inch.
  - 2. Pipe Material: Copper tube.
    - a. Size: 1-1/2 inches and larger.
    - b. Maximum Hanger Spacing: 10 feet.
    - c. Hanger Rod Diameter: 1/2 inch.
  - 3. Pipe Material: Steel.
    - a. Size: 3 inches and smaller.
    - b. Maximum Hanger Spacing: 12 feet.
    - c. Hanger Rod Diameter: 1/2 inch.
  - 4. Pipe Material: Steel.
    - a. Size: 4 inches and larger.
    - b. Maximum Hanger Spacing: 12 feet.
    - c. Hanger Rod Diameter: 5/8 inch.

3.08 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 5 Hydronic Piping, Valves, & Accessories & Installation.

END OF SECTION

## SECTION 230548

### VIBRATION CONTROLS FOR HVAC

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

###### A. Section Includes:

1. Vibration isolators.

###### B. Related Requirements:

1. Section 230529 - Hangers and Supports for HVAC Piping and Equipment: Product requirements for pipe hangers and supports.
2. Section 230593 - Testing, Adjusting, and Balancing for HVAC: Requirements for sound and vibration measurements performed independent of this Section.
3. Section 233100 - HVAC Ducts and Casings: Vibration isolation devices for ducts and casings.
4. Section 233300 - Air Duct Accessories: Product requirements for both solid and flexible duct connectors for duct sound attenuators specified for placement by this Section.

##### 1.02 REFERENCE STANDARDS

###### A. Air Movement and Control Association International, Inc.:

1. AMCA 300 - Reverberant Room Method for Sound Testing of Fans.

###### B. Air-Conditioning, Heating, and Refrigeration Institute:

1. AHRI 575 - Method of Measuring Machinery Sound within an Equipment Space.

###### C. American National Standards Institute:

1. ANSI S1.4 - Specification for Sound Level Meters.
2. ANSI S1.8 - Reference Quantities for Acoustical Levels.
3. ANSI S1.13 - Measurement of Sound Pressure Levels in Air.
4. ANSI S12.60 - Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools.

###### D. American Society of Heating, Refrigerating and Air-Conditioning Engineers:

1. ASHRAE 68 - Laboratory Method of Testing to Determine the Sound Power in a Duct.

- 2. ASHRAE Handbook - HVAC Applications.
  - E. ASTM International:
    - 1. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
    - 2. ASTM E477 - Standard Test Method for Laboratory Measurements of Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers.
    - 3. ASTM E596 - Standard Test Method for Laboratory Measurement of Noise Reduction of Sound-Isolating Enclosures.
  - F. Sheet Metal and Air Conditioning Contractors' National Association:
    - 1. SMACNA - HVAC Duct Construction Standards - Metal and Flexible.
- 1.03 PREINSTALLATION MEETINGS
- A. Section 013119 - Project Meetings: Requirements for preinstallation meeting.
  - B. Convene minimum one week prior to commencing Work of this Section.
- 1.04 SUBMITTALS
- A. Section 013323 - Shop Drawings: Requirements for submittals.
  - B. Product Data:
    - 1. Submit schedule of vibration isolator type with location and load on each.
    - 2. Submit manufacturer catalog information indicating materials, dimensional data, pressure losses, and acoustical performance for standard sound attenuation products.
  - C. Shop Drawings:
    - 1. Indicate static and dynamic load of both inertia bases and vibration isolators.
    - 2. Indicate assembly, materials, thickness, dimensional data, pressure losses, acoustical performance, layout, and connection details for fabricated sound attenuation products.
  - D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
  - E. Manufacturer Instructions:
    - 1. Submit special procedures and setting dimensions.
    - 2. Indicate installation requirements maintaining integrity of sound isolation.
  - F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

- G. Manufacturer Reports: Certify that sound isolation installation is complete and complies with instructions.
  - H. Qualifications Statements:
    - 1. Submit qualifications for manufacturer, installer, and licensed professional.
    - 2. Submit manufacturer's approval of installer.
- 1.05 CLOSEOUT SUBMITTALS
- A. Section 017800 - Contract Closeout: Requirements for submittals.
- 1.06 QUALITY ASSURANCE
- A. Perform Work according to AMCA 300 standards and ASHRAE 68 recommendations
- 1.07 QUALIFICATIONS
- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
  - B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience and approved by manufacturer.
  - C. Licensed Professional: Professional engineer experienced in design of specified Work and licensed at Project location.
- 1.08 DELIVERY, STORAGE, AND HANDLING
- A. Section 016000 Product Material and Equipment Requirements: Requirements for transporting, handling, storing, and protecting products.
  - B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
  - C. Store materials according to manufacturer instructions.
  - D. Protection:
    - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
    - 2. Provide additional protection according to manufacturer instructions.
- 1.09 EXISTING CONDITIONS
- A. Field Measurements:
    - 1. Verify field measurements prior to fabrication.
    - 2. Indicate field measurements on Shop Drawings.

## 1.10 WARRANTY

- A. Section 017800 Contract Closeout017800 - Contract Closeout: Requirements for warranties.
- B. Furnish five-year manufacturer's warranty for inertia bases.

## PART 2 - PRODUCTS

### 2.01 PERFORMANCE AND DESIGN CRITERIA

- A. Provide vibration isolation devices on motor-driven equipment over 0.5 hp, plus connected piping and ductwork.
- B. Minimum Static Deflection of Isolators:
  - 1. Under 20 hp.
    - a. 400 to 600 rpm: 1.0 inch
    - b. 600 to 800 rpm: 0.5 inch
    - c. 800 to 900 rpm: 0.2 inch
    - d. 1,100 to 1,500 rpm: 0.15 inch
    - e. Over 1,500 rpm: 0.1 inch
  - 2. Over 20 hp.
    - a. 400 to 600 rpm: 2.0 inches
    - b. 600 to 800 rpm: 1.0 inch
    - c. 800 to 900 rpm: 0.5 inch
    - d. 1,100 to 1,500 rpm: 0.2 inch
    - e. Over 1,500 rpm: 0.15 inch
- C. Consider upper floor locations critical unless otherwise indicated.

### 2.02 VIBRATION ISOLATORS

- A. Open Spring Isolators:
  - 1. Spring Isolators:
    - a. Exterior and Humid Areas: Furnish hot-dip galvanized housings and neoprene-coated springs.
    - b. Code: Color-code springs based on load carrying capacity.
  - 2. Springs:

- a. Minimum Horizontal Stiffness: 75 percent of vertical stiffness.
    - b. Working Deflection: Between 30 and 60 percent of maximum deflection.
  - 3. Spring Mounts: Furnish leveling devices, minimum 0.25-inchthick neoprene sound pads, and zinc chromate-plated hardware.
  - 4. Sound Pads:
    - a. Size: Based on minimum deflection of 0.05 inch.
    - b. As specified for neoprene pad isolators.
- B. Restrained Spring Isolators:
  - 1. Spring Isolators:
    - a. Exterior and Humid Areas: Furnish hot-dip galvanized housings and neoprene-coated springs.
    - b. Code: Color-code springs based on load carrying capacity.
  - 2. Springs:
    - a. Minimum Horizontal Stiffness: 75 percent of vertical stiffness.
    - b. Working Deflection: Between 30 and 60 percent of maximum deflection.
  - 3. Spring Mounts: Furnish leveling devices, minimum 0.25-inchthick neoprene sound pads, and zinc chromate-plated hardware.
  - 4. Sound Pads:
    - a. Size: Based on minimum deflection of 0.05 inch.
  - 5. As specified for neoprene pad isolators.
  - 6. Restraints: Furnish mounting frame and limit stops.
- C. Closed Spring Isolators:
  - 1. Spring Isolators:
    - a. Exterior and Humid Areas: Furnish hot-dip galvanized housings and neoprene-coated springs.
    - b. Code: Color-code springs based on load carrying capacity.
  - 2. Type: Closed spring mount with top and bottom housing separated by neoprene rubber stabilizers.

3. Springs:
    - a. Minimum Horizontal Stiffness: 75 percent of vertical stiffness.
    - b. Working Deflection: Between 30 and 60 percent of maximum deflection.
  4. Housings: Incorporate neoprene isolation pad meeting requirements for neoprene pad isolators and neoprene side stabilizers with minimum clearance of 0.25 inch.
- D. Restrained Closed Spring Isolators:
1. Spring Isolators:
    - a. Exterior and Humid Areas: Furnish hot-dip galvanized housings and neoprene-coated springs.
    - b. Code: Color-code springs based on load carrying capacity.
  2. Type: Closed spring mount with top and bottom housing separated by neoprene rubber stabilizers.
  3. Springs:
    - a. Minimum Horizontal Stiffness: 75 percent of vertical stiffness.
    - b. Working Deflection: Between 30 and 60 percent of maximum deflection.
  4. Housings: Incorporate neoprene isolation pad meeting requirements for neoprene pad isolators and neoprene side stabilizers with minimum clearance of 0.25 inch and limit stops.
- E. Spring Hangers:
1. Spring Isolators:
    - a. Exterior and Humid Areas: Furnish hot-dip galvanized housings and neoprene-coated springs.
    - b. Code: Color-code springs based on load carrying capacity.
  2. Springs:
    - a. Minimum Horizontal Stiffness: 75 percent of vertical stiffness.
    - b. Working Deflection: Between 30 and 60 percent of maximum deflection.
  3. Housings: Incorporate neoprene isolation pad as specified for neoprene pad isolators.
  4. Misalignment: Capable of 20-degree hanger rod misalignment.



- F. Neoprene Pad Isolators:
  - 1. Rubber or neoprene-waffle pads.
    - a. Hardness: 30 durometer.
    - b. Minimum Thickness: 1/2 inch.
    - c. Maximum Loading: 40 psi.
    - d. Rib Height: Not greater than 0.7 times width.
  - 2. Configuration: Single layer.
- G. Rubber Mount or Hanger:
  - 1. Material: Molded rubber.
  - 2. Deflection: 0.5 inches.
  - 3. Insert: Threaded.
- H. Glass-Fiber Pads: Neoprene-jacketed, pre-compressed, molded glass fiber.
- I. Seismic Snubbers:
  - 1. Description: Non-directional and double-acting unit consisting of interlocking steel members restrained by neoprene elements.
  - 2. Neoprene Elements:
    - a. Replaceable.
    - b. Minimum Thickness: 0.75 inch.
  - 3. Capacity: Four times assigned load to mount groupings at 0.4-inch deflection.
  - 4. Attachment Points and Fasteners: Capable of withstanding three times rated load capacity of seismic snubber.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Section 017800 - Contract Closeout: Requirements for installation examination.
- B. Verify that equipment, ductwork, and piping are installed before starting Work of this Section.

### **3.02 PREPARATION**

- A. Section 017800 Contract Closeout: 017800 - Contract Closeout. Requirements for installation preparation.

- B. Existing Work:
  - 1. Provide access to existing piping and ductwork and other installations remaining active and requiring access.
  - 2. Extend existing piping and ductwork installations using materials and methods compatible with existing electrical installations.

### 3.03 INSTALLATION

- A. Attach ductwork to acoustic louvers with flexible duct connections as specified in Section 233300 - Air Duct Accessories.
- B. Install isolation for motor-driven equipment.
- C. Bases:
  - 1. Steel: Provide 1 inch of clearance between housekeeping pad and base.
  - 2. Concrete Inertia: Provide 2 inches of clearance between housekeeping pad and base.
- D. Make equipment level.
- E. Install spring hangers without binding.
- F. Isolators:
  - 1. Closed Spring Isolators: Adjust such that side stabilizers are clear under normal operating conditions.
  - 2. Prior to making piping connections to equipment with operating weights substantially different from installed weights, block up equipment with temporary shims to final height; when full load is applied, adjust isolators to load to allow shim removal.
- G. Snubbers:
  - 1. Provide resiliently mounted equipment, piping, and ductwork with seismic snubbers.
  - 2. Provide each inertia base with minimum of four seismic snubbers located close to isolators.
  - 3. Equipment Designated for Post-Disaster: Snub to 0.05-inch maximum clearance.
  - 4. Other Snubbers: Provide clearance between 0.15 and 0.25 inch.
- H. Support piping connections to isolated equipment resiliently for scheduled distance.
- I. Support piping connections to isolated equipment resiliently to nearest flexible pipe connector.

3.04 FIELD QUALITY CONTROL

- A. Section 017800 - Contract Closeout: Requirements for testing, adjusting, and balancing.
- B. Inspect isolated equipment after installation and submit report, including static deflections.
- C. Sound Measurements: As specified in Section 230593 - Testing, Adjusting, and Balancing for HVAC.
- D. Testing Agency:
  - 1. Furnish services of testing agency to take noise measurement.
  - 2. Use meters according to ANSI S1.4.

3.05 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 5 Hydronic Piping, Valves, & Accessories & Installation.

END OF SECTION

## SECTION 23 05 53

### IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Nameplates.
  - 2. Tags.
  - 3. Stencils.
  - 4. Pipe markers.
  - 5. Labels.

##### 1.02 REFERENCES

- 1. ASME A13.1 - Scheme for the Identification of Piping Systems.

##### 1.03 SUBMITTALS

- A. Section 013323 – Shop Drawings: Submittal procedures.
- B. Product Data: Submit manufacturers catalog literature for each product required.
- C. Shop Drawings: Submit list of wording, symbols, letter size, and color coding for mechanical identification and valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Samples: Submit two tags, labels, pipe markers, size used on project.
- E. Manufacturer's Installation Instructions: Indicate installation instructions, special procedures, and installation.
- F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

##### 1.04 CLOSEOUT SUBMITTALS

- A. Section 017800 Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual locations of tagged valves; include valve tag numbers.

##### 1.05 QUALITY ASSURANCE

- A. Conform to ASME A13.1 for color scheme for identification of piping systems and accessories.

B. Maintain one copy of each document on site.

#### 1.06 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience approved by manufacturer.

#### 1.07 PRE-INSTALLATION MEETINGS

A. Section 013119 Project Meetings: Pre-installation meeting.

#### 1.08 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

#### 1.09 EXTRA MATERIALS

A. Section 017800 Contract Closeout: Spare parts and maintenance products.

B. Furnish two containers of spray-on adhesive .

### **PART 2 - PRODUCTS**

#### 2.01 NAMEPLATES

A. Product Description: Laminated three-layer plastic with engraved black letters on light contrasting background color.

#### 2.02 TAGS

A. Plastic Tags

1. Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inches diameter or square

B. Information Tags

1. Clear plastic with printed "Danger," "Caution," or "Warning" and message; size 3-1/4 x 5-5/8 inches with grommet and self-locking nylon ties.

C. Tag Chart: Typewritten letter size list of applied tags and location in anodized aluminum frame.

#### 2.03 STENCILS

A. Stencils: With clean cut symbols and letters of following size:

1. Up to 2 inches Outside Diameter of Insulation or Pipe: 1/2 inch high letters.

2. 2-1/2 to 6 inches Outside Diameter of Insulation or Pipe: 1-inch high letters.

3. Over 6 inches Outside Diameter of Insulation or Pipe: 1-3/4 inches high letters.
  4. Ductwork and Equipment: 1-3/4 inches high letters.
- B. Stencil Paint: Semi-gloss enamel, colors and lettering size conforming to ASME A13.1.
  - C. Color and Lettering: Conform to ASME A13.1.

#### 2.04 PIPE MARKERS

- A. Color and Lettering: Conform to ASME A13.1.
- B. Plastic Pipe Markers
  1. Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering. Larger sizes may have maximum sheet size with spring fastener.
- C. Plastic Tape Pipe Markers
  1. Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

#### 2.05 LABELS

- A. Description: Aluminum, size 1.9 x 0.75 inches, adhesive backed with printed identification.

### **PART 3 - EXECUTION**

#### 3.01 PREPARATION

- A. Degrease and clean surfaces to receive adhesive for identification materials.

#### 3.02 INSTALLATION

- A. Install identifying devices after completion of coverings and painting.
- B. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive.
- C. Install labels with sufficient adhesive for permanent adhesion and seal with clear lacquer. For unfinished canvas covering, apply paint primer before applying labels.
- D. Install tags using corrosion resistant chain. Number tags consecutively by location.
- E. Identify air handling units, pumps, heat transfer equipment, tanks, and water treatment devices with plastic nameplates. Identify in-line pumps and other small devices with tags.
- F. Identify control panels and major control components outside panels with plastic nameplates.
- G. Identify valves in main and branch piping with tags.
- H. Identify air terminal units and radiator valves with numbered tags.

- I. Tag automatic controls, instruments, and relays. Key to control schematic.
- J. Identify piping, concealed or exposed, with stenciled painting. Use tags on piping 3/4 inch diameter and smaller. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and tee, at each side of penetration of structure or enclosure, and at each obstruction.
- K. Identify ductwork with stenciled painting. Identify with air handling unit identification number and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.

3.03 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 5 Hydronic Piping, Valves, & Accessories & Installation.

END OF SECTION

## SECTION 23 05 93

### TESTING, ADJUSTING, AND BALANCING FOR HVAC

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Testing adjusting and balancing of air systems.
  - 2. Testing adjusting and balancing of hydronic systems.
  - 3. Measurement of final operating condition of HVAC systems.
- B. Related Sections:
  - 1. Section 230800 – Commissioning of HVAC: Requirements for coordination between Commissioning and testing, adjusting, and balancing work.

##### 1.02 REFERENCES

- A. Associated Air Balance Council:
  - 1. AABC MN-1 - National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems.
- B. American Society of Heating, Refrigerating and Air-Conditioning Engineers:
  - 1. ASHRAE 111 - Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning and Refrigeration Systems.
- C. Natural Environmental Balancing Bureau:
  - 1. NEBB - Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems.
- D. Testing Adjusting and Balancing Bureau:
  - 1. TABB - International Standards for Environmental Systems Balance.

##### 1.03 SUBMITTALS

- A. Section 013323 – Shop Drawings: Submittal procedures.
- B. Prior to commencing Work, submit proof of latest calibration date of each instrument.
- C. Test Reports: Indicate data on NEBB Report forms or TABB Report Forms
- D. Field Reports: Indicate deficiencies preventing proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.



- E. Prior to commencing Work, submit report forms or outlines indicating adjusting, balancing, and equipment data required. Include detailed procedures, agenda, sample report forms and Copy of NEBB Certificate of Conformance Certification or TABB International Quality Assurance program guarantee.
- F. Submit draft electronic copies of report for review prior to final acceptance of Project.
- G. Furnish Final reports in letter size, 3-ring binder manuals, complete with table of contents page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets and indicating thermostat locations.

#### 1.04 CLOSEOUT SUBMITTALS

- A. Section 017800 Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual locations of balancing valves and settings.
- C. Operation and Maintenance Data: Furnish final copy of testing, adjusting, and balancing report inclusion in operating and maintenance manuals.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with NEBB Procedural Standards for Testing, Balancing and Adjusting of Environmental Systems and TABB International Quality Assurance program.
- B. Maintain one copy of each document on site.
- C. Prior to commencing Work, calibrate each instrument to be used.

#### 1.06 QUALIFICATIONS

- A. Agency: Company specializing in testing, adjusting, and balancing of systems specified in this section with minimum three years documented experience certified by NEBB or TABB.

#### 1.07 PRE-INSTALLATION MEETINGS

- A. Section 013119 - Project Meetings: Pre-installation meeting.

#### 1.08 SEQUENCING

- A. Sequence balancing between completion of systems tested and Date of Substantial Completion.

#### 1.09 SCHEDULING

- A. Section 013216 - Project Schedule: Coordination and project conditions.

## **PART 2 - PRODUCTS**

2.01 Not Used.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Verify systems are complete and operable before commencing work. Verify the following:
1. Systems are started and operating in safe and normal condition.
  2. HVAC control systems are installed complete and operable.
  3. Proper thermal overload protection is in place for electrical equipment.
  4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
  5. Duct systems are clean of debris.
  6. Fans are rotating correctly.
  7. Fire and volume dampers are in place and open.
  8. Air coil fins are cleaned and combed.
  9. Access doors are closed and duct end caps are in place.
  10. Air outlets are installed and connected.
  11. Duct system leakage is minimized.
  12. Hydronic systems are flushed, filled, and vented.
  13. Pumps are rotating correctly.
  14. Proper strainer baskets are clean and in place or in normal position.
  15. Service and balancing valves are open.

### **3.02 PREPARATION**

- A. Furnish instruments required for testing, adjusting, and balancing operations.
- B. Make instruments available to Architect/Engineer to facilitate spot checks during testing.

### **3.03 INSTALLATION TOLERANCES**

- A. Air Handling Systems: Adjust to within plus or minus **10** percent of design.
- B. Air Outlets and Inlets: Adjust total to within plus **10** percent and minus **5** percent of design to space. Adjust outlets and inlets in space to within plus or minus **10** percent of design.

- C. Hydronic Systems: Adjust to within plus or minus **10** percent of design.

#### 3.04 ADJUSTING

- A. Verify recorded data represents actual measured or observed conditions.
- B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- C. After adjustment, take measurements to verify balance has not been disrupted. If disrupted, verify correcting adjustments have been made.
- D. Report defects and deficiencies noted during performance of services, preventing system balance.
- E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.
- F. At final inspection, recheck random selections of data recorded in report. Recheck points or areas as selected and witnessed by Owner.
- G. Check and adjust systems approximately six months after final acceptance and submit report.

#### 3.05 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to obtain required or design supply, return, and exhaust air quantities.
- B. Make air flow rate measurements in main ducts by Pitot tube traverse of entire cross sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain:
  - 1. Space temperatures within 2 degrees F.
  - 2. Minimal objectionable drafts.
- E. Use volume control devices to regulate air quantities only to extent adjustments do not create objectionable air motion or sound levels. Effect volume control by using volume dampers located in ducts.
- F. Vary total system air quantities by adjustment of fan speeds. Provide sheave drive changes to vary fan speed. Vary branch air quantities by damper regulation.
- G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.
- H. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Make allowances for 50 percent loading offilters.

- I. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.
- J. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.
- K. At modulating damper locations, take measurements and balance at extreme conditions.
- L. Check multi-zone units for motorized damper leakage. Adjust air quantities with mixing dampers set first for cooling, then heating, then modulating.
- M. For variable air volume system powered units set volume controller to airflow setting indicated. Confirm connections properly made and confirm proper operation for automatic variable-air-volume temperature control.
- N. On fan powered VAV boxes, adjust airflow switches for proper operation.

### 3.06 WATER SYSTEM PROCEDURE

- A. Adjust water systems, after air balancing, to obtain design quantities.
- B. Use calibrated Venturi tubes, orifices, or other metered fittings and pressure gauges to determine flow rates for system balance. Where flow-metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in system.
- C. Confirm air bleeds indicate system is full of water.
- D. Adjust systems to obtain specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.
- E. Perform system balance with automatic control valves fully open triple duty valves fully open, and pump VFDs at 100 percent speed.
- F. Confirm pump rotation and differential pressure at full flow.
- G. Perform adjustment of water distribution systems by the following measures:
  - 1. Reduce total system flow rate first by reducing speed of VFD.
  - 2. Use balancing cocks, valves, and fittings.
- H. Do not use service or shut-off valves for balancing unless designed for balancing and shut-off functions. Where available pump capacity is less than total flow requirements or individual system parts, simulate full flow in one part by temporary restriction of flow to other parts.

### 3.07 SCHEDULES

- A. Complete list of Equipment Requiring Testing, Adjusting, and Balancing:
  - 1. HVAC Pumps.
  - 2. Water-Cooled Centrifugal Water Chillers.

3. Fan Coil Units.
  4. Fans.
- B. Report Forms
1. Title Page:
    - a. Name of Testing, Adjusting, and Balancing Agency
    - b. Address of Testing, Adjusting, and Balancing Agency
    - c. Telephone and facsimile numbers of Testing, Adjusting, and Balancing Agency
    - d. Project name
    - e. Project location
    - f. Project Architect
    - g. Project Engineer
    - h. Project Contractor
    - i. Project altitude
    - j. Report date
  2. Summary Comments:
    - a. Design versus final performance
    - b. Notable characteristics of system
    - c. Description of systems operation sequence
    - d. Summary of outdoor and exhaust flows to indicate building pressurization
    - e. Nomenclature used throughout report
    - f. Test conditions
  3. Instrument List:
    - a. Instrument
    - b. Manufacturer
    - c. Model number
    - d. Serial number
    - e. Range

- f. Calibration date
- 4. Electric Motors:
  - a. Manufacturer
  - b. Model/Frame
  - c. HP/BHP and kW
  - d. Phase, voltage, amperage; nameplate, actual, no load
  - e. RPM
  - f. Service factor
  - g. Starter size, rating, heater elements
  - h. Sheave Make/Size/Bore
- 5. V-Belt Drive:
  - a. Identification/location
  - b. Required driven RPM
  - c. Driven sheave, diameter and RPM
  - d. Belt, size and quantity
  - e. Motor sheave diameter and RPM
  - f. Center to center distance, maximum, minimum, and actual
- 6. Pump Data:
  - a. Identification/number
  - b. Manufacturer
  - c. Size/model
  - d. Impeller
  - e. Service
  - f. Design flow rate, pressure drop, BHP and kW
  - g. Actual flow rate, pressure drop, BHP and kW
  - h. Discharge pressure
  - i. Suction pressure
  - j. Total operating head pressure

- k. Shut off, discharge and suction pressures
  - l. Shut off, total head pressure
7. Chillers:
- a. Identification/number
  - b. Manufacturer
  - c. Capacity
  - d. Model number
  - e. Serial number
  - f. Evaporator entering water temperature, design and actual
  - g. Evaporator leaving water temperature, design and actual
  - h. Evaporator pressure drop, design and actual
  - i. Evaporator water flow rate, design and actual
  - j. Condenser entering water temperature, design and actual
  - k. Condenser pressure drop, design and actual
  - l. Condenser water flow rate, design and actual
8. Fan Coil Data:
- a. Manufacturer
  - b. Identification/number
  - c. Location
  - d. Model number
  - e. Size
  - f. Air flow, design and actual
  - g. Water flow, design and actual
  - h. Water pressure drop, design and actual
  - i. Entering water temperature, design and actual
  - j. Leaving water temperature, design and actual
  - k. Entering air temperature, design and actual
  - l. Leaving air temperature, design and actual

9. Exhaust Fan Data:
  - a. Location
  - b. Manufacturer
  - c. Model number
  - d. Serial number
  - e. Air flow, specified and actual
  - f. Total static pressure (total external), specified and actual
  - g. Inlet pressure
  - h. Discharge pressure
  - i. Sheave Make/Size/Bore
  - j. Number of Belts/Make/Size
  - k. Fan RPM
10. Duct Traverse:
  - a. System zone/branch
  - b. Duct size
  - c. Area
  - d. Design velocity
  - e. Design air flow
  - f. Test velocity
  - g. Test air flow
  - h. Duct static pressure
  - i. Air temperature
  - j. Air correction factor

### 3.08 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 7 T&B, Startup & Commissioning.

END OF SECTION



## SECTION 23 07 00

### HVAC INSULATION

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

###### A. Section Includes:

1. HVAC piping insulation, jackets and accessories.
2. HVAC equipment insulation, jackets and accessories.
3. HVAC ductwork insulation, jackets, and accessories.

##### 1.02 REFERENCES

###### A. ASTM International:

1. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
2. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement.
5. ASTM C449/C449M - Standard Specification for Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement.
6. ASTM C450 - Standard Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping, and Vessel Lagging.
7. ASTM C533 - Standard Specification for Calcium Silicate Block and Pipe Thermal Insulation.
8. ASTM C534 - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
9. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation.
10. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
11. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.

12. ASTM C585 - Standard Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
  13. ASTM C591 - Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation.
  14. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
  15. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.
  16. ASTM C921 - Standard Practice for Determining the Properties of Jacketing Materials for Thermal Insulation.
  17. ASTM C1071 - Standard Specification for Thermal and Acoustical Insulation (Glass Fiber, Duct Lining Material).
  18. ASTM C1136 - Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.
  19. ASTM C1290 - Standard Specification for Flexible Fibrous Glass Blanket Insulation Used to Externally Insulate HVAC Ducts.
  20. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
  21. ASTM D4637 - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane.
  22. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.
  23. ASTM E162 - Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.
- B. Sheet Metal and Air Conditioning Contractors National Association:
1. SMACNA - HVAC Duct Construction Standard - Metal and Flexible.
- C. Underwriters Laboratories Inc.:
1. UL 1978 - Standard for Safety for Grease Ducts.

### 1.03 SUBMITTALS

- A. Section 013323 – Shop Drawings: Submittal procedures.
- B. Product Data: Submit product description, thermal characteristics and list of materials and thickness for each service, and location.
- C. Manufacturer's Installation Instructions: Submit manufacturers published literature indicating proper installation procedures.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.04 QUALITY ASSURANCE

- A. Test pipe insulation for maximum flame spread index of 25 and maximum smoke developed index of not exceeding **50** in accordance with ASTM E84.
- B. Pipe insulation manufactured in accordance with ASTM C585 for inner and outer diameters.
- C. Factory fabricated fitting covers manufactured in accordance with ASTM C450.
- D. Duct insulation, Coverings, and Linings: Maximum 25/50 flame spread/smoke developed index, when tested in accordance with ASTM E84, using specimen procedures and mounting procedures of ASTM E 2231.
- E. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards

#### 1.05 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Applicator: Company specializing in performing Work of this section **with minimum three years documented experience.**

#### 1.06 PRE-INSTALLATION MEETINGS

- A. Section 013119 - Project Meetings: Pre-installation meeting.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 Product Material and Equipment Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- C. Protect insulation from weather and construction traffic, dirt, water, chemical, and damage, by storing in original wrapping.

#### 1.08 ENVIRONMENTAL REQUIREMENTS

- A. Section 016000 Product Material and Equipment Requirements: Environmental conditions affecting products on site.
- B. Install insulation only when ambient temperature and humidity conditions are within range recommended by manufacturer.
- C. Maintain temperature before, during, and after installation for minimum period of **24** hours.

#### 1.09 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.10 WARRANTY

- A. Section 017800 Contract Closeout: Product warranties and product bonds.
- B. Furnish **five** year manufacturer warranty for manmade fiber.

**PART 2 - PRODUCTS**

2.01 MANUFACTURER

- A. Glass Fiber and Mineral Fiber Insulation
- B. Manufacturers:
  - 1. Johns Manville.
  - 2. Substitutions: Section 016000 - Product Requirements & 016200 – Substitutions.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- C. Closed Cell Elastomeric Insulation
- D. Manufacturers:
  - 1. Johns Manville.
  - 2. Substitutions: Section 016000 - Product Requirements & 016200 – Substitutions.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.

2.02 PIPE INSULATION

- A. TYPE P-1: ASTM C547, molded glass fiber pipe insulation.
  - 1. Thermal Conductivity: 0.23 at 75 degrees F.
  - 2. Operating Temperature Range: 0 to 850 degrees F.
  - 3. Vapor Barrier Jacket: ASTM C1136, Type I, factory applied reinforced foil kraft with self-sealing adhesive joints.
  - 4. Jacket Temperature Limit: minus 20 to 150 degrees F.
- B. TYPE P-5: ASTM C534, Type I, flexible, closed cell elastomeric insulation, tubular.
  - 1. Thermal Conductivity: 0.27 at 75 degrees F.

2. Operating Temperature Range: Range: Minus 70 to 180 degrees F.

#### 2.03 PIPE INSULATION JACKETS

- A. Aluminum Pipe Jacket:
  1. ASTM B209.
  2. Thickness: 0.016 inch thick sheet.
  3. Finish: Smooth.
  4. Joining: Longitudinal slip joints and 2 inch laps.
  5. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.
  6. Metal Jacket Bands: 1/2 inch wide; 0.015 inch thick aluminum.

#### 2.04 PIPE INSULATION ACCESSORIES

- A. Vapor Retarder Lap Adhesive: Compatible with insulation.
- B. Covering Adhesive Mastic: Compatible with insulation.
- C. Piping 1-1/2 inches diameter and smaller: Galvanized steel insulation protection shield. MSS SP-69, Type 40. Length: Based on pipe size and insulation thickness.
- D. Piping 2 inches diameter and larger: Wood insulation saddle, hard maple. Inserts length: not less than 6 inches long, matching thickness and contour of adjoining insulation.
- E. Closed Cell Elastomeric Insulation Pipe Hanger: Polyurethane insert with aluminum jacket single piece construction with self-adhesive closure. Thickness to match pipe insulation.
- F. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.
- G. Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement: ASTM C449/C449M.
- H. Insulating Cement: ASTM C195; hydraulic setting on mineral wool.
- I. Adhesives: Compatible with insulation.

#### 2.05 EQUIPMENT INSULATION

- A. TYPE E-8: ASTM C534, Type II, flexible, closed cell elastomeric insulation, sheet.
  1. Thermal Conductivity: 0.27 at 75 degrees F.
  2. Operating Temperature Range: Range: Minus 70 to 220 degrees F.

#### 2.06 EQUIPMENT INSULATION JACKETS

- A. Aluminum Equipment Jacket:

1. ASTM B209.
2. Thickness: 0.016
3. Finish: Smooth.
4. Joining: Longitudinal slip joints and 2 inch laps.
5. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.
6. Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick aluminum.

#### 2.07 EQUIPMENT INSULATION ACCESSORIES

- A. Vapor Retarder Lap Adhesive: Compatible with insulation.
- B. Covering Adhesive Mastic: Compatible with insulation.
- C. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.
- D. Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement: ASTM C449/C449M.
- E. Adhesives: Compatible with insulation.

#### 2.08 DUCTWORK INSULATION

- A. TYPE D-1: ASTM C1290, Type III, flexible glass fiber, commercial grade with factory applied reinforced aluminum foil jacket meeting ASTM C1136, Type II.
  1. Thermal Conductivity: 0.27 at 75 degrees F.
  2. Maximum Operating Temperature: 250 degrees F.
  3. Density: 1.0 pound per cubic foot.
- B. TYPE D-2: ASTM C612, Type IA or IB, rigid glass fiber, with factory applied **all service facing** meeting ASTM C1136, Type II.
  1. Thermal Conductivity: 0.24 at 75 degrees F
  2. Density: 3 pound per cubic foot

#### 2.09 DUCTWORK INSULATION JACKETS

- A. Aluminum Duct Jacket:
  1. ASTM B209.
  2. Thickness: 0.016
  3. Finish: Smooth.
  4. Joining: Longitudinal slip joints and 2 inch laps.

5. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.
6. Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick aluminum.

## 2.10 DUCTWORK INSULATION ACCESSORIES

- A. Vapor Retarder Tape:
  1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.
- B. Vapor Retarder Lap Adhesive: Compatible with insulation.
- C. Adhesive: Waterproof type.
- D. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.
- E. Lagging Adhesive: Fire retardant type with maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- F. Impale Anchors: Galvanized steel, 12 gage self-adhesive pad.
- G. Adhesives: Compatible with insulation.
- H. Membrane Adhesives: As recommended by membrane manufacturer.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Verify piping, equipment and ductwork has been tested before applying insulation materials.
- B. Verify surfaces are clean and dry, with foreign material removed.

### 3.02 INSTALLATION - PIPING SYSTEMS

- A. Piping Exposed to View in Finished Spaces: Locate insulation and cover seams in least visible locations.
- B. Continue insulation through penetrations of building assemblies or portions of assemblies having fire resistance rating of one hour or less. Provide intumescent firestopping when continuing insulation through assembly. Finish at supports, protrusions, and interruptions.
- C. Piping Systems Conveying Fluids Below Ambient Temperature:
  1. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
  2. Furnish factory-applied or field-applied vapor retarder jackets. Secure factory-applied jackets with pressure sensitive adhesive self-sealing longitudinal laps and butt strips. Secure field-applied jackets with outward clinch expanding staples and seal staple penetrations with vapor retarder mastic.

3. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor retarder adhesive or PVC fitting covers.
- D. Glass Fiber Board Insulation:
1. Apply insulation close to equipment by grooving, scoring, and beveling insulation. Fasten insulation to equipment with studs, pins, clips, adhesive, wires, or bands.
  2. Fill joints, cracks, seams, and depressions with bedding compound to form smooth surface. On cold equipment, use vapor retarder cement.
  3. Cover wire mesh or bands with cement to a thickness to remove surface irregularities.
- E. Inserts and Shields:
1. Piping 1-1/2 inches Diameter and Smaller: Install galvanized steel shield between pipe hanger and insulation.
  2. Piping 2 inches Diameter and Larger: Install insert between support shield and piping and under finish jacket.
    - a. Insert Configuration: Minimum 6 inches long, of thickness and contour matching adjoining insulation; may be factory fabricated.
    - b. Insert Material: Compression resistant insulating material suitable for planned temperature range and service.
  3. Piping Supported by Roller Type Pipe Hangers: Install galvanized steel shield between roller and inserts.
- F. Insulation Terminating Points:
1. Coil Branch Piping 1 inch and Smaller: Terminate hot water piping at union upstream of the coil control valve.
  2. Chilled Water Coil Branch Piping: Insulate chilled water piping and associated components up to coil connection.
  3. Condensate Piping: Insulate entire piping system and components to prevent condensation.
- G. Closed Cell Elastomeric Insulation:
1. Push insulation on to piping.
  2. Miter joints at elbows.
  3. Seal seams and butt joints with manufacturer's recommended adhesive.
  4. When application requires multiple layers, apply with joints staggered.
  5. Insulate fittings and valves with insulation of like material and thickness as adjacent pipe.



- H. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces: Finish with aluminum jacket.

### 3.03 INSTALLATION - EQUIPMENT

- A. Factory Insulated Equipment: Do not insulate.
- B. Exposed Equipment: Locate insulation and cover seams in least visible locations.
- C. Fill joints, cracks, seams, and depressions with bedding compound to form smooth surface. On cold equipment, use vapor retarder cement.
- D. Equipment Containing Fluids Below Ambient Temperature:
  - 1. Insulate entire equipment surfaces.
  - 2. Apply insulation close to equipment by grooving, scoring, and beveling insulation. Fasten insulation to equipment with studs, pins, clips, adhesive, wires, or bands.
  - 3. Furnish factory-applied or field-applied vapor retarder jackets. Secure factory-applied jackets with pressure sensitive adhesive self-sealing longitudinal laps and butt strips. Secure field-applied jackets with outward clinch expanding staples and seal staple penetrations with vapor retarder mastic.
  - 4. Finish insulation at supports, protrusions, and interruptions.
- E. Equipment Containing Fluids 140 degrees F Or Less:
  - 1. Do not insulate flanges and unions, but bevel and seal ends of insulation.
  - 2. Install insulation with factory-applied or field applied jackets, with or without vapor barrier. Finish with glass cloth and adhesive.
  - 3. Finish insulation at supports, protrusions, and interruptions.
- F. Equipment in Mechanical Equipment Rooms or Finished Spaces: Finish with aluminum jacket.
- G. Cover glass fiber, cellular glass, and cellular foam insulation with aluminum jacket.
- H. Nameplates and ASME Stamps: Bevel and seal insulation around; do not cover with insulation.
- I. Equipment Requiring Access for Maintenance, Repair, or Cleaning: Install insulation for easy removal and replacement without damage.

### 3.04 INSTALLATION - DUCTWORK SYSTEMS

- A. Duct dimensions indicated on Drawings are finished inside dimensions.
- B. Insulated ductwork conveying air below ambient temperature:
  - 1. Provide insulation with vapor retarder jackets.
  - 2. Finish with tape and vapor retarder jacket.

3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
  4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- C. Insulated ductwork conveying air above ambient temperature:
1. Provide with or without standard vapor retarder jacket.
  2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.
- D. Ductwork Exposed in Mechanical Equipment Rooms or Finished: Finish with aluminum jacket.
- E. External Glass Fiber Duct Insulation:
1. Secure insulation with vapor retarder with wires and seal jacket joints with vapor retarder adhesive or tape to match jacket.
  2. Secure insulation without vapor retarder with staples, tape, or wires.
  3. Install without sag on underside of ductwork. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift ductwork off trapeze hangers and insert spacers.
  4. Seal vapor retarder penetrations by mechanical fasteners with vapor retarder adhesive.
  5. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.
- F. External Elastomeric Duct Insulation:
1. Adhere to clean oil-free surfaces with full coverage of adhesive.
  2. Seal seams and butt joints with manufacturer's recommended adhesive.
  3. When application requires multiple layers, apply with joints staggered.
  4. Insulate standing metal duct seams with insulation of like material and thickness as adjacent duct surface. Apply adhesive at joints with flat duct surfaces.
  5. Lift ductwork off trapeze hangers and insert spacers.

### 3.05 SCHEDULES

A. Cooling Services Piping Insulation Schedule:

1. Chilled Water Supply and Return, 40 to 60 Degrees F:
  - a. Type: P-1
  - b. Thickness:

- 1) Pipe Size 1-1/2 Inches and Larger: 1.0 inch
    - c. Provide Aluminum Jacket
  2. Condensate Piping from Cooling Coils:
    - a. Type: P-5
    - b. Thickness: 0.5 inch
- B. Equipment Insulation Schedule:
1. Chilled Water Pump Bodies:
    - a. Type: E-8
    - b. Thickness: 0.5 inch
  2. Chilled Water Air Separators:
    - a. Type: E-8
    - b. Thickness: 0.5 inch
  3. Chilled Water Expansion Tanks:
    - a. Type: E-8
    - b. Thickness: 0.5 inch
  4. Chiller Cold Surfaces Not Factory Insulated:
    - a. Type: E-8
    - b. Thickness: 0.5 inch
- C. Ductwork Insulation Schedule:
1. Outside Air Intake:
    - a. Type: D-2
    - b. Thickness: 1.5 inches
  2. Equipment Casings:
    - a. Type: D-2.
    - b. Thickness: 1.0 inch
  3. Supply Ducts - Externally Insulated, Installed Thickness:
    - a. Type: D-1
    - b. Thickness: 1.0 inch

4. Return Ducts - Externally Insulated, Installed Thickness:
  - a. Type: D-1
  - b. Thickness: 1.0 inch
5. Exhaust Ducts Within 10 feet of Exterior Openings, Installed Thickness:
  - a. Type: D-1
  - b. Thickness: 1.0 inch
6. Exhaust Ducts Exposed to Outdoor Air:
  - a. Type: D-2.
  - b. Thickness: 2.0 inches

3.06 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 7 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION

SECTION 23 08 00  
COMMISSIONING OF HVAC

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. HVAC commissioning description.
2. HVAC commissioning responsibilities.

B. Related Sections:

1. Section 230593 - Testing, Adjusting, and Balancing for HVAC: For requirements and procedures concerning testing, adjusting, and balancing of mechanical systems.
2. Section 230900 - Instrumentation and Control for HVAC: Submittal and training requirements.
3. Section 233300 - Air Duct Accessories: Product requirements for ductwork test holes.

1.02 REFERENCES

A. American Society of Heating, Refrigerating and Air-Conditioning Engineers:

1. ASHRAE Guideline 1 - The HVAC Commissioning Process.

B. Building Commissioning Association:

1. BCA - Commissioning Handbook.

C. National Environmental Balancing Bureau:

1. NEBB - Procedural Standards for Building Systems Commissioning.

D. Testing Adjusting and Balancing Bureau:

1. TABB - Commissioning Manual.

1.03 COMMISSIONING DESCRIPTION

A. HVAC commissioning process includes the following tasks:

1. Testing and startup of HVAC equipment and systems.
2. Equipment and system verification checks.

3. Assistance in functional performance testing to verify testing and balancing, and equipment and system performance.
  4. Provide qualified personnel to assist in commissioning tests, including seasonal testing.
  5. Complete and endorse functional performance test checklists provided by Commissioning Authority to assure equipment and systems are fully operational and ready for functional performance testing.
  6. Provide equipment, materials, and labor necessary to correct deficiencies found during commissioning process to fulfill contract and warranty requirements.
  7. Provide operation and maintenance information and record drawings to Commissioning Authority for review verification and organization, prior to distribution.
  8. Provide assistance to Commissioning Authority to develop, edit, and document system operation descriptions.
  9. Provide training for systems specified in this Section with coordination by Commissioning Authority.
- B. Equipment and Systems to Be Commissioned:
1. New HVAC systems that were installed under this Contract.
  2. Existing HVAC systems that were modified, adjusted, upgraded, or affected by the work performed under this Contract.
- C. The following is a partial list of equipment that may be included in this HVAC Commissioning:
1. Chillers.
  2. Pumps.
  3. Piping systems.
  4. Ductwork.
  5. Variable frequency drives.
  6. Fan Coil Units.
  7. Fans.
  8. Chemical treatment systems.
  9. Automatic HVAC control system.
  10. Testing, Adjusting and Balancing work.

- D. Perform seasonal function performance tests for the following equipment and systems:
  - 1. Cooling equipment during cooling season.

#### 1.04 COMMISSIONING SUBMITTALS

- A. Draft Forms: Submit draft of system verification form and functional performance test checklist.
- B. Test Reports: Indicate data on system verification form for each piece of equipment and system as specified. Use AABC forms as guidelines.
- C. Field Reports: Indicate deficiencies preventing completion of equipment or system verification checks equipment or system to achieve specified performance.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Section 017800 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record revisions to equipment and system documentation necessitated by commissioning.
- C. Operation and Maintenance Data: Submit revisions to operation and maintenance manuals when necessary revisions are discovered during commissioning.

#### 1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with ASHRAE Guideline 1, NEBB, and TABB requirements.
- B. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards

#### 1.07 COMMISSIONING RESPONSIBILITIES

- A. Equipment or System Installer Commissioning Responsibilities:
  - 1. Attend commissioning meetings.
  - 2. Ensure temperature controls installer performs assigned commissioning responsibilities as specified below.
  - 3. Ensure testing, adjusting, and balancing agency performs assigned commissioning responsibilities as specified.
  - 4. Provide instructions and demonstrations for Owner's personnel.
  - 5. Ensure subcontractors perform assigned commissioning responsibilities.
  - 6. Ensure participation of equipment manufacturers in appropriate startup, testing, and training activities when required by individual equipment specifications.
  - 7. Develop startup and initial checkout plan using manufacturer startup procedures and functional performance checklists for equipment and systems to be commissioned.

8. During verification check and startup process, execute HVAC related portions of checklists for equipment and systems to be commissioned.
9. Perform and document completed startup and system operational checkout procedures, providing copy to Commissioning Authority.
10. Provide manufacturer representatives to execute starting of equipment. Ensure representatives are available and present during agreed upon schedules and are in attendance for duration to complete tests, adjustments and problem-solving.
11. Coordinate with equipment manufacturers to determine specific requirements to maintain validity of warranties.
12. Provide personnel to assist Commissioning Authority during equipment or system verification checks and functional performance tests.
13. Prior to functional performance tests, review test procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during tests.
14. Prior to startup, inspect, check, and verify correct and complete installation of equipment and system components for verification checks included in commissioning plan. When deficient or incomplete work is discovered, ensure corrective action is taken and re-check until equipment or system is ready for startup.
15. Provide factory supervised startup services for equipment and systems. Coordinate work with manufacturer and Commissioning Authority.
16. Perform verification checks and startup on equipment and systems as specified.
17. Assist Commissioning Authority in performing functional performance tests on equipment and systems as specified.
18. Perform operation and maintenance training sessions scheduled by Commissioning Authority.
19. Conduct HVAC system orientation and inspection.

B. Temperature Controls Installer Commissioning Responsibilities:

1. Attend commissioning meetings.
2. Review design for ability of systems to be controlled including the following:
  - a. Confirm proper hardware requirements exists to perform functional performance testing.
  - b. Confirm proper safeties and interlocks are included in design.
  - c. Confirm proper sizing of system control valves and actuators and control valve operation will result capacity control identified in Contract Documents.



- d. Confirm proper sizing of system control dampers and actuators and damper operation will result in proper damper positioning.
  - e. Confirm sensors selected are within device ranges.
  - f. Review sequences of operation and obtain clarification from Engineer.
  - g. Indicate delineation of control between packaged controls and building automation system, listing BAS monitor points and BAS adjustable control points.
  - h. Provide written sequences of operation for packaged controlled equipment. Equipment manufacturers' stock sequences may be included, when accompanied by additional narrative to reflect Project conditions.
3. Inspect, check, and confirm proper operation and performance of control hardware and software provided in other HVAC sections.
  4. Submit proposed procedures for performing automatic temperature control system point-to-point checks to Commissioning Authority and Architect/Engineer.
  5. Inspect check and confirm correct installation and operation of automatic temperature control system input and output device operation through point-to-point checks.
  6. Perform training sessions to instruct Owner's personnel in hardware operation, software operation, programming, and application in accordance with commissioning plan and requirements of Section 230900, and 230953.
  7. Demonstrate system performance and operation to Commissioning Authority during functional performance tests including each mode of operation.
  8. Provide control system technician to assist during Commissioning Authority verification check and functional performance testing.
  9. Provide control system technician to assist testing, adjusting, and balancing agency during performance of testing, adjusting, and balancing work.
  10. Assist in performing operation and maintenance training sessions scheduled by Commissioning Authority.
- C. Testing, Adjusting, and Balancing Agency Commissioning Responsibilities:
1. Attend commissioning meetings.
  2. Participate in verification of testing, adjusting, and balancing report for verification or diagnostic purposes.
  3. Assist in performing operation and maintenance training sessions scheduled by Commissioning Authority.

## 1.08 COMMISSIONING MEETINGS

- A. Attend initial commissioning meeting and progress commissioning meetings as required by Commissioning Authority.

## 1.09 SCHEDULING

- A. Prepare schedule indicating anticipated start dates for the following:
  - 1. Piping system pressure testing.
  - 2. Piping system flushing and cleaning.
  - 3. Ductwork cleaning.
  - 4. Equipment and system startups.
  - 5. Automatic temperature control system checkout.
  - 6. Testing, adjusting, and balancing.
  - 7. HVAC system orientation and inspections.
  - 8. Operation and maintenance manual submittals.
  - 9. Training sessions.
- B. Schedule seasonal tests of equipment and systems during peak weather conditions to observe full-load performance.
- C. Schedule occupancy sensitive tests of equipment and systems during conditions of both minimum and maximum occupancy or use.

## 1.10 COORDINATION

- A. Coordinate programming of automatic temperature control system with construction and commissioning schedules.

## **PART 2 - PRODUCTS**

2.01 Not Used.

## **PART 3 - EXECUTION**

### 3.01 INSTALLATION

- A. Install additional balancing dampers, balancing valves, access doors, test ports, and pressure and temperature taps required to meet performance requirements by commissioning plan.
- B. Place HVAC systems and equipment into full operation and continue operation during each working day of commissioning.
- C. Install replacement sheaves and belts to obtain system performance, as requested by Commissioning Authority.

- D. Install test holes in ductwork and plenums as requested by Commissioning Authority for taking air measurements.
- E. Prior to start of functional performance test, install replacement filters in equipment

### 3.02 FIELD TESTS AND INSPECTIONS

- A. Seasonal Sensitive Functional Performance Tests:
  - 1. Test cooling equipment at summer design temperatures.
- B. Be responsible to participate in initial and alternate peak season test of systems required to demonstrate performance.

### 3.03 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 7 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION

## SECTION 23 09 00

### INSTRUMENTATION AND CONTROL FOR HVAC

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

###### A. Section Includes:

1. Control panel enclosures.
2. Thermostats.
3. Alarm system.
4. Control air dampers.
5. Electric damper actuators.
6. Control valves.
7. Electric valve actuators.
8. Direct digital control system components.
9. Duct-mounted smoke detector.

###### B. Related Requirements:

1. Section 230513 - Common Motor Requirements for HVAC Equipment: Product requirements for electric motors.
2. Section 230553 - Identification for HVAC Piping and Equipment: Nameplates and labeling for control panels specified in this Section.
3. Section 232116 - Hydronic Piping Specialties: Product requirements for thermometer sockets and gage taps for placement by this Section. Installation requirements for piping products furnished in this Section.
4. Section 233300 - Air Duct Accessories: Product requirements for duct-mounted thermometers. Installation requirements for dampers and other duct-mounted products furnished in this Section.

##### 1.02 REFERENCE STANDARDS

###### A. Air Movement and Control Association International, Inc.:

1. AMCA 500-D - Laboratory Methods of Testing Dampers for Rating.

###### B. American Society of Heating, Refrigerating and Air-Conditioning Engineers:

1. ASHRAE 62.1 - Ventilation for Acceptable Indoor Air Quality.

- C. American Society of Mechanical Engineers:
  - 1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
  - 2. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
- D. ASTM International:
  - 1. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
  - 2. ASTM A536 - Standard Specification for Ductile Iron Castings.
  - 3. ASTM B32 - Standard Specification for Solder Metal.
  - 4. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
  - 5. ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.
  - 6. ASTM D2737 - Standard Specification for Polyethylene (PE) Plastic Tubing.
- E. American Welding Society:
  - 1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.
- F. National Electrical Manufacturers Association:
  - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
  - 2. NEMA DC 3 - Residential Controls - Electrical Wall-Mounted Room Thermostats.
- G. National Fire Protection Association:
  - 1. NFPA 72 - National Fire Alarm and Signaling Code.
  - 2. NFPA 90A - Installation of Air-Conditioning and Ventilating Systems.
- H. Underwriters Laboratories, Inc.:
  - 1. UL 1820 - Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics.

#### 1.03 COORDINATION

- A. Coordinate installation of control components in piping systems with work of Section 232116 - Hydronic Piping Specialties.
- B. Coordinate installation of control components in duct systems with work of Section 233300 - Air Duct Accessories.

#### 1.04 SUBMITTALS

- A. Section 013323 – Shop drawings: Requirements for submittals.

- B. Product Data:
  - 1. Submit description and engineering data for each control system component, including sizing as applicable.
- C. Shop Drawings:
  - 1. Indicate operating data, system drawings, wiring diagrams, and written, detailed operational description of sequences.
  - 2. Coordinate submittals with information requested in Section 230993 - Sequence of Operations for HVAC Controls.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Instructions: Submit installation requirements for each control component.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- G. Qualifications Statements:
  - 1. Submit qualifications for manufacturer and installer.
  - 2. Submit manufacturer's approval of installer.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Section 017800 - Execution and Closeout Requirements: Requirements for closeout procedures.
- B. Project Record Documents: Record actual locations of control components, including panels, thermostats, and sensors.
- C. Operation and Maintenance Data: Submit inspection period, cleaning methods, recommended cleaning materials, and calibration tolerances.

#### 1.06 MAINTENANCE MATERIAL SUBMITTALS

- A. Section 017800 - Execution and Closeout Requirements: Requirements for maintenance materials.

#### 1.07 QUALITY ASSURANCE

- A. Control Air Damper Performance: According to AMCA 500-D.
- B. Perform Work according to Miami Dade County Department of Transportation and Public Works standards.

#### 1.08 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

- B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.

#### 1.09 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept controls on-Site in original factory packaging and inspect for damage.
- C. Store materials according to manufacturer's instructions.

#### 1.10 EXISTING CONDITIONS

- A. Field Measurements:
  - 1. Verify field measurements prior to fabrication.
  - 2. Indicate field measurements on Shop Drawings.

#### 1.11 WARRANTY

- A. Section 017800 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish five-year manufacturer's warranty for each control-system component.

### **PART 2 - PRODUCTS**

#### 2.01 CONTROL PANEL ENCLOSURES

- A. Furnish enclosure for each system under automatic control.
- B. Equipment Mounting:
  - 1. Within Cabinet: Relays and controls.
  - 2. Flush on Cabinet Panel Face: Temperature indicators, pressure gages, pilot lights, push buttons, and switches.
- C. Construction:
  - 1. Comply with NEMA 250, Type 4.
  - 2. Material: Stainless steel.
- D. Covers:
  - 1. Continuous hinge.
  - 2. Closure: Flush latch operable by screwdriver.
- E. Finish: Manufacturer's standard enamel.

## 2.02 THERMOSTATS

### A. Line Voltage Thermostats:

1. Selector Switch:
  - a. Integral.
  - b. Manual HAND-OFF-AUTO.
  - c. two-pole.
2. Dead Band: Maximum 2 degrees F.
3. Cover: Locking with set point indication,.

### B. Room Thermostat Accessories:

1. Thermostat Covers: Brushed aluminum.
2. Furnish insulating bases for thermostats located on exterior walls.
3. Thermostat Guards:
  - a. Material: Locking transparent plastic.
  - b. Mounting: On separate base from thermostat.

## 2.03 CONTROL AIR DAMPERS

### A. Frames:

1. Materials: Galvanized steel, welded or riveted with corner reinforcement.
2. Minimum Thickness: 16 gage.

### B. Blades:

1. Material: Galvanized steel.
2. Blade
  - a. Minimum Thickness: 16 gage.
3. Attach to minimum 1/2-inch shafts with set screws.

### C. Seals:

1. Blades:
  - a. Material: Synthetic elastomeric.
  - b. Mechanically attached.
  - c. Field replaceable.



2. Jamb: Stainless-steel spring.
- D. Outside Air Damper Leakage: Maximum rate of 3 cfm per sq. ft. at 1-inch wg pressure differential.

#### 2.04 ELECTRIC DAMPER ACTUATORS

- A. Manufacturers:
  1. Belimo
  2. Substitutions: Section 016000 - Product Requirements & 016200 – Substitutions.
  3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Operation: Reversing type, proportional motor.
- C. Enclosure: Comply with NEMA 250, Type 4.
- D. Mounting: Direct.
- E. Stroke:
  1. Full Stroke: 90 seconds, end to end.
  2. Spring Return: 15 seconds, return to normal.
- F. Protection: Electronic stall.
- G. Electrical Characteristics:
  1. Control Input: Zero to 10 V dc.
- H. Nominal Power: 120V ac.
- I. Torque: Sized for minimum 150 percent of required duty.
- J. Duty Cycle: Rated for 65,000 cycles.
- K. Accessories:
  1. Cover-mounted transformer.
  2. Auxiliary potentiometer.
  3. Damper linkage.
  4. Direct-drive feedback potentiometer.
  5. Output position feedback.
  6. Field-selectable, rotational, spring return direction.

7. Field-adjustable zero and span.
8. End switch.

## 2.05 CONTROL VALVES

### A. Globe Pattern:

1. 2 Inches and Smaller:
  - a. Body and Trim: Bronze.
  - b. Stem: Rising.
  - c. Disc: Renewable composition.
  - d. End Connections: Screwed, with back seating capacity packable under pressure.
2. 2-1/2 Inches and Larger:
  - a. Body: Iron.
  - b. Trim: Bronze.
  - c. Stem: Rising.
  - d. Disc: Plug type; renewable.
  - e. Seats: Renewable.
  - f. End Connections: Flanged.
3. Hydronic Systems:
  - a. Service Pressure Rating: 125 psig at 250 degrees F.
  - b. Plugs and Seats: Replaceable; brass.
  - c. Sizing:
    - 1) Valves: 3 psi maximum pressure drop at design flow rate.

### B. Ball Valves:

1. Body: Forged brass.
2. Ball: Chrome-plated brass.
3. Stem: Blowout proof.
4. O-Rings:
  - a. Material: EPDM.

- b. Minimum Pressure Rating: 600 psig.
- 5. Fluid Temperature Range: Minus 20 to 250 degrees F.
- 6. Flow Characteristics:
  - a. Two-Way Valves: Equal percentage.
  - b. Three-Way Valves: Equal percentage through control port and linear through bypass port.
- 7. End Connections:
  - a. Threaded for two-way valves 3 inches and smaller.
  - b. Threaded for three-way valves 2 inches and smaller.

## 2.06 ELECTRIC VALVE ACTUATORS

- A. Manufacturers:
  - 1. Belimo.
  - 2. Substitutions: Section 016000 - Product Requirements & 016200 – Substitutions.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Motor:
  - 1. Type: Permanent-split capacitor or shaded pole.
  - 2. Gear Trains: Completely oil immersed and sealed.
  - 3. Spring-Return Motors: Furnish integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, and feedback potentiometer.
- C. Actuator:
  - 1. Description: Nonhydraulic design for minimum 100,000 full-stroke cycles at rated torque.
  - 2. Type: Direct coupled.
  - 3. Rating: Not less than twice thrust needed for actual operation of valve.
  - 4. Coupling: V bolt and V-shaped, toothed cradle.
  - 5. Overload Protection: Electronic overload or digital rotation-sensing circuitry.
  - 6. Failsafe Operation: Mechanical, spring-return mechanism.

7. Non-Spring-Return Actuators: Furnish external, manual gear release.
  8. Spring-Return Actuators: Furnish manual override, taking no more than 10 turns completely.
  9. Electrical Characteristics:
    - a. Two-Position Spring Return: 120 V AC
    - b. Modulating: 24 V ac; maximum 15 VA.
    - c. Proportional Signal: 2 to 10 V dc or 4 to 20 mA dc.
    - d. Position Feedback Signal: 2 to 10 V dc.
  10. Temperature Rating: Minus 22 to 140 degrees F.
  11. Run Time: 200 seconds open and 40 seconds closed.
- D. Sizing: Size for torque required for valve closing at maximum pump differential pressure, regardless of water loop system pressures.

## 2.07 DIRECT DIGITAL CONTROL SYSTEM COMPONENTS

- A. Temperature Sensors:
1. Type: Resistance temperature detector.
  2. Accuracy:
    - a. Plus or minus 1 degree F.
    - b. Sensing Accuracy: Plus or minus 0.5 degree F.
    - c. Minimum Display Accuracy and Resolution: Plus or minus 1 degree F.
  3. Communications Port: Built in.
  4. Space Sensors:
    - a. Digital with LCD display, day-night override button, and set point slide adjustment override options.
    - b. Set Point Slide Adjustment: Capable of being software-limited by automation system, to limit amount of room adjustment.
  5. Outside Air Sensors:
    - a. Inlet Fitting: Watertight.
    - b. Furnish with shield for protection from direct sunlight.
  6. Duct Temperature Sensors:
    - a. Type: Rigid or averaging, as indicated in sequence of operations.

- b. Averaging Sensor Minimum Length: 5 feet.
    - c. Duct Cross Sections Greater than 10 sq. ft.: Serpentine averaging element to sense stratified air temperatures.
  - 7. Piping Temperature Sensors: Separable brass well.
- B. Airflow Switches:
  - 1. Description: UL listed; SPDT snap acting; pilot-duty rated at minimum 125 VA.
  - 2. Type: Paddle or differential pressure, as indicated in sequences of operation.
  - 3. Sensitivity: Adjustable.
  - 4. Enclosure: Comply with NEMA 250, Type 1.
- C. Refrigerant Detectors:
  - 1. Description: Dual-level detectors, using solid-state sensors.
  - 2. Alarm:
    - a. Preset: 300 ppm.
    - b. Indicator light.
    - c. SILENCE switch and light.
    - d. TEST switch and light.
    - e. TROUBLE light.
  - 3. Auxiliary Relay: Preset for 150 ppm.

## 2.08 DUCT-MOUNTED SMOKE DETECTOR

- A. Comply with NFPA 72.
- B. Type: Ionization.
- C. Furnish two-wire detector with common power supply and signal circuits.
- D. Accessories:
  - 1. Auxiliary SPDT relay contact.
  - 2. Key-operated NORMAL-RESET-TEST switch.
  - 3. Duct sampling tubes extending width of duct.
  - 4. Visual indicator for detector actuation.
  - 5. Duct-mounted housing.

## 2.09 OPERATION

- A. Motors: As specified in Section 230513 - Common Motor Requirements for HVAC Equipment.
- B. Disconnect Switch: Factory mounted in control panel.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Section 017800 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that pneumatic tubing is clear of water, oil, and other contaminants.
- C. Verify that compressed-air supply has operating filter and dryer before installing control devices or actuators.
- D. Verify that air-handling units and ductwork installation has been completed and that air filters are in place before installing sensors in airstreams.
- E. Verify locations of thermostats, humidistats, and other exposed control sensors with Drawings before installation.
- F. Verify that building systems to be controlled are ready to operate.

### 3.02 INSTALLATION

- A. Tubing:
  - 1. In mechanical rooms, install bundled plastic tubing with junction boxes or single plastic tubing within tray or raceway.
  - 2. Install tubing exposed only in mechanical rooms.
  - 3. Mechanically attach tubing to supporting surfaces.
  - 4. Install minimum 1-inch tubing sleeves through concrete surfaces, extended 6 inches above floors and 1 inch below bottom surface of slabs.
  - 5. Purge tubing with dry, oil-free compressed air before connecting control instruments.
  - 6. Install instrument air tubing with check and hand valves to expansion tanks, using Schrader fittings and hose.
  - 7. Install instrument air tubing with check and hand valves to chiller.
  - 8. Copper Tubing:
    - a. Install copper tubing in mechanical rooms at following locations:
      - 1) Where tubing may be subject to damage.

- 2) Where tubing may be subject to ambient temperature exceeding 200 degrees F.
    - 3) Where tubing is to be installed adjacent to heating pipes passing through common sleeve.
    - 4) Where tubing may not be readily accessible.
  - b. Solder copper tubing joints, except at instruments and equipment.
  - c. Install compression fittings at instruments and equipment.
- B. Thermostats Humidistats Space Temperature Sensors and Other Exposed Control Sensors:
  1. Install after locations have been coordinated with other work.
  2. Install 48 inches above floor.
  3. Align with light switches.
- C. Thermostats:
  1. Install thermostats in aspirating boxes as indicated on Drawings.
  2. Install guards on thermostats as indicated on Drawings.
- D. Control Panels:
  1. Install control panels adjacent to associated equipment on vibration-free walls or freestanding supports.
  2. Use one cabinet for more than one system in same equipment room.
  3. Install engraved plastic nameplates for instruments and controls inside cabinet and engraved plastic nameplates on cabinet face, as specified in Section 230553 - Identification for HVAC Piping and Equipment.
  4. Label with appropriate equipment or system designation as specified in Section 230553 - Identification for HVAC Piping and Equipment.
  5. Install HAND-OFF-AUTO switches to override automatic interlock controls when switch is in HAND position.
- E. Install conduit and electrical wiring as specified in Section 260503 - Equipment Wiring Connections.

### 3.03 FIELD QUALITY CONTROL

- A. After completion of installation, test and adjust control equipment.
- B. Submit data showing set points and final adjustments of controls.
- C. Test pneumatic systems to maximum system pressure of 30 psig.
- D. Calibration:

1. Check calibration of instruments.
  2. Recalibrate instruments out of calibration.
  3. Replace defective instruments.
- E. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than 24 hours on-Site for installation, inspection, field testing, and instructing Owner's personnel in maintenance of equipment.
- F. Equipment Acceptance:
1. Adjust, repair, modify, or replace components failing to perform as specified, and rerun tests.
  2. Make final adjustments to equipment under direction of manufacturer's representative.
- G. Furnish Installation Certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.

#### 3.04 DEMONSTRATION

- A. Section 017800 - Execution and Closeout Requirements: Requirements for demonstration and training.
- B. Demonstrate complete operation of systems, including sequence of operation, equipment startup, shutdown, routine maintenance, and emergency repair procedures, to Owner's personnel.

#### 3.05 MAINTENANCE

- A. Section 017800 - Execution and Closeout Requirements: Requirements for maintenance service.
- B. Provide service and maintenance of control system for five years from date of Substantial Completion.
- C. Furnish complete service of controls systems, including callbacks.
- D. Inspections:
1. Furnish four complete subsequent inspections per year to inspect, calibrate, and adjust controls.
  2. Submit written report after each inspection.
- E. Examine unit components monthly, and clean, adjust, and lubricate equipment.
- F. Provide systematic examination, adjustment, and lubrication of unit and controls checkout and adjustments.
- G. Repair or replace parts according to manufacturer's operating and maintenance data, using parts produced by manufacturer of original equipment.



- H. Perform Work without removing units from service during normal building occupied hours.
- I. Provide emergency callback service at all hours for this maintenance period.
- J. Replacement Parts:
  - 1. Maintain adequate stock of parts locally, for replacement or emergency purposes.
  - 2. Ensure personnel availability to fulfill parts service without unreasonable loss of time.
- K. Perform Work using personnel under supervision of manufacturer or original installer.
- L. Do not assign or transfer maintenance service to agent or subcontractor without prior written consent of Owner.

### 3.07 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 7 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION

SECTION 23 21 16  
HYDRONIC PIPING SPECIALTIES

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Pressure gages.
2. Pressure gage taps.
3. Thermometers.
4. Thermometer supports.
5. Test plugs.
6. Flexible connectors.
7. Expansion tanks.
8. Air vents.
9. Air separators.
10. Strainers.
11. Pump suction fittings.
12. Combination pump discharge valves.
13. Flow controls.
14. Flow meters.
15. Relief valves.

B. Related Sections:

1. Section 232113 - Hydronic Piping: Execution requirements for piping connections to products specified by this section.
2. Section 232123 - Hydronic Pumps: Execution requirements for piping connections to products specified by this section.

1.02 REFERENCES

A. American Society of Mechanical Engineers:

1. ASME B40.1 - Gauges - Pressure Indicating Dial Type - Elastic Element.

2. ASME Section VIII - Boiler and Pressure Vessel Code - Pressure Vessels.
- B. ASTM International:
1. ASTM E1 - Standard Specification for ASTM Thermometers.
  2. ASTM E77 - Standard Test Method for Inspection and Verification of Thermometers.
- C. American Water Works Association:
1. AWWA C700 - Cold-Water Meters - Displacement Type, Bronze Main Case.
  2. AWWA C701 - Cold-Water Meters - Turbine Type, for Customer Service.
  3. AWWA C702 - Cold-Water Meters - Compound Type.
  4. AWWA C706 - Direct-Reading, Remote-Registration Systems for Cold-Water Meters.
  5. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.
- D. Underwriters Laboratories Inc.:
1. UL 393 - Indicating Pressure Gauges for Fire-Protection Service.
  2. UL 404 - Gauges, Indicating Pressure, for Compressed Gas Service.

### 1.03 PERFORMANCE REQUIREMENTS

- A. Flexible Connectors: Provide at or near pumps where piping configuration does not absorb vibration.

### 1.04 SUBMITTALS

- A. Section 013323 - Shop Drawings: Submittal procedures.
- B. Product Data: Submit for manufactured products and assemblies used in this Project.
1. Manufacturers data and list indicating use, operating range, total range, accuracy, and location for manufactured components.
  2. Submit product description, model, dimensions, component sizes, rough-in requirements, service sizes, and finishes.
  3. Submit schedule indicating manufacturer, model number, size, location, rated capacity, load served, and features for each piping specialty.
  4. Submit electrical characteristics and connection requirements.
- C. Manufacturer's Installation Instructions: Submit hanging and support methods, joining procedures, application, selection, and hookup configuration. Include pipe and accessory elevations.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Section 017800 - Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual locations of actual locations of components and instrumentation.
- C. Operation and Maintenance Data: Submit instructions for calibrating instruments, installation instructions, assembly views, servicing requirements, lubrication instruction, and replacement parts list.

#### 1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years' documented experience.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Product storage and handling requirements.
- B. Accept piping specialties on site in shipping containers with labeling in place. Inspect for damage.
- C. Provide temporary protective coating on cast iron and steel valves.
- D. Protect systems from entry of foreign materials by temporary covers, caps and closures, completing sections of the work, and isolating parts of completed system until installation.

#### 1.08 FIELD MEASUREMENTS

- A. Verify field measurements before fabrication.

#### 1.09 WARRANTY

- A. Section 017800 - Contract Closeout: Product warranties and product bonds.
- B. Furnish five-year manufacturer's warranty for piping specialties.

#### 1.10 MAINTENANCE SERVICE

- A. Section 017800 - Contract Closeout: Maintenance service.
- B. Furnish service and maintenance of glycol fluid and glycol charging components for five years from Date of Substantial Completion.

#### 1.11 MAINTENANCE MATERIALS

- A. Section 017800 - Contract Closeout: Spare parts and maintenance materials.

#### 1.12 EXTRA MATERIALS

- A. Section 017800 - Contract Closeout: Spare parts and maintenance products.

## PART 2 - PRODUCTS

### 2.01 LIQUID FLOW METERS

- A. Measuring Station: Type 316 stainless steel pitot type flow element with safety shut-off valves and quick coupling connections.
  - 1. Support: Inserted through welded threaded couplet with isolation valve and insert-retract mechanism.
  - 2. Pressure rating: 275 psi.
  - 3. Maximum temperature: 400 degrees F.
  - 4. Accuracy: Plus 0.55 percent to minus 2.30 percent.
  - 5. Labeling: Metal tag indicating design flow rate, reading for design flow rate, metered fluid, line size, station or location number.
- B. Meter Set: Dry single diaphragm type gage with magnetic drive, 2-1/2 inch x 6 inch dial, stainless steel wetted metal parts, and direct reading of flow rate, with two 10 foot long nylon test hoses with fittings.

### 2.02 PRESSURE GAGES

- A. Gage: ASME B40.1, UL 404 with bourdon tube, rotary brass movement, brass socket, front calibration adjustment, black scale on white background.
  - 1. Case: Stainless steel.
  - 2. Bourdon Tube: Type 316 stainless steel.
  - 3. Dial Size: 4 inch diameter.
  - 4. Mid-Scale Accuracy: One percent.
  - 5. Scale: Psi.

### 2.03 PRESSURE GAGE TAPS

- A. Needle Valve: Stainless Steel, 1/4 inch NPT for minimum 300 psi.
- B. Ball Valve: Stainless Steel, 1/4 inch NPT for 250 psi.
- C. Pulsation Damper: Pressure snubber, brass with 1/4 inch NPT connections.
- D. Siphon: Stainless Steel, 1/4 inch NPT angle or straight pattern.

### 2.04 STEM TYPE THERMOMETERS

- A. Manufacturers:
  - 1. Weiss Instruments

2. Substitutions: Section 016000 – Materials and Equipment Requirements & 016200 – Substitutions
  3. Furnish Materials and equipment according to Miami Dade County Department of Transportation and public works standards. The county shall be the sole judge of what is considered equal, based on the best interested of the county, and its decision regard shall be final.
- B. Thermometer: ASTM E1, digital thermometer, self-powered, lens front tube, Hi-Impact ABS case with enamel finish.
1. Size: 9 inch scale.
  2. Window: Clear Lexan.
  3. Display: 1/2 inch LCD Digits.
  4. Range: -50/300 °
  5. Stem: Brass, 3/4 inch NPT, 3-1/2 inch long, ASME B40.3-1990.
  6. Accuracy: ASTM E77 1 percent.
  7. Calibration: Degrees F.
  8. Waterproof cover.
  9. Ambient Operating: -30/140 °F
  10. Ambient Temp Error: Zero
  11. Humidity: 100%
  12. Sensor: Glass passivated thermistor

#### 2.05 THERMOMETER SUPPORTS

- A. Socket: Brass separable sockets for thermometer stems with or without extensions, and with cap and chain.
- B. Flange: 3 inch outside diameter reversible flange, designed to fasten to sheet metal air ducts, with brass perforated stem.

#### 2.06 TEST PLUGS

- A. 1/4 inch NPT or 1/2 inch NPT stainless steel fitting and cap for receiving 1/8 inch outside diameter pressure or temperature probe with:
  1. Neoprene core for temperatures up to 200 degrees F.
  2. Nordel core for temperatures up to 350 degrees F.
  3. Viton core for temperatures up to 400 degrees F.
- B. Test Kit:

1. Carrying case, internally padded and fitted containing:
  - a. Two 2-1/2 inch diameter pressure gages.
  - b. Two gage adapters with 1/8 inch probes.
  - c. Two 1-1/2 inch dial thermometers.

## 2.07 FLEXIBLE CONNECTORS

- A. Corrugated stainless steel hose with single layer of stainless steel exterior braiding, minimum 9 inches long with copper tube ends; for maximum working pressure 350 psig.

## 2.08 EXPANSION TANKS

- A. Manufacturers:
  1. TACO
  2. Substitutions: Section 016000 - Product Requirements.
  3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Construction: Closed, welded steel, tested and stamped in accordance with ASME Section VIII; cleaned, prime coated, and supplied with steel support saddles; with taps for installation of accessories.
- C. Gage Glass Set: Brass compression stops, guard, and 3/4 inch glass, maximum 24 inches length, long enough to cover tank for 2 inches above bottom to 2 inches below top.
- D. Quick Connect Air Inlet:
  1. Expansion Tank: Inlet tire check valve, manual air vent, tank drain, and pressure relief valve.

## 2.09 AIR VENTS

- A. Manual Type: Short vertical sections of 2 inch diameter pipe to form air chamber, with 1/8 inch brass needle valve at top of chamber.
- B. Float Type:
  1. Brass or semi-steel body, copper, polypropylene, or solid non-metallic float, stainless steel valve and valve seat; suitable for system operating temperature and pressure; with isolating valve.
- C. Washer Type:
  1. Brass with hydroscopic fiber discs, vent ports, adjustable cap for manual shut-off, and integral spring loaded ball check valve.

## 2.10 AIR SEPARATORS

- A. Manufacturers:
  - 1. Taco
  - 2. Substitutions: Section 016000 - Product Requirements
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Dip Tube Fitting: For 125 psig operating pressure; to prevent free air collected in boiler from rising into system.
- C. In-line Air Separators: Cast iron for sizes 1-1/2 inch and smaller, or steel for sizes 2 inch and larger; tested and stamped in accordance with ASME Section VIII; for 125 psig operating pressure.
- D. Combination Air Separators/Strainers: Steel, tested and stamped in accordance with ASME Section VIII; for 125 psig operating pressure, with integral galvanized steel strainer, tangential inlet and outlet connections, and internal stainless steel air collector tube.

## 2.11 STRAINERS

- A. Size 2 inch and Smaller:
  - 1. Screwed brass or iron body for 175 psig working pressure, Y pattern with 1/32 inch stainless steel perforated screen.
- B. Size 2-1/2 inch to 4 inch:
  - 1. Flanged iron body for 175 psig working pressure, Y pattern with 3/64 inch stainless steel perforated screen.
- C. Size 5 inch and Larger:
  - 1. Flanged iron body for 175 psig working pressure, basket pattern with 1/8 inch stainless steel perforated screen.

## 2.12 PUMP SUCTION FITTINGS

- A. Manufacturers:
  - 1. Taco
  - 2. Substitutions: Section 016000 - Product Requirements.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.



- B. Fitting: Angle pattern, cast-iron body. Threaded for 2 inch and smaller, flanged for 2-1/2 inch and larger. Rated for 175 psig working pressure, with inlet vanes, cylinder strainer with 3/16 inch diameter openings, disposable fine mesh strainer to fit over cylinderstrainer, and permanent magnet located in flow stream and removable for cleaning.
- C. Accessories: Adjustable foot support, blow-down tapping in bottom, gage tapping in side.

#### 2.13 COMBINATION PUMP DISCHARGE VALVES

- A. Valves: Straight or angle pattern, flanged cast-iron valve body with bolt-on bonnet for 175 psig operating pressure, non-slam check valve with spring-loaded bronze disc and seat, stainless steel stem, and calibrated adjustment permitting flow regulation.

#### 2.14 FLOW CONTROLS

- A. Construction: Brass or bronze body with union on inlet, and outlet, temperature and pressure test plug on inlet, outlet, and combination blow-down and back-flush drain.
- B. Calibration: Control within 5 percent of design flow over entire operating pressure.
- C. Control Mechanism: Stainless steel or nickel plated brass piston or regulator cup, operating against stainless steel helical or wave formed spring.
- D. Accessories: In-line strainer on inlet and ball valve on outlet.

#### 2.15 RELIEF VALVES

- A. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated capacities ASME certified and labeled.

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION - METERS

- A. Install liquid flow meters with shutoff valves on inlet and outlet.

#### 3.02 INSTALLATION - THERMOMETERS AND GAGES

- A. Install one pressure gage for each pump, locate taps before strainers and on suction and discharge of pump; pipe to gage.
- B. Install gage taps in piping
- C. Install pressure gages with pulsation dampers. Provide ball valve to isolate each gage. Extend nipples to allow clearance from insulation.
- D. Install thermometers in piping systems in sockets in short couplings. Enlarge pipessmaller than 2-1/2 inches for installation of thermometer sockets. Allow clearance from insulation.
- E. Coil and conceal excess capillary on remote element instruments.
- F. Provide instruments with scale ranges selected according to service with largest appropriate scale.

- G. Install gages and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
- H. Adjust gages and thermometers to final angle, clean windows and lenses, and calibrate to zero.

### 3.03 INSTALLATION - HYDRONIC PIPING SPECIALTIES

- A. Locate test plugs adjacent to pressure gages and pressure gage taps and as indicated on Drawings.
- B. Where large air quantities accumulate, provide enlarged air collection standpipes.
- C. Install manual air vents at system high points.
- D. For automatic air vents in ceiling spaces or other concealed locations, install vent tubing to nearest drain.
- E. Provide air separator on suction side of system circulation pump and connect to expansion tank.
- F. Provide drain and hose connection with valve on strainer blow down connection.
- G. Provide pump suction fitting on suction side of base mounted centrifugal pumps. Remove temporary strainers after cleaning systems.
- H. Provide combination pump discharge valve on discharge side of base mounted centrifugal pumps.
- I. Support pump fittings with floor mounted pipe and flange supports.
- J. Provide radiator valves on water inlet for the following terminal heating unit types: radiation, unit heaters, and fan coil units.
- K. Provide radiator-balancing valves on water outlet for the following terminal heating unit types: radiation, unit heaters, and fan coil units.
- L. Provide relief valves on pressure tanks, low-pressure side of reducing valves, heat exchangers, and expansion tanks.
- M. Select system relief valve capacity greater than make-up pressure reducing valve capacity. Select equipment relief valve capacity to exceed rating of connected equipment.
- N. Pipe relief valve outlet to nearest floor drain.
- O. Where one line vents several relief valves, make cross sectional area equal to sum of individual vent areas.

### 3.04 FIELD QUALITY CONTROL

- A. Section 017800 - Contract Closeout: Field inspecting, testing, adjusting, and balancing.

### 3.05 CLEANING

- A. Section 017800 - Contract Closeout: Requirements for cleaning.

3.06 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 017800 - Contract Closeout: Requirements for protecting installed construction.

3.07 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 5 Hydronic Piping, Valves, & Accessories & Installation.

END OF SECTION

## SECTION 23 21 23

### HYDRONIC PUMPS

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

A. Section Includes:

1. Base mounted pumps.

B. Related Sections:

1. Section 230513 - Common Motor Requirements for HVAC Equipment: Product requirements for motors for placement by this section.
2. Section 230523 - General-Duty Valves for HVAC Piping: Product requirements for valves used in hydronic piping systems.
3. Section 230548 - Vibration and Seismic Controls for HVAC Piping and Equipment: Product requirements for vibrations isolators installed with pumps.
4. Section 232113 - Hydronic Piping: Execution requirements for connection to pumps specified by this section.
5. Section 232116 - Hydronic Piping Specialties: Product and execution requirements for piping specialties installed in hydronic systems adjacent to pumps.

##### 1.02 REFERENCES

A. National Electrical Manufacturers Association:

1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

B. Underwriters Laboratories Inc.:

1. UL 778 - Motor Operated Water Pumps.

##### 1.03 PERFORMANCE REQUIREMENTS

- A. Provide pumps to operate at system fluid temperatures indicated on Drawings without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

##### 1.04 SUBMITTALS

- A. Section 013323- Shop Drawings: Submittal procedures.

- B. Product Data: Submit certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements. Submit also, manufacturer model number, dimensions, service sizes, and finishes.
- C. Manufacturer's Installation Instructions: Submit application, selection, and hookup configuration with pipe and accessory elevations. Submit hanging and support requirements and recommendations.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Section 017800 - Contract Closeout: Closeout procedures.
- B. Operation and Maintenance Data: Submit installation instructions, servicing requirements, assembly views, lubrication instructions, and replacement parts list.

#### 1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years' documented experience.

#### 1.07 PRE-INSTALLATION MEETINGS

- A. Section 013119 – Project Meetings: Pre-installation meeting.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Product storage and handling requirements.
- B. Protect systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

#### 1.09 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

#### 1.10 WARRANTY

- A. Section 017800 - Contract Closeout: Product warranties and product bonds.
- B. Furnish five-year manufacturer's warranty for pumps.

#### 1.11 EXTRA MATERIALS

- A. Section 017800 - Contract Closeout: Spare parts and maintenance products.
- B. Furnish one set of mechanical seals for each pump.

## **PART 2 - PRODUCTS**

### **2.01 BASE MOUNTED PUMPS**

- A. Manufacturers:
  - 1. TACO.
  - 2. Substitutions: Material and Equipment Requirements & 016200 – Substitutions, and product options.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Type: Horizontal shaft, single stage, direct connected, radial split casing, for 125 psig maximum working pressure.
- C. Casing: Cast iron, with suction and discharge gage ports, renewable bronze casing wearing rings, seal flush connection, drain plug, flanged suction and discharge.
- D. Impeller: Bronze, fully enclosed, keyed to shaft.
- E. Bearings: Grease lubricated roller or ball bearings.
- F. Shaft: Alloy steel with copper, bronze, or stainless steel shaft sleeve.
- G. Seal: Packing gland with minimum four rings graphite impregnated packing and bronze lantern rings, 230 degrees F maximum continuous operating temperature.
- H. Drive: Flexible coupling with coupling guard.
- I. Baseplate: Cast iron or fabricated steel with integral drain rim.
- J. Electrical Characteristics and Components:
  - 1. Motors: In accordance with Section 210513. 1760 rpm unless specified otherwise.
  - 2. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Provide pumps to operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
- B. Install long radius reducing elbows or reducers between pump and piping. Support piping adjacent to pump so no weight is carried on pump casings. For close coupled or base

mounted pumps, install supports under elbows on pump suction and discharge line sizes 4 inches and over.

- C. Install pumps on vibration isolators. Refer to Section 230548.
- D. Install flexible connectors at or near pumps where piping configuration does not absorb vibration. Refer to Section 232116.
- E. Provide line sized shut-off valve and strainer, suction diffuser on pump suction, and line sized , balancing valve, shut-off valve combination pump discharge valve on pump discharge.
- F. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump so no weight is carried on pump casings. Provide supports under elbows on pump suction and discharge line sizes 4 inches and larger.
- G. Provide air cock and drain connection on horizontal pump casings.
- H. Provide drains for bases and seals.
- I. Check, align, and certify alignment of base mounted pumps prior to start-up.
- J. Install base mounted pumps on concrete housekeeping base, with anchor bolts, set and level, and grout in place..
- K. Lubricate pumps before start-up.

### 3.02 FIELD QUALITY CONTROL

- A. 017800 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Inspect for alignment of base mounted pumps.

### 3.03 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 4 Water Pumps & Installation.

END OF SECTION

SECTION 23 25 00  
HVAC WATER TREATMENT

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Chemical feeder equipment including associated feeders, pumps, tanks, controls, meters and valves.

B. Related Sections:

1. Section 230513 - Common Motor Requirements for HVAC Equipment: Product requirements for motors for placement by this section.

1.02 REFERENCES

A. National Electrical Manufacturers Association:

1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.03 SUBMITTALS

A. Section 013323 - Shop Drawings: Submittal procedures.

B. Shop Drawings: Indicate system schematic, equipment locations, and controls schematics, electrical characteristics and connection requirements.

C. Product Data: Submit chemical treatment materials, chemicals, and equipment including electrical characteristics and connection requirements.

D. Manufacturer's Installation Instructions: Submit placement of equipment in systems, piping configuration, and connection requirements.

E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

F. Manufacturers Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.

1.04 CLOSEOUT SUBMITTALS

A. Section 017800 - Execution and Closeout Requirements: Closeout products.

B. Project Record Documents: Record actual locations of equipment and piping, including sampling points and location of chemical injectors.

C. Operation and Maintenance Data: Submit data on chemical feed pumps, agitators, and other equipment including spare parts lists, procedures, and treatment programs. Include step by step instructions on test procedures including target concentrations.



1.05 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.06 WARRANTY

- A. Section 017833 – Warranties and Bonds: Product warranties and product bonds.
- B. Furnish five year manufacturer warranty for pumps, valves and water meters.

1.07 MAINTENANCE SERVICE

- A. Section 017800 - Execution and Closeout Requirements: Maintenance service.
- B. Furnish monthly technical service visits, for one year starting at Date of Substantial Completion, to perform field inspections and make water analysis on site. Detail findings in writing on proper practices, chemical treating requirements and corrective actions needed. Submit two copies of field service report after each visit.
- C. Furnish laboratory and technical assistance services during this maintenance period.
- D. Furnish on site inspections of equipment during scheduled or emergency shutdown to properly evaluate success of water treatment program, and make recommendations in writing based upon these inspections.

1.08 MAINTENANCE MATERIALS

- A. Section 017800 - Execution and Closeout Requirements: Spare parts and maintenance products.
- B. Furnish chemicals for treatment and testing during warranty period.

**PART 2 - PRODUCTS**

2.01 BY-PASS (POT) FEEDER

- A. 6.0 gal quick opening cap for working pressure of 175 psig.

**PART 3 - EXECUTION**

3.01 PREPARATION

- A. Operate, fill, start and vent systems prior to cleaning. Use water meter to record capacity in each system. Place terminal control valves in open position during cleaning.

3.02 CLEANING

- A. Concentration:
  - 1. As recommended by manufacturer.
- B. Chilled Water Systems:

1. Circulate for 48 hours, then drain systems as quickly as possible.
  2. Refill with clean water, circulate for 24 hours, then drain.
  3. Refill with clean water and repeat until system cleaner is removed.
- C. Use neutralizer agents on recommendation of system cleaner supplier and acceptance of Architect/Engineer.
- D. Flush open systems with clean water for one hour minimum. Drain completely and refill.
- E. Remove, clean, and replace strainer screens.
- F. Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required.

### 3.03 CLOSED SYSTEM TREATMENT

- A. Provide one bypass feeder on each system. Install isolating and drain valves and interconnecting piping. Install around balancing valve downstream of circulating pumps.
- B. Introduce closed system treatment through bypass feeder when required or indicated by test.

### 3.04 DEMONSTRATION

- A. Section 017800 - Execution and Closeout Requirements: Requirements for demonstration and training.

### 3.05 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 3 Water Cooled Chillers & Installation.

END OF SECTION

SECTION 233100  
HVAC DUCTS AND CASINGS

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Section Includes:
  - 1. Duct materials.
  - 2. Ductwork fabrication.
  - 3. Duct cleaning.
- B. Related Requirements:
  - 1. Section 233300 - Air Duct Accessories: Requirements for duct accessories as specified in this Section.

1.02 REFERENCE STANDARDS

- A. American Society of Heating, Refrigerating and Air-Conditioning Engineers:
  - 1. ASHRAE Handbook - Fundamentals.
- B. American Welding Society:
  - 1. AWS D1.1 - Structural Welding Code - Steel.
  - 2. AWS D1.2 - Structural Welding Code - Aluminum.
  - 3. AWS D9.1 - Sheet Metal Welding Code.
- C. ASTM International:
  - 1. ASTM A36 - Standard Specification for Carbon Structural Steel.
  - 2. ASTM A90 - Standard Test Method for Weight of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
  - 3. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
  - 4. ASTM A568 - Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
  - 5. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

6. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
  7. ASTM A1008 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
  8. ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
  9. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
  10. ASTM C14 - Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe.
  11. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
  12. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. International Code Council:
1. International Energy Conservation Code (IECC).
  2. International Mechanical Code (IMC).
- E. NFPA:
1. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems.
  2. NFPA 90B - Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
  3. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.
- F. Sheet Metal and Air Conditioning Contractors' National Association:
1. SMACNA 016 - HVAC Air Duct Leakage Test Manual.
  2. SMACNA 1767 - Kitchen Ventilation Systems and Food Service Equipment Guidelines.
  3. SMACNA 1884 - Fibrous Glass Duct Construction Standards.
  4. SMACNA 1966 - HVAC Duct Construction Standards - Metal and Flexible.
- G. UL:
1. UL 181 - Factory-Made Air Ducts and Air Connectors.

2. UL 181A - Closure Systems for Use With Rigid Air Ducts.
3. UL 1978 - Grease Ducts.

### 1.03 SUBMITTALS

- A. Section 013323 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit manufacturer information for duct materials, duct liner, duct connectors.
- C. Shop Drawings:
  1. Submit duct fabrication drawings, drawn to scale on sheets same size as Contract Drawings, indicating following:
    - a. Fabrication, assembly, and installation details, including plans, elevations, sections, details of components, and attachments to other Work.
    - b. Duct layout that further indicates pressure classifications and sizes in plan view; exhaust duct systems that further indicate classification of materials handled as specified in this Section.
    - c. Fittings.
    - d. Reinforcing details and spacing.
    - e. Seam and joint construction details.
    - f. Penetrations through fire-rated and other walls.
    - g. Terminal unit, coil, and humidifier installations.
    - h. Hangers and supports, including methods for vibration isolation and building and duct attachment.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Welder Certificates: Certify welders and welding procedures employed on Work, verifying AWS qualification within previous 12 months.
- F. Delegated Design Submittals: Submit signed and sealed Shop Drawings with design calculations and assumptions for following:
  1. Hangers and supports, including methods for duct and building attachment, seismic restraints, and vibration isolation.
  2. Materials, fabrication, assembly, and spacing of hangers and supports.
  3. Sheet metal thicknesses.
  4. Joint and seam construction and sealing.
  5. Reinforcement details and spacing.

- G. Test and Evaluation Reports: Indicate pressure tests performed, including date, section tested, test pressure, and leakage rate according to SMACNA 016.
- H. Manufacturer Instructions:
  - 1. Submit detailed instructions on installation requirements, including storage and handling procedures.
  - 2. Submit special procedures for glass-fiber ducts.
- I. Qualifications Statements:
  - 1. Submit qualifications for manufacturer, installer, and licensed professional.
  - 2. Submit manufacturer's approval of installer.
  - 3. Welders: Qualify procedures and personnel according to AWS D1.1 for hangers and supports, AWS D1.2 for aluminum supports, and AWS D9.1 for duct joint and seam welding.

#### 1.04 CLOSEOUT SUBMITTALS

- A. Section 017800 - Contract Closeout: Requirements for submittals.
- B. Project Record Documents:
  - 1. Record actual locations of ducts and duct fittings.
  - 2. Record changes in fitting location and type.
  - 3. Show additional fittings used.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work according to SMACNA 1884 and 1966.
- B. Construct ductwork to NFPA 90A, NFPA 90B,.
- C. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards

#### 1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.
- C. Welders: AWS qualified within previous 12 months for employed weld types.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Store materials according to manufacturer instructions.
- D. Protection:
  - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
  - 2. Provide additional protection according to manufacturer instructions.

#### 1.08 AMBIENT CONDITIONS

- A. Minimum Conditions: Do not install duct sealant when temperatures are less than those recommended by sealant manufacturer.
- B. Subsequent Conditions: Maintain temperatures during and after installation of duct sealant.

#### 1.09 EXISTING CONDITIONS

- A. Field Measurements:
  - 1. Verify field measurements prior to fabrication.
  - 2. Indicate field measurements on Shop Drawings.

#### 1.10 WARRANTY

- A. Section 017800 - Contract Closeout: Requirements for warranties.
- B. Furnish five-year manufacturer's warranty for ducts.

### **PART 2 - PRODUCTS**

#### 2.01 DUCTS

- A. Performance and Design Criteria:
  - 1. Variation of duct configuration or sizes other than those of equivalent or lower loss coefficient is not permitted except by written permission of Engineer.
- B. Materials:
- C. Galvanized-Steel Ducts:
  - 1. Material: ASTM A653 galvanized-steel sheet.
  - 2. Quality: Lock forming.
  - 3. Finish: G90 zinc coating according to ASTM A90.
- D. Fasteners: Rivets, bolts, or sheet metal screws.

- E. Hanger Rod:
  - 1. Material: Galvanized steel.
  - 2. Comply with ASTM A36.
  - 3. Type: Threaded both ends.

## 2.02 FABRICATION

- A. Rectangular Ducts:
  - 1. According to SMACNA 1966.
  - 2. Provide duct material, gages, reinforcing, and sealing for indicated operating pressures.
- B. Round Ducts:
  - 1. According to SMACNA 1966
  - 2. Seams: Longitudinal.
  - 3. Provide duct material, gages, reinforcing, and sealing for indicated operating pressures.
- C. Tees, Bends, and Elbows:
  - 1. Minimum Radius:
    - a. 1-1/2 times centerline duct width.
    - b. If not possible or if rectangular elbows are used, provide airfoil turning vanes.
  - 2. If acoustical lining is indicated, furnish turning vanes of perforated metal with glass-fiber insulation.
- D. Divergence:
  - 1. Increase duct sizes gradually, not exceeding 15 degrees of divergence wherever possible.
  - 2. Upstream of Equipment: Maximum 30 degrees.
  - 3. Downstream of Equipment: Maximum 45 degrees.
- E. Welding:
  - 1. Continuously Welded Round and Oval Duct Fittings: Two gages heavier than duct gages according to SMACNA 1966.
  - 2. Cemented Slip Joints:
    - a. Minimum 4 inches.



- b. Brazed or electric welded.
  - 3. Prime coat welded joints.
- F. Takeoffs:
  - 1. Provide standard 45-degree lateral wye takeoffs.
  - 2. If not possible due to space limitations, provide 90-degree conical tee connections.
- G. Sealing:
  - 1. Seal joints between duct sections and duct seams with welds, gaskets, mastic adhesives, mastic plus embedded fabric systems, or tape.
  - 2. Sealants, Mastics, and Tapes: Comply with UL 181A and provide products bearing appropriate UL 181A markings.

## 2.03 ACCESSORIES

- A. Hangers and Supports:
  - 1. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.
  - 2. Hanger Rods for Corrosive Environments: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
  - 3. Strap and Rod Sizes:
    - a. Comply with SMACNA 1966.
    - b. Glass-Fiber-Reinforced Ducts: Comply with SMACNA 1884.
  - 4. Trapeze and Riser Supports:
    - a. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.
    - b. Supports for Stainless-Steel Ducts: Stainless-steel shapes and plates.
    - c. Supports for Aluminum Ducts: Aluminum or galvanized steel, coated with zinc chromate.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Section 017800 - Contract Closeout: Requirements for installation examination.
- B. Verify sizes of equipment connections before fabricating transitions.

### 3.02 PREPARATION

- A. Section 017800 - Contract Closeout: Requirements for installation preparation.
- B. Obtain manufacturer's inspection and acceptance of fabrication and installation at beginning of installation.
- C. Install temporary closures of metal or taped PE on open ductwork to prevent construction dust from entering ductwork system.

### 3.03 INSTALLATION

- A. Install and seal ducts according to SMACNA 1966.
- B. Hanger and Supports:
  - 1. Fabricate and support ducts according to SMACNA 1884 and 1966.
  - 2. Threaded Rods: Provide double nuts and lock washers.
  - 3. Building Attachments:
    - a. Provide concrete inserts or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
    - b. If possible, install concrete inserts before placing concrete.
    - c. Powder-Actuated Concrete Fasteners:
      - 1) Use only for slabs more than 4 inches thick.
      - 2) Install after concrete is placed and completely cured.
      - 3) Do not use powder-actuated concrete fasteners for seismic restraints.
  - 4. Hanger Spacing:
    - a. Comply with SMACNA 1884 and 1966.
    - b. Install hangers and supports within 24 inches of each elbow and within 48 inches of each branch intersection.
    - c. Extend strap supports down both sides of ducts and turn under bottom at least 1 inch.
    - d. Secure hanger to sides and bottom of ducts with sheet metal screws.
  - 5. Hangers Exposed to View: Provide threaded rod and angle or channel supports.
  - 6. Vertical Ducts:
    - a. Support with steel angles or channel secured to sides of duct with welds, bolts, sheet metal screws, or blind rivets.

- b. Support at each floor and at maximum intervals of 16 feet.
  - 7. Upper Attachments:
    - a. Attach to structures.
    - b. Selection and Sizing: Provide pull-out, tension, and shear capacities as required for supported loads and building materials.
  - 8. Penetrations:
    - a. Avoid penetrations of ducts with hanger rods.
    - b. If unavoidable, provide airtight rubber grommets at penetrations.
- C. Exhaust Outlet Locations:
  - 1. Minimum Distance from Property Lines: 3 feet.
  - 2. Minimum Distance from Building Openings: 3 feet.
  - 3. Minimum Distance from Outside Air Intakes: 10 feet.

### 3.04 FIELD QUALITY CONTROL

- A. Section 017800 - Contract Closeout: Requirements for testing, adjusting, and balancing.
- B. Testing:
  - 1. Ductwork Designed for 3-Inch wg above Ambient Pressure:
    - a. Pressure test minimum 25 percent of ductwork after duct cleaning but before duct insulation is applied or ductwork is concealed.
    - b. Comply with SMACNA 016.
    - c. Maximum Allowable Leakage: According to IECC.

### 3.05 CLEANING

- A. Section 017800 - Contract Closeout: Requirements for cleaning.
- B. Clean duct system and force air at high velocity through duct to remove accumulated dust.
- C. Vacuuming:
  - 1. Clean duct systems with high-power vacuum machines.
  - 2. Install access openings into ductwork for cleaning purposes.
- D. Protect sensitive equipment with temporary filters or bypass during cleaning.

### 3.06 ATTACHMENTS

#### A. Ductwork Material Schedule:

1. Supply - Heating Systems: Steel
2. Supply - Systems with Cooling Coils: Steel
3. Return and Relief : Steel
4. General Exhaust: Steel
5. Outside Air Intake: Steel.
6. Intake and Exhaust: Steel.

#### B. Ductwork Pressure Class Schedule:

1. Constant Volume Supply: 1-inch wg, regardless of velocity.
2. Supply - Systems with Cooling Coils: 1/2-inch wg.
3. Return and Relief: 1/2-inch wg.
4. General Exhaust: 1/2-inch wg.

### 3.07 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 6 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION

SECTION 23 33 00  
AIR DUCT ACCESSORIES

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Back-draft dampers.
2. Volume control dampers.
3. Flexible duct connections.
4. Duct test holes.

B. Related Sections:

1. Section 230900 - Instrumentation and Control for HVAC: Execution and Product requirements for connection and control of Combination Smoke and Fire Dampers for placement by this section.
2. Section 233100 - HVAC Ducts and Casings: Requirements for duct construction and pressure classifications.

1.02 REFERENCES

A. Air Movement and Control Association International, Inc.:

1. AMCA 500 - Test Methods for Louvers, Dampers, and Shutters.

B. ASTM International:

1. ASTM E1 - Standard Specification for ASTM Thermometers.

C. National Fire Protection Association:

1. NFPA 90A - Standard for the Installation of Air Conditioning and Ventilating Systems.
2. NFPA 92A - Recommended Practice for Smoke-Control Systems.

D. Sheet Metal and Air Conditioning Contractors:

1. SMACNA - HVAC Duct Construction Standard - Metal and Flexible.

E. Underwriters Laboratories Inc.:

1. UL 555 - Standard for Safety for Fire Dampers.
2. UL 555C - Standard for Safety for Ceiling Dampers.

3. UL 555S - Standard for Safety for Smoke Dampers.

#### 1.03 SUBMITTALS

- A. Section 013323 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate for shop fabricated assemblies including volume control dampers duct access doors and duct test holes.
- C. Product Data: Submit data for shop fabricated assemblies and hardware used.
- D. Product Data: Submit for the following. Include where applicable electrical characteristics and connection requirements.
  1. Backdraft dampers.
  2. Flexible duct connections.
  3. Volume control dampers.
  4. Duct test holes.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.04 CLOSEOUT SUBMITTALS

- A. Section 017800 - Execution and Closeout Requirements: Closeout procedures.

#### 1.05 QUALITY ASSURANCE

- A. Dampers tested, rated and labeled in accordance with the latest UL requirements.
- B. Damper pressure drop ratings based on tests and procedures performed in accordance with AMCA 500.
- C. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards.
- D. Maintain one copy of each document on site.

#### 1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Product storage and handling requirements.
- B. Protect dampers from damage to operating linkages and blades.
- C. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
- D. Storage: Store materials in a dry area indoor, protected from damage.

- E. Handling: Handle and lift dampers in accordance with manufacturer's instructions. Protect materials and finishes during handling and installation to prevent damage.

#### 1.08 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

#### 1.09 WARRANTY

- A. Section 017800 - Execution and Closeout Requirements: Product warranties and product bonds.
- B. Furnish five year manufacturer warranty for duct accessories.

### **PART 2 - PRODUCTS**

#### 2.01 BACK-DRAFT DAMPERS

- A. Product Description: Multi-Blade, back-draft dampers: Parallel-action, gravity-balanced, Galvanized 16 gage thick steel,. Blades, maximum 6 inch width, center pivoted, with felt or flexible vinyl sealed edges. Blades linked together in rattle-free manner with 90-degree stop, steel ball bearings, and plated steel pivot pin. Furnish dampers with adjustment device to permit setting for varying differential static pressure.

#### 2.02 VOLUME CONTROL DAMPERS

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated on Drawings.
- B. Quadrants:
  - 1. Furnish locking, indicating quadrant regulators on single and multi-blade dampers.
  - 2. On insulated ducts mount quadrant regulators on standoff mounting brackets, bases, or adapters.
  - 3. Where rod lengths exceed 30 inches furnish regulator at both ends.

#### 2.03 FLEXIBLE DUCT CONNECTIONS

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and.
- B. Connector: Fabric crimped into metal edging strip.
  - 1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric conforming to NFPA 90A, minimum density 30 oz per sq yd.
  - 2. Net Fabric Width: Approximately 3 inches wide.
  - 3. Metal: 3 inch wide, 24 gage galvanized steel.

- C. Leaded Vinyl Sheet: Minimum 0.55 inch thick, 0.87 lbs. per sq ft, 10 dB attenuation in 10 to 10,000 Hz range.

#### 2.04 DUCT TEST HOLES

- A. Permanent Test Holes: Factory fabricated, air tight flanged fittings with screw cap. Furnish extended neck fittings to clear insulation.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Verify rated walls are ready for fire damper installation.
- B. Verify ducts and equipment installation are ready for accessories.
- C. Check location of air outlets and inlets and make necessary adjustments in position to conform to architectural features, symmetry, and lighting arrangement.

#### 3.02 INSTALLATION.

- A. Install in accordance with NFPA 90A, and follow SMACNA HVAC Duct Construction Standards - Metal and Flexible. Refer to Section 233100 for duct construction and pressure class.
- B. Install back-draft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated on Drawings.
- C. Install permanent duct test holes required for testing and balancing purposes.

#### 3.03 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 6 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION



## SECTION 23 34 00

### HVAC FANS

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

###### A. Section Includes:

1. Upblast centrifugal roof fans.
2. Roof ventilators.

###### B. Related Sections:

1. Section 230513 - Common Motor Requirements for HVAC Equipment: Product requirements for motors for placement by this section.
2. Section 230548 - Vibration and Seismic Controls for HVAC Piping and Equipment: Product requirements for resilient mountings and snubbers for fans for placement by this section.
3. Section 230700 - HVAC Insulation: Product requirements for power ventilators for placement by this section.
4. Section 230900 - Instrumentation and Control for HVAC: Product requirements for control components to interface with fans.
5. Section 230923 - Direct-Digital Control System for HVAC: Controls remote from unit.
6. Section 233100 - HVAC Ducts and Casings: Product requirements for hangers for placement by this section.
7. Section 233300 - Air Duct Accessories: Product requirements for duct accessories for placement by this section.
8. Section 260503 - Equipment Wiring Connections: Execution and product requirements for connecting equipment specified by this section.

##### 1.02 REFERENCES

###### A. American Bearing Manufacturers Association:

1. ABMA 9 - Load Ratings and Fatigue Life for Ball Bearings.
2. ABMA 11 - Load Ratings and Fatigue Life for Roller Bearings.

###### B. Air Movement and Control Association International, Inc.:

1. AMCA 99 - Standards Handbook.
2. AMCA 204 - Balance Quality and Vibration Levels for Fans.

3. AMCA 210 - Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.
  4. AMCA 300 - Reverberant Room Method for Sound Testing of Fans.
  5. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data.
- C. American Refrigeration Institute:
1. ARI 1060 - Air-to-Air Energy Recovery Ventilation Equipment Certification Equipment Program.
- D. ASTM International:
1. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
- E. National Electrical Manufacturers Association:
1. NEMA MG 1 - Motors and Generators.
  2. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- F. Underwriters Laboratories Inc.:
1. UL 705 - Power Ventilators.

#### 1.03 PERFORMANCE REQUIREMENTS

- A. Wind-Borne Debris Loads: Design louvers located within 30 feet of grade to withstand ASTM E1996; large missile impact test.

#### 1.04 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate size and configuration of fan assembly, mountings, weights, ductwork and accessory connections.
- C. Product Data: Submit data on each type of fan and include accessories, fan curves with specified operating point plotted, power, RPM, sound power levels for both fan inlet and outlet at rated capacity, electrical characteristics and connection requirements.
- D. Manufacturer's Installation Instructions: Submit fan manufacturer instructions.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Section 017000 - Execution and Closeout Requirements: Closeout procedures.
- B. Operation and Maintenance Data: Submit instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.

1.06 QUALITY ASSURANCE

- A. Performance Ratings: Conform to AMCA 210.
- B. Sound Ratings: AMCA 301, tested to AMCA 300.
- C. UL Compliance: UL listed and labeled, designed, manufactured, and tested in accordance with UL 705.
- D. Balance Quality: Conform to AMCA 204.
- E. Perform Work in accordance with Miami Dade County Department of Transportation and Public Works standards.

1.07 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years' documented experience.

1.08 PRE-INSTALLATION MEETINGS

- A. Section 013000 - Administrative Requirements: Pre-installation meeting.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Product storage and handling requirements.
- B. Protect motors, shafts, and bearings from weather and construction dust.

1.10 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.11 WARRANTY

- A. Section 017000 - Execution and Closeout Requirements: Product warranties and product bonds.
- B. Furnish five-year manufacturer's warranty for fans.

1.12 MAINTENANCE SERVICE

- A. Section 017800 - Execution and Closeout Requirements: Requirements for maintenance service.
- B. Furnish service and maintenance of fans for five years from Date of Substantial Completion.
- C. Examine components monthly. Clean, adjust, and lubricate equipment.
- D. Include systematic examination, adjustment, and lubrication of fans, and controls checkout and adjustments. Repair or replace parts in accordance with manufacturer's

operating and maintenance data. Use parts produced by manufacturer of original equipment.

- E. Perform work without removing fans from service during building normal occupied hours.
- F. Provide emergency call back service at all hours for this maintenance period.
- G. Maintain locally, near Place of the Work, adequate stock of parts for replacement or emergency purposes. Have personnel available to ensure fulfillment of this maintenance service, without unreasonable loss of time.
- H. Perform maintenance work using competent and qualified personnel under supervision and in direct employ of manufacturer or original installer.
- I. Do not assign or transfer maintenance service to agent or subcontractor without prior written consent of Owner

#### 1.13 EXTRA MATERIALS

- A. Section 017800 - Execution and Closeout Requirements: Spare parts and maintenance products.

### **PART 2 - PRODUCTS**

#### 2.01 CENTRIFUGAL ROOF FANS

- A. Manufacturers:
  - 1. Greenheck
  - 2. Substitutions: Section 016200 – Substitutions and Product Options.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Fan Unit: Roof mount type. direct drive, spun aluminum housing with grease tray; resilient mounted motor; aluminum wire bird screen; square base to suit roof curb with continuous curb gaskets.
- C. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.
- D. Motor: Totally enclosed fan cooled.
- E. Roof Curb: aluminum construction with continuously welded seams , hinged curb adapter, and factory installed nailer strip.
- F. Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor NEMA 250 Type 4 enclosure.

- G. Accessories:
  - 1. Backdraft Damper: Gravity actuated, aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked
  - 2. Factory Two-Speed Fan Controller

## 2.02 GRAVITY ROOF VENTILATORS

- A. Manufacturers:
  - 1. Greenheck
  - 2. Substitutions: Section 016200 – Substitutions and Product Options.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Product Description: Square type, with aluminum housing; aluminum wire bird screen; square base to suit roof curb with continuous curb gaskets.
- C. Roof Curb: aluminum construction with continuously welded seams , hinged curb adapter, and factory installed nailer strip.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Section 013000 - Administrative Requirements: Coordination and project conditions.

### 3.02 INSTALLATION

- A. Secure roof fans and gravity ventilators with stainless steel lag screws to roof curb per manufacturers recommendations to maintain high wind rating.
- B. Install backdraft dampers on inlet to roof exhaust fans.
- C. Install safety screen where inlet or outlet is exposed.
- D. Pipe scroll drains to nearest floor drain.
- E. Install backdraft dampers on discharge of exhaust fans.
- F. Provide sheaves required for final air balance.

### 3.03 MANUFACTURER'S FIELD SERVICES

- A. Furnish services of factory trained representative for minimum of one day to start-up, calibrate controls, and instruct Owner on operation and maintenance.

3.04 CLEANING

- A. Section 017800 - Execution and Closeout Requirements: Requirements for cleaning.
- B. Vacuum clean coils and inside of fan cabinet.

3.05 DEMONSTRATION

- A. Section 017800 - Execution and Closeout Requirements: Requirements for demonstration and training.
- B. Demonstrate fan operation.

3.06 PROTECTION OF FINISHED WORK

- A. Section 017800 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Do not operate fans for until ductwork is clean, filters in place, bearings lubricated, and fan has been test-run under observation.

3.07 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 6 HVAC (FCU's, Fans, Ductwork) & Installation.

END OF SECTION

## SECTION 23 82 00

### CONVECTION HEATING AND COOLING UNITS

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

A. Section Includes:

1. Fan coil units.

B. Related Sections:

1. Section 230513 - Common Motor Requirements for HVAC Equipment: Product requirements for motors for placement by this section.
2. Section 230700 - HVAC Insulation: Execution requirements for insulation specified by this section.
3. Section 232113 - Hydronic Piping: Execution requirements for connection of chilled water, hot water, and drain piping to units specified by this section.
4. Section 232116 - Hydronic Piping Specialties: Product requirements for hydronic piping specialties for placement by this section.
5. Section 233100 - HVAC Ducts and Casings: Execution requirements for ducts specified by this section.

##### 1.02 REFERENCES

A. Air-Conditioning and Refrigeration Institute:

1. ARI 410 - Forced-Circulation Air-Cooling and Air-Heating Coils.

B. Sheet Metal and Air Conditioning Contractors:

1. SMACNA - HVAC Duct Construction Standard - Metal and Flexible.

##### 1.03 SUBMITTALS

A. Section 013323 – Shop Drawings: Submittal procedures.

B. Shop Drawings: Indicate cross sections of cabinets, grilles, bracing and reinforcing, and typical elevations. Indicate schedules of equipment and enclosures typically indicating length and number of pieces of element and enclosure, corner pieces, end caps, cap strips, access doors, pilaster covers.

C. Product Data: Submit coil and frame configurations, dimensions, materials, rows, connections, and rough-in dimensions. Submit mechanical and electrical service locations, capacities and accessories or optional items.

- D. Manufacturer's Installation Instructions: Submit assembly, support details, and connection requirements.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.04 CLOSEOUT SUBMITTALS

- A. Section 017800 - Contract Closeout Requirements: Closeout procedures.
- B. Project Record Documents: Record actual locations of components and locations of access doors in radiation cabinets required for access to valves.
- C. Operation and Maintenance Data: Submit manufacturers descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work according to Miami Dade County Department of Transportation and Public Works standards.
- B. Maintain one copy of each document on site.

#### 1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years' documented experience.

#### 1.07 PRE-INSTALLATION MEETINGS

- A. Section 013119 – Project Meetings: Pre-installation meeting.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Section 016000 - Product Requirements: Product storage and handling requirements.
- B. Accept units on site in factory packing. Inspect for damage. Store under roof.
- C. Protect coil fins from crushing and bending by leaving in shipping cases until installation, and by storing indoors. Protect coils from entry of dirt and debris with pipe caps or plugs.

#### 1.09 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

#### 1.10 WARRANTY

- A. Section 017800 - Execution and Closeout Requirements: Product warranties and product bonds.
- B. Furnish five-year manufacturer's warranty for fan-coil unit and motors.



## 1.11 EXTRA MATERIALS

- A. Section 017800 - Execution and Closeout Requirements: Spare parts and maintenance products.
- B. Furnish two sets of filters.

## PART 2 - PRODUCTS

### 2.01 FAN COIL UNITS

- A. Manufacturers:
  - 1. Daikin.
  - 2. Substitutions: Section 016000 - Product Requirements.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Coils: Evenly spaced aluminum fins mechanically bonded to copper tubes, designed for 200 psi and 220 degrees F. Furnish drain pan under cooling coil, easily removable for cleaning, with drain connection.
- C. Cabinet: 0.0598 inch thick steel with exposed corners and edges rounded, easily removed panels, glass fiber insulation.
- D. Finish: Factory apply baked primer coat on visible surfaces of enclosure or cabinet.
- E. Fans: Centrifugal forward-curved double-width wheels, statically and dynamically balanced, direct driven.
- F. Motor: Tap wound multiple speed permanent split capacitor with sleeve bearings, resiliently mounted.
- G. Control: Multiple speed switch, factory wired, located in cabinet.
- H. Filter: Easily removed 2" angle type furnished with MERV 8 deep pleated panel filters., located to filter air before coil.
- I. Capacity: As indicated on Drawings.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. For recessed units, verify recess dimensions are correct size.
- B. Verify ductwork is ready for installation.
- C. Verify concealed blocking and supports are in place and connections are correctly located.

### 3.02 INSTALLATION

- A. Install air coils in ducts and casings in accordance with SMACNA HVAC Duct Construction Standards, Metal and Flexible. Refer to Section 233100.
- B. Support air coil sections independent of piping on steel channel or double angle frames and secure to casings. Furnish frames for maximum three coil sections. Arrange supports to avoid piercing drain pans. Install with airtight seal between coil and duct or casing.
- C. Protect coils to prevent damage to fins and flanges. Comb out bent fins.
- D. Make connections to coils with unions and flanges.
- E. On water coils, install shut-off valve on supply piping and lock shield balancing valve on return piping. Locate water supply at bottom of supply header and return water connection at top. Install float operated automatic air vents at high points complete with stop valve. Install water coils to be drainable and install drain connection at low points. Refer to Section 232113.
- F. On water heating coils, and chilled water cooling coils, connect water supply piping to leaving airside of coil (counter flow arrangement). Refer to Section 232113.
- G. For cooling coils where air velocity exceeds 500 ft/min, install six break moisture eliminators of 24 gage galvanized steel.
- H. Install insulation air coil casings. Refer to Section 230700.
- I. Install drain pan and drain piping connection for cooling coils. Fabricate drain pan from 20 gage galvanized steel. Extend 3 inches from face of coil entering air side, 6 inches from face of coil leaving air side, and 4 inches from face of eliminators. Pipe drain pans individually to existing drain piping with water seal trap. Refer to Section 232113.
- J. Insulate headers located outside airflow, insulate as specified for piping. Refer to Section 230700.
- K. Install equipment exposed to finished areas after walls and ceilings are finished and painted. Avoid damage.
- L. Protection: Install finished cabinet units with protective covers during remainder of construction.
- M. Fan-Coil Units: Install at locations as indicated on Drawings. Coordinate to assure correct recess size for recessed units.
- N. Units with Cooling Coils: Install drain piping to condensate drain. Refer to Section 232113.

### 3.03 CLEANING

- A. Section 017800 - Execution and Closeout Requirements: Final cleaning.
- B. After construction is completed, including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.

- C. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.
- D. Install new filters.

3.04 PAYMENT

- C. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 3 Water Cooled Chillers & Installation.

END OF SECTION

SECTION 26 00 10

SUPPLEMENTAL REQUIREMENTS FOR ELECTRICAL

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Supplemental requirements generally applicable to the Work specified in Division 26. This Section is also referenced by related Work specified in other Divisions.

1.02 REFERENCES

A. Abbreviations and Acronyms for Electrical Terms and Units of Measure:

1. A: Ampere, unit of electrical current.
2. AC or ac: Alternating current.
3. AFCI: Arc-fault circuit interrupter.
4. AIC: Ampere interrupting capacity.
5. AL, AI, or ALUM: Aluminum.
6. ATS: Automatic transfer switch.
7. AWG: American wire gauge; see ASTM B258.
8. BAS: Building automation system.
9. BIL: Basic impulse insulation level.
10. CB: Circuit breaker.
11. CU-AL or AL-CU: Copper-aluminum.
12. DC or dc: Direct current.
13. DDC: Direct digital control (HVAC).
14. EGC: Equipment grounding conductor.
15. EMF: Electromotive force.
16. EMI: Electromagnetic interference.
17. EPS: Emergency power supply.

18. EPSS: Emergency power supply system.
19. fc: Footcandle, an internationally recognized unit of illuminance equal to one lumen per square foot or 10.76 lx. The simplified conversion  $1 \text{ fc} = 10 \text{ lx}$  in the Specifications is common practice and considered adequate precision for building construction activities. When there are conflicts, lux is the primary unit; footcandle is specified for convenience.
20. FLC: Full-load current.
21. GEC: Grounding electrode conductor.
22. GFCI: Ground-fault circuit interrupter.
23. GFPE: Ground-fault protection of equipment.
24. GND: Ground.
25. HACR: Heating, air conditioning, and refrigeration.
26. HDPE: High-density polyethylene.
27. HP or hp: Horsepower.
28. HVAC: Heating, ventilating, and air conditioning.
29. Hz: Hertz.
30. IBT: Intersystem bonding termination.
31. inch: Inch. To avoid confusion, the abbreviation "in." is not used.
32. IP: Ingress protection rating (enclosures); Internet protocol (communications).
33. IR: Infrared.
34. IS: Intrinsically safe.
35. kAIC: Kiloampere interrupting capacity.
36. kcmil or MCM: One thousand circular mils.
37. kV: Kilovolt.
38. kVA: Kilovolt-ampere.
39. kVA<sub>r</sub> or kVAR: Kilovolt-ampere reactive.
40. kW: Kilowatt.
41. kWh: Kilowatt-hour.
42. LAN: Local area network.

43. LED: Light-emitting diode.
44. Li-ion: Lithium-ion.
45. lm: Lumen, the SI derived unit of luminous flux.
46. LRC: Locked-rotor current.
47. LV: Low voltage.
48. m: Meter.
49. MCC: Motor-control center.
50. MLO: Main lugs only.
51. MV: Medium voltage.
52. MVA: Megavolt-ampere.
53. mW: Milliwatt.
54. MW: Megawatt.
55. MWh: Megawatt-hour.
56. NC: Normally closed.
57. Ni-Cd: Nickel-cadmium.
58. Ni-MH: Nickel-metal hydride.
59. NO: Normally open.
60. OCPD: Overcurrent protective device.
61. PF or pf: Power factor.
62. PLC: Programmable logic controller.
63. PLFA: Power-limited fire alarm.
64. PoE: Power over Ethernet.
65. PV: Photovoltaic.
66. PVC: Polyvinyl chloride.
67. pW: Picowatt.
68. RFI: (electrical) Radio-frequency interference; (contract) Request for interpretation.

69. RMS or rms: Root-mean-square.
70. RPM or rpm: Revolutions per minute.
71. SCADA: Supervisory control and data acquisition.
72. SCR: Silicon-controlled rectifier.
73. SPD: Surge protective device.
74. sq.: Square.
75. SWD: Switching duty.
76. TCP/IP: Transmission control protocol/Internet protocol.
77. TEFC: Totally enclosed fan-cooled.
78. TR: Tamper resistant.
79. TVSS: Transient voltage surge suppressor.
80. UL: (standards) Underwriters Laboratories, Inc.; (product categories) UL, LLC.
81. UPS: Uninterruptible power supply.
82. UV: Ultraviolet.
83. V: Volt, unit of electromotive force.
84. V(ac): Volt, alternating current.
85. V(dc): Volt, direct current.
86. VA: Volt-ampere, unit of complex electrical power.
87. VAR: Volt-ampere reactive, unit of reactive electrical power.
88. VFC: Variable-frequency controller.
89. VRLA: Valve regulated lead acid; also called "sealed lead acid (SLA)" or "valve regulated sealed lead acid."
90. W: Watt, unit of real electrical power.
91. Wh: Watt-hour, unit of electrical energy usage.
92. WR: Weather resistant.

B. Abbreviations and Acronyms for Electrical Raceway Types:

1. ARC: Aluminum rigid conduit

2. EMT: Electrical metallic tubing
3. NT: Electrical nonmetallic tubing.
4. FMC: Flexible metal conduit.
5. IMC: Steel electrical intermediate metal conduit.
6. LFMC: Liquidtight flexible metal conduit.
7. LFNC: Liquidtight flexible nonmetallic conduit.
8. PVC: Rigid PVC conduit.
9. SCH-40: Schedule 40 rigid PVC conduit.
10. SCH-80: Schedule 80 rigid PVC Conduit.
11. PVC-EB: Type EB rigid PVC concrete-encased underground conduit.
12. RGS: Rigid galvanized steel.
13. RMC: Rigid metallic conduit.

C. Abbreviations and Acronyms for Electrical Single-Conductor and Multiple-Conductor Cable Types:

1. AC: Armored cable.
2. CI: Circuit integrity cable.
3. CM: Communications general-purpose cable.
4. CMG: Communications general-purpose cable.
5. CMP: Communications plenum cable.
6. CMR: Communications riser cable.
7. MC: Metal-clad cable.
8. MI: Mineral-insulated, metal-sheathed cable.
9. MTW: (machine tool wiring) Moisture-, heat-, and oil-resistant thermoplastic cable.
10. MV: Medium-voltage cable.
11. OFC: Conductive optical fiber general-purpose cable.
12. OFCG: Conductive optical fiber general-purpose cable.
13. OFCP: Conductive optical fiber plenum cable.



14. OFCR: Conductive optical fiber riser cable.
15. OFN: Nonconductive optical fiber general-purpose cable.
16. OFNG: Nonconductive optical fiber general-purpose cable.
17. OFNP: Nonconductive optical fiber plenum cable.
18. OFNR: Nonconductive optical fiber riser cable.
19. PLTC: Power-limited tray cable.
20. PLTC-ER: Power-limited tray cable, exposed run.
21. PV: Photovoltaic cable.
22. RHH: (high heat) Thermoset rubber, heat-resistant cable.
23. RHW: Thermoset rubber, moisture-resistant cable.
24. SE: Service-entrance cable.
25. SER: Service-entrance cable, round.
26. TC: Tray cable.
27. THW: Thermoplastic, heat- and moisture-resistant cable.
28. THHN: Thermoplastic, heat-resistant cable with nylon jacket outer sheath.
29. THHW: Thermoplastic, heat- and moisture-resistant cable.
30. THWN: Thermoplastic, moisture- and heat-resistant cable with nylon jacket outer sheath.
31. XHH: Cross-linked polyethylene, heat-resistant cable.
32. XHHW: Cross-linked polyethylene, heat- and moisture-resistant cable.

#### 1.03 COORDINATION

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions:
  1. Notify Owner no fewer than seven days in advance of proposed interruption of electrical service.
  2. Do not proceed with interruption of electrical service without Owner's written permission.

#### 1.04 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data:

1. Provide emergency operation, normal operation, and preventive maintenance manuals for electrical equipment.
2. Include the following information:
  - a. Manufacturer's operating specifications.
  - b. User's guides for software and hardware.
  - c. Schedule of maintenance material items recommended to be stored at Project site.
  - d. Detailed instructions covering operation under both normal and abnormal conditions.
  - e. Time-current curves for overcurrent protective devices and manufacturer's written instructions for testing and adjusting their settings.
  - f. List of load-current and overload-relay heaters with related motor nameplate data.
  - g. Manufacturer's instructions for setting field-adjustable components.

## **PART 2 - PRODUCTS**

### **2.01 SUBSTITUTION LIMITATIONS FOR ELECTRICAL EQUIPMENT**

- A. Substitution requests for electrical equipment will be entertained under the following conditions:
  1. Substitution requests may be submitted for consideration prior to the Electrical Preconstruction Conference if accompanied by value analysis data indicating that substitution will comply with Project performance requirements while significantly increasing value for Owner throughout life of facility.
  2. Substitution requests may be submitted for consideration concurrently with submission of power system study reports when those reports indicate that substitution is necessary for safety of maintenance personnel and facility occupants.
  3. Contractor is responsible for sequencing and scheduling power system studies and electrical equipment procurement. After the Electrical Preconstruction Conference, insufficient lead time for electrical equipment delivery will not be considered a valid reason for substitution.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION OF ELECTRICAL WORK**

- A. Unless more stringent requirements are specified in the Contract Documents or manufacturers' written instructions, comply with NFPA 70 and NECA NEIS 1 for

installation of Work specified in Division 26. Consult Engineer for resolution of conflicting requirements.

3.02 CLOSEOUT ACTIVITIES

3.03 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 05 19

### LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Copper building wire.
  - 2. Metal-clad cable, Type MC.
  - 3. Fire-alarm wire and cable.
  - 4. Connectors and splices.
- B. Related Requirements:
  - 1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.

##### 1.02 ACTION SUBMITTALS

- A. Product Data: For each type of product.

#### **PART 2 - PRODUCTS**

##### 2.01 COPPER BUILDING WIRE

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. 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. Belden Inc.
  - 2. Cerro Wire LLC.
    - a. General Cable; Prysmian Group North America.
  - 3. Southwire Company, LLC.
- C. Standards:
  - 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.
- E. Conductor Insulation:
1. Type THHN and Type THWN-2: Comply with UL 83.
  2. Type THW and Type THW-2: Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
  3. Type XHHW-2: Comply with UL 44.

## 2.02 METAL-CLAD CABLE, TYPE MC

- A. Description: A factory assembly of one or more current-carrying insulated conductors in an overall metallic sheath.
- B. 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. AFC Cable Systems; Atkore International.
  2. Belden Inc.
  3. General Cable; Prysmian Group North America.
  4. Southwire Company, LLC.
- C. Standards:
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
  2. Comply with UL 1569.
  3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- D. Circuits:
1. Single circuit.
  2. Power-Limited Fire-Alarm Circuits: Comply with UL 1424.
- E. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.
- F. Ground Conductor: Insulated.

- G. Conductor Insulation:
  - 1. Type TFN/THHN/THWN-2: Comply with UL 83.
  - 2. Type XHHW-2: Comply with UL 44.
- H. Armor: Steel, interlocked.
- I. Jacket: PVC applied over armor.

#### 2.03 FIRE-ALARM WIRE AND CABLE

- 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. Allied Wire & Cable Inc.
  - 2. CommScope, Inc.
  - 3. Comtran Corporation.
  - 4. Superior Essex Inc.; subsidiary of LS Corp.
- B. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760.
- C. Signaling Line Circuits: Twisted, shielded pair, not less than No. 18 AWG.
  - 1. Circuit Integrity Cable: Twisted shielded pair, NFPA 70, Article 760, Classification CI, for power-limited fire-alarm signal service Type FPL. NRTL listed and labeled as complying with UL 1424 and UL 2196 for a two-hour rating.
- D. Non-Power-Limited Circuits: Solid-copper conductors with 600 V rated, 75 deg C, color-coded insulation, and complying with requirements in UL 2196 for a two-hour rating.
  - 1. Low-Voltage Circuits: No. 16 AWG, minimum, in pathway.
  - 2. Line-Voltage Circuits: No. 12 AWG, minimum, in pathway.
  - 3. Multiconductor Armored Cable: NFPA 70, Type MC, copper conductors, Type TFN/THHN conductor insulation, copper drain wire, copper armor with outer jacket with red identifier stripe, NRTL listed for fire-alarm and cable tray installation, plenum rated.

#### 2.04 CONNECTORS AND SPLICES

- A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

- B. 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. 3M Electrical Products.
  - 2. ABB, Electrification Business.
  - 3. AFC Cable Systems; Atkore International.
  - 4. Hubbell Utility Solutions; Hubbell Incorporated.
  - 5. O-Z/Gedney; brand of Emerson Electric Co., Automation Solutions, Appleton Group.
  - 6. TE Connectivity Ltd.
- C. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.
- D. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
  - 1. Material: Copper.
  - 2. Type: One hole with standard barrels.
  - 3. Termination: Compression.

## PART 3 - EXECUTION

### 3.01 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders:
  - 1. Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
  - 2. Copper for feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger. Conductors must be solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits:
  - 1. Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
  - 2. Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- C. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

### 3.02 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Feeders: Type THHN/THWN-2, single conductors in raceway or Type XHHW-2, single conductors in raceway.

- B. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway or Type XHHW-2, single conductors in raceway.
- D. Exposed Branch Circuits, Including in Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- E. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway Metal-clad cable, Type MC.
- F. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway or Type XHHW-2, single conductors in raceway.

### 3.03 INSTALLATION, GENERAL

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- G. Complete cable tray systems installation according to Section 260536 "Cable Trays for Electrical Systems" prior to installing conductors and cables.

### 3.04 INSTALLATION OF FIRE-ALARM WIRE AND CABLE

- A. Comply with NFPA 72.
- B. Wiring Method: Install wiring in metal pathway according to Section 270528.29 "Hangers and Supports for Communications Systems."
  - 1. Install plenum cable in environmental airspaces, including plenum ceilings.
  - 2. Fire-alarm circuits and equipment control wiring associated with fire-alarm system must be installed in a dedicated pathway system.



- a. Cables and pathways used for fire-alarm circuits, and equipment control wiring associated with fire-alarm system, may not contain any other wire or cable.
- 3. Fire-Rated Cables: Use of two-hour, fire-rated fire-alarm cables, NFPA 70, Types MI and CI, is permitted.
- 4. Signaling Line Circuits: Power-limited fire-alarm cables may be installed in the same cable or pathway as signaling line circuits.
- C. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with fire-alarm system to terminal blocks. Mark each terminal according to system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.
- D. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes; cabinets; or equipment enclosures where circuit connections are made.
- E. Color-Coding: Color-code fire-alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire-alarm system junction boxes and covers red.
- F. Risers: Install at least two vertical cable risers to serve the fire-alarm system. Separate risers in close proximity to each other with a minimum one-hour-rated wall, so the loss of one riser does not prevent receipt or transmission of signals from other floors or zones.
- G. Wiring to Remote Alarm Transmitting Device: 1 inch (25 mm) conduit between the fire-alarm control panel and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

### 3.05 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
  - 1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch (150 mm) of slack.

### 3.06 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

### 3.07 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.

### 3.08 FIELD QUALITY CONTROL

#### A. Tests and Inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors.
2. Perform each of the following visual and electrical tests:
  - a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
  - b. Test bolted connections for high resistance using one of the following:
    - 1) A low-resistance ohmmeter.
    - 2) Calibrated torque wrench.
    - 3) Thermographic survey.
  - c. Inspect compression-applied connectors for correct cable match and indentation.
  - d. Inspect for correct identification.
  - e. Inspect cable jacket and condition.
  - f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500 V(dc) for 300 V rated cable and 1000 V(dc) for 600 V rated cable for a one-minute duration.
  - g. Continuity test on each conductor and cable.
  - h. Uniform resistance of parallel conductors.
3. Initial Infrared Scanning: After Substantial Completion, but before Final Acceptance, perform an infrared scan of each splice in conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.
  - a. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  - b. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation

of deficiencies detected, remedial action taken, and observations after remedial action.

4. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.

B. Cables will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports to record the following:

1. Procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

### 3.09 PAYMENT

A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 05 26

### GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

#### **PART 1 - GENERAL**

##### 1.1 SUMMARY

###### A. Section Includes:

1. Grounding and bonding conductors.
2. Grounding and bonding clamps.
3. Grounding and bonding bushings.
4. Grounding and bonding hubs.
5. Grounding and bonding connectors.
6. Grounding and bonding busbars.
7. Grounding (earthing) electrodes.

###### B. Related Requirements:

1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.

##### 1.2 ACTION SUBMITTALS

###### A. Product Data:

1. For each type of product indicated.

#### **PART 2 - PRODUCTS**

##### 2.1 GROUNDING AND BONDING CONDUCTORS

###### A. Equipment Grounding Conductor:

1. General Characteristics: 600 V, THHN/THWN-2 or THWN-2, copper or tinned-copper wire or cable, green color, in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

###### B. Isolated Equipment Grounding Conductor:

1. General Characteristics: 600 V, THHN/THWN-2 or THWN-2, copper or tinned-copper wire or cable, green color with one or more yellow stripes, in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- C. A STM - Bare Copper Grounding and Bonding Conductor:
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. ERICO; brand of nVent Electrical plc.
    - b. Harger Lightning & Grounding; business of Harger, Inc.
  2. Referenced Standards: Complying with one or more of the following:
    - a. Soft or Annealed Copper Wire: ASTM B3
    - b. Concentric-Lay Stranded Copper Conductor: ASTM B8.
    - c. Tin-Coated Soft or Annealed Copper Wire: ASTM B33.
    - d. 19-Wire Combination Unilay-Stranded Copper Conductor: ASTM B787/B787M.

## 2.2 GROUNDING AND BONDING CLAMPS

- A. Description: Clamps suitable for attachment of grounding and bonding conductors to grounding electrodes, pipes, tubing, and rebar. Grounding and bonding clamps specified in this article are also suitable for use with communications applications; see Section 270526 "Grounding and Bonding for Communications Systems," for selection and installation guidelines.
- B. Source Limitations: Obtain products from single manufacturer.
- C. Performance Criteria:
1. Regulatory Requirements:
    - a. Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
  2. Listing Criteria:
    - a. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
    - b. Grounding and Bonding Equipment for Communications: UL CCN KDSH; including UL 467.
- D. UL KDER and KDSH - U-Bolt-Type Pipe and Rod Grounding and Bonding Clamp
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. Cooper B-line; brand of Eaton, Electrical Sector.
- b. Crouse-Hinds; brand of Eaton, Electrical Sector.
- c. ERICO; brand of nVent Electrical plc.
- d. Harger Lightning & Grounding; business of Harger, Inc.
- e. ILSCO.
- f. O-Z/Gedney; brand of Emerson Electric Co., Automation Solutions, Appleton Group.
- g. Panduit Corp.

2. General Characteristics:

- a. Clamp Material: Aluminum.
- b. Listed for outdoor use.

E. UL KDER and KDSH - Strap-Type Pipe and Rod Grounding and Bonding Clamp:

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. Burndy; brand of Hubbell Electrical Solutions; Hubbell Incorporated.
- b. Crouse-Hinds; brand of Eaton, Electrical Sector.
- c. ERICO; brand of nVent Electrical plc.
- d. O-Z/Gedney; brand of Emerson Electric Co., Automation Solutions, Appleton Group.
- e. Panduit Corp.

2. General Characteristics:

- a. Clamp Material: Aluminum, Copper or Tinned copper.
- b. Listed for outdoor use.

F. UL KDER - Beam Grounding and Bonding Clamp:

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. Panduit Corp.

2. General Characteristics: Mechanical-type, terminal, ground wire access from four directions; with dual, tin-plated or silicon bronze bolts.

G. UL KDER - Exothermically Welded Connection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. ERICO; brand of nVent Electrical plc.
  - b. Harger Lightning & Grounding; business of Harger, Inc.
2. General Characteristics: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING AND BONDING BUSHINGS

- A. Description: Bonding bushings connect conduit fittings, tubing fittings, threaded metal conduit, and unthreaded metal conduit to metal boxes and equipment enclosures, and have one or more bonding screws intended to provide electrical continuity between bushing and enclosure. Grounding bushings have provision for connection of bonding or grounding conductor and may or may not also have bonding screws.
- B. Source Limitations: Obtain products from single manufacturer.
- C. Performance Criteria:
  1. Regulatory Requirements:
    - a. Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
  2. Listing Criteria:
    - a. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
- D. UL KDER - Grounding Bushing:
  1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Crouse-Hinds; brand of Eaton, Electrical Sector.
    - b. O-Z/Gedney; brand of Emerson Electric Co., Automation Solutions, Appleton Group.
    - c. Raco Taymac Bell; brand of Hubbell Electrical Solutions; Hubbell Incorporated.
  2. General Characteristics: Threaded bushing with insulated throat and mechanical-type wire terminal.

2.4 GROUNDING AND BONDING HUBS

- A. Description: Hubs with certified grounding or bonding locknut.
- B. Source Limitations: Obtain products from single manufacturer.

C. Performance Criteria:

1. Regulatory Requirements:
  - a. Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Listing Criteria:
  - a. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.

2.5 GROUNDING AND BONDING BUSBARS

- A. Description: Miscellaneous grounding and bonding device that serves as common connection for multiple grounding and bonding conductors.
- B. Source Limitations: Obtain products from single manufacturer.
- C. Performance Criteria:
  1. Regulatory Requirements:
    - a. Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
  2. Listing Criteria:
    - a. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
- D. UL KDER - Equipment Room Grounding and Bonding Busbar:
  1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Chatsworth Products, Inc.
    - b. Cooper B-line; brand of Eaton, Electrical Sector.
    - c. ERICO; brand of nVent Electrical plc.
    - d. Harger Lightning & Grounding; business of Harger, Inc.
    - e. Panduit Corp.
  2. General Characteristics:
    - a. Bus: Rectangular bar of annealed copper.
    - b. Mounting Stand-Off Insulators: Lexan or PVC.
      - 1) Comply with UL 891 for use in 600 V switchboards, impulse tested at 5000 V.



3. Options:
  - a. Dimensions: 1/4 by 4 inch in cross section; length as indicated on Drawings.
  - b. Predrilled Hole Pattern: 9/32 inch holes spaced 1-1/8 inch apart.
  - c. Mounting Hardware: Stand-off brackets that provide 2 inch clearance to access rear of bus. Brackets and bolts must be stainless steel.

## 2.6 GROUNDING (EARTHING) ELECTRODES

- A. Description: Grounding electrodes include rod electrodes, ring electrodes, metal underground water pipes, metal building frames, concrete-encased electrodes, and pipe and plate electrodes.
- B. Source Limitations: Obtain products from single manufacturer.
- C. Performance Criteria:
  1. Regulatory Requirements:
    - a. Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
  2. Listing Criteria:
    - a. Grounding and Bonding Equipment: UL CCN KDER; including UL 467.
- D. UL KDER - Rod Electrode :
  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. ERICO; brand of nVent Electrical plc.
    - b. Harger Lightning & Grounding; business of Harger, Inc.
  2. General Characteristics: Copper-clad Stainless steel; 3/4 inch by 10 ft (19 mm by 3 m).

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine facility's grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of electrical system.
- B. Inspect test results of grounding system measured at point of electrical service equipment connection.

- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with connection of electrical service equipment only after unsatisfactory conditions have been corrected.

### 3.2 SELECTION OF BUSBARS

- A. Grounding Bus: Install in electrical equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
  - 1. Install bus horizontally, on insulated spacers 2 inch minimum from wall, 6 inch above finished floor unless otherwise indicated.
  - 2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down; connect to horizontal bus.

### 3.3 SELECTION OF GROUNDING AND BONDING CONDUCTORS

- A. Conductors: Install solid conductor for 8 AWG and smaller, and stranded conductors for 6 AWG and larger unless otherwise indicated.
  - 1. Bury at least 30 inch below grade.
  - 2. Duct-Bank Grounding Conductor: Bury 12 inch above duct bank when indicated as part of duct-bank installation.

### 3.4 SELECTION OF CONNECTORS

- A. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
  - 3. Connections to Ground Rods at Test Wells: Bolted connectors.
  - 4. Connections to Structural Steel: Welded connectors.

### 3.5 INSTALLATION

- A. Comply with manufacturer's published instructions.
- B. Reference Standards:
  - 1. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.
  - 2. Consult Architect for resolution of conflicting requirements.

C. Special Techniques:

1. Conductors:

a. Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

2. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.

a. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.

b. Make connections with clean, bare metal at points of contact.

c. Make aluminum-to-steel connections with stainless steel separators and mechanical clamps.

d. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.

e. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

f. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1) Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate adjacent parts.

2) Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

3) Use exothermic-welded connectors for outdoor locations; if disconnect-type connection is required, use bolted clamp.

g. Grounding and Bonding for Piping:

1) Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use bolted clamp connector or bolt lug-type connector to pipe flange by using one of lug bolts of flange. Where dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

2) Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with bolted connector.

- 3) Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
  - h. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.
  - i. Grounding for Steel Building Structure: Install driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 ft (18 m) apart.
3. Electrodes:
- a. Ground Rods: Drive rods until tops are 2 inch below finished floor or final grade unless otherwise indicated.
    - 1) Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
    - 2) Use exothermic welds for below-grade connections.
  - b. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 260543 "Underground Ducts and Raceways for Electrical Systems," and must be at least 12 inch deep, with cover.
    - 1) Install at least one test well for each service unless otherwise indicated. Install at ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.
  - c. Concrete-Encased Electrode (Ufer Ground):
    - 1) Fabricate in accordance with NFPA 70; use minimum of 20 ft (6 m) of bare copper conductor not smaller than 4 AWG.
      - a) If concrete foundation is less than 20 ft (6 m) long, coil excess conductor within base of foundation.
      - b) Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building's grounding grid or to grounding electrode external to concrete.
    - 2) Fabricate in accordance with NFPA 70; using electrically conductive coated steel reinforcing bars or rods, at least 20 ft (6.0 m) long. If reinforcing is in multiple pieces, connect together by usual steel tie wires or exothermic welding to create required length.
4. Grounding at Service:

- a. Equipment grounding conductors and grounding electrode conductors must be connected to ground bus. Install main bonding jumper between neutral and ground buses.
- 5. Grounding Separately Derived Systems:
  - a. Generator: Install grounding electrode(s) at generator location. Electrode must be connected to equipment grounding conductor and to frame of generator.
- 6. Equipment Grounding:
  - a. Install insulated equipment grounding conductors with feeders and branch circuits.
  - b. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
    - 1) Feeders and branch circuits.
    - 2) Lighting circuits.
    - 3) Receptacle circuits.
    - 4) Single-phase motor and appliance branch circuits.
    - 5) Three-phase motor and appliance branch circuits.
    - 6) Flexible raceway runs.
    - 7) Armored and metal-clad cable runs.
  - c. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

### 3.6 FIELD QUALITY CONTROL

- A. Tests and Inspections:
  - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
  - 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with calibrated torque wrench in accordance with manufacturer's published instructions.
- B. Nonconforming Work:
  - 1. Grounding system will be considered defective if it does not pass tests and inspections.
  - 2. Remove and replace defective components and retest.

3.7 PROTECTION

- A. After installation, protect grounding and bonding cables and equipment from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

3.08 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 05 29

### HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

#### **PART 1 - GENERAL**

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Support, anchorage, and attachment components.
  - 2. Fabricated metal equipment support assemblies.
- B. Related Requirements:
  - 1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.

##### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
    - a. Slotted support systems, hardware, and accessories.
    - b. Clamps.
    - c. Hangers.
    - d. Fasteners.
    - e. Anchors.
  - 2. Include rated capacities and furnished specialties and accessories.

##### 2.1 PERFORMANCE REQUIREMENTS

- 1. Flame Rating: Class 1.
- 2. Self-extinguishing according to ASTM D635.

##### 2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32 inch diameter holes at a maximum of 8 inch on center in at least one surface.

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. Allied Tube & Conduit; Atkore International.
    - b. Cooper B-line; brand of Eaton, Electrical Sector.
    - c. Unistrut; Atkore International.
  2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
  3. Material for Channel, Fittings, and Accessories: Stainless steel, Type 316.
  4. Channel Width: Selected for applicable load criteria.
  5. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Aluminum Slotted Support Systems: Extruded-aluminum channels and angles with minimum 13/32 inch (10 mm) diameter holes at a maximum of 8 inch (200 mm) on center in at least one surface.
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. Eaton.
    - b. Flex-Strut Inc.
    - c. Unistrut; Atkore International.
  2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
  3. Channel Material: 6063-T5 aluminum alloy.
  4. Fittings and Accessories Material: 5052-H32 aluminum alloy.
  5. Channel Width: Selected for applicable load criteria.
  6. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Conduit and Cable Support Devices: Stainless steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs must have number, size, and shape of conductor



gripping pieces as required to suit individual conductors or cables supported. Body must be made of malleable iron.

- E. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated stainless steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by the following:
      - 1) Hilti, Inc.
  - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
  - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
  - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325.
  - 6. Toggle Bolts: Stainless steel springhead type.
  - 7. Hanger Rods: Threaded steel.

## 2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

## **PART 3 - EXECUTION**

### 3.1 SELECTION

- A. Comply with the following standards for selection and installation of hangers and supports, except where requirements on Drawings or in this Section are stricter:
  - 1. NECA NEIS 101
  - 2. NECA NEIS 102.
  - 3. NECA NEIS 105.

4. NECA NEIS 111.

- B. Comply with requirements for raceways and boxes specified in Section 260533 "Raceway and Boxes for Electrical Systems."
- C. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and ERMC as scheduled in NECA NEIS 1, where its Table 1 lists maximum spacings that are less than those stated in NFPA 70. Minimum rod size must be 1/4 inch (6 mm) in diameter.
- D. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- E. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2 inch (38 mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings, and for fastening raceways to trapeze supports.

3.2 INSTALLATION OF SUPPORTS

- A. Comply with NECA NEIS 101 for installation requirements except as specified in this article.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination must be weight of supported components plus 200 lb.
- C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To New Concrete: Bolt to concrete inserts.
  - 2. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 3. To Existing Concrete: Expansion anchor fasteners.
  - 4. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inch thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inch thick.
  - 5. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69.
  - 6. To Light Steel: Sheet metal screws.
  - 7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction

boxes, transformers, and other devices on slotted-channel racks attached to substrate.

- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

### 3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M. Submit welding certificates.

### 3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inch larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use 3000 psi, 28-day compressive-strength concrete.
- C. Anchor equipment to concrete base as follows:
  - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
  - 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

### 3.5 PAINTING

- A. Touchup:
  - 1. Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shoppainting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
    - a. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

### 3.06 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 05 33

### RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

#### **PART 1 - GENERAL**

##### 1.1 SUMMARY

###### A. Section Includes:

1. Type EMT raceways and elbows.
2. Type ENT raceways and fittings.
3. Type FMC raceways.
4. Type IMC raceways.
5. Type LFMC raceways.
6. Type LFNC raceways.
7. Type PVC raceways and fittings.
8. Fittings for conduit, tubing, and cable.
9. Threaded metal joint compound.
10. Wireways and auxiliary gutters.
11. Metallic outlet boxes, device boxes, rings, and covers.
12. Termination boxes.
13. Cabinets, cutout boxes, junction boxes, pull boxes, and miscellaneous enclosures.
14. Cover plates for device boxes.

###### B. Related Requirements:

1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.
2. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" for nonmetallic underground conduit with conductors (Type NUCC).

##### 1.2 ACTION SUBMITTALS

###### A. Product Data: For the following:

1. Wireways and auxiliary gutters.

2. Cabinets, cutout boxes, and miscellaneous enclosures.

## **PART 2 - PRODUCTS**

### **2.1 TYPE EMT RACEWAYS AND ELBOWS**

- A. Performance Criteria:
  1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  2. General Characteristics: UL 797 and UL Category Control Number FJMX.
- B. Steel Electrical Metal Tubing (EMT) and Elbows:
  1. Material: Steel.
  2. Options:
    - a. Exterior Coating: Zinc.
    - b. Interior Coating: Zinc.
    - c. Minimum Trade Size: Metric designator 21 (trade size 3/4).
    - d. Colors: As indicated on Drawings.

### **2.2 TYPE ENT RACEWAYS AND FITTINGS**

- A. Performance Criteria:
  1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  2. General Characteristics: UL 1653 and UL Category Control Number FKHU.
- B. Electrical Nonmetallic Tubing (ENT) and Fittings:
  1. Options:
    - a. Minimum Trade Size: Metric designator 21 (trade size 3/4).
    - b. Fittings:
      - 1) Mechanically Attached Fittings: UL 1653.
      - 2) Solvent-Attached Fittings: UL 651.

### **2.3 TYPE FMC AND TYPE FMC-A RACEWAYS**

- A. Performance Criteria:
  1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

2. General Characteristics: UL 1 and UL Category Control Number DXUZ.
- B. Steel Flexible Metal Conduit (FMC):
1. Material: Steel.
  2. Options:
    - a. Minimum Trade Size: Metric designator 16 (trade size 1/2).
    - b. Maximum allowable length is six feet..

## 2.4 TYPE IMC RACEWAYS

- A. Performance Criteria:
1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  2. General Characteristics: UL 1242 and UL Category Control Number DYBY.
- B. Steel Electrical Intermediate Metal Conduit (IMC):
1. Options:
    - a. Exterior Coating: Zinc.
    - b. Interior Coating: Zinc.
    - c. Minimum Trade Size: Metric designator 21 (trade size 3/4).

## 2.5 TYPE LFMC RACEWAYS

- A. Performance Criteria:
1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  2. General Characteristics: UL 360 and UL Category Control Number DXHR.
- B. Steel Liquidtight Flexible Metal Conduit (LFMC-S):
1. Material: Steel.
  2. Options:
    - a. Minimum Trade Size: Metric designator 16 (trade size 1/2).
    - b. Maximum length is six feet.

## 2.6 TYPE PVC RACEWAYS AND FITTINGS

- A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  2. General Characteristics: UL 651 and UL Category Control Number DZYR.
- B. Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:
1. Dimensional Specifications: Schedule 40.
  2. Options:
    - a. Minimum Trade Size: Metric designator 21 (trade size 3/4).
    - b. Markings: For use with maximum 90 deg C wire.
- C. Schedule 80 Rigid PVC Conduit (PVC-80) and Fittings:
1. Dimensional Specifications: Schedule 80.
  2. Options:
    - a. Minimum Trade Size: Metric designator 21 (trade size 3/4).
    - b. Markings: For use with maximum 90 deg C wire.

## 2.7 FITTINGS FOR CONDUIT, TUBING, AND CABLE

- A. Performance Criteria:
1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
- B. Fittings for Type Type IMC Raceways:
1. General Characteristics: UL 514B and UL Category Control Number DWTT.
  2. Options:
    - a. Material: Steel.
    - b. Coupling Method: Compression coupling.
    - c. Conduit Fittings for Hazardous (Classified) Locations: UL 1203.
    - d. Expansion and Deflection Fittings: UL 651 with flexible external bonding jumper.
- C. Fittings for Type EMT Raceways:
1. General Characteristics: UL 514B and UL Category Control Number FKAV.
  2. Options:
    - a. Material: Steel.

- b. Coupling Method: Compression coupling.
  - c. Conduit Fittings for Hazardous (Classified) Locations: UL 1203.
  - d. Expansion and Deflection Fittings: UL 651 with flexible external bonding jumper.
- D. Fittings for Type FMC Raceways:
- 1. General Characteristics: UL 514B and UL Category Control Number ILNR.
- E. Fittings for Type LFMC and Type LFNC Raceways:
- 1. General Characteristics: UL 514B and UL Category Control Number DXAS.
- 2.8 ELECTRICALLY CONDUCTIVE CORROSION-RESISTANT COMPOUNDS FOR THREADED CONDUIT
- A. Performance Criteria:
- 1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  - 2. General Characteristics: UL 2419 and UL Category Control Number FOIZ.
- 2.9 SOLVENT CEMENTS
- A. Performance Criteria:
- 1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  - 2. General Characteristics: As recommended by conduit manufacturer in accordance with UL 514B and UL Category Control Number DWTT.
  - 3. Sustainability Characteristics:
- 2.10 WIREWAYS AND AUXILIARY GUTTERS
- A. Performance Criteria:
- 1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  - 2. General Characteristics: UL 870 and UL Category Control Number ZOYX.
- B. Metal Wireways and Auxiliary Gutters:
- 1. Additional Characteristics:
    - a. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
    - b. Finish: Manufacturer's standard enamel finish.



2. Options:
  - a. Degree of Protection: Type 3R(wet location) Type 12 unless otherwise indicated.
  - b. Wireway Covers: Hinged type unless otherwise indicated.

## 2.11 METALLIC OUTLET BOXES, DEVICE BOXES, RINGS, AND COVERS

### A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: UL 514A and UL Category Control Number QCIT.

### B. Metallic Outlet Boxes:

1. Description: Box having pry out openings, knockouts, threaded entries, or hubs in either the sides of the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.
2. Options:
  - a. Material: Sheet steel.
  - b. Sheet Metal Depth: Minimum 2 inch.

### C. Metallic Conduit Bodies:

1. Description: Means for providing access to interior of conduit or tubing system through one or more removable covers at junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.

### D. Metallic Device Boxes:

1. Description: Box with provisions for mounting wiring device directly to box.
2. Options:
  - a. Material: Sheet steel.
  - b. Sheet Metal Depth: minimum 2 inch.

### E. Metallic Extension Rings:

1. Description: Ring intended to extend sides of outlet box or device box to increase box depth, volume, or both.

## 2.12 TERMINATION BOXES

- A. Description: Enclosure for termination base consisting of lengths of bus bars, terminal strips, or terminal blocks with provision for wire connectors to accommodate incoming or outgoing conductors or both.

B. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: UL 1773 and UL Category Control Number XCKT.

2.13 CABINETS, CUTOOUT BOXES, JUNCTION BOXES, PULL BOXES, AND MISCELLANEOUS ENCLOSURES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics:
  - a. Non-Environmental Characteristics: UL 50.
  - b. Environmental Characteristics: UL 50E.

B. Indoor Sheet Metal Cabinets:

1. Description: Enclosure provided with frame, mat, or trim in which swinging door or doors are or can be hung.
2. Options:
  - a. Degree of Protection: Type 1.

C. Indoor Sheet Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Additional Characteristics: UL Category Control Number BGUZ.
3. Options:
  - a. Degree of Protection: Type 1.

D. Outdoor Sheet Metal Cabinets:

1. Description: Enclosure provided with frame, mat, or trim in which swinging door or doors are or can be hung.
2. Additional Characteristics: UL Category Control Number CYIV.
3. Options:
  - a. Degree of Protection: Type 4X.

- E. Outdoor Sheet Metal Junction and Pull Boxes:
  - 1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
  - 2. Additional Characteristics: UL Category Control Number BGUZ.
  - 3. Options:
    - a. Degree of Protection: Type 4X.
- F. Outdoor Cast-Metal Junction and Pull Boxes:
  - 1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
  - 2. Additional Characteristics: UL Category Control Number BGUZ.
  - 3. Options:
    - a. Degree of Protection: Type 4X.

#### 2.14 COVER PLATES FOR DEVICES BOXES

- A. Performance Criteria:
  - 1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
  - 2. General Characteristics:
    - a. Reference Standards: UL 514D and UL Category Control Numbers QCIT and QCMZ.
    - b. Wall plate-Securing Screws: Metal with head color to match wall plate finish.
- B. Metallic Cover Plates for Device Boxes:
  - 1. Options:
    - a. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
    - b. Wall plate Material: 0.032 inch thick Type 302/304 non-magnetic stainlesssteel with brushed finish

## **PART 3 - EXECUTION**

### **3.1 SELECTION OF RACEWAYS**

- A. Unless more stringent requirements are specified in Contract Documents or manufacturers' written instructions, comply with NFPA 70 for selection of raceways. Consult Architect for resolution of conflicting requirements.
- B. Outdoors:
  - 1. Exposed and Subject to Physical Damage: IMC.
  - 2. Exposed and Not Subject to Physical Damage: Corrosion-resistant EMT or PVC-40.
  - 3. Concealed Aboveground: IMC.
  - 4. Direct Buried: PVC-40
  - 5. Concrete Encased in Trench: PVC-40.
  - 6. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
- C. Indoors:
  - 1. Exposed and Subject to Physical Damage: IMC. Subject to physical damage includes the following locations:
    - a. Locations less than 2.5 m (8 ft) above finished floor.
    - b. Stub-ups to above suspended ceilings.
    - c. Mechanical rooms.
  - 2. Exposed and Not Subject to Physical Damage: EMT.
  - 3. Concealed in Ceilings and Interior Walls and Partitions: EMT.
  - 4. Damp or Wet Locations: IMC.
  - 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
- D. Raceway Fittings: Select fittings in accordance with NEMA FB 2.10 guidelines.
  - 1. ERMC and IMC: Provide threaded type fittings unless otherwise indicated.

### **3.2 SELECTION OF BOXES AND ENCLOSURES**

- A. Unless more stringent requirements are specified in Contract Documents or manufacturers' written instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Architect for resolution of conflicting requirements.
- B. Degree of Protection:

1. Outdoors:
  - a. Type 4X unless otherwise indicated.
  - b. Locations in-Ground or Exposed to Corrosive Agents: Type 4X.
  - c. Locations in-Ground or Exposed to Corrosive Agents Where Mechanism Must Operate When Ice Covered: Type 3SX.
2. Indoors:
  - a. Type 1 unless otherwise indicated.
  - b. Damp or Dusty Locations: Type 12.
  - c. Surface Mounted in Kitchens and Other Locations Exposed to Oil or Coolants: Type 12.

### 3.3 INSTALLATION OF RACEWAYS

- A. Installation Standards:
  1. Unless more stringent requirements are specified in Contract Documents or manufacturers' written instructions, comply with NFPA 70 for installation of raceways. Consult Architect for resolution of conflicting requirements.
  2. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
  3. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
  4. Comply with NECA NEIS 101 for installation of steel raceways.
  5. Comply with NECA NEIS 102 for installation of aluminum raceways.
  6. Comply with NECA NEIS 111 for installation of nonmetallic raceways.
  7. Install raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.
  8. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to metric designator 35 (trade size 1-1/4) and insulated throat metal bushings on metric designator 41 (trade size 1-1/2) and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

9. Raceway Terminations at Locations Subject to Moisture or Vibration:
  - a. Provide insulating bushings to protect conductors, including conductors smaller than No. 4 AWG. Install insulated throat metal grounding bushings on service conduits.

B. General Requirements for Installation of Raceways:

1. Complete raceway installation before starting conductor installation.
2. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 ft above finished floor.
3. Install no more than equivalent of three 90-degree bends in conduit run. Support within 12 inch of changes in direction.
4. Make bends in raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.
5. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
6. Support conduit within 12 inch of enclosures to which attached.
7. Install raceway sealing fittings at accessible locations in accordance with NFPA 70 and fill them with listed sealing compound. For concealed raceways, install fitting in flush steel box with blank cover plate having finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings in accordance with NFPA 70.
8. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal interior of raceways at the following points:
  - a. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  - b. Where an underground service raceway enters a building or structure.
  - c. Conduit extending from interior to exterior of building.
  - d. Conduit extending into pressurized duct and equipment.
  - e. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
  - f. Where otherwise required by NFPA 70.
9. Do not install raceways or electrical items on "explosion-relief" walls or rotating equipment.
10. Do not install conduits within 2 inch of the bottom side of a metal deck roof.

11. Keep raceways at least 6 inch away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
12. Cut conduit perpendicular to the length. For conduits metric designator 53 (trade size 2) and larger, use roll cutter or a guide to make cut straight and perpendicular to the length. Ream inside of conduit to remove burrs.
13. Install pull wires in empty raceways. Provide polypropylene or monofilament plastic line with not less than 200 lb tensile strength. Leave at least 12 inch of slack at both ends of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

C. Requirements for Installation of Specific Raceway Types:

1. Do not install aluminum raceways or fittings in contact with concrete or earth.
2. Type IMC:
  - a. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound that maintains electrical conductivity to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
3. Types FMC, LFMC, and LFNC:
  - a. Comply with NEMA RV 3. Provide a maximum of 72 inch of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
4. Types PVC:
  - a. Do not install Type PVC or Type EPEC conduit where ambient temperature exceeds 122 deg F. Conductor ratings must be limited to 75 deg C except where installed in a trench outside buildings with concrete encasement, where 90 deg C conductors are permitted.
  - b. Comply with manufacturer's written instructions for solvent welding and fittings.

D. Raceways Embedded in Slabs:

1. Run raceways larger than metric designator 27 (trade size 1) parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place raceway close to slab support. Secure raceways to reinforcement at maximum 10 ft intervals.
2. Arrange raceways to cross building expansion joints with expansion fittings at right angles to the joint.
3. Arrange raceways to ensure that each is surrounded by a minimum of 1 inch of concrete without voids.
4. Do not embed threadless fittings in concrete unless locations have been specifically approved by Architect.

5. Change from ENT to IMC before rising above floor.
- E. Stub-ups to Above Recessed Ceilings:
1. Provide EMT, IMC, or ERMC for raceways.
  2. Provide a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- F. Raceway Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.
1. ERMC-S-PVC: Provide only fittings listed for use with this type of conduit. Patch and seal joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Provide sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
  2. EMT: Provide compression, steel fittings. Comply with NEMA FB 2.10.
  3. Flexible Conduit: Provide only fittings listed for use with flexible conduit type. Comply with NEMA FB 2.20.
- G. Expansion-Joint Fittings:
1. Install in runs of aboveground PVC that are located where environmental temperature change may exceed 30 deg F and that have straight-run length that exceeds 25 ft. Install in runs of aboveground ERMC and EMT conduit that are located where environmental temperature change may exceed 100 deg F and that have straight-run length that exceeds 100 ft.
  2. Install type and quantity of fittings that accommodate temperature change listed for the following locations:
    - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
    - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
    - c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
    - d. Attics: 135 deg F temperature change.
  3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.00078 inch per foot of length of straight run per deg F of temperature change for metal conduits.
  4. Install expansion fittings at locations where conduits cross building or structure expansion joints.
  5. Install expansion-joint fitting with position, mounting, and piston setting selected in accordance with manufacturer's written instructions for conditions at specific



location at time of installation. Install conduit supports to allow for expansion movement.

- H. Raceways Penetrating Rooms or Walls with Acoustical Requirements:
  - 1. Seal raceway openings on both sides of rooms or walls with acoustically rated putty or firestopping.

### 3.4 INSTALLATION OF BOXES AND ENCLOSURES

- A. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures.
- B. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- C. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box, whether installed indoors or outdoors.
- D. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- E. Locate boxes so that cover or plate will not span different building finishes.
- F. Support boxes in recessed ceilings independent of ceiling tiles and ceiling grid.
- G. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for purpose.
- H. Fasten junction and pull boxes to, or support from, building structure. Do not support boxes by conduits.
- I. Set metal floor boxes level and flush with finished floor surface.
- J. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.
- K. Do not install aluminum boxes, enclosures, or fittings in contact with concrete or earth.
- L. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to ensure a continuous ground path.
- M. Boxes and Enclosures in Areas or Walls with Acoustical Requirements:
  - 1. Seal openings and knockouts in back and sides of boxes and enclosures with acoustically rated putty.
  - 2. Provide gaskets for wall plates and covers.

3.5 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

3.6 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

3.7 CLEANING

- A. Boxes: Remove construction dust and debris from device boxes, outlet boxes, and floor-mounted enclosures before installing wall plates, covers, and hoods.

3.08 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 05 53

### IDENTIFICATION FOR ELECTRICAL SYSTEMS

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Labels.
  - 2. Cable ties.
  - 3. Miscellaneous identification products.
- B. Related Requirements:
  - 1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.

##### 1.02 ACTION SUBMITTALS

- A. Product Data:
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.

#### **PART 2 - PRODUCTS**

##### 2.01 PERFORMANCE REQUIREMENTS

- A. Comply with ASME A13.1 and IEEE C2.
- B. Comply with 29 CFR 1910.144 for color identification of hazards; 29 CFR 1910.145 for danger, caution, warning, and safety instruction signs and tags; and the following:
  - 1. Fire-protection and fire-alarm equipment, including raceways, must be finished, painted, or suitably marked safety red.
  - 2. Ceiling-mounted hangers, supports, cable trays, and raceways must be finished, painted, or suitably marked safety yellow where less than 7.7 ft above finished floor.
- C. Signs, labels, and tags required for personnel safety must comply with the following standards:
  - 1. Safety Colors: NEMA Z535.1.
  - 2. Facility Safety Signs: NEMA Z535.2.

3. Safety Symbols: NEMA Z535.3.
  4. Product Safety Signs and Labels: NEMA Z535.4.
  5. Safety Tags and Barricade Tapes for Temporary Hazards: NEMA Z535.5.
- D. Comply with NFPA 70E requirements for arc-flash warning labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, must comply with UL 969.
- F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

## 2.02 COLOR AND LEGEND REQUIREMENTS

- A. Raceways and Cables Carrying Circuits at 1000 V or Less:
1. Black letters on orange field.
  2. Legend: Indicate voltage and system or service type.
- B. Color-Coding for Phase- and Voltage-Level Identification, 1000 V or Less: Use colors listed below for ungrounded conductors.
1. Color must be factory applied or field applied for sizes larger than 8 AWG if authorities having jurisdiction permit.
  2. Colors for 208Y/120 V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.
    - c. Phase C: Blue.
  3. Colors for 240 V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.
  4. Colors for 480Y/277 V Circuits:
    - a. Phase A: Brown.
    - b. Phase B: Orange.
    - c. Phase C: Yellow.
  5. Color for Neutral: White or gray.

6. Color for Equipment Grounds: Green or Green with yellow stripe.
  7. Colors for Isolated Grounds: Green with two or more yellow stripes.
- C. Warning Label Colors:
1. Identify system voltage with black letters on orange background.
- D. Warning labels and signs must include, but are not limited to, the following legends:
1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
  2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 3 FEET MINIMUM."
- E. Equipment Identification Labels:
1. Black letters on white field.

### 2.03 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.
- B. Self-Adhesive Wraparound Labels: Preprinted, 3 mil thick, vinyl flexible label with acrylic pressure-sensitive adhesive.
1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over legend. Labels sized such that clear shield overlaps entire printed legend.
  2. Marker for Labels:
    - a. Permanent, waterproof, black ink marker recommended by tag manufacturer.
    - b. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

### 2.04 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
1. Minimum Width: 3/16 inch.
  2. Tensile Strength at 73 deg F in accordance with ASTM D638: 12,000 psi.
  3. Temperature Range: Minus 40 to plus 185 deg F.
  4. Color: Black, except where used for color-coding.

- B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 deg F in accordance with ASTM D638: 12,000 psi.
  - 3. Temperature Range: Minus 40 to plus 185 deg F.
  - 4. Color: Black.
- C. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 deg F in accordance with ASTM D638: 7000 psi.
  - 3. UL 94 Flame Rating: 94V-0.
  - 4. Temperature Range: Minus 50 to plus 284 deg F.
  - 5. Color: Black.

#### 2.05 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless steel screws or stainless steel machine screws with nuts and flat and lock washers.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

#### 3.02 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.
- G. System Identification for Raceways and Cables under 1000 V: Identification must completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
  - 1. Secure tight to surface of conductor, cable, or raceway.
- H. System Identification for Raceways and Cables over 1000 V: Identification must completely encircle cable or conduit. Place adjacent identification of two-color markings in contact, side by side.
  - 1. Secure tight to surface of conductor, cable, or raceway.
- I. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- J. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from floor.
- K. Accessible Fittings for Raceways: Identify cover of junction and pull box of the following systems with wiring system legend and system voltage. System legends must be as follows:
  - 1. "EMERGENCY POWER."
  - 2. "POWER."
  - 3. "UPS."
- L. Vinyl Wraparound Labels:
  - 1. Secure tight to surface of raceway or cable at location with high visibility and accessibility.
  - 2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to location and substrate.
- M. Self-Adhesive Labels:
  - 1. Install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
  - 2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on 1-1/2 inch high label; where two lines of text are required, use labels 2 inch high.
- N. Heat-Shrink, Preprinted Tubes: Secure tight to surface at location with high visibility and accessibility.
- O. Marker Tapes: Secure tight to surface at location with high visibility and accessibility.

- P. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.
- Q. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's instructions.
- R. Metal Tags:
  - 1. Place in location with high visibility and accessibility.
  - 2. Secure using UV-stabilized cable ties.
- S. Nonmetallic Preprinted Tags:
  - 1. Place in location with high visibility and accessibility.
  - 2. Secure using UV-stabilized cable ties.
- T. Baked-Enamel Signs:
  - 1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
  - 2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on minimum 1-1/2 inch high sign; where two lines of text are required, use signs minimum 2 inch high.
- U. Metal-Backed Butyrate Signs:
  - 1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
  - 2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on 1-1/2 inch high sign; where two lines of text are required, use labels 2 inch high.
- V. Laminated Acrylic or Melamine Plastic Signs:
  - 1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
  - 2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on 1-1/2 inch high sign; where two lines of text are required, use labels 2 inch high.
- W. Cable Ties: General purpose, for attaching tags, except as listed below:
  - 1. Outdoors: UV-stabilized nylon.
  - 2. In Spaces Handling Environmental Air: Plenum rated.

### 3.03 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.



- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. Concealed Raceways, Duct Banks, More Than 1000 V, within Buildings: Tape and stencil. Stencil legend "DANGER - CONCEALED HIGH-VOLTAGE WIRING" with 3 inch high, black letters on 20 inch centers.
  - 1. Locate identification at changes in direction, at penetrations of walls and floors, and at 10 ft maximum intervals.
  - 2. Locate identification at changes in direction, at penetrations of walls and floors, at 50 ft maximum intervals in straight runs, and at 25 ft maximum intervals in congested areas.
- D. Accessible Fittings for Raceways and Cables within Buildings: Identify cover of junction and pull box of the following systems with self-adhesive labels containing wiring system legend and system voltage. System legends must be as follows:
  - 1. "EMERGENCY POWER."
  - 2. "POWER."
  - 3. "UPS."
- E. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.
- F. Concealed Raceways and Duct Banks, More Than 1000 V, within Buildings: Apply floor marking tape to the following finished surfaces:
  - 1. Floor surface directly above conduits running beneath and within 12 inch of floor that is in contact with earth or is framed above unexcavated space.
  - 2. Wall surfaces directly external to raceways concealed within wall.
  - 3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in building, or concealed above suspended ceilings.
- G. Workspace Indication: Apply floor marking tape to finished surfaces. Show working clearances in direction of access to live parts. Workspace must comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- H. Instructional Signs: Self-adhesive labels, including color code for grounded and ungrounded conductors.
- I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Metal-backed, butyrate warning signs.
  - 1. Apply to exterior of door, cover, or other access.
  - 2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:
    - a. Power-transfer switches.

- b. Controls with external control power connections.
- J. Arc Flash Warning Labeling: Self-adhesive labels.
- K. Equipment Identification Labels:
  - 1. Indoor Equipment: Metal-backed butyrate signs.
  - 2. Outdoor Equipment: Stenciled legend 4 inch high.
  - 3. Equipment to Be Labeled:
    - a. Panelboards: Typewritten directory of circuits in location provided by panelboard manufacturer. Panelboard identification must be in form of self-adhesive, engraved, laminated acrylic or melamine label.
    - b. Enclosures and electrical cabinets.
    - c. Access doors and panels for concealed electrical items.
    - d. Enclosed switches.
    - e. Enclosed circuit breakers.
    - f. Enclosed controllers.
    - g. Variable-speed controllers.
    - h. Push-button stations.

### 3.04 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 22 13

### LOW-VOLTAGE DISTRIBUTION TRANSFORMERS

#### PART 1 - GENERAL

##### 1.01 SUMMARY

###### A. Section Includes:

1. Distribution, dry-type transformers with nominal primary and secondary rating of 600 V and less, with capacities up to 1500 kVA.
2. Furnish and install single-phase and three-phase general purpose individually mounted dry-type transformers of the two-windings type, self-cooled as specified herein, and as shown on the Drawings.
3. The provisions of this Section shall apply to all dry-type distribution transformers, except as indicated otherwise.

###### B. Related Requirements:

1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.
2. Section 260011 "Facility Performance Requirements for Electrical" for seismic-load, wind-load, acoustical, and other field conditions applicable to Work specified in this Section.

##### 1.02 ACTION SUBMITTALS

###### A. Product Data:

1. For each type of product.
  - a. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type and size of transformer.
  - b. Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, and performance for each type and size of transformer.

###### B. Shop Drawings:

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of field connections.
2. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment.
3. Include diagrams for power, signal, and control wiring.

###### C. Field Quality-Control Submittals:

1. Field quality-control reports.

### 1.03 DELIVERY, STORAGE, AND HANDLING

- A. Inspection: On receipt, inspect for and note shipping damage to packaging and transformer.
  1. If manufacturer packaging is removed for inspection, and transformer will be stored after inspection, re-package transformer using original or new packaging materials that provide protection equivalent to manufacturer's packaging.
- B. Storage: Store in warm, dry, and temperature-stable location in original shipping packaging.
- C. Temporary Heating: Apply temporary heat in accordance with manufacturer's published instructions within enclosure of ventilated-type units, throughout periods during which equipment is not energized and when transformer is not in space that is continuously under normal control of temperature and humidity.
- D. Handling: Follow manufacturer's instructions for lifting and transporting transformers.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following Manufacturers are acceptable.
  1. General Electrical
  2. Eaton
  3. Square D
- B. The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed above are not relieved from meeting these specifications in their entirety.

### 2.02 GENERAL TRANSFORMER REQUIREMENTS

- A. Description: Factory-assembled and -tested, air-cooled units for 60 Hz service.
- B. Electrical Components, Devices, and Accessories: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
- C. Transformers Rated 15 kVA and Larger:
  1. Comply with 10 CFR 431 (DOE 2016) efficiency levels.
  2. Marked as compliant with DOE 2016 efficiency levels by qualified electrical testing laboratory recognized by authorities having jurisdiction.
- D. Shipping Restraints: Paint or otherwise color-code bolts, wedges, blocks, and other restraints that are to be removed after installation and before energizing. Use fluorescent colors that are easily identifiable inside transformer enclosure.

## 2.03 DISTRIBUTION TRANSFORMERS

- A. Comply with NFPA 70.
- B. Cores: Electrical grade, non-aging silicon steel with high permeability and low hysteresis losses.
  - 1. One leg per phase.
  - 2. Core volume must allow efficient transformer operation at 10 percent above nominal tap voltage.
  - 3. Grounded to enclosure.
- C. Coils: Continuous windings except for taps.
  - 1. Transformer core shall be constructed with high-grade, nonaging, silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Maximum magnetic flux densities shall be substantially below the saturation point. The transformer core volume shall allow efficient transformer operation at 10% above the nominal tap voltage. The core laminations shall be tightly clamped and compressed. Coils shall be wound of electrical grade copper with continuous wound construction.
  - 2. On single and three-phase units rated up to 15 kVA, the core and coil assembly shall be completely encapsulated in a proportioned mixture of resin and aggregate to provide a moisture proof, shock-resistant seal. The core and coil encapsulation system shall minimize the sound level. Enclosure construction shall be encapsulated, non-ventilated, enclosure, with lifting eyes.
  - 3. On single and three-phase units, 15kVA and above, the core and coil assembly shall be impregnated with non-hydroscopic, thermosetting varnish and cured to reduced hot spots and seal out moisture. Enclosure construction shall be a ventilated enclosure. All ventilation openings shall be protected against falling dirt. The assembly shall be installed on vibration-absorbing pads.
- D. Enclosure:
  - 1. Core and coil must be encapsulated within resin compound to seal out moisture and air.
  - 2. KVA Ratings: Based on convection cooling only and not relying on auxiliary fans.
  - 3. Wiring Compartment: Sized for conduit entry and wiring installation.
  - 4. Environmental Protection:
    - a. Indoor: UL 50E Type 4X, Stainless Steel.
- E. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and four 2.5 percent taps below normal full capacity.
- F. Insulation Class, 30 kVA and Larger: 220 deg C, UL-component-recognized insulation system with maximum of 150 deg C rise above 40 deg C ambient temperature.
- G. Grounding: Provide ground-bar kit or ground bar installed on inside of transformer enclosure.

## 2.04 IDENTIFICATION

- A. Nameplates:
  - 1. Engraved, laminated-acrylic or melamine plastic signs for distribution transformers, mounted with corrosion-resistant screws. Nameplates and label products are specified in Section 260553 "Identification for Electrical Systems."

## 2.05 SOURCE QUALITY CONTROL

- A. Testing Administrant: Engage qualified electrical testing agency to evaluate transformer.
- B. Factory Tests and Inspections: Test and inspect assembled system, by, or under supervision of, qualified electrical testing laboratory recognized by authorities having jurisdiction, in accordance with IEEE C57.12.01 and IEEE C57.12.91 before delivering to site. Affix label with name and date of manufacturer's certification of system compliance on control units.
  - 1. Resistance measurements of windings at rated voltage connections and at tap connections.
  - 2. Ratio tests at rated voltage connections and at tap connections.
  - 3. Phase relation and polarity tests at rated voltage connections.
  - 4. No load losses, and excitation current and rated voltage at rated voltage connections.
  - 5. Impedance and load losses at rated current and rated frequency at rated voltage connections.
  - 6. Applied and induced tensile tests.
  - 7. Regulation and efficiency at rated load and voltage.
  - 8. Insulation-Resistance Tests:
    - a. Line-side to ground.
    - b. Load-side to ground.
    - c. Line-side to load-side.
  - 9. Temperature tests.
- C. Nonconforming Work:
  - 1. System equipment that does not pass tests and inspections will be considered defective.
- D. Prepare test and inspection reports.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine conditions for compliance with enclosure- and ambient-temperature requirements for transformers.
- B. Verify that field measurements are as needed to maintain working clearances required by NFPA 70 and manufacturer's published instructions.
- C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.
- D. Verify that ground connections are in place and requirements in Section 260526 "Grounding and Bonding for Electrical Systems" have been met.
- E. Environment: Enclosures must be rated for environment in which they are located. Covers for UL 50E, Type 4X enclosures may not cause accessibility problems.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. Install wall-mounted transformers level and plumb with wall brackets fabricated by transformer manufacturer.
  - 1. Coordinate installation of wall-mounted and structure-hanging supports with actual transformer provided.
- B. Secure transformer to concrete base in accordance with manufacturer's published instructions.
- C. Secure covers to enclosure and tighten bolts to manufacturer-recommended torques to reduce noise generation.
- D. Remove shipping bolts, blocking, and wedges.

### 3.03 CONNECTIONS

- A. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- C. Tighten electrical connectors and terminals in accordance with manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- D. Provide flexible connections at conduit and conductor terminations and supports to eliminate sound and vibration transmission to building structure.

### 3.04 FIELD QUALITY CONTROL

- A. Tests and Inspections:
  - 1. Small (Up to 167 kVA Single-Phase or 500 kVA Three-Phase) Dry-Type Transformer Field Tests:
    - a. Electrical Tests:
      - 1) Verify correct secondary voltage, phase-to-phase and phase-to-neutral, after energization and prior to loading.
- B. On completion of satisfactory testing of units, attach dated and signed "Satisfactory Test" label to tested components.

### 3.05 ADJUSTING

- A. Record transformer secondary voltage at unit for at least 48 hours of typical occupancy period. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 5 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions. Submit recording and tap settings as test results.

B. Output Settings Report: Prepare written report recording output voltages and tap settings.

3.06 CLEANING

A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.

3.07 PAYMENT

A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION



## SECTION 262416

### PANELBOARDS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Distribution panelboards.
2. Lighting and appliance branch-circuit panelboards.
3. Load centers.
4. Electronic-grade panelboards.

##### 1.2 DEFINITIONS

- A. ATS: Acceptance testing specification.
- B. GFCI: Ground-fault circuit interrupter.
- C. GFEP: Ground-fault equipment protection.
- D. HID: High-intensity discharge.
- E. MCCB: Molded-case circuit breaker.
- F. SPD: Surge protective device.
- G. VPR: Voltage protection rating.

##### 1.3 ACTION SUBMITTALS

###### A. Product Data: For each type of panelboard.

1. Include materials, switching and overcurrent protective devices, SPDs, accessories, and components indicated.
2. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

###### B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details.
2. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.
3. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
4. Detail bus configuration, current, and voltage ratings.
5. Short-circuit current rating of panelboards and overcurrent protective devices.
6. Include evidence of NRTL listing for series rating of installed devices.

7. Include evidence of NRTL listing for SPD as installed in panelboard.
8. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
9. Include wiring diagrams for power, signal, and control wiring.
10. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graph paper; include selectable ranges for each type of overcurrent protective device. Include an Internet link for electronic access to downloadable PDF of the coordination curves.

#### 1.4 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. Keys: Two spares for each type of panelboard cabinet lock.
  2. Circuit Breakers Including GFCI and GFEP Types: Four spares for each panelboard.
  3. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
  4. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001 or ISO 9002 certified.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.
- B. Handle and prepare panelboards for installation according to NEMA PB 1.

#### 1.7 FIELD CONDITIONS

- A. Environmental Limitations:
  1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
  2. Rate equipment for continuous operation.
- B. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
  1. Notify Owner no fewer than two days in advance of proposed interruption of electric service.
  2. Do not proceed with interruption of electric service without Owner's written permission.
  3. Comply with NFPA 70E.

## 1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace panelboards that fail in materials or workmanship within specified warranty period.
  - 1. Panelboard Warranty Period: 18 months from date of Substantial Completion.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace SPD that fails in materials or workmanship within specified warranty period.
  - 1. SPD Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PANELBOARDS AND LOAD CENTERS COMMON REQUIREMENTS

- A. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- B. 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.
- C. Comply with NEMA PB 1.
- D. Comply with NFPA 70.
- E. Enclosures: Flush and Surface-mounted, dead-front cabinets.
  - 1. Rated for environmental conditions at installed location.
    - a. Indoor Dry and Clean Locations: NEMA 250, Type 1 (unless plans specify otherwise)
    - b. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 5 (unless plans specify otherwise).
  - 2. Height: 84 inches maximum.
  - 3. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Trims shall cover all live parts and shall have no exposed hardware.
  - 4. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims shall cover all live parts and shall have no exposed hardware.
  - 5. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
  - 6. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
  - 7. Finishes:
    - a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
    - b. Back Boxes: Same finish as panels and trim.

- F. Incoming Mains:
  - 1. Location: Bottom.
  - 2. Main Breaker: Main lug interiors up to 400 amperes shall be field convertible to main breaker.
  
- G. Phase, Neutral, and Ground Buses:
  - 1. Material: Tin-plated aluminum.
    - a. Plating shall run entire length of bus.
    - b. Bus shall be fully rated the entire length.
  - 2. Interiors shall be factory assembled into a unit. Replacing switching and protective devices shall not disturb adjacent units or require removing the main bus connectors.
  - 3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
  - 4. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box.
  - 5. Full-Sized Neutral: Equipped with full-capacity bonding strap for service entrance applications. Mount electrically isolated from enclosure. Do not mount neutral bus in gutter.
  
- H. Conductor Connectors: Suitable for use with conductor material and sizes.
  - 1. Terminations shall allow use of 75 deg C rated conductors without derating.
  - 2. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
  - 3. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.
  - 4. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.

## 2.2 PERFORMANCE REQUIREMENTS

### 2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Subject to compliance with Contract Documents, the following Manufacturers are acceptable:
  - 1. Eaton / Cutler Hammer
  - 2. Schneider Electrical Square D
  - 3. Siemens
  
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
  
- C. Mains: Circuit breaker or lugs only.
  
- D. Branch Overcurrent Protective Devices: Plug-in circuit breakers, replaceable without disturbing adjacent units.
  
- E. Contactors in Main Bus: NEMA ICS 2, Class A, mechanically held, general-purpose controller, with same short-circuit interrupting rating as panelboard.
  
- F. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

## 2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.
  - 1. Thermal-Magnetic Circuit Breakers:
    - a. Inverse time-current element for low-level overloads.
    - b. Instantaneous magnetic trip element for short circuits.
    - c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
  - 2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
  - 3. Electronic Trip Circuit Breakers:
    - a. RMS sensing.
    - b. Field-replaceable rating plug or electronic trip.
    - c. Field-Adjustable Settings:
      - 1) Instantaneous trip.
      - 2) Long- and short-time pickup levels.
      - 3) Long and short time adjustments.
      - 4) Ground-fault pickup level, time delay, and I squared T response.
  - 4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.
  - 5. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).
  - 6. GFEP Circuit Breakers: Class B ground-fault protection (30-mA trip).
  - 7. Arc-Fault Circuit Interrupter Circuit Breakers: Comply with UL 1699; 120/240-V, single-pole configuration.
  - 8. Sub-feed Circuit Breakers: Vertically mounted.
  - 9. MCCB Features and Accessories:
    - a. Standard frame sizes, trip ratings, and number of poles.
    - b. Breaker handle indicates tripped status.
    - c. UL listed for reverse connection without restrictive line or load ratings.
    - d. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
    - e. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and HID lighting circuits.
    - f. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.

## 2.5 IDENTIFICATION

- A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.
- B. Breaker Labels: Faceplate shall list current rating, UL and IEC certification standards, and AIC rating.
- C. Circuit Directory: Computer-generated circuit directory mounted inside panelboard door with transparent plastic protective cover.

1. Circuit directory shall identify specific purpose with detail sufficient to distinguish it from all other circuits.

## 2.6 ACCESSORY COMPONENTS AND FEATURES

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify actual conditions with field measurements prior to ordering panelboards to verify that equipment fits in allocated space in, and comply with, minimum required clearances specified in NFPA 70.
- B. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.
- C. Examine panelboards before installation. Reject panelboards that are damaged, rusted, or have been subjected to water saturation.
- D. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- B. Comply with NECA 1.
- C. Install panelboards and accessories according to NEMA PB 1.1.
- D. Equipment Mounting:
  1. Attach panelboard to the vertical finished or structural surface behind the panelboard.
- E. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.
- F. Mount panelboard cabinet plumb and rigid without distortion of box.
- G. Install overcurrent protective devices and controllers not already factory installed.
  1. Set field-adjustable, circuit-breaker trip ranges.
  2. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written instructions.

- H. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
- I. Install filler plates in unused spaces.

### 3.3 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems."
- B. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- C. Device Nameplates: Label each branch circuit device in power panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- D. Install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems" identifying source of remote circuit.

### 3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
  - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
  - 2. Test continuity of each circuit.
- C. Tests and Inspections:
  - 1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers stated in NETA ATS, Paragraph 7.6 Circuit Breakers.
  - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Panelboards will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results, with comparisons of the two scans. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

### 3.5 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.
- B. Set field-adjustable circuit-breaker trip ranges as indicated.

### 3.06 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 28 16

### ENCLOSED SWITCHES AND CIRCUIT BREAKERS

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

###### A. Section Includes:

1. Fusible switches.
2. Non-fusible switches.
3. Molded-case circuit breakers (MCCBs).
4. Enclosures.

###### B. Related Requirements:

1. Section 260010 "Supplemental Requirements for Project requirements applicable to Work specified in this Section.

##### 1.02 DEFINITIONS

###### A. GFEP: Ground-fault circuit-interrupter for equipment protection.

###### B. GFLS: Ground-fault circuit-interrupter for life safety.

1. Electrical" for additional abbreviations, definitions, sub
2. SPDT: Single pole, double throw. Submittals, qualifications, testing agencies, and other

##### 1.03 ACTION SUBMITTALS

###### A. Product Data:

1. For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
2. Enclosure types and details for types other than UL 50E, Type 1.
3. Current and voltage ratings.
4. Short-circuit current ratings (interrupting and withstand, as appropriate).
5. Include evidence of qualified electrical testing laboratory listing for series rating of installed devices.



6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
  7. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.
- B. Shop Drawings: For enclosed switches and circuit breakers.
1. Include plans, elevations, sections, details, and attachments to other work.
  2. Include wiring diagrams for power, signal, and control wiring.
- 1.04 MAINTENANCE MATERIAL SUBMITTALS
- A. Spare Parts: Furnish to Owner spare parts, for repairing enclosed switches and circuitbreakers, that are packaged with protective covering for storage on-site and identified with labels describing contents. Include the following:
1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.05 WARRANTY

- A. Special Installer Extended Warranty: Installer warrants that fabricated and installed enclosed switches and circuit breakers perform in accordance with specified requirements and agrees to repair or replace components or products that fail to perform as specified within extended-warranty period.
1. Extended-Warranty Period: Two years from date of Substantial Completion; full coverage for labor, materials, and equipment.

**PART 2 - PRODUCTS**

2.01 GENERAL REQUIREMENTS

- A. Source Limitations: Obtain products from single manufacturer.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- C. Electrical Components, Devices, and Accessories: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.02 FUSIBLE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Eaton.

2. Siemens Industry, Inc., Energy Management Division.
  3. Square D; Schneider Electric USA.
- B. Type HD, Heavy Duty:
1. Single throw.
  2. Three pole.
  3. 600 V(ac).
  4. 1200 A and smaller.
  5. UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate indicated fuses.
  6. Lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- C. Accessories:
1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
  2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors. Provide for all switches indicated to contain neutral conductors.
  3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
  4. Service-Rated Switches: Labeled for use as service equipment.
  5. Hookstick Handle: Allows use of hookstick to operate handle.
  6. Lugs: Mechanical type, suitable for number, size, and conductor material, unless noted otherwise.

## 2.03 NON-FUSIBLE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Eaton.
  2. Siemens Industry, Inc., Energy Management Division.
  3. Square D; Schneider Electric USA.
- B. Type HD, Heavy Duty, Three Pole, Single Throw, 600 V(ac), 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors. Provide for all switches indicated to contain neutral conductors.
3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
4. Service-Rated Switches: Labeled for use as service equipment.
5. Hookstick Handle: Allows use of hookstick to operate handle.
6. Lugs: Mechanical type, suitable for number, size, and conductor material, unless noted otherwise.

2.04 MOLDED-CASE CIRCUIT BREAKERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Eaton.
  2. Siemens Industry, Inc., Energy Management Division.
  3. Square D; Schneider Electric USA.
- B. Circuit breakers must be constructed using glass-reinforced insulating material. Current carrying components must be completely isolated from handle and accessory mounting area.
- C. Circuit breakers must have toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. Circuit-breaker handle must be over center, be trip free, and reside in tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon must be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with push-to- trip button, located on face of circuit breaker to mechanically operate circuit-breaker tripping mechanism for maintenance and testing purposes.
- D. Maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings must be clearly marked on face of circuit breaker. Circuit breakers must be 100 percent rated.
- E. MCCBs must be equipped with device for locking in isolated position.
- F. Lugs must be suitable for 90 deg C rated wire, sized in accordance with 75 deg C temperature rating in NFPA 70.
- G. Standard: Comply with UL 489 with required interrupting capacity for available fault currents.

- H. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- I. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
- J. Electronic Trip Circuit Breakers: Field-replaceable rating plug, RMS sensing, with the following field-adjustable settings:
  - 1. Instantaneous trip.
  - 2. Long- and short-time pickup levels.
  - 3. Long- and short-time time adjustments.
  - 4. Ground-fault pickup level, time delay, and I-squared t response.
- K. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- L. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker and trip activation on fuse opening or on opening of fuse compartment door.
- M. GFLS Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6 mA trip).
- N. GFEP Circuit Breakers: With Class B ground-fault protection (30 mA trip).
- O. Features and Accessories:
  - 1. Standard frame sizes, trip ratings, and number of poles.
  - 2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
  - 3. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
  - 4. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
  - 5. Ground-Fault Protection: Comply with UL 1053; integrally mounted, self-powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.
  - 6. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.

## 2.05 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, UL 50E, and UL 50, to comply with environmental conditions at installed location.
- B. Enclosure Finish: Enclosure must be finished with gray baked enamel paint, electrodeposited on cleaned, phosphatized steel (UL 50E Type 1), gray baked enamel paint, electrodeposited on cleaned, phosphatized galvanized steel (UL 50E Types 3R, 12) or a brush finish on Type 304 stainless steel (UL 50E Type 4-4X stainless steel).
- C. Conduit Entry: UL 50E Types 4, 4X, and 12 enclosures may not contain knockouts. UL 50E Types 7 and 9 enclosures must be provided with threaded conduit openings in both endwalls.
- D. Operating Mechanism: Circuit-breaker operating handle must be externally operable with operating mechanism being integral part of box, not cover. Cover interlock mechanism must have externally operated override. Override may not permanently disable interlock mechanism, which must return to locked position once override is released. Tool used to override cover interlock mechanism must not be required to enter enclosure in order to override interlock.
- E. Enclosures designated as UL 50E Type 4, 4X stainless steel, 12, or 12K must have dual cover interlock mechanism to prevent unintentional opening of enclosure cover when circuit breaker is ON and to prevent turning circuit breaker ON when enclosure cover is open.
- F. UL 50E Type 7/9 enclosures must be furnished with breather and drain kit to allow their use in outdoor and wet location applications.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
  - 1. Commencement of work will indicate Installer's acceptance of areas and conditions as satisfactory.

### 3.02 SELECTION OF ENCLOSURES

- A. Indoor, Dry and Clean Locations: UL 50E, Type 1.
- B. Outdoor Locations: UL 50E, Type 4X.
- C. Other Wet or Damp, Indoor Locations: UL 50E, Type 4X.
- D. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: UL 50E, Type 12.

### 3.03 INSTALLATION

- A. Comply with manufacturer's published instructions.
- B. Special Techniques:
  - 1. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
  - 2. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
  - 3. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."
  - 4. Temporary Lifting Provisions: Remove temporary lifting of eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
  - 5. Install fuses in fusible devices.

### 3.04 IDENTIFICATION

- A. Comply with requirements in Section 260553 "Identification for Electrical Systems."
  - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
  - 2. Label each enclosure with engraved metal or laminated-plastic nameplate.

### 3.05 FIELD QUALITY CONTROL

- A. Tests and Inspections for Switches:
  - 1. Visual and Mechanical Inspection:
    - a. Inspect physical and mechanical condition.
    - b. Inspect anchorage, alignment, grounding, and clearances.
    - c. Verify that unit is clean.
    - d. Verify blade alignment, blade penetration, travel stops, and mechanical operation.
    - e. Verify that fuse sizes and types match the Specifications and Drawings.
    - f. Verify that each fuse has adequate mechanical support and contact integrity.
    - g. Inspect bolted electrical connections for high resistance using one of the following methods:

- 1) Use low-resistance ohmmeter.
  - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of lowest value.
- 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
  - a) Bolt-torque levels must be in accordance with manufacturer's published data. In absence of manufacturer's published data, use NETA ATSTable 100.12.
- h. Verify that operation and sequencing of interlocking systems is as described in the Specifications and shown on Drawings.
- i. Verify correct phase barrier installation.
- j. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.

2. Electrical Tests:

- a. Perform resistance measurements through bolted connections with low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of lowest value.
- b. Measure contact resistance across each switchblade fuseholder. Drop values may not exceed high level of manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of lowest value.
- c. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In absence of manufacturer's published data, use Table 100.1 from NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
- d. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.
- e. Perform ground fault test in accordance with NETA ATS Section 7.14 "Ground Fault Protection Systems, Low-Voltage."

B. Tests and Inspections for Molded-Case Circuit Breakers:

1. Visual and Mechanical Inspection:
  - a. Verify that equipment nameplate data are as described in the Specifications and shown on Drawings.
  - b. Inspect physical and mechanical condition.
  - c. Inspect anchorage, alignment, grounding, and clearances.
  - d. Verify that unit is clean.
  - e. Operate circuit breaker to ensure smooth operation.
  - f. Inspect bolted electrical connections for high resistance using one of the following methods:
    - 1) Use low-resistance ohmmeter.
      - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of lowest value.
    - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
      - a) Bolt-torque levels must be in accordance with manufacturer's published data. In absence of manufacturer's published data, use NETA ATSTable 100.12.
  - g. Inspect operating mechanism, contacts, and chutes in unsealed units.
  - h. Perform adjustments for final protective device settings in accordance with coordination study.
2. Electrical Tests:
  - a. Perform resistance measurements through bolted connections with low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of lowest value.
  - b. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with circuit breaker closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In absence of manufacturer's published data, use Table 100.1 from NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
  - c. Perform contact/pole resistance test. Drop values may not exceed high level of manufacturer's published data. If manufacturer's published data are not available,



investigate values that deviate from adjacent poles or similar switches by more than 50 percent of lowest value.

- C. Nonconforming Work:
  - 1. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.
  - 2. Remove and replace defective units and retest.
- D. Collect, assemble, and submit test and inspection reports.
  - 1. Test procedures used.
  - 2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
  - 3. List deficiencies detected, remedial action taken, and observations after remedial action.
- E. Manufacturer Services:
  - 1. Engage factory-authorized service representative to support field tests and inspections.

### 3.06 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.
- B. Set field-adjustable circuit-breaker trip ranges as directed by Engineer

### 3.07 PROTECTION

- A. After installation, protect enclosed switches and circuit breakers from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

### 3.08 MAINTENANCE

- A. Infrared Scanning of Enclosed Switches and Breakers: Two months after Substantial Completion, perform infrared scan of joints and connections. Remove covers so joints and connections are accessible to portable scanner. Take visible light photographs at same locations and orientations as infrared scans for documentation to ensure follow-on scans match same conditions for valid comparison.
  - 1. Instruments and Equipment: Use infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  - 2. Follow-up Infrared Scanning: Perform two follow-up infrared scans of enclosed switches and breakers, one at four months and another at 11 months after Substantial Completion.

3. Instrument: Use infrared-scanning device designed to measure temperature or to detect significant deviations from normal values. Provide documentation of device calibration.
4. Report: Prepare certified report that identifies units checked and that describes scanning results. Include notation of deficiencies detected, remedial actions taken, and scanning observations after remedial action.

3.09 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

## SECTION 26 29 13

### MANUAL AND MAGNETIC MOTOR CONTROLLERS

#### **PART 1 - GENERAL**

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Combination full-voltage magnetic motor controllers.
  - 2. Enclosures.
  - 3. Accessories.
  - 4. Identification.

##### 1.02 DEFINITIONS

- A. CPT: Control power transformer.
- B. MCCB: Molded-case circuit breaker.
- C. MCP: Motor circuit protector.
- D. NC: Normally closed.
- E. OCPD: Overcurrent protective device.
- F. SCCR: Short-circuit current rating.
- G. SCPD: Short-circuit protective device.

##### 1.03 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: For each type of magnetic controller.
  - 1. Include plans, elevations, sections, and mounting details.
  - 2. Indicate dimensions, weights, required clearances, and location and size of each field connection.
  - 3. Wire Termination Diagrams and Schedules: Include diagrams for signal, and control wiring. Identify terminals and wiring designations and color-codes to facilitate installation, operation, and maintenance. Indicate recommended types, wire sizes, and circuiting arrangements for field-installed wiring, and show circuit

protection features. Differentiate between manufacturer-installed and field-installed wiring.

4. Include features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

C. Product Schedule: List the following for each enclosed controller:

1. Each installed magnetic controller type.
2. NRTL listing.
3. Factory-installed accessories.
4. Nameplate legends.
5. SCCR of integrated unit.
6. For each combination magnetic controller include features, characteristics, ratings, and factory setting of the SCPD and OCPD.
  - a. Listing document proving Type 2 coordination.
7. For each series-rated combination state the listed integrated short-circuit current (withstand) rating of SCPD and OCPDs by an NRTL acceptable to authorities having jurisdiction.

#### 1.04 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Field quality-control reports.

#### 1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For magnetic controllers to include in operation and maintenance manuals.
  1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    - a. Routine maintenance requirements for magnetic controllers and installed components.
    - b. Manufacturer's written instructions for testing and adjusting circuit breaker and MCP trip settings.
    - c. Manufacturer's written instructions for setting field-adjustable overload relays.
    - d. Load-Current and Overload-Relay Heater List: Compile after motors have been installed, and arrange to demonstrate that selection of heaters suits actual motor nameplate full-load currents.

- e. Load-Current and List of Settings of Adjustable Overload Relays: Compile after motors have been installed, and arrange to demonstrate that switch settings for motor-running overload protection suit actual motors to be protected.

#### 1.06 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. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
  - 2. Control Power Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type.
  - 3. Indicating Lights: Two of each type and color installed.
  - 4. Auxiliary Contacts: Furnish one spare(s) for each size and type of magnetic controller installed.
  - 5. Power Contacts: Furnish three spares for each size and type of magnetic contactor installed.

#### 1.07 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Accredited by NETA.
  - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store controllers indoors in clean, dry space with uniform temperature to prevent condensation. Protect controllers from exposure to dirt, fumes, water, corrosive substances, and physical damage.

#### 1.09 FIELD CONDITIONS

- A. Ambient Environment Ratings: Rate equipment for continuous operation under the following conditions unless otherwise indicated:
  - 1. Ambient Temperature: Not less than 23 deg F and not exceeding 104 deg F.
  - 2. Altitude: Not exceeding 6600 feet for electromagnetic and manual devices.

## PART 2 - PRODUCTS

### 2.01 PERFORMANCE REQUIREMENTS

- 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 use.
- B. UL Compliance: Fabricate and label magnetic motor controllers to comply with UL 508 and UL 60947-4-1.
- C. NEMA Compliance: Fabricate motor controllers to comply with ICS 2.

### 2.02 ENCLOSED FULL-VOLTAGE MAGNETIC MOTOR CONTROLLERS

- A. Description: Across-the-line start, electrically held, for nominal system voltage of 600-V ac and less.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. ABB, Electrification Business.
  - 2. Eaton.
  - 3. Siemens Industry, Inc., Energy Management Division.
  - 4. Square D; Schneider Electric USA.
- C. Standard: Comply with NEMA ICS 2, general purpose, Class A.
- D. Configuration: Non-reversing.
- E. Contactor Coils: Pressure-encapsulated type with coil transient suppressors when indicated.
  - 1. Operating Voltage: Manufacturer's standard, unless indicated.
- F. Control Power:
  - 1. For on-board control power, obtain from line circuit or from integral CPT. The CPT shall have capacity to operate integral devices and remotely located pilot, indicating, and control devices.
    - a. Spare CPT Capacity as Indicated on Drawings: 100 VA.
- G. Overload Relays:
  - 1. Thermal Overload Relays:
    - a. Inverse-time-current characteristic.
    - b. Class 10 tripping characteristic.

- c. Heaters in each phase shall be matched to nameplate full-load current of actual protected motor and with appropriate adjustment for duty cycle.
- d. Ambient compensated.
- e. Automatic resetting.

### 2.03 COMBINATION FULL-VOLTAGE MAGNETIC MOTOR CONTROLLER

- A. Description: Factory-assembled, combination full-voltage magnetic motor controller consisting of the controller described in this article, indicated disconnecting means, SCPD and OCPD, in a single enclosure.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. ABB, Electrification Business.
  - 2. Eaton.
  - 3. Siemens Industry, Inc., Energy Management Division.
  - 4. Square D; Schneider Electric USA.
- C. Standard: Comply with NEMA ICS 2, general purpose, Class A.
- D. Configuration: Non-reversing.
- E. Contactor Coils: Pressure-encapsulated type with coil transient suppressors when indicated.
  - 1. Operating Voltage: Manufacturer's standard, unless indicated.
- F. Control Power:
  - 1. For on-board control power, obtain from line circuit or from integral CPT. The CPT shall have capacity to operate integral devices and remotely located pilot, indicating, and control devices.
    - a. Spare CPT Capacity as Indicated on Drawings: 100 VA.
- G. Overload Relays:
  - 1. Thermal Overload Relays:
    - a. Inverse-time-current characteristic.
    - b. Class 10 tripping characteristic.
    - c. Heaters in each phase shall be matched to nameplate full-load current of actual protected motor and with appropriate adjustment for duty cycle.
    - d. Ambient compensated.

e. Automatic resetting.

H. Non-fusible Disconnecting Means:

1. NEMA KS 1, heavy-duty, horsepower-rated, non-fusible switch.
2. Lockable Handle: Accepts three padlocks and interlocks with cover in closed position.

#### 2.04 ENCLOSURES

- A. Comply with NEMA 250, type designations as indicated on Drawings, complying with environmental conditions at installed location.
- B. The construction of the enclosures shall comply with NEMA ICS 6.
- C. Controllers in hazardous (classified) locations shall comply with UL 1203.

#### 2.05 ACCESSORIES

- A. General Requirements for Control Circuit and Pilot Devices: NEMA ICS 5; factory installed in controller enclosure cover unless otherwise indicated.
  1. Push Buttons, Pilot Lights, and Selector Switches: Standard-duty, except as needed to match enclosure type. Heavy-duty or oil-tight where indicated in the controller schedule.
    - a. Push Buttons: As indicated in the controller schedule.
    - b. Pilot Lights: As indicated in the controller schedule.
  2. Elapsed Time Meters: Heavy duty with digital readout in hours; resettable.

#### 2.06 IDENTIFICATION

- A. Controller Nameplates: Baked enamel signs, as described in Section 260553 "Identification for Electrical Systems," for each compartment, mounted with corrosion-resistant screws.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Examine areas and space conditions for compliance with requirements for motor controllers, their relationship with the motors, and other conditions affecting performance of the Work.

#### 3.02 INSTALLATION

- A. Comply with NECA 1.
- B. Wall-Mounted Controllers: Install magnetic controllers on walls with tops at uniform height indicated, and by bolting units to wall or mounting on lightweight structural-steel channels bolted to wall. For controllers not at walls, provide freestanding racks complying with



- C. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.
- D. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- E. Setting of Overload Relays: Select and set overloads on the basis of full-load current rating as shown on motor nameplate. Adjust setting value for special motors as required by NFPA 70 for motors that are high-torque, high-efficiency, and so on.

### 3.03 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

### 3.04 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections with the assistance of a factory-authorized service representative.
- D. Tests and Inspections:
  - 1. Comply with the provisions of NFPA 70B, "Testing and Test Methods" Chapter.
  - 2. Visual and Mechanical Inspection:
    - a. Compare equipment nameplate data with drawings and specifications.
    - b. Inspect physical and mechanical condition.
    - c. Inspect anchorage, alignment, and grounding.
    - d. Verify the unit is clean.
    - e. Inspect contactors:
      - 1) Verify mechanical operation.
      - 2) Verify contact gap, wipe, alignment, and pressure are according to manufacturer's published data.
    - f. Motor-Running Protection:
      - 1) Verify overload element rating is correct for its application.
      - 2) If motor-running protection is provided by fuses, verify correct fuse rating.

- g. Inspect bolted electrical connections for high resistance using one of the two following methods:
    - 1) Use a low-resistance ohmmeter. Compare bolted connection resistance values with values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
    - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method according to manufacturer's published data or NETA ATS Table 100.12. Bolt-torque levels shall be according to manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
  - h. Verify appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.
3. Electrical Tests:
- a. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Insulation-resistance values shall be according to manufacturer's published data or NETA ATS Table 100.1. In the absence of manufacturer's published data, use Table 100.5. Values of insulation resistance less than those of this table or manufacturer's recommendations shall be investigated and corrected.
  - b. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.
  - c. Test motor protection devices according to manufacturer's published data.
  - d. Test circuit breakers as follows:
    - 1) Operate the circuit breaker to ensure smooth operation.
    - 2) For adjustable circuit breakers, adjust protective device settings according to the coordination study. Comply with coordination study recommendations.
  - e. Perform operational tests by initiating control devices.
4. Infrared Inspection: Perform the survey during periods of maximum possible loading. Remove all necessary covers prior to the inspection.
- a. Comply with the recommendations of NFPA 70B, "Testing and Test Methods" Chapter, "Infrared Inspection" Article.
  - b. After Substantial Completion, but not more than 60 days after Final Acceptance, perform infrared inspection of the electrical power connections of each motor controller.

- c. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each motor controller 11 months after date of Substantial Completion.
- d. Report of Infrared Inspection: Prepare a certified report that identifies the testing technician and equipment used, and lists the following results:
  - 1) Description of equipment to be tested.
  - 2) Discrepancies.
  - 3) Temperature difference between the area of concern and the reference area.
  - 4) Probable cause of temperature difference.
  - 5) Areas inspected. Identify inaccessible and unobservable areas and equipment.
  - 6) Load conditions at time of inspection.
  - 7) Photographs and thermograms of the deficient area.
  - 8) Recommended action.
- e. Equipment: Inspect distribution systems with imaging equipment capable of detecting a minimum temperature difference of 1 deg C at 30 deg C. The equipment shall detect emitted radiation and convert detected radiation to a visual signal.
- f. Act on inspection results and recommended action, and considering the recommendations of NETA ATS, Table 100.18. Correct possible and probable deficiencies as soon as Owner's operations permit. Retest until deficiencies are corrected.

E. Motor controller will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

### 3.05 SYSTEM FUNCTION TESTS

- A. System function tests shall prove the correct interaction of sensing, processing, and action devices. Perform system function tests after field quality control tests have been completed and all components have passed specified tests.
  - 1. Develop test parameters and perform tests for the purpose of evaluating performance of integral components and their functioning as a complete unit within design requirements and manufacturer's published data.
  - 2. Verify the correct operation of interlock safety devices for fail-safe functions in addition to design function.
  - 3. Verify the correct operation of sensing devices, alarms, and indicating devices.

- B. Motor controller will be considered defective if it does not pass the system function tests and inspections.
- C. Prepare test and inspection reports.

3.06 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain switchgear.

3.07 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 9 Electrical.

END OF SECTION

SECTION 28 44 00

REFRIGERANT DETECTION AND ALARM

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes refrigerant monitors, notification appliances, and SCBA.

1.03 DEFINITIONS

- A. CMOS: Complementary metal-oxide semiconductor.
- B. LCD: Liquid-crystal display.
- C. LED: Light-emitting diode.
- D. MOS: Metal-oxide semiconductor.
- E. NDIR: Non-dispersive infrared.
- F. PIR: Photoacoustic infrared.
- G. SCBA: Self-contained breathing apparatus.

1.04 ACTION SUBMITTALS

- A. Product Data:
  - 1. For each type of refrigerant monitor, include refrigerant sensing range in ppm, temperature and humidity range, alarm outputs, display range, furnished specialties, installation requirements, and electric power requirement.
  - 2. For SCBA, include mounting details, service requirements, and compliance with authorized Federal agency.
- B. Shop Drawings:
  - 1. Air-Sampling Tubing: Size, routing, and termination including elevation above finished floor.
  - 2. Wiring Diagrams: Power, signal, and control wiring.

1.05 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Include machinery-room layout showing location of monitoring devices and air-sampling tubing with filter/inlet locations in relation to refrigerant equipment.
- B. Product Certificates: For monitoring devices and SCBA, signed by product manufacturer.
- C. Field quality-control test reports.

1.06 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For refrigerant monitoring equipment and SCBA to include in emergency, operation, and maintenance manuals.

1.07 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. One calibration kit including clean air calibration gas bottle for zero calibration and specific refrigerant calibration gas for span calibration, minimum 58-L capacity, pressure regulator, and tubing.

1.08 COORDINATION

- A. Coordinate refrigerant detection and alarm system with refrigerant contained in refrigeration equipment for compatibility.

**PART 2 - PRODUCTS**

2.01 PIR REFRIGERANT MONITOR

- A. Manufacturers:
  - 1. Honeywell.
  - 2. Substitutions: Section 016000 - Product Requirements & 016200 – Substitutions.
  - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of equality, based on the best interested of the County, and its decision in this regard shall be final.
- B. Description: Sensor shall be factory tested, calibrated, and certified to continuously measure and display the specific gas concentration and shall be capable of indicating, alarming, shutting down fuel-fired equipment, and automatically activating ventilation system.
- C. Standard: Monitoring system shall comply with ASHRAE 15.

D. Performance:

1. Refrigerant to Be Monitored: R-134a.
2. Range: 0 to 1000 ppm.
3. Sensitivity:
  - a. Minimum Detectability: 1 ppm.
  - b. Accuracy: 0 to 50 ppm; plus or minus 1 ppm. 51 to 1000 ppm; plus or minus 10 percent of reading.
  - c. Repeatability: Plus or minus 1 percent of full scale.
  - d. Response: Maximum 10 seconds per sample.
  - e. Detection Level Set Points:
    - 1) Detection Level 1: 20 ppm.
    - 2) Detection Level 2: 50 ppm.
    - 3) Detection Level 3: 250 ppm.
4. Sensitivity:
  - a. Minimum Detectability: 20 ppm.
  - b. Accuracy: 0 to 100 ppm; plus or minus 20 ppm, 100 to 1000 ppm; plus or minus 5 percent of reading.
  - c. Repeatability: Plus or minus 1 percent of full scale.
  - d. Response: 50 percent of a step change in 60 seconds.
  - e. Detection Level Set Points:
5. Operating Temperature: 32 to 104 deg F
6. Relative Humidity: 20 to 95 percent, noncondensing over the operating temperature range. Compensate sensor for relative humidity.

E. Input/Output Features:

1. Maximum Power Input: 120-V ac, 60 Hz, 75 W.
2. Number of Air-Sampling Points: Four
3. Air-Sampling Point Inlet Filter: 0.10-micron filter element for each sampling point.
4. Air-Sampling Point Analog Output: 0- to 10-V dc into 2k ohms, or 4- to 20-mA into 1k ohms matched to sensor output.

5. Alarm Relays: Minimum 4 relays at a minimum of 5-A resistive load each.
6. Alarm Set Points: Displayed and adjustable through keypad on front of meter.
7. Alarm Silence Switch: Mount in the front panel of the monitor to stop audible and visual notification appliances, but alarm LED remains illuminated.
8. Alarm Manual Reset: Momentary-contact push button in the front panel of the monitor stops audible and visual notification appliances, extinguishes alarm LED, and returns monitor to detection mode at current detection levels.
9. Display: Alphanumeric LCD, LED indicating lights for each detection level; acknowledge switch and test switch mounted on front panel; alarm status LEDs and service fault/trouble LEDs.
10. Audible Output: Minimum 75 dB at 10 feet.
11. Visible Output: Strobe light.
12. Sensor Analog Output: 0- to 10-V dc into 2k ohms, or 4- to 20-mA into 1k ohms.
13. Serial Output: RS-232 or RS-485 and compatible with HVAC controls.
14. Enclosure: NEMA 250, Type 1, with locking quarter-turn latch and key.

## 2.02 MONITOR ALARM SEQUENCE

- A. Detection Level 1: Notify HVAC control workstation of detection in the refrigeration equipment room on a rise or fall of refrigerant concentration to this level. Start ventilation system at low speed to allow occupancy by maintenance technicians to identify leaks. Cycle blue strobe lights.
- B. Detection Level 2: Notify the HVAC control workstation of the detection in the refrigeration equipment room on a rise or fall of refrigerant concentration to this level. Run ventilation system at high speed on a rise in concentration to this level, and change to low speed on a reduction in concentration below this level. Operate the ventilation system at high speed for a minimum of five minutes. Cycle amber strobe lights.
- C. Detection Level 3: Notify the HVAC control workstation of the detection in the refrigeration equipment room on a rise or fall of refrigerant concentration to this level. Sound alarm horns and cycle red strobe lights inside and outside refrigeration equipment room. Terminate operation of any combustion-process equipment located in the refrigeration equipment room. Provide manual reset for this detection level.
- D. Sensor Fault/Trouble: Notify HVAC control workstation of fault/trouble detection in monitor.

## 2.03 NOTIFICATION APPLIANCES

- A. Horns: Comply with UL 464; electric-vibrating-polarized type, listed by a qualified testing agency with provision for housing the operating mechanism behind a grille. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn.



- B. Visible Alarm Devices: Comply with UL 1971; three color xenon strobe lights, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The words "REFRIGERANT DETECTION" printed in minimum 1/2-inch-high letters on the lens. Rated light output is 75 candela.

#### 2.04 AIR-SAMPLING TUBING

- A. Annealed-Temper Copper Tubing: ASTM B88, Type L
- B. Polyethylene Tubing: ASTM D2737, flame-retardant, nonmetallic tubing rated for ambient temperature range of 10 to 150 deg F

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION

- A. Comply with ASHRAE 15.
- B. Install air-sampling inlets, or diffusion type monitors in pits, tunnels, or trenches in machinery room that are accessible to personnel.
- C. Floor mount diffusion-type monitor, sensor/transmitters, or air-sampling inlets on slotted channel frame 12 to 18 inches above the floor in a location near the refrigerant source or between the refrigerant source and the ventilation duct inlet.
- D. Wall mount air-sampling multiple-point monitors with top of unit 60 inches above finished floor.
- E. Run air-sampling tubing from monitor to air-sampling point, in size as required by monitor manufacturer. Install tubing with maximum unsupported length of 36 inches for tubing exposed to view. Terminate air-sampling tubing at sampling point with filter recommended by monitor manufacturer.
- F. Install air-sampling tubing with sufficient slack and flexible connections to allow for vibration of tubing and movement of equipment.
- G. Purge air-sampling tubing with dry, oil-free compressed air before connecting to monitor.
- H. Number-code or color-code air-sampling tubing for future identification and service of air-sampling multiple-point monitors.
- I. Extend air-sampling tubing from exhaust part of multiple-point monitors to outside.  
  
Retain paragraph below for NDIR monitors. Delete for other types of monitors.
- J. Install warning signs, labels, and nameplates to identify detection devices and SCBA according to Section 230553 "Identification for HVAC Piping and Equipment."
- K. Place warning signs inside and outside each door to the refrigeration equipment room. Sample wording: "AUDIBLE AND VISUAL ALARM SOUNDING INDICATES REFRIGERANT DETECTION - ENTRY REQUIRES SCBA."

- L. Audible Alarm-Indicating Devices: Install at each entry door to refrigeration equipment room, and position not less than 6 inches below the ceiling. Install horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.
- M. Visible Alarm-Indicating Devices: Install adjacent to each alarm horn at each entry door to refrigeration equipment room, and position at least 6 inches below the ceiling.

### 3.02 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
  - 1. Inspect field-assembled components, equipment installation, and electrical connections for compliance with requirements.
  - 2. Test and adjust controls and safeties.
  - 3. Test Reports: Prepare a written report to record the following:
    - a. Test procedures used.
    - b. Test results that comply with requirements.
    - c. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- C. Repair or replace malfunctioning units and retest as specified above.

### 3.03 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain refrigerant detection devices.

### 3.04 PAYMENT

- A. Work under this Section will be paid for as part of the Contract lump sum price for Pay Item No. 3 Water Cooled Chillers & Installation.

END OF SECTION

**UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER  
RPQ NO. TP-0000017889**

**SECTION 2**

**SPECIAL TERMS AND CONDITIONS**

**2.1 PURPOSE**

The purpose of this solicitation is to establish a contract for the removal and replacement of (2) existing water-cooled chillers with new magnetic bearing water-cooled chillers, (3) new chilled water pumps, (2) new condenser water pumps, hydronic piping, valves, accessories, including all necessary electrical upgrades to support the replacement as shown on the contract documents including additional goods, services, and extended warranty as described herein, for Miami-Dade County (County) on behalf of the Department of Transportation and Public Works (DTPW).

**2.2 TERM OF CONTRACT**

This contract shall commence on the first calendar day of the month succeeding approval of the contract by the Board of County Commissioners, or designee, unless otherwise stipulated in the Purchase Order issued by the Internal Services Department, Strategic Procurement Division, and shall remain in effect until such time as the goods are delivered and/or services are completed and accepted by the County's authorized representative.

**2.3 METHOD OF AWARD**

Award of this contract will be made to the responsible Bidder with a responsive bid whose offer represents the lowest price for the complete chilled water plant replacement including additional goods and services and extended warranty as described herein, meets the minimum requirements, and all specifications and drawings of this solicitation. The County will award the total contract to a single vendor.

**2.4 "EQUAL OR BETTER" PRODUCT CAN BE CONSIDERED UPON RECEIPT OF PRODUCT INFORMATION**

Manufacturer's name, brand name and/or model number information contained in this solicitation are being used for the sole purpose of establishing the minimum requirement of level of quality, standard of performance and design, and is in no way intended to prohibit the offer of another manufacturer's equal product unless otherwise indicated herein.

This solicitation requires submission of the following documentation to enable the County's evaluation of "equal" products:

1. Product Information
2. Owner's or Operations Manual.

Documentation containing terms and conditions contrary to the terms and conditions in this solicitation will be deemed null and void. If an "equal" product is offered by a Bidder, the product shall be equal or better in quality and standards of performance to the product specified in the solicitation. Where an "or equal or better" product is offered, product information is required with the initial offer and shall be submitted with complete product information (such as factory specifications, standard manufacturer information sheets, catalogues, and brochures), and if requested by the County, performance test results of the unit offered as an equal or better.

All supporting documentation submitted by the Bidder must in total meet or exceed the required specifications set forth in this solicitation. Where the product information submitted with the offer provides information that does not comply with the specifications of this solicitation, the Bidder shall state, in an official letter on corporate letterhead as

**UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER  
RPQ NO. TP-0000017889**

part of their initial offer, the differences between the item they are specifically offering, and the equipment described by the product information, to substantiate compliance to all of the specifications set forth in this solicitation. In such cases, any offer submitted with product information but without the letter explaining compliance may result in the rejection of the offer for not meeting the solicitation specifications.

If samples of all "or equal or better" items bid are required for evaluation, such items are to be provided at no cost to the County, and should be submitted with the initial offer, or at the time of specific request. Failure to meet this requirement may result in your offer being rejected. Pursuant to Section 1, 1.5(K) the County reserves the right to request and evaluate additional information.

The County and the EOR shall be sole judges of what is considered equal, based on the best interests of the County, and its decision in this regard shall be final.

**2.5 PRICES**

If a Bidder is awarded a contract as a result of this solicitation, the price offered by the Bidder shall remain fixed and firm during the term of the contract. The price offered shall include all costs for delivery, installation and technical, maintenance, and factory assisted start-up for proper use of all equipment and accessories purchased herein.

**2.6 METHOD OF PAYMENT:**

Payments shall be provided within the terms of the Miami-Dade County Capital Improvements Information System (CIIS) Miscellaneous Construction Contracts MCC 7360 and/or 7040 program. The County will provide for this project a specific payment not to exceed more than 50% of the total contract bid, after both specified chillers have been delivered on-site. Final payments shall be after both chiller units and all other specified equipment has been installed, commissioned, placed into operation, and all permits are passed and finalized.

**2.7 SHIPPING**

All vendors shall quote prices based on F.O.B. The awarded Bidder shall hold title to the goods until such time as they are delivered and accepted by an authorized DTPW representative at the following location and quantities:

Dept. of Transportation & Public Works (DTPW)  
Miami Dade Transit William Lehman Facility  
Attention: Ray Harding  
6601 NW 72<sup>nd</sup> Avenue  
Miami, FL 33166

All equipment shall be constructed, prepared, and loaded to avoid damage during shipping and delivery. The awarded Bidder shall be responsible for filing, processing, and collecting all damage claims.

**2.8 DELIVERY AND ACCEPTANCE: DELIVERY SHALL BE WITHIN TWO HUNDRED AND FORTY (240) DAYS AFTER DATE OF ORDER**

The awarded vendor shall deliver within two hundred and forty (240) calendar days after the date of the order. All deliveries shall be made in accordance with good commercial practice and all required delivery timeframes shall be adhered to by the awarded vendor; except in such cases where the delivery will be delayed due to acts of natural

**UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER  
RPQ NO. TP-0000017889**

disasters, strikes, or other causes beyond the control of the vendor. In these cases, the vendor shall notify the County of the delays in advance of the original delivery date so that a revised delivery schedule can be appropriately considered by the County.

Should the vendor to whom the contract is awarded fail to deliver in the number of days stated above, the County reserves the right to cancel the contract on a default basis after any backorder period that has been specified in this contract has lapsed. If the contract is terminated, it is hereby understood and agreed that the County has the authority to purchase the goods elsewhere and to charge the incumbent vendor with any re-procurement costs. If the vendor fails to honor these re-procurement costs, the County may terminate the contract for default.

**2.8.1 LIQUIDATED DAMAGES FOR INCOMPLETE PROJECTS**

Failure to complete the project in accordance with the specifications and to the satisfaction of the County within the time stated shall cause the vendor to be subject to charges for liquidated damages in the amount of \$325.00 for each and every calendar day the work remains incomplete. As compensation due the County for loss of use and for additional costs incurred by the County due to such non-completion of the work, the County shall have the right to deduct the said liquidated damages from any amount due, or that may become due to the vendor under this agreement, or to invoice the vendor for such damages if the costs incurred exceed the amount due to the vendor.

**2.9 WARRANTY**

In addition to all other standard warranties that may be supplied by the awarded Bidder, the awarded Bidder shall warrant its products against faulty labor and/or defective material, for one (1) year for all parts and labor. An additional factory extended warranty shall be provided as part of this bid for a minimum period of four (4) years for the entire chiller unit, parts, and labor and against defective material with a total five (5) years R-134a refrigerant warranty, after the date of acceptance of each chiller, whichever is later.

2.9.1 This warranty requirement shall remain in force for the full period listed above; regardless of whether the awarded Bidder is under contract with the County at the time of defect, in accordance with Section 1, Paragraph 1.12. Any payment by the County for the goods or services received from the awarded Bidder does not constitute a waiver of these warranty provisions.

2.9.2 The awarded Bidder shall be responsible for promptly correcting any deficiency, at no cost to the County, within seven (7) calendar days after the County notifies the awarded Bidder of such deficiency in writing. If the awarded Bidder fails to honor the warranty and/or fails to correct or replace the defective work or items within the period specified, the County may, at its discretion, notify the awarded Bidder, in writing, that the awarded Bidder may be debarred as a County vendor and/or subject to contractual default if the corrections or replacements are not completed to the satisfaction of DTPW within fourteen (14) calendar days of receipt of the notice. If the awarded Bidder fails to satisfy the warranty within the period specified in the notice, the County may (a) place the awarded Bidder in default of its contract, and/or (b) procure the products or services from another vendor and charge the awarded Bidder for any additional costs that are incurred by the County for this work or items, either through a credit memorandum or through invoicing.

**2.10 EQUIPMENT SHALL BE NEW AND MOST RECENT MODEL AVAILABLE**

All equipment offered by the awarded Bidder shall be new and the most recent model available. Any optional components which are required in accordance with the contract specifications shall be considered standard equipment for the purposes of this solicitation. Demonstrator models will not be accepted.

**UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER  
RPQ NO. TP-0000017889**

**2.11 LICENSES, PERMITS AND FEES**

The awarded Bidder shall obtain and pay for all licenses, permits, and applicable taxes and fees required for this contract; and shall comply with all laws, ordinances, and regulations applicable to the work contemplated herein. Damages, penalties and or fines imposed on the County, or the awarded Bidder shall be borne by the awarded Bidder.

2.11.1 Contractor must pull Mechanical A/C Permit and other required permits and provide any documentation, drawings, engineering tie-down or wind load plans as required for permitting. Per Florida State Statute 218.80 requires permit fees to be disclosed, which is part of the contractor's responsibility as part of the contractor's bid and MCC 7360 or 7040 requirements. Estimated permit fees are based on the total project cost. These fees are to be paid to the Miami-Dade County Building Department. They are estimated at approximately \$25,000. However, the final fee will be determined by the Building Department when the permit is obtained. All fees and permit costs are subject to change and are the responsibility of the awarded the contractor.

**2.12 OMISSION FROM SPECIFICATIONS**

The apparent silence of the specifications and any addendum regarding any details or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail, and that only new materials and workmanship of first quality are to be used. All interpretations of this specification shall be made upon the basis of this agreement.

**2.13 INSURANCE**

Insurance can be found under Special Provisions, section 6.0 Insurance Requirements.



SMALL BUSINESS  
DEVELOPMENT PROJECT  
WORKSHEET  
UPGRADE CHILLER UNITS AT  
WILLIAM LEHMAN CENTER

**APPENDIX B**

**SMALL BUSINESS DEVELOPMENT  
PROJECT WORKSHEET**





# Small Business Development Division

## Project Worksheet

Project/Contract Title: UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER Received Date: 7/20/2022

Project/Contract No: TP-0000017889 Funding Source: OTHER

Department: Department of Transportation and Public Works

Estimated Cost of Project/Bid: \$1,550,036.00

Description of Project/Bid: This project consists of the removal and replacement of (2) existing Trane water-cooled 110-ton, R-113, chiller, units with new magnetic bearing water-cooled chillers, (3) new chilled water pumps, and all related controls, (2) new condenser water pumps, hydronic piping, valves, wiring, accessories, including all necessary electrical upgrades to support the replacement as shown on the contract documents.

Contract Measures		
Measure	Program	Goal Percent
Goal	SBE – Con	10.00%
No Measure	SBE – G&S	

**Reasons for Recommendation**

**SMALL BUSINESS ENTERPRISE - CONSTRUCTION (SBE-Con)**  
 SBD reviewed this project pursuant to Implementing Order(s) 3-22 and 3-41 for SBE-Con and SBE-Goods measures. Project information analyzed included the project’s scope of services, minimum requirements/qualifications and funding source. An attempt was made to assign this project a Set-Aside measure; however, three or more firms did not respond to the Verification of Availability to Bid as being able to meet the project’s requirements.

An analysis of the factors contained in Implementing Order 3-22 indicates a 10.00% Small Business Enterprise – Construction (SBE-Con) subcontractor goal is appropriate in the trade of: Electrical Contractors and Other Wiring Installation Contractors.

**SMALL BUSINESS ENTERPRISE - GOODS & SERVICES (SBE-G&S).**  
 An analysis of the factors contained in section VIII. B. of Implementing Order 3-41 & Ordinance 14-41 indicates a No Measure is appropriate as no SBE-G&S opportunities could apply.

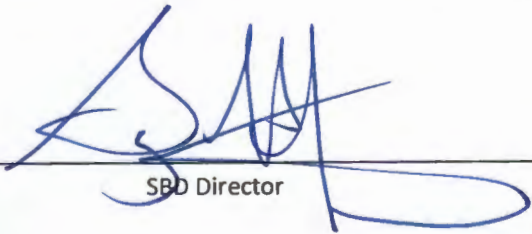
CWP Not Applicable: Not in a DTA.

NAICS 236220 Commercial and Institutional Building Construction, NAICS 237990 Other Heavy and Civil Engineering Construction, NAICS 238220 Plumbing, Heating, and Air-Conditioning Contractors, and NAICS 238210 Electrical Contractors and Other Wiring Installation Contractors.

Small Business Contract Measure Recommendation	
Subtrade	Category
Electrical Contractors and Other Wiring Installation Contractors	SBE-Con

Living Wages: YES  NO  Highway: YES  NO  Heavy Construction: YES  NO

Responsible Wages: YES  NO  Building: YES  NO

  
 \_\_\_\_\_  
 SBD Director

8-10-23  
 \_\_\_\_\_  
 Date





RESPONSIBLE WAGES &  
BENEFITS  
UPGRADE CHILLER UNITS AT  
WILLIAM LEHMAN CENTER

**APPENDIX C**

**RESPONSIBLE WAGES & BENEFITS**



DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

RESPONSIBLE WAGES & BENEFITS  
(Ordinance No. 90-143, as amended)

**BUILDING CONSTRUCTION**

The following Minimum Wage Rates and Responsible Wages and Benefits are those established for the listed trades working at the Work site by the U. S. Secretary of Labor and/or by the Board of County Commissioners under Ordinance No. 90-143, as amended. The rates have been established in accordance with the stipulations contained in the Davis-Bacon Act and/or by Miami-Dade County Ordinance No. 90-143, as amended, and have been established as being the rates for the corresponding classes of workers employed for projects of a similar character in the locality where the Work is to be performed. The Contractor shall pay wages and fringe benefits at rates not less than the higher of the Minimum Wage Rates (Davis-Bacon Act) or Responsible Wages and Benefits (Ordinance No. 90-143, as amended) as stipulated for each listed trade. A mistake in the indicated wages and fringe benefits will not entitle the Contractor to cancel the Contract, to increase the Contract price or to recover additional payment.

The Contractor is ultimately responsible for the verification and use of the latest wages publication.

# MIAMI-DADE COUNTY, FLORIDA

## RESPONSIBLE WAGES AND BENEFITS SECTION 2-11.16 OF THE CODE OF MIAMI-DADE COUNTY

### SUPPLEMENTAL GENERAL CONDITIONS

#### WAGES AND BENEFITS SCHEDULE

Construction Type: **BUILDING**

Building Construction generally is the construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment, or supplies. It includes all construction of such structures, the installation of utilities and the installation of equipment, both above and below grade.

Note: Where multiple construction is "incidental" in function, the construction is considered a part of the building project for wage determination purposes.

#### NOTICE TO EMPLOYEES

#### FAIR WAGE AFFIDAVIT

#### LCPTRACKER – CONTRACTOR QUICK START GUIDE

**2023**

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- E. LCPTRACKER - CONTRACTOR QUICK START GUIDE**

## **SUPPLEMENTAL GENERAL CONDITIONS TO BIDDERS**

Bidders are advised that the provisions of § 2-11.16 *et seq.*, Code of Miami-Dade County (the "Code"), pertaining to Responsible Wages on County Construction Contracts, will apply to any contract awarded pursuant to this bid. By submitting a bid under these provisions, a bidder agrees to comply with these provisions of the Code and to acknowledge awareness of the penalties for non-compliance. A copy of the Code may be obtained from the department issuing the specifications for this bid or online at <http://www.municode.com/resources/gateway.asp?pid=10620&sid=9>.

This Supplemental General Conditions is organized with the following sections:

1. Minimum Wages and Posting of Information
2. Liability for Unpaid Wages, Liquidated Damages and Withholding
3. Payrolls Records, Reporting and Inspection of Records
4. Subcontracts
5. Complaints, Hearings and Contracts Termination and Debarment
6. Apprentices and Trainees
7. Other State and Federal Wage Laws

### **1. MINIMUM WAGES AND POSTING OF INFORMATION**

#### **A. Minimum Wages**

All employees working on the project must be paid the combined dollar value (hourly rate and benefits) listed in the Wages and Benefits Schedule for work being performed. Payment to workers shall be made in the form of check, money order or direct deposit. Cash payments are not allowed. The rates paid shall be no less than those contained in the Wages and Benefits Schedule regardless of any contractual relationship that may exist between the contractor and the workers hired to perform under the contract. For any classification of workers, the hourly rate paid must equal the sum of the base rate and the fringe benefit rates listed for that classification in the Wages and Benefits Schedule. Paying below the base rate is not acceptable, even if the value of the fringe benefits exceeds the value of the required contribution. Paying the base wage rate or above and making payments to legitimate fringe benefits providers on behalf of workers is acceptable.

Wages and benefits listed in the Wages and Benefits Schedule will be reviewed and increased, if appropriate, once a year, on January 1st. The rates for wages and benefits to be paid for work performed under this contract and during each subsequent calendar year will be the rate in effect on January 1st of the year in which the work is performed.

#### **B. Fringe Benefits**

The contractor, or any subcontractor under the contractor, may pay the base rate to the employee plus pay contributions to employee benefit plans; or, pay the base rate plus the benefit rate in the Wages and Benefits Schedule in the form of check, money order or direct deposit, but not cash. If the value of the fringe benefits is less than the hourly amount required in the wage schedule the difference must be paid to the employee as an increase to their base pay.

Payments made to health insurance companies for hospitalization and medical costs, to dental insurance companies for dental costs, retirement plans, and life insurance companies for life insurance are fringe benefits.

Payments made irrevocably to a trustee or third party pursuant to a bona fide fringe benefit fund, plan or program for health, life, death, and dismemberment, dental, vision insurance and retirement/pension can be credited towards meeting the required wages. These payments must be made not less often than quarterly. Annual payments to a fringe benefit fund, plan or program will not be accepted.

#### C. More than One Classification

Workers must be paid the appropriate base rate and fringe benefits on the Wages and Benefits Schedule for the classification of work actually being performed without regard to skill. Workers performing work in more than one classification may be paid at the rate listed for each classification for the time they worked; however, the employer's payrolls must accurately show the time spent in each classification in which work is performed. This does not apply to workers performing tasks that are incidental to the trade they are working in, such as handling materials they will be installing or cleaning up the worksite after they complete their work.

#### D. Classification Not Listed in the Wage Schedule

If you do not find a wage classification in the Wages and Benefits Schedule that describes the work actually being done, you must contact Small Business Development. Questions concerning the comparability of worker classifications or the applicability of Davis Bacon classifications will be determined by the County.

#### E. Complaints by Workers

Any complaints of underpayment by the workers should be filed with:

**Internal Services Department  
Small Business Development Division  
111 NW 1<sup>ST</sup> Street, 19<sup>TH</sup> Floor Miami, FL 33128  
Telephone: (305) 375-3111 FAX: (305) 375-3160  
Email: [SBDMAIL@MIAMIDADE.GOV](mailto:SBDMAIL@MIAMIDADE.GOV)**

Neither the contractor nor any subcontractor on the project may terminate an employee

performing work on the contract because of such employee's filing a complaint regarding underpayment of required wage rates.

F. Posting of Wages

The contractor and all subcontractors must permanently post the Wages and Benefits Schedule, together with a notice of the fines that may be assessed to the contractor or subcontractor, for failure to pay the required wage rates, at the site where the contract work is being performed in a prominent and accessible place where it can be easily seen by the workers. Failure to post the Wages and Benefits Schedule is a violation.

**2. LIABILITY FOR UNPAID WAGES; PENALTIES; WITHHOLDING**

A. Compliance by Bidders

In the event of underpayment of the required wage rates, the contractor shall be liable to the underpaid employee for such underpayment. In addition, the contractor shall pay a penalty in accordance with the requirements of the Code and section 2B below. Contractors must pay all back wages and penalties on previous contracts before being awarded or participating on a new contract.

B. Penalties

In addition to any under payment due to employees, contractors may be fined a penalty in an amount equal to twenty percent (20%) of the first underpayment; forty percent (40%) of the amount of the second underpayment; for the third and successive underpayments, a penalty in an amount equal to sixty percent (60%) of the underpayment. A fourth underpayment violation within a three (3) year period shall subject the contractor to debarment to be initiated by SBD in accordance with the debarment procedures of the County. A fourth underpayment violation shall also constitute a default of the subject contract and shall be cause for suspension or termination. If the required payments are not made within the specified period of time, the non-complying contractor and principal owners thereof shall be prohibited from bidding on or otherwise participating in County contracts for a period not to exceed three (3) years.

C. Withholding Contractor Payments

The County may stop payment of monies to the contractor necessary to pay any wages that are required, and any penalties owed by the contractor or subcontractor. The withheld monies shall be given to the employee in accordance with the provisions of Section 5, "Complaints and Hearings; Contract Termination and Debarment".

**3. PAYROLL; BASIC RECORDS; REPORTING**

A. Payroll Records



The contractor and all subcontractors must keep accurate written records, signed under oath as true and correct, showing payment of the required wages. These records must include the name, social security number of each worker, his or her address, correct classification, per hour rates of wages paid (including rates of contributions or costs anticipated for legitimate fringe benefits), and daily and weekly number of hours worked on this project. Contractors employing apprentices or trainees under approved programs shall keep records of the registration or apprenticeship programs, the certification of trainee programs, the registration of the apprentices and trainees, and wage rates as required by the applicable programs, in accordance with the provisions of Section 6 “Apprentices and Trainees”.

## B. LCPtracker

Each contractor and every low-tier subcontractor is required to submit all certified payrolls and labor compliance documentation electronically by the 10th of every month for the previous month using LCPtracker, a web-based Certified Payroll Management System ([www.lcptracker.net](http://www.lcptracker.net)). The system is managed by Small Business Development (“SBD”), a division of the Internal Services Department. The use of the system is **mandatory**, pursuant to Miami-Dade County Ordinance No. 18-33.

Each contractor and subcontractor on applicable contracts will be provided a username and password to access LCPtracker system. Use of the system will involve data entry of weekly payroll information including: employee name, social security number, trade classification, total hours and fractions of hours for every type of trade classification work performed on the project, and wage and benefits paid. LCPtracker’s software can also interface with most payroll and accounting software programs that are capable of generating a CSV (comma delimited file). If your program does not have this capability, LCPtracker may be able to build an interface to communicate with your accounting software.

Hands-on training sessions for the LCPtracker system is available. To RSVP, please visit <https://mdcsbd.gob2g.com/events.asp> and select the training session you would like to attend.

If you are not able to attend a training class in person, there are other free training options available for contractors:

**Option 1: Web-Based Training Sessions.** Online and live training sessions facilitated by members of LCPtracker’s Customer Support Team are offered several times per month. All you need to participate is a computer with internet access, an email address, and access to a phone.

- Go to the LCPtracker Website: [www.lcptracker.net](http://www.lcptracker.net)
- Enter your username/password
- Select “Watch Now” on the Projects tab and register for the Online training sessions

**Option 2: Computer-Based Training Courses**. Pre-recorded videos can be viewed at any time by logging into the LCPtracker website ([www.lcptracker.net](http://www.lcptracker.net)) and following these simple steps:

- Enter your username/password
- Select the “Training Materials” link located at the top of the page
- Select Contractor Training Videos

#### C. Inspection of Records

The contractor or subcontractor must make these records available for inspection and copying by an authorized representative of the County and shall allow such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the reports or make the records on which they are based available, the County may, after written notice to the contractor, cause the stoppage of payments. Also, failure to submit the reports upon request or make the records available may be reason for debarment. The prime contractor is responsible for the submission of the information required and for the maintenance of records and provisions of access to same by all subcontractors.

#### **4. SUBCONTRACTS**

The contractor must insert into any subcontracts the clauses set forth in paragraphs 1 through 6 of this Supplemental General Conditions and a clause reminding their subcontractors to include these paragraphs in any lower tier subcontract. The prime contractor will be responsible for compliance by all subcontractors and their lower tier subcontractors with the clauses set forth in paragraphs 1 through 6 of this Supplemental General Conditions. In the event of non-payment or underpayment of the required wages, the prime contractor shall be liable to the underpaid employees of the subcontractor for each underpayment.

#### **5. COMPLAINTS AND HEARINGS; CONTRACT TERMINATION AND DEBARMENT**

##### A. Complaints

Upon receipt of a written complaint or identification of a violation pertaining to an employee wage underpayment of the required overall hourly rates, the County will investigate the complaint and notify the contractor or subcontractor employing said workers of the complaint/violation. The notice shall include a brief description of the said complaint/violation, the dollar amount that the contractor or subcontractor is liable for in back wages and fines, the required corrective action(s) to be taken and the due date for payment of back wages and fines or to request a compliance meeting. Failure to comply or request a compliance meeting within the due date specified shall constitute a waiver of the contractor's or subcontractor's right to a compliance meeting, and that such waiver shall constitute an admission of the complaint/violation. The County may withhold from the contractor so much accrued payments as may be considered necessary by the Contracting Officer to pay employees of the contractor or subcontractor under

them for the performance of the contract work, the difference between the combined overall hourly wage rate and benefits required to be paid by the contractor/subcontractor to the employee on the work and the amounts received by such employee where violations have been found.

Any employee of a contractor or subcontractor who performed work on a contract subject to this section, may instead of adhering to the County administrative procedure, but not in addition to such procedure, bring an action by filing suit against the contractor or subcontractor in any court of competent jurisdiction to enforce these provisions and may be awarded back pay, benefits, attorney's fees, costs. The applicable statute of limitations of such a claim will be two (2) years as provided in Section 95.11(4)(c), Florida Statutes, in an action for payment of wages. The court may also impose sanctions on the employer, including those persons or entities aiding or abetting the employer, to include wage restitution to the affected employee and damages payable to the covered employee in the sum of up to five hundred dollars (\$500.00) for each week each employer is found to have violated these provisions.

#### B. Hearings

A contractor or subcontractor has the right to an administrative hearing to appeal a determination of non-compliance within (30) days of the notice. To request a hearing the contractor or subcontractor must file a written request along with a \$250.00 non-refundable filing fee with the County Mayor or his or her designee. Upon timely receipt of a request for an administrative hearing request, the County Mayor shall appoint a hearing officer and fix a time for an administrative hearing thereon. A notice of hearing (together with a copy of SBD's determination of non-compliance) shall be served upon the contractor (or subcontractor). Upon completion of the hearing, the hearing officer shall submit proposed written findings and recommendations to the County Mayor within a reasonable time. The County Mayor or designee will review the findings and recommendations of the Hearing Officer and decide to accept or reject the recommendations of the Administrative Hearing Officer either with or without modifications.

#### C. Penalties

If the County Mayor or designee determines that the contractor or subcontractor substantially or repeatedly failed to comply, the non-complying contractor or subcontractor and the principal owners thereof shall be prohibited from bidding or otherwise participating in County contracts for the construction, alteration and/or repair, including painting or decorating, of public buildings or public works for a period of three years. The County Mayor or designee may order the withheld amount equal to any underpayment remitted to the employee. In addition, the County Mayor or designee may order payment of a penalty to the County. If the required payment is not made

within a reasonable period, the County Mayor or designee may order debarment as described above.

A breach of the clauses contained in this Supplemental General Conditions shall be deemed a breach of this contract and may be grounds for termination of the contract, and for debarment.

## **6. APPRENTICES AND TRAINEES**

### **A. Apprentices**

Apprentices will be permitted to work at less than the rate listed in the Wages and Benefits Schedule for the work they perform when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau, or if a person is employed in his or her first 90 days probationary employment who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a state apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice. All apprentices participating on a project must be approved in LCPtracker by SBD. LCPtracker will not allow a contractor to enter an apprentice on its certified payrolls until SBD has received and approved the Apprenticeship Certification, which is only valid for 90 days after issuance. To obtain SBD's approval, the Program Sponsor must submit the Apprenticeship Certification to:

**Internal Services Department  
Small Business Development Division  
111 NW 1<sup>ST</sup> Street, 19<sup>TH</sup> Floor Miami, FL 33128  
Telephone: (305) 375-3111 FAX: (305) 375-3160  
Email: [SBDMAIL@MIAMIDADE.GOV](mailto:SBDMAIL@MIAMIDADE.GOV)**

Any worker listed as an apprentice on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, must be paid not less than the wage on the Wages and Benefits Schedule for the classification of work actually performed.

### **B. Apprentice Ratio**

The number of apprentices shall not be greater than the ratio listed in the Wages and Benefits Schedule. If the number of apprentices working on the project, is greater than the ratio permitted, the apprentices must be paid the wage rate on the Wages and Benefits Schedule for the work performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in the percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be

observed. Every apprentice must be paid at least the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable schedule.

#### C. Apprentice Fringe Benefits

Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable apprentice classification; fringe benefits shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a state apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is provided.

#### D. Trainees

The rules for trainees are similar to those of apprentices. Except as provided in 29 C.F.R. § 5.16, trainees cannot work for less than the predetermined rate listed in the Wages and Benefits Schedule unless they are registered in a program certified by the U. S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site must not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Trainees must be paid fringe benefits in accordance with the Trainee Program. If the Trainee Program does not specify fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the administrator of the wage and hour division determines that the rate is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination, which provides for less than the full fringe benefits for apprentices.

#### E. Summary of Apprentices and Trainees

Any worker who is not registered in a training plan approved by the Employment and Training Administration must be paid not less than the wage rate on the Wages and Benefits Schedule for the work actually performed without regard to skill. In addition, if the number of apprentices and trainees are in excess of the ratio permitted under the registered program, then the wages that must be paid are those listed on the Wages and Benefits Schedule for the work actually performed by the apprentices or trainees. If the Employment and Training Administration cancels approval of an apprenticeship or training program, the contractor will no longer be permitted to pay the trainee or apprenticeship rate.

## **7. OTHER STATE AND FEDERAL WAGE LAWS**

All Miami-Dade County contracts require contractors to comply with all applicable state and federal wage laws including payment of overtime. To obtain information regarding these laws, please visit the U.S. Department of Labor Wage and Hours Division at [www.dol.gov/whd](http://www.dol.gov/whd).

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"BUILDING CONSTRUCTION"

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
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**BRICKLAYERS**

Bricklayer	\$ 26.30	\$ 5.40	\$ 3.15	<b>\$ 34.85</b>
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(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see page 6 of the Supplemental General Conditions for more information.**

**Apprentices:**

1st 6 month period	\$ 17.10	\$ 5.40	\$ 3.15	<b>\$ 25.65</b>
2nd 6 month period	\$ 18.41	\$ 5.40	\$ 3.15	<b>\$ 26.96</b>
3rd 6 month period	\$ 19.73	\$ 5.40	\$ 3.15	<b>\$ 28.28</b>
4th 6 month period	\$ 21.04	\$ 5.40	\$ 3.15	<b>\$ 29.59</b>
5th 6 month period	\$ 22.36	\$ 5.40	\$ 3.15	<b>\$ 30.91</b>
6th 6 month period	\$ 23.67	\$ 5.40	\$ 3.15	<b>\$ 32.22</b>

**Apprentice Ratio: There shall be one (1) apprentice for every three (3) journeymen.**

Scope of work under this trade includes but is not limited to: all forms of masonry construction, including all brick, stone, concrete block, marble, cement, plaster, mosaic, tile, terrazzo, terra cotta, glass block, refractory materials, and pointing-cleaning-caulking. The complete installation of all forms of masonry panels including the on-site fabrication, all integral elements of masonry construction and all forms of substitute masonry materials or building systems thereto utilized.

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**CARPENTERS**

Carpenter	\$ 25.65	\$ 5.50	\$ 6.65	<b>\$ 37.80</b>
Foreman (5 or more workers one must be a Forman)	\$ 27.78	\$ 5.50	\$ 6.65	<b>\$ 39.93</b>
Foreman (12 or more workers)	\$ 31.54	\$ 5.50	\$ 6.65	<b>\$ 43.69</b>
General Foreman (2 or more foremen)	\$ 33.84	\$ 5.50	\$ 6.65	<b>\$ 45.99</b>

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see page 6 of the Supplemental General Conditions for more information.**

1st 6 month period	\$ 15.90	\$ 5.50	\$ 6.65	<b>\$ 28.05</b>
2nd 6 month period	\$ 17.19	\$ 5.50	\$ 6.65	<b>\$ 29.34</b>
3rd 6 month period	\$ 18.47	\$ 5.50	\$ 6.65	<b>\$ 30.62</b>
4th 6 month period	\$ 19.75	\$ 5.50	\$ 6.65	<b>\$ 31.90</b>
5th 6 month period	\$ 21.03	\$ 5.50	\$ 6.65	<b>\$ 33.18</b>
6th 6 month period	\$ 22.32	\$ 5.50	\$ 6.65	<b>\$ 34.47</b>
7th 6 month period	\$ 23.60	\$ 5.50	\$ 6.65	<b>\$ 35.75</b>
8th 6 month period	\$ 24.88	\$ 5.50	\$ 6.65	<b>\$ 37.03</b>

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

**Acoustic Ceilings**

The unloading, distribution and installation of all materials and component parts of all types of acoustic ceilings and plenums, regardless of their material composition or method of manner of their installation, attachment or connection, including, but not limited to the following items: all hangers, carrying channels, cross furring, stiffeners, braces, all bars regardless of materials or methods of attachment, all integrated gypsum wall board ceiling heat panels, fill, all main tees, cross tees, splines, splays, wall and ceiling angles or moldings, all backing board and all finish ceiling materials regardless of method of installation excepting acoustic plaster.

**Doors**

The unloading, distribution and installation of all prefinished wooden doors, hollow metal doors, overhead or mechanical doors, whether steel, aluminum or plastic and all supporting systems. Install all hollow metal jambs and hardware on doors whether they be interior or exterior.

**Floor Covering**

Carpeting including all measuring, lay-outs, remaking, cutting, fitting, sewing, binding, sizing, laying, stretching, repairing and installation, either by hand or power machine. The installation of resilient flooring to include the laying of all cork, linoleum, asphalt, mastic, plastic, rubber tile, whether nailed or laid in with Lino paste, glue, mastic or substitute materials. All wood flooring, whether nailed or laid in mastic. All necessary preparatory work including the scraping, filling of holes, nailing, lay of paper or other underlayments. The sanding or refinishing of all wood floors either by hand or power machine.



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**CARPENTERS, Continued**

**Forms**

The fabrication and re-fabrication of all forms and dismantling of forms when they are to be reused. This includes removable corrugated metal forming systems and all other patented forming systems. When power rigging is used in the setting or dismantling of forms, and the necessary false work, all handling, rigging and signaling. The setting, leveling and aligning of all templates for anchor bolts for structural members, machinery, and the placing, leveling, bracing, burning and welding for all bolts. The installation of embedded materials where attached to forms and/or embedded materials for machinery. Framing in connection with the setting of bulkhead; fabrication of screeds and stakes for floors and form for articles. The handling of lumber, fabricated forms and form hardware installed by carpenters. The building and moving of all scaffolding for runways and staging. The cutting or framing of openings for piles, conduit, ducts, when they pass through floors, partitions or forms. All rigging, setting, aligning and hand signaling when setting up pre-cast units.

**Furniture**

The loading, unloading, handling, dismantling, distribution, erection, stockpiling, refurbishing, and installation of all modular and systems office furniture and all components parts, new and refurbished.

**Lathing**

The prefabricating, erecting, construction, furring, making and erecting of brackets, clips and hangers, wood, wire and metal lath to which plaster-type materials are applied; corner beads, arches erected for the purpose of holding plaster or cement.

The rigging, erecting, staying and fastening in any manner of all pre-cast aggregate panels of all types. All carrying bars, purlins and furring, regardless of size; light iron and metal furring of all descriptions for the receipt of metal lath, rock lath and all light iron when studs are to receive metal lath or rock lath for the application of plaster; and all other light iron furring erected to receive lath and plaster. The nailing, typing and fastening of all wire and metallic lath such as wire cloth, wire mesh, expanded metal lath, hy rib and flat expanded metal lath and wire of all descriptions as well as the placing of all hangers to support suspended ceilings or any of the above types of light iron and metal furring which receive lath and plaster; the placing of all types of floor lath, such as hyrib lath, paperback steeltex floor lath, Penn metal rib, etc. The tying, nailing, clipping or fastening, mechanical or otherwise, of all types of lath regardless of size, such as wood lath, plasterboard, button board, flaxilinum board, bishopric, celetex, gypsum lath, foam and Styrofoam, rock lath or any and all other types of material erected to receive or hold plaster. The erection of all metal plastering accessories such as metal corner beads and other plastering accessories which are covered and/or serve as a ground of screed for plaster.

**Material Procedures**

The unloading, handling and erection and power rigging in connection with laminated wood arches, trusses and decks. All power rigging and signaling of Carpenters' materials. The operation and maintenance of small air compressors generators, electric or gasoline power motors for the operation of woodworking machinery. The unloading, handling and distribution of materials erected and installed. by carpenters. All prefabricated, manufactured and finished materials regardless of packing, shall be unloaded distributed and installed by the Carpenters. This shall include, but not be limited to all forms, templates, bolt, cabinets and all materials normally installed by Carpenters. Underpinning, lagging, bracing, propping and shoring, raising and moving of all building structures of parts thereof by the use of jack, power rigging or other methods shall be the work. This includes the unloading and setting of modular units and all work related thereto. The assembly and erection of pole and pre-engineered buildings.

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**CARPENTERS, Continued**

**Railing**

The installation of all construction of temporary guardrails, barricades and /or safety devices. The unloading, handling, distribution, installation and backing necessary for all aluminum, vinyl, plastic or wood handrails and guardrails.

**Scaffolding**

The installation of all construction of temporary guardrails, barricades and /or safety devices. The unloading, handling, distribution, installation and backing necessary for all aluminum, vinyl, plastic or wood handrails and guardrails.

**Sink Tops and Cabinets**

The unloading, distribution and installation of all sink tops, cabinets, hoods base and wall units.

**Weather and Spray Protection**

The fabrication, erection and removal of frames, enclosures of buildings or scaffoldings, the draping of tarps, visqueen or similar coverings when secured by wire, nailing, bolting or clamps. The handling and setting up of all temporary enclosures.

**Windows, Walls and Partitions**

The installation, erection and/or application of all material component parts of wall and partitions regardless of all materials composition or method or manner of their installation, attachment of connection, including but not limited to the following items: All floor and ceiling runners, studs, stiffeners, cross bracings, Te-Blocking, resilient channels, furring channels, doors and windows including frames, casing, molding, base, accessory trim items, gypsum drywall materials, the making and installing of all backing for fixtures and welding of studs or other fasteners to receive materials being applied; laminated gypsum systems backing board, finish board, fireproofing of beams and columns, fireproofing of chase, sound and thermal installation materials, fixture attachments including all layout work, preparation of all openings for lighting, air vents or other purposes, all toilet partitions and insulated translucent wall and ceiling systems, and all other necessary or related work.

The erection of exterior metal studs and the installation windows metal or wood and those attached to metal studs.

The installation of rockwool, cork, fiberglass, tectum, Styrofoam and other insulation material used form sound of weatherproofing, the renewal for caulking and replacing of staff bead, brick mould and all Oakum, caulking, substitutes and all other caulking in connection there with, and the installation of chalkboards, cork and tack boards.

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**DRYWALL FINISHERS**

Drywall Finisher - Hand Tools	\$ 21.54	\$ 6.72	\$ 5.83	<b>\$ 34.09</b>
Drywall Finisher - Bazooka Box	\$ 22.54	\$ 6.72	\$ 5.83	<b>\$ 35.09</b>

**\$1.00** Charge person working up to 5 employees

**\$1.50** Charge person working 6 or more employees

**\$1.00** General Foreman above highest paid Charge person

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st 6 months	\$ 14.00	\$ 6.72	\$ 1.67	<b>\$ 22.39</b>
2nd 6 months	\$ 15.08	\$ 6.72	\$ 1.67	<b>\$ 23.47</b>
3rd 6 months	\$ 16.16	\$ 6.72	\$ 1.67	<b>\$ 24.55</b>
4th 6 months	\$ 17.23	\$ 6.72	\$ 1.67	<b>\$ 25.62</b>
5th 6 months	\$ 18.31	\$ 6.72	\$ 1.67	<b>\$ 26.70</b>
6th 6 months	\$ 19.39	\$ 6.72	\$ 1.67	<b>\$ 27.78</b>
7th and 8th 6 months	\$ 20.46	\$ 6.72	\$ 1.67	<b>\$ 28.85</b>

**APPRENTICE RATIO: One (1) Apprentice to every one (1) Drywall Finisher**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

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**ELECTRICAL WORKERS**

Electrician - Wiremen	\$ 38.71	\$ 6.00	\$ 5.81	<b>\$ 50.52</b>
Electrician - Cable Splicer	\$ 39.21	\$ 6.00	\$ 5.88	<b>\$ 51.09</b>
Welder	\$ 39.21	\$ 6.00	\$ 5.88	<b>\$ 51.09</b>
Foremen - Required on any job where 3-9 electricians are employed, one shall be designated foreman. One (1) additional electrician shall be designated foreman if there are 10-14 electricians, and one (1) additional for 15-21 electricians	\$ 42.58	\$ 6.00	\$ 6.39	<b>\$ 54.97</b>
General Foremen (22 or more Electricians)	\$ 46.45	\$ 6.00	\$ 6.97	<b>\$ 59.42</b>

**Per Hour Premiums:**

**\$1.00** per hour to the per hour wage rate for electricians working in hazardous locations, above or below ground in high places such as silos, hangers, beacon lights, or other similar structures where a free fall of 30 feet or more is possible.

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st Year	\$ 19.26	\$ 4.57	\$ 0.58	<b>\$ 24.41</b>
2nd Year	\$ 20.36	\$ 4.57	\$ 3.05	<b>\$ 27.98</b>
3rd Year	\$ 22.54	\$ 4.57	\$ 3.38	<b>\$ 30.49</b>
4th Year	\$ 24.72	\$ 4.57	\$ 3.71	<b>\$ 33.00</b>
5th Year	\$ 29.03	\$ 4.57	\$ 4.35	<b>\$ 37.95</b>

**APPRENTICE RATIO: Two (2) Apprentices to (1-3) Wiremen, four (4) Apprentices to (4 to 6) Wiremen, six (6) Apprentices to (7 to 9) Wiremen**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: installation, inspection, operation, maintenance, service, repair, testing or retrofit of all energized and de-energized electrical power and communications conductors, electrical materials, electrical devices and electrical power distribution equipment, or a part of there which generates, transmits, transforms or utilize electrical energy in any form AC or DC voltages for heat, light or power used in the construction, alteration, temporary power, maintenance, service and repair of public and private premises including building, floating buildings, structures, bridges, street, highway and tunnel work including all signaling, shafts, dams or levees, river and harbor work, airports, mobile homes, recreational vehicles, yards, lots, parking lots, carnivals, tradeshows, events and industrial substations, The installations of electrical conductors and electrical distribution equipment that connect to the supply of electricity, installations used by an electric utility that are not an integral part of a generating plant, substation or control center and all electrical raceways of whatever form for electrical and communications conductors and fiber optics.

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**ELECTRICAL WORKERS, Continued**

As related to an electrical system in its entirety, the chasing, channeling, opening and closing of places above and below ground, placement, installation or temporary installation, erection, inspection, operation, welding, maintenance, service, repair, testing or connection of any electrical conductors, electrical lighting fixtures, appliances, instrumentation apparatus, raceway systems, conduit systems, pipe systems, underground systems, cable tray systems, grounding, bonding systems, lightening protection systems, power-generating green technology systems or other systems of renewable energy including but not limited to photovoltaic, solar, wind turbine, hydro-generation, geothermal or tidal systems, electric vehicle technology, electrical power conductors and communications conductors for energy management systems, electrical power conductors and communications conductors for building automation systems, railroad, signalman, maintainer and railroad communication, nuclear, or the erection, alteration, repair, modification, splicing, termination of electric transmission lines on private property, structured cabling systems for transmission of voice, data, video, notification, warning systems, smoke and fire alarm systems, other life safe safety and security systems and appurtenances.

The installation of electrical lighting, heating and power equipment, fiber optics, and the installation and connecting of all electronic equipment, including computing machines and devices, monitoring of radiation hazards where such monitoring work is not preempted or performed by an electrical utility, the installation of all temporary power and light wiring, high-voltage cable splicing and terminations, breaker testing and the commission and decommission of electrical control systems. Clean, service, repair, replace, operate and adjust high and low voltage switchgear; transformers, conductors, connectors, breakers, fuses and buses. Operations, maintenance and repair of high voltage electrical power connections, circuit protection devices and associated switchgear. Pre-fabricated parts and materials shall be unloaded, distributed and installed by employees covered under this trade and working for the electrical contractor. There are no restrictions on an employers utilization of pre-fabricated or pre-assembled parts, fixtures or other materials when obtained from a third party supplier, except as set forth above.

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TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
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**ELECTRICAL WORKERS (ELECTRIC SIGN)**

Electrician - Wireman	\$ 38.71	\$ 6.00	\$ 5.81	<b>\$ 50.52</b>
Foreman - Required on any job where ten (10) Electricians are employed, one shall be designated foreman.	\$ 42.58	\$ 6.00	\$ 6.39	<b>\$ 54.97</b>

**Per Hour Premiums:**

**\$2.00** per hour to the per hour wage rate for Electrician working in high places, seventy-five feet (75') above the ground floor except safety-guarded swing stage, walkways, or 2 man remote baskets.

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st year	\$ 19.26	\$ 4.57	\$ 0.58	<b>\$ 24.41</b>
2nd year	\$ 20.36	\$ 4.57	\$ 3.05	<b>\$ 27.98</b>
3rd year	\$ 22.54	\$ 4.57	\$ 3.38	<b>\$ 30.49</b>
4th year	\$ 24.72	\$ 4.57	\$ 3.71	<b>\$ 33.00</b>
5th year	\$ 29.03	\$ 4.57	\$ 4.35	<b>\$ 37.95</b>

**APPRENTICE RATIO: Two (2) Apprentices to (1-3) Wiremen, four (4) Apprentices to (4 to 6) Wiremen, six (6) Apprentices to (7 to 9) Wiremen**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: the installation, alteration, dismantling or removing of all illuminated signs, non illuminated signs or displays, whether luminous tube, light emitting diodes, receptacle, plastic, reflector type, plaques and panels. The installation of all interior neo tubing and light emitting diodes for lighting or decorating all secondary conduit work, flashers, timers or other auxiliary equipment, also the steel structures for the support of signs or displays. In the event of billboards or displays not served from an existing building or group of buildings and which in itself is an individual entity, having its own service and meter, all such service conduit meter and secondary conduit. Also covered is the service, maintenance and patrolling of all electrical equipment on signs, displays, and tube lighting after they have been erected and in operation.

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**ELEVATOR CONSTRUCTORS**

Mechanics	\$ 51.26	\$ 16.08	\$ 20.56	<b>\$ 87.90</b>
Mechanic In Charge	\$ 57.67	\$ 16.08	\$ 20.56	<b>\$ 94.31</b>

**Apprentices:**

**NOTE:** Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see page 6 of the Supplemental General Conditions for more information.

Probationary Apprentice/Helper (0 - 6 mo.)	\$ 25.63	\$ -	\$ -	<b>\$ 25.63</b>
Probationary Apprentice/Helper (7 mo. - 1 yr.)	\$ 28.19	\$ 16.08	\$ 20.56	<b>\$ 64.83</b>
1st year	\$ 28.19	\$ 16.08	\$ 20.56	<b>\$ 64.83</b>
2nd year	\$ 33.32	\$ 16.08	\$ 20.56	<b>\$ 69.96</b>
3rd year & Helpers	\$ 35.88	\$ 16.08	\$ 20.56	<b>\$ 72.52</b>
4th year & Asst. Mechanics	\$ 41.01	\$ 16.08	\$ 20.56	<b>\$ 77.65</b>

**APPRENTICE RATIO: One (1) Apprentice to one (1) Mechanic**

- (1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.
- (2) Probationary Apprentice/Helper receive health and pension after 1st 6 months.

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**INSULATORS & ASBESTOS WORKERS**

Insulators & Asbestos Workers	\$ 35.03	\$ 15.62	-	<b>\$ 50.65</b>
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(1) Per hour health benefit includes hospitalization, medical and life insurance.

Scope of work under this trade includes but is not be limited to: the preparation, fabrication, application, alteration, erection, assembling molding, spraying, pouring, mixing, hanging, adjusting, repairing, dismantling, reconditioning, maintenance, finishing and/or weatherproofing of cold or hot thermal, insulation with such materials as may be specified when these materials are to be installed for thermal, fireproofing and acoustical purposes in voids, or to create voids, or on either piping, fittings, valves, boilers, ducts, flues, tanks, vats equipment, or on any cold or hot surfaces for the purpose of thermal control. Exclude is the manufacture or pipe covering and/or fittings in one piece halves or the facing of flexible blanket duct insulation.

Preparation and application of all exterior material, excluding factory applied for the purpose of weatherproofing or protection, etc. This is also to include all labor connected with the handling and distribution of thermal insulation materials on the job premises and all other such work for the purpose of thermal control. All exterior material, excluding factory applied for the purpose of weatherproofing or protection, etc., shall be prepared and applied by the Asbestos Workers. This is also to include all labor connected with the handling and distribution of thermal insulation materials on the job premises.

It shall also includes firestopping or fireproofing technicians, & apprentices engaged in the manufacture, fabrication, assembling, molding, handling, erection, spraying, pouring, mixing, hanging, preparation, application, adjusting, alteration, repairing, dismantling, reconditioning, testing, and maintenance of the following, when applied by machine or other application methods of all firestopping materials including, but not limited to: intumescent firestop sealant, intumescent firestop blocks, elastomeric firestop sealant, self-leveling firestop sealant, trowel able firestop compound, firestop collars, composite sheets, putty pads, fire containment pillows, wrap strips, putty sticks, firestop mortar, firestop mastic, refractory ceramic fiber blanket for kitchen exhaust and fire rated duct systems, or other materials used in connection with labor, and to include other fire protection materials such as boots and cable coatings which are connected with the handling or distribution of the above insulating materials, or the repair and maintenance of all equipment, on job premises.

The types of work shall include but not be limited to: top of wall, curtain wall, fire rated wall penetrations, grease ducts, stairwell pressurization systems, beam, column, and deck fireproofing, application of materials or devices within or around penetrations and openings in all rated wall or floor assemblies in order to prevent the passage of fire, smoke, or other gases. The application include all components involved in creating the rated barrier at perimeter slab edges and cavities, the head of gypsum board or concrete walls, joints between rated wall or floor components, and sealing of penetrating items and blank openings.

The unloading and distribution on the job site of all insulation material and related material and equipment, the assembling, dismantling of scaffolding and clean up when necessary.



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**IRONWORKERS**

Ironworkers	\$ 27.00	\$ 6.00	\$ 6.07	<b>\$ 39.07</b>
Foreman *	\$ 29.70	\$ 6.00	\$ 6.07	<b>\$ 41.77</b>
General Foreman *	\$ 32.40	\$ 6.00	\$ 6.07	<b>\$ 44.47</b>

\* A foreman is required when two (2) or more Ironworkers are employed by one employer, one shall be a foreman. When the crew exceeds 12 or more, another foreman is required. A general foreman is required if three (3) or more Ironworker Foremen are employed on a job.

**Per Hour Premiums:**

Diving Pay add \$40.00 rental plus \$5.00 to the Ironworker's wage rate.

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st 6 months - 800 Hours	\$ 16.20	\$ 6.00	\$ -	<b>\$ 22.20</b>
2nd 6 months - 800 Hours	\$ 17.55	\$ 6.00	\$ -	<b>\$ 23.55</b>
3rd 6 months - 800 Hours	\$ 18.90	\$ 6.00	\$ -	<b>\$ 24.90</b>
4th 6 months - 800 Hours	\$ 20.25	\$ 6.00	\$ -	<b>\$ 26.25</b>
5th 6 months - 800 Hours	\$ 21.60	\$ 6.00	\$ -	<b>\$ 27.60</b>
6th 6 months - 800 Hours	\$ 22.95	\$ 6.00	\$ -	<b>\$ 28.95</b>
7th 6 months - 800 Hours	\$ 24.30	\$ 6.00	\$ -	<b>\$ 30.30</b>

**APPRENTICE RATIO: One (1) Apprentice to four (4) Ironworkers. Ornamental work one (1) Apprentice to two (2)**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: erection and installation of all bridges, structural, ornamental, reinforcing, and reinforcing ironwork; which includes but is not limited to the following: reinforcing steel (rebar), post tensioning (cables), structural steel and iron, miscellaneous steel and iron, stairs – joist – decking, curtains and window walls, storefronts – windows, metal doors (manual and electric), glass doors (manual and electric), glass slider doors, screens – fences, tilt walls – precast – stone, space frames – skylights, pre-engineered metal buildings, cladding covers (all types), column covers (all types), towers – cranes – hoists, standing seam metal roofs, handrails – rails (all types), rigging – welding, conveyors – erectors and maintenance, glazing – caulking – sealants and louvers -fixed.

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**This classification cannot be used for unskilled employees performing work in other trades OR for employees in other trades that handle their own materials and/or must clean up after their work is performed. Employees must be paid in accordance with the type of work being performed without regard to skill.**

**LABORERS**

Laborer	\$ 19.00	\$ 4.25	\$ 3.41	<b>\$ 26.66</b>
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**Per Hour Premiums:**

Laborer Foreman (For every 4 laborers) - **\$2.00** per hour on top of the highest paid laborers

General Foreman (16 or more laborers) - **\$3.00** per hour on top of the highest paid laborers

**\$2.00** - Mason and Plaster Tenders, Concrete Placement Patch Men, and Finisher Tenders, Scaffold Builders, Strippers and Wreckers (Demolition), Electric and Air-Hammers, Concrete Grinders, Saws, Coring Machines, Nozzle and Hopper & Mixers, Cutting Torch, Hydro-Blasting (Pressure Washing), Chain Saw.

**\$3.50** - Sidewalks and Curb and Gutter Form Builders and Setters, Plaster and Concrete Finish and Repair, Loader, Lulls, Forklifts, Bobcats, Water Sewer and Storm Drain Pipe Layers, Asbestos Removal, Hazardous Waste, and Lead Removal, Remediation and Handling.

*Contracts for the inspection of sewer lines for leakage and damage through the use of Closed Circuit T.V. inspections and the simultaneous sealing of leaks or other damage in the lines as the machine inspects the sewer line is covered under the Responsible Wages and Benefits. Contracts for inspection only are not covered. Workers performing on a Closed Circuit T.V. crew should be classified and paid as laborer. The CCTV Operator should receive the \$3.00 per hour supplement for Water Sewer & Storm Drain Pipe layers. The rate for the Vector Trucks Operator is listed under the Operating Engineers*

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st 6 month period	\$ 15.20	\$ 4.25	\$ 3.41	<b>\$ 22.86</b>
2nd 6 month period	\$ 16.15	\$ 4.25	\$ 3.41	<b>\$ 23.81</b>
3rd 6 month period	\$ 17.10	\$ 4.25	\$ 3.41	<b>\$ 24.76</b>
4th 6 month period	\$ 18.05	\$ 4.25	\$ 3.41	<b>\$ 25.71</b>

**APPRENTICE RATIO: After employing one (1) Laborer, the next laborer employed may be an apprentice, after employing four (4) Laborers, an apprentice shall be employed as the next laborer employed. After the first apprentice is employed, the ratio of Apprentices to Laborers shall not exceed one (1) Apprentice for three (3) Laborers**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes tending masons, plasterers, carpenters and other building and construction crafts. Tending shall consist of preparation of materials and the handling and conveying of materials. Unloading, handling and distributing of all materials, fixtures, furnishings and appliances from point of delivery to point of installation. Cleaning and clearing of all debris. Ageing and curing of concrete, mortar and other materials.

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**LABORERS, Continued**

**Scaffolds:** The erection, planking and removal of all scaffolds for lathers, plasterers, bricklayers and other construction trades. Building planking or installation and removal of all staging, swing and hanging scaffolds, including maintenance thereof up to a height of three (3) bucks.

**Excavations and Foundations, Site Preparation and Clearance, Transportation and Transmissions Lines:** Excavation for building and all other construction, digging of trenches, piers, foundations and holes, digging, lagging, sheeting, cribbing, bracing and propping of foundations, holes, caissons, cofferdams, dams, dikes, and irrigation trenches, canals and all handling filling and placing of sand bags connected therewith. All drilling, blasting and scaling on the site or along the right of way, as well as all access roads, reservoirs, including areas adjacent or pertinent to the construction site, installation of temporary lines. Preparation and compacting of roadbeds for highway construction and the preparation of trenches, footings, etc. for cross country transmission or underground lines or cables. On site preparation and right-of-way clearance, for construction of any structures or the installation of traffic and transportation facilities such as highways, pipelines, electrical transmission lines, dam sites and reservoir areas, access roads, etc. Erection, dismantling and/pre-installation of all fences.

**Concrete, Bituminous Concrete and Aggregates:** Mixing, handling, conveying, pouring, vibrating, gunniting and otherwise placing concrete or aggregates, whether done by hand or other process. Wrecking, stripping, dismantling and handling concrete forms and falsework. Placing of concrete or aggregates whether poured, pumped, gunnited, or placed by any other process. All vibrating, grinding, spreading, flowing, puddling, leveling and strike off of concrete aggregates by floating rodding or screeding, by hand or mechanical means prior to finishing. The filling and patching of voids, crevices etc. to correct defects in concrete.

Underpinning, Lagging, Bracing, Propping and Shoring; Drilling and Blasting; Signal Men; General Excavation and Grading and Landscaping of all sites for all purposes; and Wrecking.

Construction Cleaners, Janitors, Fire Watchers, Hole Watchers, Material Handlers, Escorts and Equipment Monitors, Decontamination Workers, Flaggers and Landscapers, Mowers, Guardrail and Fencer Erectors, Rod Carriers, and Pressure Washing

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<b><u>MILLWRIGHTS, MACHINERY ERECTORS &amp; DIVERS</u></b>				
Millwrights, Machinery Erectors	\$ 32.75	\$ 5.50	\$ 12.58	<b>\$ 50.83</b>
Foreman - (2 to 10 Millwrights)	\$ 35.04	\$ 5.50	\$ 12.58	<b>\$ 53.12</b>
General Foreman - (2 or more Foremen and can serve as a Crew Foreman)	\$ 36.03	\$ 5.50	\$ 12.58	<b>\$ 54.11</b>
Diver - wet dry days (2)	\$ 38.79	\$ 5.50	\$ 12.58	<b>\$ 56.87</b>

**Per Hour Premiums:**

On wet days, a Diver shall be paid the Diver rate and penetration pay of **\$2.00** per foot per day in excess of twenty (20) feet after entering an enclosed structure that has no direct path to the surface.

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st Year	\$ 21.29	\$ 5.50	\$ 12.58	<b>\$ 39.37</b>
2nd Year	\$ 24.56	\$ 5.50	\$ 12.58	<b>\$ 42.64</b>
3rd Year	\$ 27.84	\$ 5.50	\$ 12.58	<b>\$ 45.92</b>
4th Year	\$ 31.11	\$ 5.50	\$ 12.58	<b>\$ 49.19</b>

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

(2) Diver classification applies to any Millwright that performs work beneath the water surface.

Scope of work under this trade includes but is not be limited to: installation, assembly, and, when necessary, dismantling machinery in factories, power plants, and construction sites.

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<b><u>OPERATING ENGINEERS</u></b>				
A-Frame Truck	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Air Compressor	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Compressor, Above 250 CFM	\$ 26.29	\$ 7.05	\$ 4.50	<b>\$ 37.84</b>
Backhoe-Loader Combination	\$ 28.93	\$ 7.05	\$ 4.50	<b>\$ 40.48</b>
Batching Plant	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Bobcat/Skid Steer	\$ 22.50	\$ 4.25	\$ 3.41	<b>\$ 30.16</b>
Boom Hauling Truck	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Boom Truck	\$ 28.93	\$ 7.05	\$ 4.50	<b>\$ 40.48</b>
Boring Machine	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Bulldozer	\$ 28.75	\$ 7.55	\$ 5.00	<b>\$ 41.30</b>
Concrete Mixer	\$ 30.47	\$ 7.55	\$ 5.00	<b>\$ 43.02</b>
Concrete Placing Booms	\$ 30.33	\$ 7.05	\$ 4.50	<b>\$ 41.88</b>
Concrete Pump, Trailer Mounted	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Concrete Pump, Truck Mounted	\$ 30.33	\$ 7.05	\$ 4.50	<b>\$ 41.88</b>
Crane 100 Ton - 199, Medium Top Drive				
Drill Rig. All Friction Cranes performing duty cycle work (clam shelling pile driving, drag line work.	\$ 36.50	\$ 7.55	\$ 5.00	<b>\$ 49.05</b>
Crane 200 Ton+, Large Top Drive Drill Rigs	\$ 37.50	\$ 7.55	\$ 5.00	<b>\$ 50.05</b>
Crane 99 Ton and Below	\$ 28.75	\$ 7.55	\$ 5.00	<b>\$ 41.30</b>
Drill Rig	\$ 28.75	\$ 7.55	\$ 5.00	<b>\$ 41.30</b>
Directional Boring and Drilling Machine	\$ 30.47	\$ 7.55	\$ 5.00	<b>\$ 43.02</b>
Distributor	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Dozer	\$ 28.93	\$ 7.05	\$ 4.50	<b>\$ 40.48</b>
Drill Rig, Truck Mounted, Large	\$ 32.34	\$ 7.05	\$ 4.50	<b>\$ 43.89</b>
Drill Rig, Truck Mounted, Small	\$ 28.93	\$ 7.05	\$ 4.50	<b>\$ 40.48</b>
Driver, Miscellaneous Trucks	\$ 26.29	\$ 7.05	\$ 4.50	<b>\$ 37.84</b>
Excavator	\$ 28.93	\$ 7.05	\$ 4.50	<b>\$ 40.48</b>
Finish Machine - Paving	\$ 25.00	\$ 7.55	\$ 4.50	<b>\$ 37.05</b>
Forklift/Lull	\$ 22.50	\$ 4.25	\$ 3.41	<b>\$ 30.16</b>
Front-End Loader	\$ 22.50	\$ 4.25	\$ 3.41	<b>\$ 30.16</b>
Fuel Truck	\$ 25.00	\$ 7.55	\$ 4.50	<b>\$ 37.05</b>
Gradall	\$ 28.93	\$ 7.05	\$ 4.50	<b>\$ 40.48</b>
Grader	\$ 30.33	\$ 7.05	\$ 4.50	<b>\$ 41.88</b>
Grader, Finisher	\$ 32.34	\$ 7.05	\$ 4.50	<b>\$ 43.89</b>
Grease Truck	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Hoist (Electric, Hydraulic, Air) Personnel,				
Material, Tugger	\$ 27.35	\$ 7.05	\$ 4.50	<b>\$ 38.90</b>
Hoists, 2 & 3 Drum Only	\$ 34.29	\$ 7.05	\$ 4.50	<b>\$ 45.84</b>
Hydraulic Backhoe	\$ 28.75	\$ 7.55	\$ 5.00	<b>\$ 41.30</b>
Inside Elevators, Temporary Only	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Locomotive Operator	\$ 25.00	\$ 7.55	\$ 5.00	<b>\$ 37.55</b>
Lowboy Truck	\$ 25.00	\$ 7.55	\$ 4.50	<b>\$ 37.05</b>

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<b><u>OPERATING ENGINEERS, Continued</u></b>				
Mechanic I	\$ 28.93	\$ 7.05	\$ 4.50	\$ 40.48
Mechanic II	\$ 28.75	\$ 7.55	\$ 5.00	\$ 41.30
Mechanic's Helper	\$ 24.06	\$ 7.05	\$ 4.50	\$ 35.61
Milling Machine	\$ 15.00	\$ -	\$ -	\$ 15.00
Motor Grader	\$ 30.47	\$ 7.55	\$ 5.00	\$ 43.02
Motor Mixing Pump (All types)	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Off-Road Trucks	\$ 26.29	\$ 7.05	\$ 4.50	\$ 37.84
Oiler, Driver Oiler, Crawler Crane	\$ 24.06	\$ 7.05	\$ 4.50	\$ 35.61
Oiler/Driver/Flagman	\$ 25.76	\$ 7.05	\$ 4.50	\$ 37.31
Pan	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Pavement Breaker	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Pumps/ Dewatering Systems 4 in. and over	\$ 26.29	\$ 7.05	\$ 4.50	\$ 37.84
Roller	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Scraper	\$ 26.29	\$ 7.05	\$ 4.50	\$ 37.84
Spreading/Finishing Machine	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Straddle Buggy/Travel Lift	\$ 28.93	\$ 7.05	\$ 4.50	\$ 40.48
Tack Truck	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Trackhoe	\$ 28.93	\$ 7.05	\$ 4.50	\$ 40.48
Tractors	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Trenching and Ditching Machine	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Utility Operator, Less than 6 Pieces of				
Miscellaneous Equipment	\$ 26.29	\$ 7.05	\$ 4.50	\$ 37.84
Vactor Truck	\$ 23.87	\$ -	\$ -	\$ 23.87
Vacuum Pump	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Water Truck Driver	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Welder	\$ 28.93	\$ 7.05	\$ 4.50	\$ 40.48
Welding Machines, three (3) or more	\$ 26.29	\$ 7.05	\$ 4.50	\$ 37.84
Winch Truck	\$ 25.00	\$ 7.55	\$ 5.00	\$ 37.55
Yard Crane	\$ 28.75	\$ 7.55	\$ 5.00	\$ 41.30

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st 6 months	\$ 20.51	\$ 7.55	\$ 5.00	\$ 33.06
2nd 6 months	\$ 21.06	\$ 7.55	\$ 5.00	\$ 33.61
3rd 6 months	\$ 21.61	\$ 7.55	\$ 5.00	\$ 34.16
4th 6 months	\$ 22.15	\$ 7.55	\$ 5.00	\$ 34.70
5th 6 months	\$ 22.70	\$ 7.55	\$ 5.00	\$ 35.25
6th 6 months	\$ 23.25	\$ 7.55	\$ 5.00	\$ 35.80
7th 6 months	\$ 23.79	\$ 7.55	\$ 5.00	\$ 36.34
8th 6 months	\$ 24.34	\$ 7.55	\$ 5.00	\$ 36.89

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

**APPRENTICE RATIO: Three (3) Apprentices to one (1) Operator. Apprentices must be under the supervision of an Operator**

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**PAINTERS/WALL COVERING INSTALLATIONS**

Painter - Commercial	\$ 17.53	\$ 6.72	\$ 5.83	<b>\$ 30.08</b>
Painter - Industrial	\$ 21.76	\$ 6.72	\$ 5.83	<b>\$ 34.31</b>
Painter (Highway/Parking Lot Striper)	\$ 15.00	\$ -	\$ -	<b>\$ 15.00</b>
Operator (Spray Nozzleman)	\$ 15.00	\$ -	\$ -	<b>\$ 15.00</b>
Operator (Striping Machine)	\$ 15.07	\$ -	\$ -	<b>\$ 15.07</b>

**Per Hour Premiums:**

**\$1.00** Charge person working up to 5 employees

**\$1.50** Charge person working 6 or more employees

**\$1.00** General Foreman above highest paid charge person

**\$1.00** Swing-Stage

**\$2.00** Thermal-Spary/Metalizing

**\$ .50** Apprentices - steel, swing/stage, tanks, lead/asbestos abatement, power facilities, catalyzed epoxies, urethanes, HIPAC coatings

Industrial Rates are used on Water Treatment Plants, Pump Stations, Elevated / Ground Storage Tanks and Communication Towers.

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st 6 months	\$ 11.39	\$ 6.72	\$ 1.67	<b>\$ 19.78</b>
2nd 6 months	\$ 12.27	\$ 6.72	\$ 1.67	<b>\$ 20.66</b>
3rd 6 months	\$ 13.15	\$ 6.72	\$ 1.67	<b>\$ 21.54</b>
4th 6 months	\$ 14.02	\$ 6.72	\$ 1.67	<b>\$ 22.41</b>
5th 6 months	\$ 14.90	\$ 6.72	\$ 1.67	<b>\$ 23.29</b>
6th 6 months	\$ 15.78	\$ 6.72	\$ 1.67	<b>\$ 24.17</b>
7th and 8th 6 months	\$ 16.65	\$ 6.72	\$ 1.67	<b>\$ 25.04</b>

**APPRENTICE RATIO: One (1) Apprentice to every one (1) Painter/Wall Covering Installer**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not limited to: preparation, application and removal of all types of coatings and coating systems in relation to all painting, decorating, protective coatings, coating and staining of concrete floors and toppings, waterproofing, masonry restoration, fireproofing, fire retarding, metal polishing, refinishing, sealing, lining, fiber glassing, E-Glass fiberglass, carbon fiber, encapsulating, insulating, metalizing, flame spray, the application of Exterior Insulating Finishing Systems;

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**PAINTERS/WALL COVERING INSTALLATIONS, Continued**

Each and all such applications, and similar or substitute applications, on all surfaces, interior and exterior, to include, but not to be limited to: residences; buildings; structures; industrial, power, chemical and manufacturing plants; bridges; tanks; vats; pipes; stacks; light and high tension poles; parking, traffic and air strip lines; trucks; automobile and railroad cars; ships; aircraft; and all machinery and equipment;

Any and all material used in preparation, application or removal of any paint, coatings or applications, including, but not limited to: the handling and use of thinners, dryers, sealers, binders, pigments, primers, extenders, air and vapor barriers, emulsions, waxes, stains, mastics, plastics, enamels, acrylics, epoxies, epoxy injection and T-Lock welding, alkalis, sheet rubber, foams, seamless and tile-like coatings, etc.;

All preparation for and removal of any and all materials for finishes, such as deep cleaning, patching, all levels of finishing, taping/finishing skim coating, pointing, caulking, high pressure water, chemical and abrasive blasting, environmental blasting, wet/dry vacuum work, chemical stripping, scraping, air tooling, bleaching, steam cleaning, asbestos and lead abatement/removal; mold remediation and vapor barrier systems;

The inspection of all coatings and/or coating systems during their applications.

**WALL COVERING INSTALLATIONS**

All material applied to walls or ceilings with adhesive, staples, tacks, by stretching or adhered by any other method, including all papers, vinyl, flexible woods, fabrics, borders, metals upholstered wall systems, the fabric covered panels made of plastic/wood or pre-finished products of micro fiberglass, etc., acrovin and various plastic wall coverings such as wainscot, caps, corner moldings and accessories;

Any and all preparation of walls and ceilings such as scraping or any methodology for removal of existing materials, including patching, leveling, skim coating and priming.



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**PILEDRIVERS, BRIDGE CARPENTERS & DIVERS**

Piledrivers and Bridge Carpenters	\$ 25.45	\$ 4.60	\$ 7.05	<b>\$ 37.10</b>
Foreman	\$ 28.95	\$ 4.60	\$ 7.05	<b>\$ 40.60</b>
(All piledriving crews shall consist of at least one paid foreman)				
Divers (Wet days up to 59' or Dry days)	\$ 29.90	\$ 4.60	\$ 7.05	<b>\$ 41.55</b>
Diver Tenders	\$ 29.90	\$ 4.60	\$ 7.05	<b>\$ 41.55</b>
Diver Foreman	\$ 33.40	\$ 4.60	\$ 7.05	<b>\$ 45.05</b>

Diver Wet Days - The diver and tender must receive the diver rate with a premium pay of \$1.00 per hour/ per foot per day for (60'-100'). Over 100' will be negotiated between the diver and the employer.

Foreman Wet Days - The foreman must receive the foremen rate with a premium pay of \$2.00 per hour/ per foot per day for (50'-100'). Over 100' will be negotiated between the diver and the employer.

For Effluent Diving (working in hazardous waters such as waste water treatment plant/tanks, sewer pipes or storm water out fall pipes) the diver and tender must receive 1.5 times the diver and tender base rate and on wet days the diver and tender must also receive a premium pay of \$1.00 per foot per day for (60' - 100') and over 100' will be negotiated between the diver and the employer.

Penetration: \$1.00 per foot per day in excess of 20' after entering an enclosed structure that has no direct path to the surface.

**Per Hour Premiums:**

\$0.50 Certified Welders

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see page 6 of the Supplemental General Conditions for more information.**

1st year	\$ 17.05	\$ 4.60	\$ 7.05	<b>\$ 28.70</b>
2nd year	\$ 19.09	\$ 4.60	\$ 7.05	<b>\$ 30.74</b>
3rd year	\$ 20.87	\$ 4.60	\$ 7.05	<b>\$ 32.52</b>
4th year	\$ 22.91	\$ 4.60	\$ 7.05	<b>\$ 34.56</b>

**APPRENTICE RATIO: Two (2) Apprentices to three (3) Piledrivers/Bridge Carpenter**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: all work historically related to piledrivers, welders, drillers, burners, riggers, divers, bridge, deck and wharf builders, signaling, and highway construction. Such work includes, but is not limited to, the following kinds, classes, or descriptions of work: fabricating, erecting, dismantling, loading, unloading, moving, spotting, and handling of all piledriving equipment on the jobsite;

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**PILEDRIVERS, BRIDGE CARPENTERS & DIVERS, Continued**

Jobsite moving and spotting of barges used in connection with piledriving work; anchoring, bolting, boom-tending, bracing, building, burning, capping, caulking, cutting, chipping of all types of piles, dismantling, drilling, erecting, fabricating, fitting, handling, lagging, loading, moving, plumbing, rafting, securing, signaling, spotting, welding, wrapping, and tying back, unloading and removing, all materials of any kind, make, shape or composition, whether prestressed or post stressed concrete, pipe, corrugated shell where power rigging is used, sand piles, sheet piles, auger cast type piling, wood, plastic, fiberglass, steel or any metal or synthetic which is used or installed in, or for, the building, construction, alteration, maintenance, or repair of wharfs, bridges, docks, piers, bulkheads, trestles, offshore drilling platforms of oil, gas, or any other purpose, coal docks, cofferdams, tunnels, seawalls, seawall caps, boardwalks, deck, and temporary flotation devices;

Pilings used in retaining walls, reservoirs, ditches, canals, spillways, cuts, or in any place where retaining walls are used, made of any kind of material, whether temporary or permanent; weights for piers, caissons, and test piles; Test piles and other test materials, including the securing of such materials except for independent testing equipment done by an independent testing laboratory;

Foundation work, including all piling, whether cast-in-place, poured-in-place, driven, jetted, augured, pre-augured or placed, and all caisson, drilled shaft and vibro-flotation foundations;

The splicing, heading, placing of stringers for frame work, fabrication and placing of wailing, spring and fender lines of any material described above;

The driving, vibrating, jetting, sinking, or screwing of all materials described above, whether by steam, pneumatic, hydraulic, electric, diesel, gravity, or vibratory hammer power; All other work in connection with drilling of any holes, shafts or caissons, for foundation work, spotting, aligning, monitoring, plumbing, and leveling of all drilling equipment whether the drilling is vertical, diagonal, on land or water, and is performed by equipment mounted on trucks, cranes, platforms or barges, or any other kind of mounted or self-contained water or land unit; and the handling, loading, unloading, changing, setting up, repairing, welding, or maintenance of the drilling equipment on the job site.

The fabrication and placing of all decking and guards on all docks, wharfs, and piers on the jobsite. All labor (except the work of the Operating Engineers and Oilers) employed in the actual operation of Piledriving equipment used from whatever purpose, including the operation of deck winches. The operation of vibratory hammer controls, hammer throttle values and panels not permanently fixed to a crane within reach of the Operator work.

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**PILEDRIVERS, BRIDGE CARPENTERS & DIVERS, Continued**

Diving: shall be defined as any work performed beneath the water surface, which require individual external life support systems for safe and efficient performance. All underwater construction and reconstruction and the salvage of, and removing of, underwater structures; underwater inspection and repair of hulls, docks, bridges and dams, underwater pipelines, sewages and water systems, underwater suction and discharge lines such as those used at chemical plants, pull mills, and desalinization plants; inspecting, surveying , removing, rescuing, and recovering of all objects below water surfaces; all underwater work necessary on offshore oil platforms permanent or temporary, including all offshore floating drill rights and offshore jack up platforms; all underwater work on pipelines and hookups including oil, gas, water sewage systems; the laying of under water power and telephone cables; offshore marine mining and dredging operations using divers in any phase of tier work; all petroleum, fisheries, oceanographic, research and experimental work, nuclear reactors where the use of divers is necessary; all underwater demolition and blasting work requiring divers.

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**PIPEFITTERS, AIR CONDITIONING & REFRIGERATION**

<b>R-1 ALL PIPING NOT FOR AIR CONDITIONING WORK; AND, COMMERCIAL UNLIMITED, ALL PIPING SYSTEMS OVER 100</b>				
Pipefitter, Air Conditioning & Refrigeration	\$ 40.78	\$ 7.85	\$ 6.30	<b>\$ 54.93</b>

<b>R-2 COMMERCIAL LIMITED, PIPING LIMITED, ALL AC SYSTEMS REFRIGERATION, PIPING UP TO 100 TONS</b>				
Pipefitter, Air Conditioning & Refrigeration	\$ 32.62	\$ 7.85	\$ 5.95	<b>\$ 46.42</b>

<b>R-3 COMMERCIAL AC, REFRIGERATION, ICE MACHINES, SELF CONTAINED AND SPLIT SYSTEMS UP TO 50 TONS</b>				
Pipefitter, Air Conditioning & Refrigeration	\$ 26.51	\$ 7.60	\$ 5.35	<b>\$ 39.46</b>

<b>R-4 UNLIMITED RESIDENTIAL AND LIGHT COMMERCIAL UP TO 10 TONS</b>				
Pipefitter, Air Conditioning & Refrigeration	\$ 22.43	\$ 7.60	\$ 1.00	<b>\$ 31.03</b>

<b>Foreman</b> - Required for four (4) or more workers; also required on all jobs 150 tons or over. A foreman may supervise up to nine (9) Pipefitter, Air Conditioning & Refrigeration Workers.	\$ 46.90	\$ 7.85	\$ 6.30	<b>\$ 61.05</b>
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<b>General Foreman</b> - Required when three (3) foremen are required. A general foreman may supervise up to five (5) foreman.	\$ 50.98	\$ 7.85	\$ 6.30	<b>\$ 65.13</b>
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**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st year	\$ 18.35	\$ -	\$ 0.35	<b>\$ 18.70</b>
2nd year	\$ 20.39	\$ 6.15	\$ 0.35	<b>\$ 26.89</b>
3rd year	\$ 24.47	\$ 6.15	\$ 0.35	<b>\$ 30.97</b>
4th year	\$ 26.51	\$ 6.15	\$ 3.74	<b>\$ 36.40</b>
5th year	\$ 28.55	\$ 6.15	\$ 3.90	<b>\$ 38.60</b>

**APPRENTICE RATIO: One (1) Apprentice to one (1) Pipefitter, Air Conditioning & Refrigeration Worker**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

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**PIPEFITTERS, AIR CONDITIONING & REFRIGERATION, Continued**

Scope of work under this trade includes but is not be limited to: All piping, setting and hanging of all units and fixtures for air conditioning, cooling, heating, roof cooling, refrigeration, ice making, humidifying, dehumidifying, dehydrating, by any method, and the charging and testing, servicing of all work after completion.

The installation and service of all circulating water lines when used for the distribution of heat and heat transfer equipment on ornamental pools, commercial and residential pools and spas, display fountains and aquariums.

All piping, handling and setting of equipment in connection with central distributing filtration treatment stations, boosting stations, water treatment, waste and sewage disposal plants, central chlorination and chemical treatment work and all underground supply lines to cooling wells, suction basins, filter basins, settling tanks, aeration basins or tanks and lift stations. (This applies to public work when installed or serviced and would apply to private work after its completion and or under pubic operation.)

The handling, assembling and erecting of all economizers, super heaters, regardless of mode or method of making joints, hangers and erection of same, when used in connection with the pipefitting industry.

All internal and external piping on boilers, heaters, tanks and evaporators, water legs, water backs and water grates, boiler compound equipment, etc., when in connection with the pipefitting industry.

The setting and erecting of all boiler feeders, water heaters, filters, water softeners, purifiers, condensate equipment, pumps, condensers, coolers and all piping for same when used in connection with the pipefitting industry.

The setting and erecting of all underfeed stokers, fuel burners and piping, including gas, oil, power fuel, hot and cold air piping and all accessories and parts of burners and stokers, etc., when used in connection with the pipefitting industry.

Make-up water supply from main to equipment installed by Pipefitters.

All meters for measuring a volume of any substance, when used in connection with the pipefitting industry.

The setting and hanging of all units or fixtures for ice making when unit must be assembled before operation. (Shipping bolts, grids and other parts are to be removed or put in place.)

All solar systems, piping and collectors of every description when used in connection with the pipefitting industry.

The installation and service of hydraulic or pneumatic door openers when in connection with industrial, manufacturing and commercial applications. Airports included.

All gas piping from the main to the meter. All distribution lines.

The assembling, erecting, handling and setting of tanks used in connection with the pipefitting industry.

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**PIPEFITTERS, AIR CONDITIONING & REFRIGERATION, Continued**

The setting, erecting and piping for all smoke consuming and smoke washing and regulating devices, when used in connection with the pipefitting industry.

The setting, erecting and piping of instruments, measuring devices, thermostatic controls, gauge boards and other controls used in connection with power, heating, refrigeration, air conditioning, manufacturing, mining and industrial work.

The setting and erection of all oil heaters, oil coolers, storage and distribution tanks, transfer pumps and mixing devices and piping thereto, when used in connection with the pipefitting industry.

Installations of drain lines from equipment installed by pipefitters where drain lines drop to a safe waste, floor drain, roof, or any open fixture and where drain lines are not directly connected to a sanitary system.

Recovery condensate systems in their entirety.

The setting, erecting and piping of all cooling units, pumps, reclaiming systems and appurtenances in connection with transformer and piping to switches of every description.

The installation and service of vacuum cleaning equipment and piping when used in connection with manufacturing plants, maintenance facilities, airport terminals, post offices, etc.

The installation and service of vacuum systems when used in connection with manufacturing plants, maintenance facilities, airport terminals, post offices, etc.

The installation and service of oxygen systems when used in connection with manufacturing, commercial & industrial application.

All sheet lead lining for tanks or vats for all purpose, when in the category of industrial work.

All piping for railing work and racks of every description, whether screwed or welded when assigned by the Contractor.

All power plant piping of every description, as it applies to the pipefitting industry.

The unloading, handling and setting of all sterilizers, laundry and cleaning equipment will be done by composite crew. Steam and oil lines will be done by this trade classification.

Laying out, cutting, bending and fabricating of all pipe work of every description by whatever mode or method, when used in connection with the pipefitting industry.

All acetylene and arc welding, brazing, lead burning, soldered and wiped joints, caulked joints, expanded joints, rolled joints or any other mode or method of making joints used in connection with the pipefitting industry including pipe fusing.

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**PIPEFITTERS, AIR CONDITIONING & REFRIGERATION, Continued**

The laying out and cutting of all holes, chases and channels, the setting and erection of bolts, inserts, stands, brackets, supports, sleeves, thimbles, hangers, conduit and boxes, used in connection with the pipefitting industry. Hangers, supports, brackets requiring off site fabrication may be purchased from miscellaneous metal or structural steel fabricators.

The handling and using of all tools and equipment that may be necessary for the erection and installation of all work and materials used in connection with the pipefitting industry.

The operation, maintenance, repairing, servicing, test and balance, and dismantling of all work installed by this trade classification.

All soot blowers and soot collecting piping systems, when used in, connection with the pipefitting industry.

All piping for artificial gases, natural gases, holders and equipment for same, chemicals, minerals and by products and refining of same, when used in connection with the pipefitting industry.

All ash collecting and conveyor piping systems, including all air washing and dust collecting piping and equipment, accessories and appurtenances and regulating devices, etc., when used in connection with the pipefitting industry.

All pneumatic transit tube work and all piping for carrying systems by vacuum.

All process piping and equipment for refining, manufacturing, and industrial purposes.

The installation and service of all piping systems and equipment with grease pressure lubricating and hydraulic lifts in connection with industrial manufacturing, commercial and maintenance facilities applications (excluding schools). Service station installations optional pertaining to grease pressure and hydraulic lift installations until assigned.

The installation of all related piping, fuel storage tanks and exhaust piping for emergency generators, manufacturing plants, airports, post offices and industrial applications.

The installation and service of all air piping and related equipment in connection with manufacturing plants, industrial, airports, post offices, etc.

The installation and service of all fuel oil, gasoline and cleaning solvent piping and related equipment in connection with manufacturing plants, industrial, airports, post offices. Maintenance facilities and service stations optional until assigned.

The installation and service of all oxygen and acetylene piping systems and related equipment in connection with manufacturing plants or remote distribution systems and industrial applications. Maintenance facilities and service stations optional until assigned.

The setting, erecting and piping of all cooling towers and evaporative condensers.

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**PIPEFITTERS, AIR CONDITIONING & REFRIGERATION, Continued**

All work related to the removal and replacement of CFC Refrigerants as mandated by the federal, state and local laws.

All work done in the pipefitter industry to comply with any environmental rules or regulations as set forth by federal, state, or local governments.

Equipment used on building and construction work in conjunction with the work of the trade, as a time and labor saving device, shall be operated by qualified Employees under this trade classification.

The operation of pumps, air compressors and welding machines when used in conjunction with work covered by the pipefitters, shall be done by this trade classification.

The testing and balancing of all piping systems or component parts thereof and solar systems, shall be done by this trade classification.

Temporary mechanical equipment and air conditioning systems shall be installed and serviced by this trade classification.

The unloading and handling from curbside delivery, all equipment (including cooling towers) materials, the erection, installation of all tubing and piping, the setting and hanging of all units and fixtures which are included and necessary to make and complete an air conditioning, refrigeration, heating, piping installation, and solar installation, including the charging, testing, air and water balancing, servicing and maintenance of same and warranty of same.



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**PLUMBERS**

Plumbers	\$ 30.78	\$ 6.90	\$ 5.34	<b>\$ 43.02</b>
Foremen (10 or more employees)	\$ 35.42	\$ 6.90	\$ 5.34	<b>\$ 47.66</b>
General Foremen (16 or more employees)	\$ 40.05	\$ 6.90	\$ 5.34	<b>\$ 52.29</b>

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

1st year	\$ 16.62	\$ 3.44	\$ 0.40	<b>\$ 20.46</b>
2nd year	\$ 17.54	\$ 4.99	\$ 1.85	<b>\$ 24.38</b>
3rd year	\$ 18.78	\$ 5.09	\$ 2.03	<b>\$ 25.90</b>
4th year	\$ 20.01	\$ 5.15	\$ 2.03	<b>\$ 27.19</b>
5th year	\$ 23.09	\$ 5.06	\$ 2.03	<b>\$ 30.18</b>

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: the installation of appliances, piping and plumbing fixtures to be done by plumber and plumbers apprentices. All job site unloading from tailgate and after, all of the handling and rigging of materials, fixtures, appliances having waste, water or gas connections, tools and equipment, for use in the work covered shall be done by plumbers and plumber apprentices. Also included, where required, cement under tubs and all cementing of pipe supports and columns for piping systems. All filling and testing fixtures and pipes as required, including the layout and hook-up of water hoses for tests. Additionally where required: covering of fixtures for protection, grouting of all fixtures and cementing of all plumbing pipe chases and sleeves.

Plumber shall mean any person employed by a firm or corporation lawfully licensed to contract for and install work covered by the Plumbing Code of Miami-Dade County. The scope of work shall be, but not limited to as follows: All piping, setting and hanging of all units and fixtures for plumbing systems, water, waste, floor drains, drain gates, supply, leader, soil pipe, grease traps, sewage and vent lines. All cold, hot and circulating water lines, piping for house pumps, cellar drains, ejectors, house tanks, pressure tanks, swimming pools, ornamental pools, display fountains, drinking fountains, aquariums, plumbing fixtures and appliances, and the handling and setting of the above mentioned equipment. All piping in connection with central distributing filtration treatment stations, boosting stations, water and sewage disposal plants, central chlorination and chemical treatment work, and all underground supply lines to cooling wells, suction basin, filter basins, settling basins, and aeration basins or tanks and lift stations on private property.

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**2023**

**"BUILDING CONSTRUCTION"**

TRADE/WORK LEVEL CLASSIFICATION	PER HOUR WAGE RATE	PER HOUR HEALTH BENEFIT (1)	PER HOUR PENSION BENEFIT	COMBINED DOLLAR VALUE
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**PLUMBERS, Continued**

All potable water mains for whatever source, including branches and fire hydrants, etc. All potable water services from mains to buildings, including water meters and water meter foundations. All piping for potable water filters, water softeners, water meters and the setting of the same. All meters for measuring a volume of any substance, when used in connection with the plumbing industry. The laying out and cutting of holes, chases and channels, the setting and erection of bolts, inserts, stands, brackets, supports and boxes used in connection with the plumbing industry. The handling and using of all tools and equipment that may be necessary for the erection and installation of all work and material used in connection with plumbing. Laying out, cutting, bending and fabricating of all pipe work of every description, by whatever mode or method, when used in connection with the plumbing industry.

Prepare and grade trenches either manually or with machines in connection with the plumbing. The setting and hanging of all units or fixtures for ice making when units are complete and ready for operation. All Solar systems, piping and collectors of every description when used. All gas piping on the building side of meter, all piping of air systems including the assembling, erecting, handling and setting of all equipment used in the systems. The assembling, erecting, handling and setting of tanks, piping of instruments, measuring devices, thermostatic controls, gauges boards and other controls, oil heaters, oil coolers, storage and distribution tanks, transfer pumps and mixing devices and piping thereto. Installation of drain lines from equipment installed by pipefitters where directly connected to a sanitary system and condensate drain as part of system.

Down spouts and drainage area soil pipes, catch basins, manholes, drains, gravel basins, storm water sewers, septic tanks, cesspools, water storage tanks, air conditioning and heating drain directly connected to storm drains and condensation systems. The installation and service of vacuum cleaning equipment and piping, vacuum systems and the installation and service of oxygen systems. All acetylene and arc welding, brazing, lead burning, soldering and wiped joints, caulked, expanded and rolled joints, or any other mode or method of making joints in connection with the plumbing industry.

Inspections of sewer lines for leak and damages through the use of video camera inspections and the repairing of any leaks or replacing pipes.

Smoke testing on sanitary piping systems and the repairing of damaged pipes; domestic water piping, reclaim water and irrigation water distribution; water pipe locating and leak detection and repairs of all water services, water distribution, irrigation and reclaim water piping.

All reclaim water systems and water harvesting systems installed and maintained by the plumbers including underground tank, above ground tanks, pumps and filters and filtering systems.

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**ROOFERS**

Roofers	\$ 25.59	\$ 6.47	\$ 2.50	<b>\$ 34.56</b>
Foreman	\$ 27.59	\$ 6.47	\$ 2.50	<b>\$ 36.56</b>
Helper 1st year	\$ 12.80	\$ 6.47	\$ 2.50	<b>\$ 21.77</b>
Helper 2nd year	\$ 15.35	\$ 6.47	\$ 2.50	<b>\$ 24.32</b>
Helper 3rd year	\$ 17.91	\$ 6.47	\$ 2.50	<b>\$ 26.88</b>

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

The application and installation of the following types of work: All forms of elastomeric, elasto-plastic and thermo-plastic roofing systems, both sheet and liquid applied, whether single-ply or multi-ply. These shall include but not be limited to Polyvinyl chloride systems (PVC), Butyl Rubber, ethylene propylene diene monomer (EDPM), Polyisobutylene (PIB), Chlorinated polyethylene (CPE), Chlorosulfonated polyethylene (CSPE), Neoprene, Nitrile Alloy (NBP), Ethylene Interpolymers (EIP), Thermoplastic Polyolefins (TPO), Ethylene Tetra Fluoro Ethylene (ETFE).

All base flashings, curb flashings and counter flashings of elastomeric, elasto-plastic or thermos-plastic composition as outlined in (1) used to roof or waterproof intersections of horizontal surfaces.

All components of elastomeric, elasto-plastic and thermos-plastic roofing systems used to seal the roof, including but not limited to nailers, blocking, ballast of all types of walkways, reinforcements, preformed panels, protection boards, plaza pavers, expansion joints, pitch pans, scupper flashing, drain flashings, compression seal, termination bars, caulking, and sealants.

All insulations applied with the above systems, whether laid dry, mechanically fastened or attached with adhesives.

All forms of composite insulations having nailable surfaces or any other means of attachments (e.g. plywood, pressboard, chipboard, drywall, or other laminates) bonded to the insulation wherever such composite insulations are used as an integral thermal insulating component of the roofing system.

All types of aggregates, blocks, bricks, stones, pavers, soils, overburdens, vegetation or units of photovoltaic cell construction used to ballast or protect these elastomeric, elasto-plastic and thermo-plastic systems.

All solar or photovoltaic cell-type integrated roof membranes used to transform solar energy to electrical energy.

All types of aggregates, blocks, bricks, stones, pavers, soils, overburdens, vegetation or units of photovoltaic cell construction used to ballast or protect inverted roof membrane assembly (IRMA) roofs or roofs of similar construction where the insulation is laid over the roof membrane.

All sealing and caulking of seams and joints on these elastomeric, elasto-plastic and thermos-plastic systems to ensure that these systems are watertight.

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**ROOFERS, Continued**

All cleaning, preparing, priming and sealing of surfaces to be roofed, whether done by roller, mop, swab three-knot brush, squeegees, spray systems or any other means of application.

All handling, hoisting, lifting and storing of all roofing materials.

All tear off and/or removal of any type of roofing including ballast and all overburdens, all spading, sweeping, vacuuming and/or cleanup of any and all areas of any type where an elastomeric, elasto-plastic or thermos-plastic or similar product as listed above to be re-laid or any cleanup of any materials on any construction site and operation of equipment that are used these roofing systems under the roofing trade.

All components of water recapturing systems that is an integral part of these types of roofing systems that protect against water and moisture mitigation or intrusion.

All components of rooftop and sub-surface water recapture or rainwater harvest systems that are an integral part of these type roof systems where the primary purpose is to control and manage water run-off.

All water and flood testing of all roofing systems.

All substitutions, improvements, changes, modifications and/or alternatives to roofer jurisdiction or materials listed above.

All other materials, equipment and/or applications necessary or appropriate to complete, perform or apply the processes and/or materials under this trade.

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**SHEET METAL WORKERS**

**Commercial**

Sheet Metal Workers	\$ 27.90	\$ 8.11	\$ 5.77	<b>\$ 41.78</b>
Foreman (4 - 10 workers)	\$ 30.69	\$ 8.11	\$ 5.77	<b>\$ 44.57</b>
General Foreman (2 or more Foreman)	\$ 32.09	\$ 8.11	\$ 5.77	<b>\$ 45.97</b>

**Industrial**

Sheet Metal Workers	\$ 37.09	\$ 8.11	\$ 6.06	<b>\$ 51.26</b>
Foremen (4 -10 workers)	\$ 42.65	\$ 8.11	\$ 6.06	<b>\$ 56.82</b>
General Foremen (2 or more Foremen)	\$ 44.51	\$ 8.11	\$ 6.06	<b>\$ 58.68</b>

Industrial Rate are used for Garbage Disposal Plants and Water & Sewer Treatment Plants.

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

**Commercial Apprentice**

1st 6 months	\$ 15.35	\$ 8.11	\$ 3.18	<b>\$ 26.64</b>
2nd 6 months	\$ 15.35	\$ 8.11	\$ 3.18	<b>\$ 26.64</b>
3rd 6 months	\$ 16.74	\$ 8.11	\$ 3.46	<b>\$ 28.31</b>
4th 6 months	\$ 18.14	\$ 8.11	\$ 3.76	<b>\$ 30.01</b>
5th 6 months	\$ 19.53	\$ 8.11	\$ 4.04	<b>\$ 31.68</b>
6th 6 months	\$ 20.93	\$ 8.11	\$ 4.33	<b>\$ 33.37</b>
7th 6 months	\$ 22.32	\$ 8.11	\$ 4.62	<b>\$ 35.05</b>
8th 6 months	\$ 23.72	\$ 8.11	\$ 4.91	<b>\$ 36.74</b>

**Industrial Apprentice**

1st 6 months	\$ 20.40	\$ 8.11	\$ 3.34	<b>\$ 31.85</b>
2nd 6 months	\$ 20.40	\$ 8.11	\$ 3.34	<b>\$ 31.85</b>
3rd 6 months	\$ 22.25	\$ 8.11	\$ 3.64	<b>\$ 34.00</b>
4th 6 months	\$ 24.11	\$ 8.11	\$ 3.94	<b>\$ 36.16</b>
5th 6 months	\$ 25.96	\$ 8.11	\$ 4.24	<b>\$ 38.31</b>
6th 6 months	\$ 27.82	\$ 8.11	\$ 4.55	<b>\$ 40.48</b>
7th 6 months	\$ 29.67	\$ 8.11	\$ 4.85	<b>\$ 42.63</b>
8th 6 months	\$ 31.53	\$ 8.11	\$ 5.16	<b>\$ 44.80</b>

**APPRENTICE RATIO: Three (3) Apprentices to three (3) Sheet metal Workers**

(1) Per hour health benefit includes hospitalization, medical, life vision and dental insurance.

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**SHEET METAL WORKERS, continued**

Scope of work under this trade includes but is not be limited to: (a) manufacture, fabrication, assembling, handling, erection, installations, dismantling, conditioning, adjustment, alteration, repairing and serving of all ferrous or nonferrous metal work and all other materials used in lieu thereof and of all HVAC systems, air veyor systems, exhaust systems and air-handling systems regardless of materials used including the setting of all equipment and all reinforcements in connection therewith; (b) all lagging over insulation and all duct lining; (c) testing and balancing of all air-handling equipment and duct work; (d) the preparation of all shop and field sketches whether manually drawn or computer assisted used in fabrication and erection, including those taken from original architectural and engineering drawings or sketches; and, (e) installation of proprietary and non proprietary metal roofing.

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**SPRINKLER FITTERS**

Low Commercial: Construction up to 12 stories and all warehouses up to 800,000 square feet.

Sprinkler Fitters	\$ 30.03	\$ 11.10	\$ 10.20	<b>\$ 51.33</b>
Foreman (4 or less workers)	\$ 31.78	\$ 11.10	\$ 10.20	<b>\$ 53.08</b>
Foreman (5 or more workers)	\$ 32.28	\$ 11.10	\$ 10.20	<b>\$ 53.58</b>
General Foreman (15 or more workers)	\$ 34.28	\$ 11.10	\$ 10.20	<b>\$ 55.58</b>

Commercial: Construction 13 stories or more.

Sprinkler Fitters	\$ 31.28	\$ 11.10	\$ 10.20	<b>\$ 52.58</b>
Foreman (4 or less workers)	\$ 33.03	\$ 11.10	\$ 10.20	<b>\$ 54.33</b>
Foreman (5 or more workers)	\$ 33.53	\$ 11.10	\$ 10.20	<b>\$ 54.83</b>
General Foreman (15 or more workers)	\$ 35.53	\$ 11.10	\$ 10.20	<b>\$ 56.83</b>

**Apprentices:**

**NOTE: Apprentices will be permitted to work at these rates when they are employed pursuant to and individually registered in a legitimate apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau. In Florida this agency is the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section - <http://www.fldoe.org/workforce/apprenticeship>. Please see pages 7-8 of the Supplemental General Conditions for more information.**

**For Apprentices indentured after June 30, 2011 but prior to July 1, 2017**

1st year	\$ 15.64	\$ 10.20	\$ 1.50	<b>\$ 27.34</b>
2nd year	\$ 16.85	\$ 10.20	\$ 1.65	<b>\$ 28.70</b>
3rd year	\$ 18.77	\$ 10.20	\$ 1.95	<b>\$ 30.92</b>
4th year	\$ 22.52	\$ 10.20	\$ 9.45	<b>\$ 42.17</b>
5th year	\$ 25.53	\$ 10.20	\$ 9.75	<b>\$ 45.48</b>

**For Apprentices indentured after June 30, 2017**

1st year	\$ 15.64	\$ 10.20	\$ 1.50	<b>\$ 27.34</b>
2nd year	\$ 17.20	\$ 10.20	\$ 1.50	<b>\$ 28.90</b>
3rd year	\$ 18.77	\$ 10.20	\$ 1.50	<b>\$ 30.47</b>
4th year	\$ 22.52	\$ 10.20	\$ 8.70	<b>\$ 41.42</b>
5th year	\$ 25.53	\$ 10.20	\$ 8.70	<b>\$ 44.43</b>

**APPRENTICE RATIO: One (1) Apprentice for every two (2) Sprinkler Fitters**

(1) Per hour health benefit includes hospitalization, medical, life, vision and dental insurance.

Scope of work under this trade includes but is not be limited to: the installation of all fire protection and fire control systems including the unloading, handling by hand, power equipment and installation of all piping and tubing appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, hose and hose connections with sprinkler and alarm systems, also all tanks and pumps connected thereto, but excluding steam fire protection systems. Also, included shall be detection systems, mulsifyre, fog and fog foam, also dry chemical systems.

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

For any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract, please contact Small Business Development for a wage determination.

Questions concerning the comparability of worker classifications or the applicability of Davis-Bacon classification shall be determined by the County.

**Please Contact:**

**Internal Services Department  
 Small Business Development Division  
 The Stephen P. Clark Center  
 111 N.W. 1st Street - 19th Floor  
 Miami, Florida 33128-1906  
 Phone Number: (305) 375-3111  
 Fax Number: (305) 375-3160**



# NOTICE



County Code §2-11.16

## NOTICE TO ALL EMPLOYEES WORKING ON COUNTY CONSTRUCTION PROJECTS

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### RESPONSIBLE WAGES AND BENEFITS

#### **MINIMUM WAGE**

You must be paid not less than the required base hourly rate and benefits listed in the Wages and Benefits Schedule for every hour worked. You may not be paid below the base rate even if the value of the fringe benefits provided to you exceeds the value of the health and pension required in the schedule. Additionally, you must be paid not less than the combined dollar value (Base Rate + Health + Pension Benefit) listed in the wage and benefits schedule posted with this notice for the type of work you are performing if benefits are not provided.

#### **OVERTIME**

You must be paid time and one-half of your rate of pay for all hours worked in excess of 40 hours in a week.

#### **APPRENTICES & TRAINEES**

Apprentices/trainees rates apply only to apprentices and trainees properly registered under an approved Federal or State apprenticeship or training program.

#### **SANCTIONS**

Sanctions for a first-time offender are 20% of the amount of underpayment payable to the County. The sanctions increase to 40% for the second underpayment and 60% for the third underpayment. Contractors found to have underpaid a fourth time may be subject to suspension or termination in accordance with the contract terms and debarment in accordance with the debarment procedures of the County.

**COMPLAINTS** Written complaints of underpayment should be filed with:

Internal Services Department  
Small Business Development Division  
111 NW 1<sup>ST</sup> Street, 19<sup>TH</sup> Floor Miami, FL 33128  
Telephone: (305) 375-3111 FAX: (305) 375-3160  
Email: [SBDMAIL@MIAMIDADE.GOV](mailto:SBDMAIL@MIAMIDADE.GOV)



miamidade.gov

Internal Services Department
Small Business Development
111 NW 1 Street, 19th Floor
Miami, Florida 33128
T 305-375-3111 F 305-375-3160

FAIR WAGE AFFIDAVIT

Before me, the undersigned authority appeared \_\_\_\_\_ the
(PRINT NAME)

\_\_\_\_\_ of \_\_\_\_\_,
(PRINT TITLE) (PRINT NAME OF BIDDER OR PROPOSER)

who attests that \_\_\_\_\_ shall pay workers on
(PRINT NAME OF BIDDER OR PROPOSER)

the project minimum wage rates in accordance with Responsible Wages and Benefits, Section 2-
11.16 of the Code of Miami-Dade County and the Labor Provisions of the contract documents.

State of FLORIDA
County of Miami-Dade

Sworn to (or affirmed) and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_ Personally, known or \_\_\_\_\_ produced identification.

(Signature of Notary Public - State of Florida)

(Print, Type, or Stamp Commissioned Name of Notary Public)

Type of identification produced: \_\_\_\_\_



# Contractor Quick Start Guide

Version: 2

Date: 8/3/2022

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## Contractor Quick Start Guide

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At LCPtracker (Labor Compliance Program Tracker), we are aware that using a Prevailing Wage Software may be a new undertaking for many Contractors. We have designed this guide to explain what LCPtracker is used for and how to start using the software.

The LCPtracker service is a paperless, online system of entering Certified Payroll Reports (CPRs). Payroll data may be entered directly into the system or uploaded from major construction accounting systems or payroll programs. This service eliminates the need for Contractors to submit paper documents and forms while providing an online database that stores all CPRs.

All contract-specific wage rates, fringe rates and worker crafts/classifications are online within the system, and Contractors may then select craft/classifications from a drop-down menu. Potential errors in wage rates or work classification entries can be flagged to Contractors preemptively, allowing them to submit data with corrections implemented. (This is contingent on how the Administrator set up their Project validations). Once you have submitted your CPR, an electronic version will be available, and you will have access to all Contractor reports within LCPtracker.

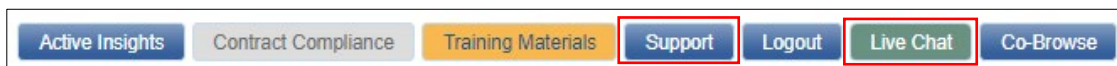
**It is important to understand that the LCPtracker validation rules operate to assist you in your compliance process only insofar as the correct classifications are chosen by the user, and the correct data is entered by the user.**

## Contacting LCPtracker Support

There is no cost to Contractors for this service or for online training. We have a dedicated Support staff available Monday through Friday from 5:00am until 5:30pm PST.

Contractors may access the various options for training after receiving a User ID and password, which will be sent by a “no reply” email address from LCPtracker (i.e., NOREPLY@LCPtracker.com). This email, with login instructions, will be sent to Contractors once they’re assigned to an account in LCPtracker by your Agency or Prime Contractor. Every Contractor account is created by the Agency or their Prime Contractor. Complete and full support is offered directly to Contractors by LCPtracker for any technical questions on the use of the software.

Contact LCPtracker Support:



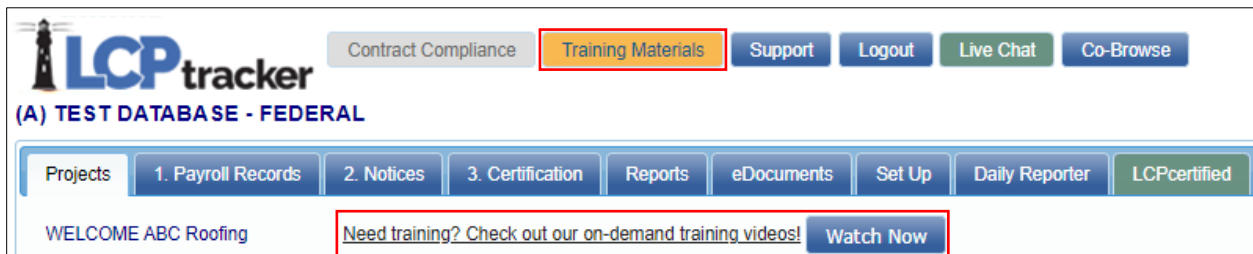
- 714-669-0052 option 4; or
- Support@LCPtracker.com; or
- Live Chat

If you send the Support Team an email or prefer to leave a voice message, LCPtracker asks that you include the information listed below (because of the high number of users stored within LCPtracker, we cannot look up your account with only your company name or project you are working on).

- Your Company Name
- Your User ID
- Your Name and Phone Number
- What the Issue is – please be as specific as possible so we can re-create the issue

## LCPtracker Training Options

Contractors can access the various options for training after receiving a User ID and password. An email with login instructions will be sent to Contractors once they are assigned to an account in LCPtracker. Every Contractor account is created by the Agency or their Prime Contractor.



The screenshot shows the LCPtracker user interface. At the top left is the LCPtracker logo. To its right are navigation buttons: Contract Compliance, Training Materials (highlighted with a red box), Support, Logout, Live Chat, and Co-Browse. Below this is the text "(A) TEST DATABASE - FEDERAL". A secondary navigation bar contains buttons for Projects, 1. Payroll Records, 2. Notices, 3. Certification, Reports, eDocuments, Set Up, Daily Reporter, and LCPcertified. At the bottom left, it says "WELCOME ABC Roofing". At the bottom right, there is a message: "Need training? Check out our on-demand training videos!" with a "Watch Now" button (highlighted with a red box).

## Add/Edit Employee

This section is used to enter Contractor employee's personal information.

To add an employee into system or edit someone already in system, click 'Set Up' and then 'Add/Edit Employee'.



The screenshot shows the "Set Up" menu in LCPtracker. The "Set Up" button in the top navigation bar is highlighted with a red box. Below it is a "Setup Main Menu" section containing several buttons: Add/Edit Employee (highlighted with a red box), Company Information, Add/Edit Craft Name, Fringe Benefits Maintenance, Copy Employees, Add/Edit Work Order, Subcontractor Setup, Add/Remove County Match, Add/Edit Additional Users, Edit Login Password, Add/Remove Craft Match, and Edit/Reset eSignature, Add/Remove Project Match.

## Add/Edit Employee Information

Enter the appropriate employee information in the data fields. Tab key or mouse click to move between fields. Any **RED** asterisk field(\*) is required by the Agency, and the system will not save unless the information is entered in the required fields.

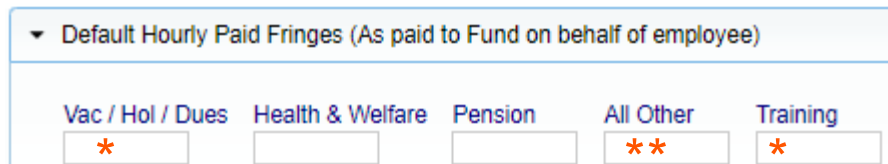
## Default Hourly Paid Fringes (As paid to Fund on behalf of employee)

This section is known as a 'time saver'. It is optional to fill in the hourly fringe rates in this section. This will allow for ease of use when entering payroll records manually, as you will be able to click the 'Calculate Fringes' button on the Payroll Entry screen, and the system will perform the mathematical calculation of the hourly fringes multiplied by the hours worked.

\*If there are any predetermined increases, or your Union updates once a year, you will need to come back to this section and update your fringes accordingly.

\*\*If you have multiple projects with different fringe rates, built in increases, or everyone has the same fringes and you only want to enter those dollar values once, skip this section and use the 'Fringe Benefit Maintenance' table to enter your hourly fringe rates into system.

Note: Any fringe amount entered in this section will supersede the fringe amount entered in that time saver section of the employee setup.



The screenshot shows a form titled "Default Hourly Paid Fringes (As paid to Fund on behalf of employee)". It contains five input fields with the following labels: "Vac / Hol / Dues", "Health & Welfare", "Pension", "All Other", and "Training". The "Vac / Hol / Dues" field contains an asterisk (\*), "All Other" contains two asterisks (\*\*), and "Training" contains one asterisk (\*). The other fields are empty.

**\* DO NOT USE - Not allowed by Responsible Wages & Benefits**      **\*\* Use to enter vision, dental, life, and Accidental Death & Dismemberment insurance Only**

### Default Other Deductions Notes

Any deduction that is permissible according to the USDOL or your Agency (such as IRS garnishments, child support, a company loan, etc.) would fall under the 'other' deduction section. Any amount listed in 'other' will then dictate that 'other deduction notes' are required.

## 1. Payroll Records Tab

---

There are five methods of payroll entry available to all Contractors:

1. Copy Payroll feature in LCPtracker
2. Upload from a payroll system export file
3. Upload from the Excel spreadsheet
4. Direct Payroll Subscription / Interface (DPI)
5. Manual entry

### 1. Copy Payroll

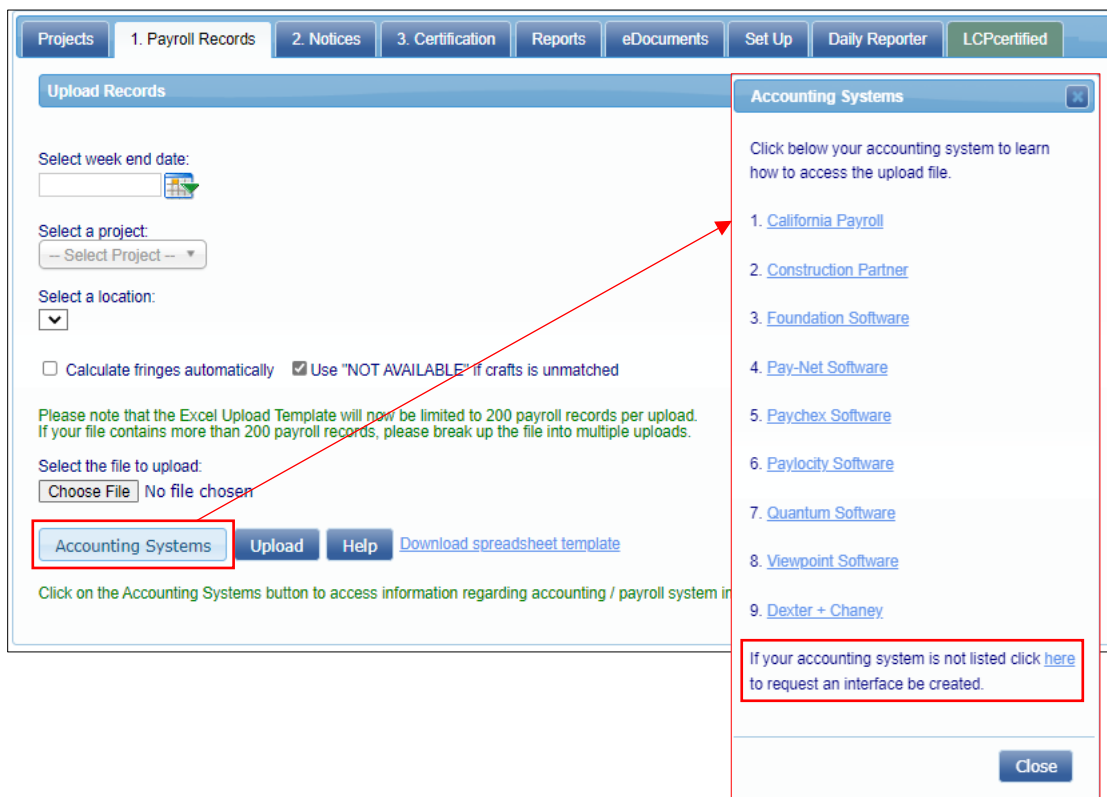
This option is only available if a week of payroll has been previously completed. In the Payroll Records tab, click the 'Copy Previous Payroll' button, select the project, then select the CPR to be copied.



## 2. Upload from a Payroll System Export File

In the Payroll Records tab, click the 'Upload Records' button, then click the 'Accounting Systems' button, you will see a partial list of the payroll companies that we have partnered with to create a payroll interface, or export file.

To see a complete list of payroll interfaces available, please visit [www.lcptracker.com](http://www.lcptracker.com), and click the 'Resources' tab, then select 'Partners'. If you do not find your payroll company and would like to see if there is an opportunity to partner, please fill out the informational form listed under the "Upload Records" section and someone from LCPtracker will contact you.



Click on the name of your payroll company, and a list of directions on how to obtain your export file will be available, or you will see a request that you contact your payroll company directly for instructions on how to obtain that export file.

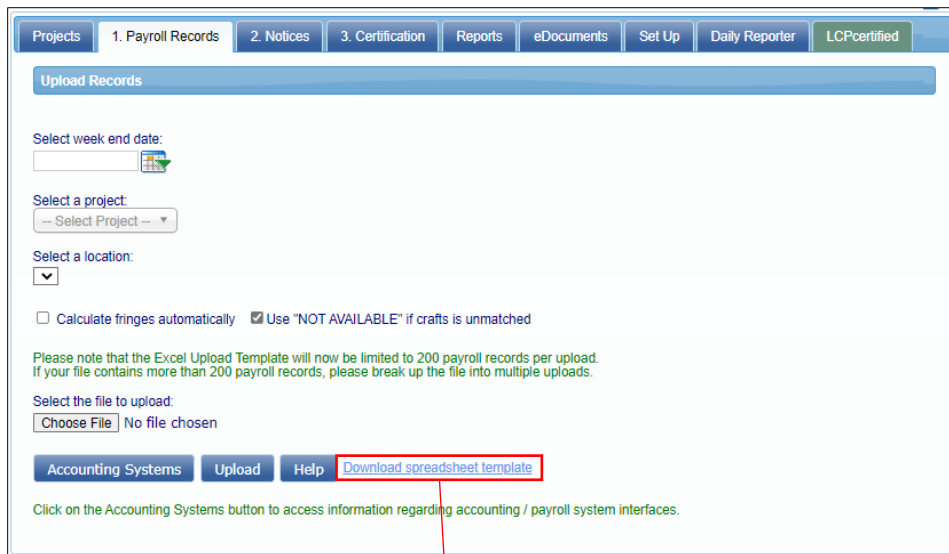
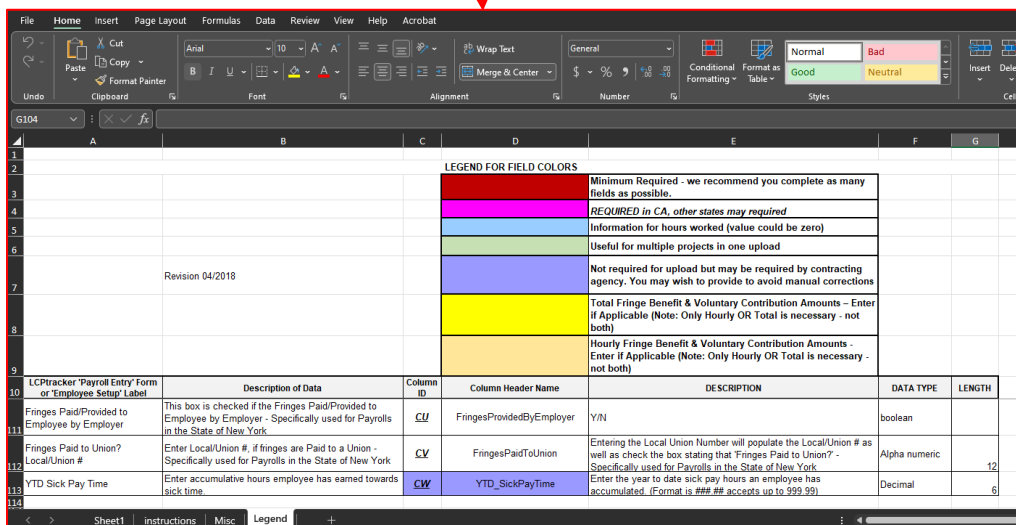


Once you have the export file, you can use it to upload your CPR using the “Upload Records” button.

### 3. Upload from the Excel Spreadsheet

There is an Excel spreadsheet template available for you to download in the same ‘Upload Records’ section mentioned above. There is a legend as well as instructions available on the Excel template.

Information can be manually entered into this Excel spreadsheet, or you can confer with your IT department to see if they can utilize this spreadsheet to create a report out of your existing payroll system.

LCPtracker Payroll Entry Form or Employee Setup Label	Description of Data	Column ID	Column Header Name	DESCRIPTION	DATA TYPE	LENGTH
Fringes Paid/Provided to Employee by Employer	This box is checked if the Fringes Paid/Provided to Employee by Employer - Specifically used for Payrolls in the State of New York.	CU	FringesProvidedByEmployer	Y/N	boolean	
Fringes Paid to Union? Local/Union #	Enter Local/Union #, if fringes are Paid to a Union - Specifically used for Payrolls in the State of New York	CV	FringesPaidToUnion	Entering the Local Union Number will populate the Local/Union # as well as check the box stating that 'Fringes Paid to Union?' - Specifically used for Payrolls in the State of New York.	Alpha numeric	12
YTD Sick Pay Time	Enter accumulative hours employee has earned towards sick time.	CW	YTD_SickPayTime	Enter the year to date sick pay hours an employee has accumulated. (Format is ###.## accepts up to 999.99)	Decimal	6

# Entering Fringe Benefits on LCPTracker

Projects | 1. Payroll Records | 2. Notices | 3. Certification | Reports | eDocuments | Set Up | Daily Reporter | LCPcertified

**Notices**

Week End Date: 6/21/2019 Contractor: CMC PRIME CONTRACTOR  
 Project: CMC RWB TEST CONTRACT-HIGHWAY Sub To:  
 Employee: ANDERSON, ALECIA Contract ID: test

Is Foreman  Is Owner/Operator

Gross Employee Pay This Project (Usually No Fringes) 1600.000  
 Wages Paid in Lieu of Fringes (Total Cash Fringes) 0.000

These fields are Hourly rate fields (Usually No Fringes)

Base Hourly	Overtime Hourly	Doubletime Hourly	Rate in Lieu of Fringes (Cash Fringes)
40.000	0.000	0.000	0.000

Classifications

Jurisdiction	Location	Craft	Classification	Construction Type	
Miami-Dade County Responsible Wages	Miami-Dade County	ELECTRICAL WORKER	Electrician - Wireman	Building	Edit

Hours Worked Each Day for This Project Only

	Saturday 6/15/2019	Sunday 6/16/2019	Monday 6/17/2019	Tuesday 6/18/2019	Wednesday 6/19/2019	Thursday 6/20/2019	Friday 6/21/2019	Total Hours
Regular Time	0.00	0.00	8.00	8.00	8.00	8.00	8.00	40.00
Overtime at 1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Double-Time	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	8.00	8.00	8.00	8.00	8.00	40.00
Total Hours All Projects Worked	40.00							

Fringes / Contributions paid to others (not employee) for This Project Only (Rate Times the # of Hours Worked)

Vac / Hol / Dues	Health & Welf.	Pension	All Other	Training
0.000	0.000	0.000	0.000	0.000

Voluntary Contributions for all Projects

Pension	Medical
0.000	0.000

Vac/Hol/Dues Included in Gross Emp. Pay/Base Hourly Rate  
 Some or All Fringes Paid to Employee  
 Voluntary Contributions Included in Gross Emp. Pay  
 Calculate Fringes

Wages Paid in Lieu of Fringes (Total cash fringes) = hourly rate of fringe x hours worked on county

This is an hourly rate of funds paid instead of Fringes Benefits. Funds paid directly to the employee and not paid into an approved plan.

- Paid into approved Plan.**
- Health Insurance
  - Dental Insurance
  - Vision Insurance
  - Life Insurance
  - Accident Death & Dismemberment

- Paid into approved Plan**
- Pension Plan
  - 401K

Payroll record entry form (2 of 2)

Week End Date: 6/3/2018 Contractor: Darren's Demo  
 Project: M59 Realignment Sub To:  
 Employee: DUCK, DONALD Contract ID: 5

Is Foreman  Is Owner/Operator

Gross Employee Pay This Project (Usually No Fringes)	Wages Paid in Lieu of Fringes (Total Cash Fringes)	These fields are Hourly rate fields (Usually No Fringes)			Rate in Lieu of Fringes (Cash Fringes)
		Base Hourly	Overtime Hourly	Doubletime Hourly	
0.000	0.000	50.000	0.000	0.000	0.000

**Gross Employee Pay This Project** – The amount of basic wages paid for this project only. This is typically the hourly rate of pay multiplied by the hours worked (it could be more complex with overtime figured in).

**Wages Paid-in-Lieu of Fringes** – The amount paid to the employee instead of fringe benefits paid to a plan, fund or program. This amount is sometimes included in the Gross Employee Pay this Project depending on the accounting system and the agency reporting requirements. (Whether you are a Union Shop or Open Shop typically determines whether you pay these required fringes to an approved plan, fund or program, or pay them directly to the employee in cash.) This amount would be the rate-in-lieu of Fringes multiplied by the number of hours worked.

**Rate-in-lieu of fringes** – The hourly rate paid-in-lieu of fringes. If you pay your employees directly for the required fringe benefit instead of paying into an approved plan, fund or program, please list the hourly rate paid here.

**Base Hourly** – The hourly rate of pay not including fringes. Some accounting systems include taxable fringes and fringes paid-in-lieu in this amount, do not include those in this field.

**Overtime Hourly** – The hourly rate of pay multiplied by a factor of 1.5. Do not include fringe benefits in this equation, unless specifically called for by your Awarding Body.

**Doubletime Hourly** – The hourly rate of pay multiplied by a factor of 2. Do not include fringe benefits in this equation, unless specifically called for by your Awarding Body.

Lump Sum Payments

Rates

## 4. Direct Payroll Subscription/Interface (DPI)

This option allows you to choose to have LCPtracker map your existing payroll so that you may use it (as a PDF or .CSV file) as an upload file. Once you have it, you can use it to upload your CPR from that 'Upload Records' button.



The screenshot shows the 'Payroll Records' section of the LCPtracker interface. The navigation tabs at the top are: Projects, 1. Payroll Records, 2. Notices, 3. Certification, Reports, eDocuments, Set Up, Daily Reporter, and LCPcertified. Below the tabs, there is a 'Payroll Records' header. The main area contains several buttons: Enter Records, Direct Payroll Subscription, Edit Certified Payroll Records, Copy Previous Payroll, Recovery Act Additional Data Entry, Edit Uncertified Payroll Records, FHWA 1391 Additional Data Entry, Upload Records (highlighted with a red box), and HUD Additional Data Entry.

## 5. Manual Entry

For Manual Entry, in the 'Enter Records' tab, you will enter a record each week for every employee that performs work covered by prevailing wages on their project.



The screenshot shows the 'Payroll Records' section of the LCPtracker interface. The navigation tabs at the top are: Projects, 1. Payroll Records, 2. Notices, 3. Certification, Reports, eDocuments, Set Up, Daily Reporter, and LCPcertified. Below the tabs, there is a 'Payroll Records' header. The main area contains several buttons: Enter Records (highlighted with a red box), Direct Payroll Subscription, Edit Certified Payroll Records, Copy Previous Payroll, Recovery Act Additional Data Entry, Edit Uncertified Payroll Records, FHWA 1391 Additional Data Entry, Upload Records, and HUD Additional Data Entry.

If your employee works in more than one classification (i.e., they've worked 20 hours as a Carpenter and 20 hours as a Power Equipment Operator) enter two separate pay records to show that they are being paid according to the work performed.

### Amounts Paid (top section of the Payroll Record Entry Form)

Enter the appropriate amounts in the appropriate sections. Keep in mind this is just a transfer of historical data from your already existing payroll records.

1. Gross Employee Pay This Project – The amount of basic wages paid for this project only. This is typically the hourly rate of pay multiplied by the hours worked (it could be more complex with overtime figured in).
2. Wages Paid-in-Lieu of Fringes – The amount paid to the employee instead of fringe benefits paid to a plan, fund or program. This amount is sometimes included in the Gross Employee Pay this Project depending on the accounting system and the agency reporting requirements. (Whether you are a Union Shop or Open Shop typically

determines whether you pay these required fringes to an approved plan, fund or program, or pay them directly to the employee in cash.) This amount would be the rate-in-lieu of Fringes multiplied by the number of hours worked.

3. Rate-in-lieu of fringes – The hourly rate paid-in-lieu of fringes. If you pay your employees directly for the required fringe benefit instead of paying into an approved plan, fund, or program, please list the hourly rate paid here.
4. Base Hourly – The hourly rate of pay not including fringes. Some accounting systems include taxable fringes and fringes paid-in-lieu in this amount, do not include those in this field.
5. Overtime Hourly – The hourly rate of pay multiplied by a factor of 1.5. Do not include fringe benefits in this equation, unless specifically called for by your Agency.
6. Doubletime Hourly – The hourly rate of pay multiplied by a factor of 2. Do not include fringe benefits in this equation, unless specifically called for by your Agency.

**Payroll record entry form (2 of 2)**

Week End Date: 6/3/2018      Contractor: Darren's Demo  
 Project: M59 Realignment      Sub To:  
 Employee: DUCK, DONALD      Contract ID: 5

Is Foreman     Is Owner/Operator

<b>1</b> Gross Employee Pay This Project (Usually No Fringes) <input style="width: 100%;" type="text" value="0.000"/>	<b>2</b> Wages Paid in Lieu of Fringes (Total Cash Fringes) <input style="width: 100%;" type="text" value="0.000"/>	These fields are Hourly rate fields (Usually No Fringes)			<b>3</b> Rate in Lieu of Fringes (Cash Fringes) <input style="width: 100%;" type="text" value="0.000"/>		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;"> <b>4</b>                      Base Hourly  <input style="width: 100%;" type="text" value="50.000"/> </td> <td style="width: 33%; padding: 5px;"> <b>5</b>                      Overtime Hourly  <input style="width: 100%;" type="text" value="0.000"/> </td> <td style="width: 33%; padding: 5px;"> <b>6</b>                      Doubletime Hourly  <input style="width: 100%;" type="text" value="0.000"/> </td> </tr> </table>					<b>4</b> Base Hourly <input style="width: 100%;" type="text" value="50.000"/>	<b>5</b> Overtime Hourly <input style="width: 100%;" type="text" value="0.000"/>	<b>6</b> Doubletime Hourly <input style="width: 100%;" type="text" value="0.000"/>
<b>4</b> Base Hourly <input style="width: 100%;" type="text" value="50.000"/>	<b>5</b> Overtime Hourly <input style="width: 100%;" type="text" value="0.000"/>	<b>6</b> Doubletime Hourly <input style="width: 100%;" type="text" value="0.000"/>					

### Classifications

This section lists the craft and classification that your employee worked on your project and will be paid for. If you mistakenly choose the wrong classification on the original entry page, you may change it here by clicking on the Edit button. (Remember that if your employee worked in more than one classification within this work week, you would need to enter a separate payroll record for that classification).

▼ Classifications					
Jurisdiction	Location	Craft	Classification	Construction Type	
Federal Wages	Huron County, MI	Carpenter	Carpenter - Pending USDOL 02/01/2017	Highway	Edit

### Hours Worked Each Day for This Project Only

Enter the hours worked each day.



The first row is for regular time worked(1), the second row is for overtime worked(2) and the third row for is for double time worked(3).

ONLY enter hours worked on this prevailing wage job for this week. The system will total each type of hours worked, the days worked and the week under the totals hours column(4).

Hours Worked Each Day for This Project Only								
	Monday 5/28/2018	Tuesday 5/29/2018	Wednesday 5/30/2018	Thursday 5/31/2018	Friday 6/1/2018	Saturday 6/2/2018	Sunday 6/3/2018	Total Hours
1 Regular Time	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 Overtime at 1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 Double-Time	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Note:** If turned on by the Administrator, you may see an additional field 'Total Hours All Projects Worked' listed in the hours section. If so, this field will require a manual entry for your employee's full hours worked that week.

Hours Worked Each Day for This Project Only								
	Monday 4/8/2019	Tuesday 4/9/2019	Wednesday 4/10/2019	Thursday 4/11/2019	Friday 4/12/2019	Saturday 4/13/2019	Sunday 4/14/2019	Total Hours
Regular Time	2.00	2.00	2.00	2.00	2.00	0.00	0.00	10.00
Overtime at 1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Double-Time	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	2.00	2.00	2.00	2.00	2.00	0.00	0.00	10.00
Total Hours All Projects Worked	40.00							

### Fringes/Contributions Paid to Other (Not Employee) for This Project Only

You may utilize this section in two different ways:

1. Auto calculate
2. Manual entry

Fringes / Contributions paid to others (not employee) for This Project Only (Rate Times the # of Hours Worked)					
* Vac / Hol / Dues	Health & Welf.	2 Pension	** All Other	* Training	
0.000	0.000	0.000	0.000	0.000	
More...		More...			
Voluntary Contributions for all Projects			<input type="checkbox"/> Vac/Hol/Dues Included in Gross Emp. Pay <input type="checkbox"/> Some or All Fringes Paid to Employee <input type="checkbox"/> Voluntary Contributions Included in Gross Emp. Pay		
Pension	Medical	<input type="button" value="Calculate Fringes"/>			
0	0	1			

**\* DO NOT USE - Not allowed by Responsible Wages & Benefits**      **\*\* Use to enter vision, dental, life, and Accidental Death & Dismemberment insurance Only**

**Auto Calculate:** The first is by simply clicking the ‘Calculate Fringes’ button so that the system automatically calculates the fringe benefit rates paid.

**Manual Entry:** This only works if you filled out the hourly fringe benefit rates in the Add/Edit Employee screen (or the Fringe Benefit Maintenance section, also available in the Set Up tab). This function multiplies the hours worked times the fringe benefit rate to get the values.

The second way is to manually enter the total amounts paid per section (Vac/Hol/Dues, Health & Welfare, Pension, etc.) from your payroll register or paystubs. Mark the appropriate check boxes as required. If they are checked in the Add/Edit Employee setup, then that value carries over.

## Paycheck – Deductions, Payments, and Notes

Values entered in this section apply to all hours worked on all projects during the week.

▼ Paycheck - Deductions, Payments and Notes (For All Projects Worked This Week)

Single Paycheck  Multiple Paychecks

**Deductions** 1

Fed Tax	Social Security	Medicare	State Tax	Local Taxes/SDI	Other <span style="float: right;">2</span>	Vac/Dues	Savings	Total Deductions
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

**Payments (If included in paycheck)**

Trav/Subs <span style="float: right;">3</span>	Gross Pay All Projects <span style="float: right;">4</span>	Paycheck Amount <span style="float: right;">5</span>	Check Number * <span style="float: right;">6</span>	Payment Date <span style="float: right;">7</span>
0.000	0.000	0.000		

**Notes** 8

**Other Deduction Notes** 9

1. Deductions - the ‘Total Deductions’ box will add as you enter values in the taxes, other deductions, Vac/Dues and Savings fields.
2. Other Deduction - this field is for permissible deductions that do not fall into the other available fields. If you put an amount in the ‘Other’ deductions field, an ‘Other Deduction Note’ will become required.
3. Trav/Subs - this field is for travel or subsistence paid to your employee. This amount does figure into the mathematical calculation that the system to ensure that Gross and Net pays are correct.
4. Gross Pay All Projects – the gross amount on the paycheck for the week including all projects worked.
5. Paycheck Amount – this is also referred to as Net pay. This is the actual amount of pay the employee received.
6. Check Number – you have the option of putting different information in this field. If you hand out actual checks to your employees, please enter the check number in this field. If

you utilize direct deposit and no check numbers exists, enter 'DD'.

7. Payment Date – this is the actual date of the paycheck. Not all Agencies require this field.
8. Notes – this is a section that allows you to communicate anything out of the ordinary that you would like your Agency to know.
9. Other Deduction Notes – if you entered a permissible deduction in the above-mentioned field, then you will be required to leave a note describing that deduction. Please remember to be transparent in your notes entered. We recommend that you list what the actual deduction is, and not write “other deduction” or “N/A”.

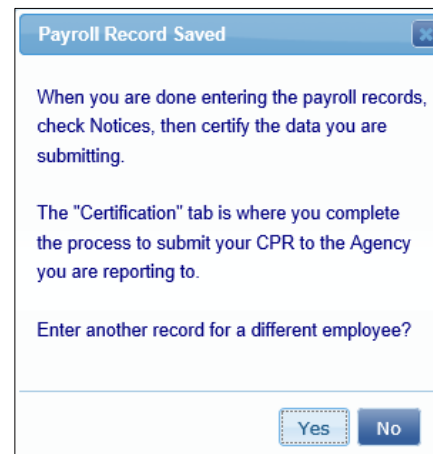
## Saving the Payroll Record

When you have completed all the above-mentioned fields, Click Save.

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### SAVE WITH NO NOTICES

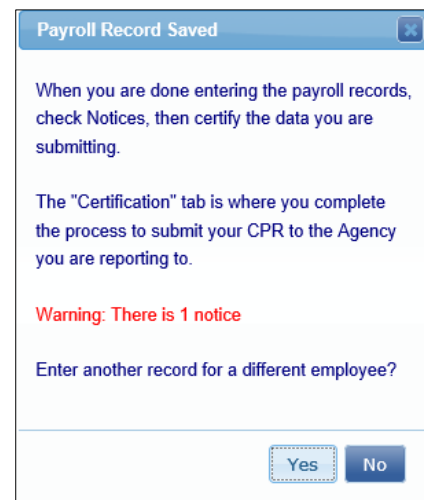
With a successful save you will get this message:



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### SAVE WITH NOTICES

If you do not get this message, look for the **RED** message on the screen. You may have to scroll through the payroll record to see what you have missed that may be a required field.



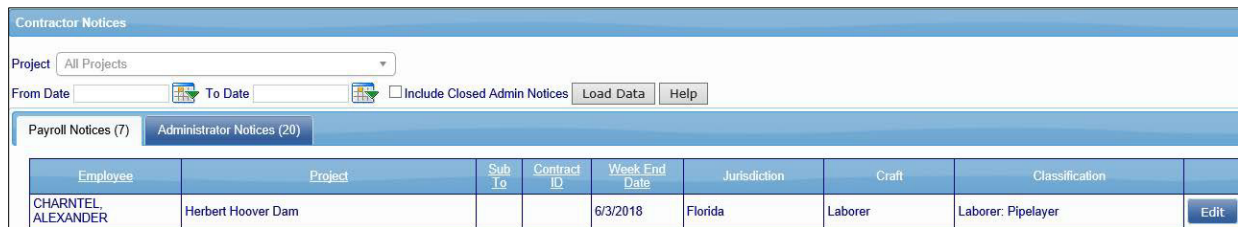


## 2. Notices Tab

Once you have entered all payroll records for the week, go to the '2. Notices' tab to check and see if you have any payroll Notices.

After your records have been saved: there could be issues ranging from forgetting to add an employee ID or phone number to forgetting to enter the Gross Employee Pay This Project field at the top of the Payroll Record Entry screen, this will display in the Notices tab.

If an employee is displayed on the notices screen (see below), the notice will need to be cleared.



The screenshot shows the 'Contractor Notices' interface. At the top, there is a 'Project' dropdown menu set to 'All Projects'. Below it are 'From Date' and 'To Date' fields, a checkbox for 'Include Closed Admin Notices', and 'Load Data' and 'Help' buttons. A navigation bar shows 'Payroll Notices (7)' and 'Administrator Notices (20)'. The main table has columns for Employee, Project, Sub Lo, Contract ID, Week End Date, Jurisdiction, Craft, and Classification. One row is visible for CHARNTEL ALEXANDER at the Herbert Hoover Dam project, with a week end date of 6/3/2018, in Florida, as a Laborer. An 'Edit' button is located at the end of the row.

Employee	Project	Sub Lo	Contract ID	Week End Date	Jurisdiction	Craft	Classification	
CHARNTEL ALEXANDER	Herbert Hoover Dam			6/3/2018	Florida	Laborer	Laborer: Pipelayer	Edit

To clear the notice, click on the Edit button to the right of the employee's name. This will take you back into the Payroll Record Entry screen. Scroll down the bottom and you will see detailed notes on exactly what your notice is.

If you do not understand the notice, there are options on how to get help. You can click on the Video Assistance 'Play Now' button and you will see a video that explains what the notice is and how to address it, or you can contact our [Support](#) department and they will assist you.

All Notices must be cleared to certify the payroll.

## 3. Certification Tab

It's time to certify your payroll! You will do this for each week beginning when you first start work on your project until the last week on the project.

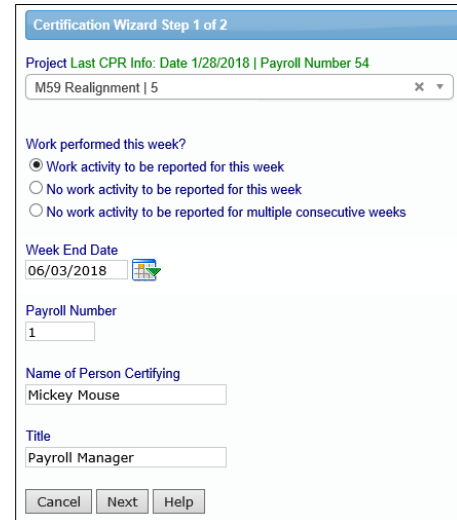
There are three options available to you when you certify your payroll:

1. Certify a payroll for a week during which work was performed
2. Certify a payroll for a week during which no work was performed (non-work week payroll)
3. Certify a payroll for multiple consecutive weeks during which no work was performed

## Certification Wizard - Step 1 of 2

To certify your payroll:

- Choose your project
- Choose the type of payroll you are certifying
- Choose your week ending date (if you choose multiple consecutive weeks, you will enter the start date and the last date)
- Enter your name as the person certifying your payroll
- Enter your title
- Click next



The screenshot shows the 'Certification Wizard Step 1 of 2' interface. At the top, it displays 'Project Last CPR Info: Date 1/28/2018 | Payroll Number 54'. Below this is a dropdown menu for 'M59 Realignment | 5'. The 'Work performed this week?' section has three radio button options: 'Work activity to be reported for this week' (selected), 'No work activity to be reported for this week', and 'No work activity to be reported for multiple consecutive weeks'. The 'Week End Date' is set to '06/03/2018'. The 'Payroll Number' is '1'. The 'Name of Person Certifying' is 'Mickey Mouse'. The 'Title' is 'Payroll Manager'. At the bottom are 'Cancel', 'Next', and 'Help' buttons.

## Certification Wizard - Step 2 of 2

The Statement of Compliance (SOC) portion of your certified payroll report will display.

You now need to denote how you pay your fringe benefits (if you do both, you may choose both):

- 4a – paid into an approved plan, fund, or program
- 4b – paid in cash to the employee
- 4c – section to note any exceptions you might have, per craft/classification.

If you have any final remarks that you'd like to leave for your Agency, there is a section available to you to do so. Note: this field is mandatory if you are *recertifying* a CPR.

You may also click on a checkbox to note if your CPR is a final.

Enter your eSignature and click Save. This completes your CPR, and it will pop up in another window so long as you have your pop-up blocker turned off. (If you forget your e-Signature, go back to the Set Up tab, edit your eSignature, and then go back to the Certification Tab and follow the above procedures again.)



The image shows a text input field with the label 'eSignature Password:' to its left.

You have now completed certifying your payroll.

Your CPRs are electronically sent to your Administrator, and unless otherwise specified, there is no need to send or print out a hardcopy unless you would like to do so for your own records.

Remember that your CPR's will always be stored in your account to access at any time, so you may decide not to print out hardcopies.

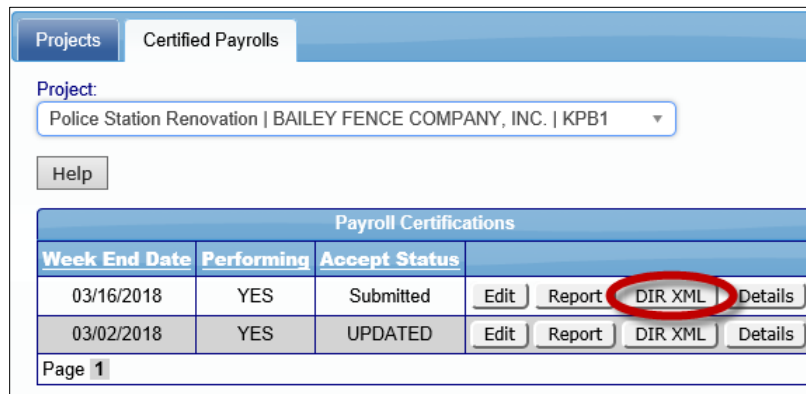
## State Specific Uploads

### California DIR XML Upload

If you perform work on a California Public Works project, you also need to upload your payroll to the Department of Industrial Relations (DIR) eCPR system. Once you've certified your payroll, you can download the DIR XML file to upload.

Instructions to find and upload this file:

- Click on the Projects tab
- Click on the Certified Payrolls tab
- Locate the week ending payroll file you need
- Click on the DIR XML button (make sure your pop-up blockers are off)
- Save this file to your desktop
- Upload into the DIR eCPR system



Payroll Certifications			
Week End Date	Performing	Accept Status	
03/16/2018	YES	Submitted	Edit Report <b>DIR XML</b> Details
03/02/2018	YES	UPDATED	Edit Report DIR XML Details

Page 1

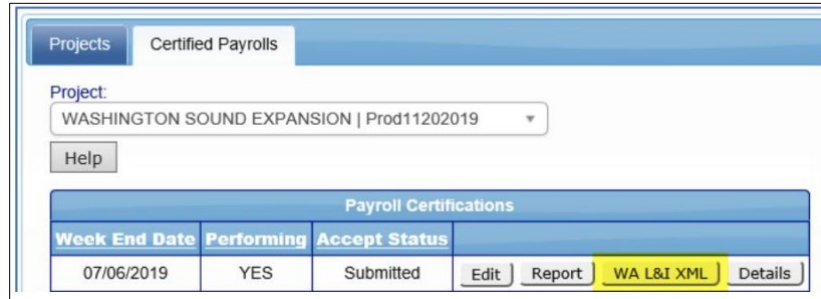
### Washington L&I XML Upload

Beginning in January 2020, weekly certified payroll reports are required to be filed online with Washington State Department of Labor and Industries, or WA L&I, at least once a month for all public works projects. Once you've certified your payroll, you can download the WA L&I XML file to upload.

Instructions to find and upload this file:

- Click on the Projects tab
- Click on the Certified Payrolls tab
- Locate the week ending payroll file you need
- Click on the WA L&I XML button (make sure your pop-up blockers are off)
- Save this file to your desktop

- Upload into the WA State PWIA portal

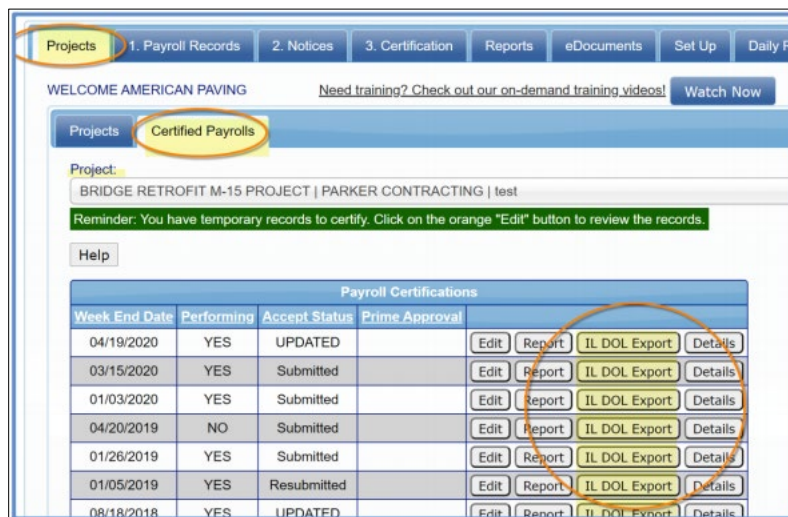


## Illinois DOL Export Upload

Beginning in September 2020, weekly certified payroll reports are required to be filed online with the Illinois Department of Labor, or IDOL, by the 15th of each month for all state-funded public works projects. Once you've certified your payroll, you can download the IL DOL XML file to upload.

Instructions to find and upload this file:

- Click on the Projects tab
- Click on the Certified Payrolls tab
- Locate the week ending payroll file you need
- Click on the IL DOL Export button (make sure your pop-up blockers are off)
- Save this file to your desktop
- Make any manual additions/adjustments to the CSV file
- Upload into the IDOL portal



Should you find that you have any further questions, please consult either the Contractor User Manual or call our [Support](#) department.

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

STANDARD CONSTRUCTION  
GENERAL CONTRACT CONDITIONS

STANDARD CONSTRUCTION  
GENERAL CONTRACT CONDITIONS  
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# 1. DEFINITIONS

(June 12, 2012)

**Addendum/Addenda:** A modification or clarification of the Contract Documents distributed to prospective Bidders prior to the opening of Bids.

**Advertisement for Bids:** The public notice inviting the submission of Bids for the Work.

**Allowance Account (General):** Account in which a stated maximum dollar amount is included in the Contract for the purpose of funding, at the sole discretion of the Owner, unforeseen and/or changed conditions or extra work arising during the prosecution of the Work or any other changes issued by the Owner. The scope and limitations regarding use of the Allowance Account are contained in the Contract Documents. Performance of work, if any, under this Allowance Account shall be authorized by written Work Order issued by the Owner.

**Allowance Account(s) (Dedicated):** Account(s) in which stated maximum dollar amount(s) are included in the Contract for the purpose of funding specific items of work at the sole discretion of the Owner. The scope and limitations regarding use of the Dedicated Allowance Account(s) are contained in the Contract Documents.

**Architect/Engineer:** Owner or its authorized representatives identified in the Notice-to-Proceed letter, including but not limited to the Resident Architect/Engineer, the Construction Manager, the Owner's representatives and the Architect/Engineer of Record. In the event an Architect/Engineer is not employed on the project, the term "Owner" may be substituted for Architect/Engineer.

**Art in Public Places:** Miami-Dade County program established through Ordinance #94-12 and codified in Miami-Dade County Code Section 2-11.15 providing 1.5% of each County project's capital cost to fund a public art component within the Project. Coordination and installation of the Artist's work is included as part of the scope of the Contractor's services to the extent that it is defined in the Bid Documents.

**Artist:** Person(s) chosen through the Art in Public Places program to design and fabricate or specify an integrated work of art for the Project. The term Artist as may be referred to in the Contract Documents means the Artist and/or their authorized representative.

**As-Built Documents:** Documents signed and sealed by an appropriately licensed professional and submitted by the Contractor during and/or upon completion of the Contract reflecting actual installed/built conditions and all changes made in the Contract Documents during the construction process and showing the exact dimensions, geometry, location, identification and such other information as required by the Contract Documents and/or Architect/Engineer for all elements of the work completed under the contract. (Also referred to as As-Built Drawings or As-Built). Final payment is conditional upon the receipt of As-Built Documents.

**BCC:** Board of County Commissioners, the governing board of Miami-Dade County.

**Beneficial Occupancy:** The point at which the Owner or Architect/Engineer determines that the Work or any portion thereof can be occupied from a regulatory and work function standpoint prior to Substantial Completion of the Work. Beneficial Occupancy will not relieve the Contractor of any of its obligations



relative to Substantial Completion or of its responsibility to fully complete the Work in accordance with the Contract Documents.

**Bid:** The written offer of a Bidder to perform the Work.

**Bid Documents:** The Advertisement for Bids, Instructions to Bidders, Bid Form, Bid Security, Construction Contract, all contractual forms, General Conditions, Special Provisions, Technical Specifications and Contract Drawings, together with all Addenda and any other applicable standards, regulations, laws and permits as described within these other documents which may be incorporated by reference.

**Bid Item:** A specific item of work represented by a line item in the Bid Form.

**Bid Form:** The form on which Bids are submitted.

**Bid Security:** The cashier's check, certified check or bid bond, accompanying the Bid and submitted by the prospective bidder, as a guarantee that the prospective bidder will enter into a contract with the Owner for the performance of the Work and furnish acceptable bonds and insurance if the Contract is awarded to him.

**Bidder:** An individual, firm, partnership, corporation or combination thereof, submitting a Bid for the Work.

**Certificate of Substantial Completion:** Certificate issued to the Contractor by the Owner certifying that Substantial Completion has been achieved.

**Certificate of Completion:** Certificate issued by the local building official providing proof that a structure or system is complete and, for certain types of permits, is released for use and may be connected to a utility system. This certificate does not grant authority to occupy a building, such as a shell building, prior to the issuance of a Certificate of Occupancy by the local building official.

**Certificate of Final Acceptance:** Certificate issued to the Contractor by the Owner certifying that Final Acceptance has been achieved in accordance with the definition reflected herein (see Final Acceptance definition).

**Certificate of Occupancy:** Certificate issued by the local building official after the building official inspects the building or structure and finds no violations of the provisions of applicable codes or other laws that are enforced by the local building department.

**Change Notice:** A document issued by the Architect/Engineer or Owner to the Contractor specifying a proposed change to the Contract Documents and requesting a price proposal from the Contractor, if applicable, within a specified time period.

**Change Order:** A written agreement executed by the Owner, the Contractor and the Contractor's Surety, covering modifications to the Contract Documents.

**Construction Staging Area:** Property which may be available for use by the Contractor during the construction period for the purpose of storing products and construction equipment and for the purpose of staging the Work. The construction staging area(s), if applicable, are defined in the Contract Documents.

**Construction Contract:** The agreement executed by the Contractor and the Owner covering the performance of the Work including the furnishing of labor, superintendence, materials, tools and equipment as indicated in the Contract Documents. The term "Contract" shall have the same meaning.

**Consultant:** See Architect/Engineer.

**Contract Documents:** Bid Documents, Change Orders, Payment and Performance Bonds, Work Orders, Approved Schedules, all Contractual Forms, Approved Shop Drawings and Approved Working Drawings.

**Contract Drawings:** The plans, profiles, cross-sections, elevations, schedules, and details which show locations, character, dimensions and details of the Work. Contract Drawings are confidential under the Florida Public Records Act and the Contractor is responsible for maintaining confidentiality during and after the progress of the Work.

**Contractor:** The individual, firm, partnership, or corporation, or combination thereof, private, municipal, or public, including joint ventures, duly licensed under Florida Statutes, which, as an independent Contractor, has entered into a Contract with Miami-Dade County, who is referred to throughout the Contract Documents by singular in number and masculine in gender.

**Contract Time:** The number of days allowed for completion of the Work commencing with the effective date of Notice to Proceed. The Contract Time will be stipulated in the Contract Documents unless extended by a Change Order or by a Work Order.

**County:** See Owner.

**County Manager:** The County Manager of Miami-Dade County, Florida.

**County Mayor:** The Mayor of Miami-Dade County, Florida.

**Critical Path:** Longest sequence of activities in a project's schedule which defines the project completion date and which must be completed on time in order for the project to be completed on schedule.

**Days:** Unless otherwise designated, days mean calendar days.

**Department Director:** The Director of the Miami-Dade County Department implementing the work.

**Department Director's Representative:** The person or persons designated by the Department Director to act on his behalf in the administration of the contract within the limits of their respective authorization.

**Direct Costs:** Direct Costs recoverable by the Contractor as a result of changes in the Work shall be limited to the actual additional costs of labor and materials installed as part of the Work and for the reasonable additional cost of rental of any Special Equipment or Machinery. Labor shall be limited to site labor costs, including Employer's Payroll Burden. Specifically excluded from labor are the costs of general foremen and site office personnel. Materials are limited to permanent materials required by the Contract Documents and materials approved by the Architect/Engineer as necessary to install the permanent materials in an efficient and workmanlike manner. For special equipment or machinery not listed in said document, the Contractor shall be paid a rental rate corresponding to the average prevailing rental rate for such equipment or machinery in Miami-Dade County, Florida, subject to approval by the Architect/Engineer. No additional payment shall be made to the Contractor for fuel, lubricants, fair wear and tear, transportation, insurance, or depreciation. Any equipment or machinery not designated by the Architect/Engineer as special equipment and machinery shall be considered Overhead.

**Extra Work:** Work not provided for in the Contract Documents as awarded or as previously modified by Change Order or Work Order but found to be essential to the satisfactory completion of the Contract within its intended scope.

**Field Representative/Construction Manager:** An authorized representative of the Owner that may provide administrative and construction inspection services during the pre-construction, construction, and closeout phases of the Contract and through which the orders of the Owner shall be given. The Field Representative has no authority to modify or waive any provision of the Contract Documents.

**Final Acceptance:** The formal written acceptance by the Owner of the completed work.

**Final Completion:** Point in time when the Owner determines that all Work has been completed in accordance with the Contract Documents and all deficiencies listed within the Certificate of Substantial Completion and Punch List have been corrected to the satisfaction of the Owner or Architect/Engineer including but not limited to all required final inspections, close-out documents, delivery of all spares and extra materials and activation of warranties as required. A Certificate of Final Acceptance shall be issued to the Contractor by the Owner upon Final Completion.

**Force Account:** A method of payment measured by actual cost of the labor, materials and equipment plus a mark-up for Indirect Costs, as distinct from other payment methods such as lump sum or unit price, for Extra Work ordered by Change Order and/or Work Order.

**Fragment:** A fragment or selected portion of the Schedule network and/or network of proposed changed work activities.

**Furnishing:** Manufacturing, fabricating and delivering to the site of the Work materials, plant, power, tools, patterns, supplies, appliances, vehicles and conveyances necessary or required for the completion of Work.

**General Conditions:** This section of the Contract Documents which specifies, in general, the contractual conditions.

**Green Building Practices:** Environmentally- and socially-conscious practices that emphasize processes and methods of design and construction that reduce exposure to noxious materials, conserve non-renewable energy and scarce materials, minimize life-cycle ecological impact of energy and materials, employ renewable energy or materials that are sustainably harvested, protect and restore local air, water, soils, flora and fauna, and support pedestrians, bicycles, mass transit and other alternatives to fossil-fueled vehicles.

**Indirect Costs:** Overhead.

**Installation, Install or Installing:** Completely assembling, erecting and connecting material, parts, components, supplies and related equipment specified or required for the completion of the Work including the successful passing of all tests so that they are fully functional.

**LEED (Leadership in Energy and Environmental Design):** An ecology-oriented building certification program run under the auspices of the U.S. Green Building Council (USGBC) which concentrates its efforts on improving performance across five key areas of environmental and human health: energy efficiency, indoor environmental quality, materials selection, sustainable site development, and water savings.

**Limit of Work:** Boundary within which the Work is to be performed.

**Liquidated Damages:** The amount that the Contractor accepts, as stipulated in the Contract Documents, that will be deducted from the Contract Sum for each Day of delay due to a Nonexcusable Delay.

**Liquidated Indirect Costs Rate:** The amount, stipulated in the Contract Documents, that will be added to the Contract Sum for each Day of delay due to a Compensable Delay. The Contractor accepts this sum as full compensation for the Contractor's and all its Subcontractors' Indirect Costs, for each Day of Compensable Delays. This amount is agreed to include any costs other than Direct Costs incurred by the Contractor and all its Subcontractors of any tier in the performance of this Contract.

**Lump Sum Bid Item:** A bid item in which quantity is not separately measured for payment in units but rather is based on the amount bid by the Contractor as indicated in the Bid Form and made a part of the Contract. Partial payments of Lump Sum Bid Items will be conditionally made, based upon an approved schedule of values, and will be subject to reconciliation in the event that the work of a Lump Sum Bid Item is not fully completed in accordance with the requirements of the Contract Documents.

**Miami-Dade County (MDC):** A political subdivision of the State of Florida, the Owner.

**Milestone:** A completion date as defined in the Contract Documents.

**Notice to Proceed:** Written notice from the Owner to the Contractor specifying the date on which the Contractor is to proceed with the Work and on which the Contract Time commences to run.

**Notice of Termination:** Written notice from the Architect/Engineer or the Owner to the Contractor to permanently stop work under the Contract on the date and to the extent specified in the notice. The Notice of Termination includes Notices of Termination for Convenience, Default and National Emergencies as set forth in the Contract Documents. Upon receipt of such notice, the Contractor shall comply with the termination provisions of this Contract.

**Overhead (Indirect Costs):** Overhead, also defined as "Indirect Costs", includes any and all costs other than Direct Costs. The term "Overhead" as indicated in this definition shall apply to both Contractors and Subcontractors of any tier. Overhead includes, but is not limited to, all profit and costs associated with: Project bond premiums, Project insurance premiums, costs of supervision, coordination, superintendents, general foremen, consultants, schedulers, cost controllers, accountants, office administrative personnel, time keepers, clerks, secretaries, watch persons, small tools, equipment or machinery, utilities, rent, telephones, facsimile machines, computers, word processors, printers, plotters, computer software, all expendable items, job site and general office expenses, extended jobsite general conditions, interest on monies retained by the Owner, escalated costs of materials and labor, impact cost on unchanged work, inefficiency, decreased productivity, home office expenses or any cost incurred that may be allocated from the headquarters of the Contractor or any of its Subcontractors, loss of any anticipated profits, loss of bonding capacity or capability losses, loss of business opportunities, loss of productivity on this or any other Project, loss of interest income on funds not paid, costs to prepare a bid, cost to prepare a quote for a Change in the Work, costs to prepare, negotiate or prosecute claims, costs of legal and accounting work, costs spent to achieve compliance with applicable laws and ordinances, loss of Projects not bid upon, loss of productivity or inefficiencies in the Work from any cause.

**Owner:** Miami-Dade County, whose governing body is the BCC acting in its proprietary capacity. Where applicable, the Owner acts through its Architect/Engineer or Field Representative. When these Contract Documents require the action of individual persons, the documents contain specific references to these

persons. In particular, the documents shall refer to the BCC when approval of the BCC is specifically required and to the Architect/Engineer when the Architect/Engineer's approval is specifically required.

**Payment and Performance Bonds:** Bonds executed by the Contractor and its Surety assuring that the Contractor will, in good faith, perform and guarantee the work in full conformity with the terms of the Contract Documents and will promptly pay all persons supplying the Contractor with labor, materials, or supplies, used directly or indirectly by the Contractor in the prosecution of the Work. These bonds shall be two separate bonds, one bonding payment and one bonding performance. Each bond shall be for no less than 100% of the total maximum contract amount.

**Project:** See definition for Work.

**Punch List:** A list issued by the Owner to the Contractor of work elements requiring remedial action or completion by the Contractor before Final Completion is issued to the Contractor.

**Right-of-Way:** A term denoting land and property, and interests therein, owned or acquired by the Owner.

**Schedules:** All schedules delivered under the Contract including time schedules and schedule of values.

**Schedule of Values:** A detailed cost breakdown of each lump sum bid item in the bid form, submitted by the Contractor at the beginning of the Work and to be used as a basis to determine monthly progress payments and quantity adjustments within the constraints specified in the Contract Documents.

**Shop Drawings:** Documents furnished by the Contractor for approval by the Architect/Engineer to illustrate specific portions of the Work. Shop Drawings include drawings, diagrams, illustrations, calculations, schedules, tables, charts, brochures and other data describing design, fabrication and installation of specific portions of the Work.

**Site, Project Site, Work Site, Construction Site, Job Site:** The location(s) at which the work under this Contract is to be accomplished, as shown in the Contract Documents.

**Special Provisions:** Section of the Contract which includes specific contractual requirements not covered in the General Conditions that are specific to the Project.

**Subcontractor:** Any person or entity, other than the employees of the Contractor, supplying the Contractor with labor, materials, supplies and/or equipment used directly or indirectly by the Contractor in the prosecution of the Work.

**Substantial Completion:** Substantial Completion of a Project is the date on which the Owner certifies that the construction is sufficiently completed, in accordance with the Contract Documents, as modified by any Change Orders, so that the Owner can occupy the Project for the use for which it was intended. A certificate shall be issued to the Contractor by the Owner upon achievement of Substantial Completion.

**Surety:** The bonding company or companies furnishing the bonds required of a Bidder and of the Contractor.

**Technical Specifications:** The general term comprising all the written directions, provisions and requirements contained herein, entitled "Technical Specifications," those portions of standard specifications to which reference is specifically made in the Technical Specifications, and any Addenda, Work Orders and Change Orders that may be issued for the Contract, all describing the work required to be performed, including detailed technical requirements as to labor, materials, supplies and equipment and standards to which such work is to be performed as well as any reports specifically issued with the RPQ No.: TP-0000017889

Bid Documents and specifically identified in the Instructions to Bidders which may include geotechnical or other technical reports.

Temporary Construction Easement Line: A boundary which describes additional areas which may be made temporarily available for construction operations.

Time Contingency: The maximum time specifically identified in the Contract Documents by which the Owner may extend the contract time to accomplish the work without a change order. Limitations on the use of the time contingency are set forth in the Contract Documents.

Unit Prices: Unit prices shall include all labor, materials, tools, and equipment; all other direct and indirect costs necessary to complete the item of Work and to coordinate the unit price Work with adjacent work; and shall include all overhead and profit. Contractor shall accept compensation computed in accordance with the unit prices as full compensation for furnishing such Work.

Work: The construction and services required by the Contract Documents, which includes all labor, materials, equipment, and services to be provided by the Contractor to fulfill the Contractor's duties and obligations imposed by the Contract Documents or, if not specifically imposed by the Contract Documents, which can be reasonably assumed as necessary to fulfill the intent of the Contract Documents to provide a complete, fully functional and satisfactory project.

Work Order: A written order, authorized by the Architect/Engineer or Owner, directing the Contractor to perform work under a specific Allowance Account or directing the Contractor to perform a change in the Work that does not have a monetary impact, including but not limited to, extending the Contract Time or subject to the payment of Liquidated Indirect Costs if entitlement is established as required by these Contract Documents. No Work Order may increase the Contract Sum.

END OF ARTICLE

## **2. INTERPRETATION**

(June 12, 2012)

- A. The intent of the Contract is to include all necessary items for the proper completion of the Work by the Contractor so the Owner may have a fully functioning facility and fully receive the benefits intended under the Contract. The Contractor shall perform, without additional compensation, such incidental work as necessary to complete the Work and fulfill the design intent, in accordance with the requirements set forth in the Contract Documents, so that it will meet the requirements for which the Project was intended, in a satisfactory and workmanlike manner.
- B. The Contract Documents and all referenced standards cited are essential parts of the Contract requirements. A requirement occurring in one is as binding as though occurring in all. The documents comprising the Contract Documents are complementary and indicate the construction and completion of the Work. Anything mentioned in the Contract Documents and not shown on the Contract Drawings or shown on the Contract Drawings and not mentioned in the Contract Documents, shall be of like effect as if shown or mentioned in both. The more stringent shall apply in the case of a conflict.

- C. Site Inspections and Verification of Governing Dimensions: In executing the contract, the Contractor represents that he has, prior to bid, visited the site, become familiar with the conditions under which the work is to be performed and correlated his personal observations with the requirements of the Contract Documents or that he has chosen not to do so, in the event that a mandatory site visit is not specified in the Contract Documents. The Contractor accepts the responsibility for all errors in construction which could have been avoided by such examination and the opportunity to seek timely clarifications during the bidding process. The Contractor, before commencing work, shall verify all governing dimensions at the site, and shall examine all adjoining work on which his work is in any way dependent for its conformance with the intent of the Contract Documents and no disclaimer of responsibility for defective or non-conforming adjoining work will be considered unless notice of same has been filed by the Contractor, and agreed to in writing by the Owner through the Architect/Engineer before the Contractor begins any part of the Work. No disclaimer for defective or non-conforming adjoining work that was clearly foreseeable to the Contractor during a site visit (mandatory or non-mandatory) will be considered by the Owner.
- D. Errors, Inconsistencies and Omissions: The Contractor shall carefully study and compare all drawings, Contract Documents and other instructions; shall verify all figures on the Contract Drawings before laying out the Work; shall notify the Owner or Architect/Engineer of all errors, inconsistencies, or omissions which he may discover; and obtain specific instructions in writing during the bidding process and prior to submitting his Bid. The Contractor shall not take advantage of any apparent error or omission which may be found in the Contract Drawings or Contract Documents, and the Architect/Engineer shall be entitled to make such corrections therein and interpretations thereof as he may deem necessary for the fulfillment of their intent. The Contractor shall be responsible for all errors in construction which could have been avoided by such examination and notification, and shall correct, at his own expense, all work improperly priced, scheduled or constructed through failure to notify the Owner or Architect/Engineer and to request specific instructions.
- E. Where "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the Contract Documents unless stated otherwise.
- F. References to Articles or Sections include sub-articles or subsections under the Article referenced.
- G. Referenced Standards: Material and workmanship specified by the number, symbol, or title of a referenced standard shall comply with the latest edition or revision thereof and amendments and supplements thereto in effect on the date of the Invitation to Bid except where otherwise expressly indicated. In case of a conflict between the Contract Documents and the referenced standard, the Contract Documents shall govern.
- H. Order of Precedence of Contract Documents: Unless otherwise provided for in the Special Provisions or required by law, the order of precedence of the Contract Documents will be as follows:
- 1) Change Orders to the Contract
  - 2) Notice to Proceed
  - 3) Construction Contract

- 4) Addenda
  - 5) Special Provisions
  - 6) General Conditions
  - 7) Technical Specifications
  - 8) Contract Drawings
  - 9) Referenced Codes and Standards
  - 10) Guarantees
  - 11) Instructions to Bidders
  - 12) Invitation to Bid
  - 13) Other documents
- I. In case of differences between small and large scale drawings, the drawings showing greater detail shall govern. Schedules on drawings shall take precedence over conflicting notations on drawings. In the event of discrepancy between any scaled dimensions on drawings and the figures written thereon, the figures shall govern over the scaled dimensions unless otherwise indicated.
- J. Explanations: Should it appear that the Work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Owner or Architect/Engineer in a timely manner to allow sufficient time for such further written explanations as may be necessary and shall conform to the explanation provided as part of the Contract. The Owner or Architect/Engineer's decision shall be final.
- K. Effect of Headings: The headings and titles to provisions in the Contract Documents are descriptive only and shall be deemed not to modify or affect the rights and duties of parties to this Contract.
- L. No acceptance, order, measurement, payment, or certificate of or by the Architect/Engineer and/or the Owner or its employees or agents shall either estop the Owner from asserting any rights or operate as a waiver of any provision hereof or of any power or right herein reserved to the Owner or of any rights to damages herein provided.
- M. Wherever the terms, "as directed", "ordered", "permitted", "designated", "as approved", "approved equal", "or equal", "acceptable" and other words of similar meaning which authorize an exercise of judgment are used in the Contract Documents, such judgment shall be vested only in the Architect/Engineer and/or the Owner and shall be final.
- N. The Contractor shall make available at the job site one copy of each referenced standard and/or Contract Documents for the Contractor's and the Field Representative's use during the time that work covered by the standards and/or Contract Documents is underway.
- O. The Contract Documents provide for a complete work and may have been prepared in divisions of various crafts, trades and other categories of work. The Contractor is responsible for the performance of all work under the Contract regardless of any such divisions and shall ensure that all of the work is performed and completed. The organization of the Contract Documents into divisions, sections and articles and the arrangement of the drawings do not restrict or limit



the Contractor into dividing the Work among subcontractors or in establishing the extent of the Work to be performed by any trade.

- P. No deviation from the approved Contract Documents shall be permitted without the prior written approval of the Owner, which approved deviation shall be documented either by Change order or Work Order.
- Q. All Requests for Information by the Contractor per this section shall be in accordance with the Contract Documents.

END OF ARTICLE

### **3. ARCHITECT/ENGINEER/FIELD REPRESENTATIVE**

(June 12, 2012)

- A. The Architect/Engineer shall respond to questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work in accordance with the time frames prescribed in the Contract Documents. The Architect/Engineer shall decide all questions which may arise as to the interpretation of the Contract Documents relating to the Work, and the fulfillment of the Contract on the part of the Contractor, and those decisions shall be binding on the Contractor
- B. The Architect/Engineer is not authorized to revoke, alter, or waive any requirement of the Contract.
- C. The Architect/Engineer, Owner or Field Representative shall have free access to the Work and materials at all times to facilitate the performance of his duties.
- D. Subject to concurrence by the Owner, the Architect/Engineer shall have the right to observe and reject any material or work performed which does not meet the requirements of the Contract Documents. When the Architect/Engineer discovers any work in progress or completed that does not meet the requirements of the Contract Documents, the Architect/Engineer shall reject that portion of the Work affected and shall confirm such rejection in writing, as soon as practical, detailing the reasons for the rejection. Work rejected by the Architect/Engineer will not be paid for. Any such observation and/or rejection shall not be construed as undertaking supervisory control of the Work or of means and methods employed by the Contractor or his Subcontractors and shall not relieve the Contractor of any of his responsibilities or obligations under the Contract. The Contractor shall not request or attempt to require the Architect/Engineer to undertake such supervisory control or to administer, supervise, inspect, assist, or act in any manner so as to relieve the Contractor from such responsibilities or obligations.
- E. The fact that the Architect/Engineer has not made early discovery of materials furnished or work performed which does not meet the requirements of the Contract Documents, shall not bar the Architect/Engineer from subsequently rejecting said materials or work.
- F. If either the Architect/Engineer or the Field Representative requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to

the standard required by the Contract Documents. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as Extra Work. Should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at no additional cost to the Owner.

- G. Any work done or materials used which are not in compliance with the Contract Documents may be ordered removed and replaced at the Contractor's expense.
- H. The Owner and other agencies having jurisdiction over the work hereunder shall be afforded free access to the site to perform such inspections and tests as may be required to determine conformance of the Work with the Contract Documents.
- I. Neither the Architect/Engineer nor the Field Representative shall be responsible for any safety obligations imposed on the Contractor by applicable industry standards, licensing requirements, laws or regulatory requirements.

END OF ARTICLE

## 4. OWNER

(June 12, 2012)

- A. Unless otherwise specified or excluded elsewhere in the Contract Documents, the records of borings, test excavations and other subsurface investigations, if any, are offered as information only and solely for the convenience of the Contractor. The Owner does not warrant or guarantee either that said records are complete or that the said records will disclose the actual subsurface conditions. The interpretation of the records and the conclusions drawn therefrom as to the actual existing subsurface conditions are the sole responsibility of the Contractor.
- B. Any estimates of quantities of work or materials, based on said borings, test excavations and other subsurface investigations are not warranted by the Owner to indicate the true quantities or distribution of quantities unless the Contractor is expressly directed to rely on such information to prepare and submit his Bid.
- C. If the Contractor is notified by the Owner to correct defective or nonconforming work, and the Contractor fails to promptly proceed with corrective action in a reasonable time, the Owner may, upon written notice, accomplish the redesign, repair, rework or replacement of nonconforming work by the most expeditious means available and backcharge the Contractor for the cost incurred. The cost of backcharge work shall include all reasonable costs associated with the corrective action.
- D. The Owner shall separately invoice or deduct from payments, otherwise due to the Contractor, the costs as provided herein. The Owner's right to backcharge is in addition to any or all other rights and remedies provided in this Contract, or by law. The performance of backcharge work, on behalf of the Owner, shall not relieve the Contractor of any of its responsibilities under this Contract including but not limited to express or implied warranties, specified standards for quality, contractual liabilities and indemnifications, and the Contract Time.
- E. The Field Representative and/or Architect/Engineer will administer the Contract and the orders of the Owner are to be given through the Field Representative and/or Architect/Engineer. The Field Representative and/or Architect/Engineer shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for under the Contract.
- F. The Field Representative will observe the Contractor's work for compliance with the Contract Documents. Such observation shall extend to all or any part of the work done and to the preparation, fabrication, or manufacture of the material to be used.
- G. Upon discovery, the Field Representative shall call the Contractor's attention to faulty workmanship or defective materials and shall reject work and materials not conforming to the requirements of the Contract Documents.
- H. When any work in progress or completed does not meet the requirements of the Contract Documents, the Field Representative shall have the authority to order the Contractor to shut down that portion of the work affected until the affected work is corrected to the satisfaction of the Field Representative. The Field Representative shall confirm this order in writing as soon as practicable, detailing the reasons for the shutdown. Work performed in violation of the Field Representative's order to shutdown will not be accepted or paid for.

- I. The Field Representative is not authorized to revoke, alter, or waive any requirements of the Contract. The Field Representative will negotiate and act on behalf of the Owner to the authorized limits of his authority as specified in the Contract Documents.
- J. Whenever the Contractor intends to build, assemble or perform any portions of the Work away from the site, the Contractor shall promptly notify the Field Representative of such intentions, including where and when such work is to be performed, before such work starts. The Contractor shall also make arrangements for access thereto by the Field Representative and/or the Architect/Engineer so that the aforementioned portions of the Work may be inspected as needed.
- K. The fact that the Field Representative has not made early discovery of materials furnished or work performed which does not meet the requirements of the Contract Documents, shall not bar the Field Representative from subsequently rejecting said materials or work and does not relieve the Contractor of his responsibility to meet the requirements of the Contract Documents.
- L. The Field Representative shall not act as a foreman or perform other duties for the Contractor, nor interfere with the management of the work by the Contractor.
- M. The administration, observation of the work, and actions by the Field Representative, as herein provided, shall not be construed as undertaking supervisory control of the construction work or of means and methods employed by the Contractor or his Subcontractors and shall not relieve the Contractor from any of his responsibilities or obligations under the Contract; the Contractor shall not request or attempt to require the Field Representative to undertake such supervisory control or to administer, to supervise, to inspect, to assist, or to act in any manner so as to relieve the Contractor from such responsibilities or obligations.
- N. The Field Representative shall decide all questions relating to the rights of different prime Contractors on the Project or site.
- O. All materials and each part or detail of the work shall be subject to observation by the Field Representative and/or the Architect/Engineer. The Architect/Engineer and the Field Representative shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required.
- P. Miami-Dade County enters into this Contract solely in its proprietary capacity. Nothing in this Contract is intended to bind or otherwise restrict the discretion of Miami-Dade County acting in its regulatory capacity, including but not limited to the regulatory acts of the Departments of Regulatory and Economic Resources (RER), Transportation and Public Works (DTPW), Fire-Rescue (MDFRD) and Water & Sewer (WASD) or their successors.

END OF ARTICLE

## **5. CONTRACTOR**

(June 12, 2012)

- A. If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

- B. The Contractor shall hold valid current certificate(s) of competency for the type of work to be performed, in accordance with the qualifications requirements as set forth in Chapter 489 of the Florida Statutes and Chapter 10 of the Code of Miami- Dade County.
- C. The Contractor shall maintain within Miami-Dade County, Florida, a duly authorized agent to accept service of legal process on its behalf, and shall keep the Owner advised of such agent's name and address, during the duration of the Contract, and for three years after final payment or as long as Contractor has warranty obligations under these Contract Documents, whichever period terminates later. The Contractor shall complete the form titled "Contractor Agent to Accept Service" included in the Contract Documents and submit it to the Architect/Engineer prior to NTP.
- D. The Contractor shall be responsible for the complete performance for all of the work under the Contract, and for the methods, means, and equipment used in performing the Contract and for all materials, tools, apparatus and property of every description used in connection therewith.
- E. Upon approval of the Contractor's schedule by the Owner, the Contractor will submit written confirmation from all his Subcontractors agreeing to work within the timeframes specified in the Contractor's approved schedule.
- F. Contractor's Superintendent: The Contractor shall provide a superintendent at the site at all times who is competent in the type of work being performed to act as the Contractor's agent, and shall give that superintendent the full authority to receive instruction from the Field Representative or Architect/Engineer and to execute the order or directions of the Field Representative or Architect/Engineer, including the prompt supply of all materials, tools, equipment, labor, and incidentals that may be required. The Contractor shall furnish such superintendence regardless of the amount of work that is subcontracted, and the superintendent shall read, speak, write and understand English. The Contractor shall also maintain at least one other employee on the work site during Project working hours who speaks and understands English. This superintendent shall be responsible for keeping written daily logs of the work on the project.
- G. The competency of the superintendent shall be demonstrated through licensure or certification in contracting, engineering, trade or experience as applicable to the work being performed. Proof of licensure, certification or qualification of the superintendent must be provided to the Owner at the pre-construction conference and is subject to the approval of the Architect/Engineer or Field Representative after Contractor receipt of said requirements.
- H. In the event that the Field Representative or Architect/Engineer determines, through the course of the actual work progress, that the superintendent lacks the knowledge or expertise necessary to execute the work in an efficient and competent manner, in keeping with all current codes and best practices, the Field Representative or Architect/Engineer shall notify the Contractor in writing and the superintendent shall be replaced by the Contractor with a person acceptable to the Field Representative or Architect/Engineer within five (5) working days.
- I. The Contractor's failure to replace the superintendent in the time allotted shall be cause for the Owner to suspend work with such delays chargeable to the Contractor as Liquidated Damages as specified elsewhere in this contract.

- J. The Contractor shall maintain a daily accounting of his daily manpower, by trade and position, and provide this information to the Field Representative on a weekly basis.

END OF ARTICLE

## 6. SUBCONTRACTORS

(June 12, 2012)

- A. The Contractor will be permitted to subcontract portions of the Work to competent Subcontractors. Such Subcontractors shall hold valid current certificate(s) of competency for the type of work to be performed, in accordance with the qualifications requirements as set forth in the Florida Statutes and the Code of Miami- Dade County.
- B. Nothing contained herein shall create any contractual relationship between the Owner and any level of Subcontractor, materialman or supplier.
- C. All work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor and the Subcontractor which shall contain provisions that:
  - 1) Preserve and protect the rights of the Owner and any of its authorized representatives under the Contract, including but not limited to, the Architect/Engineer and Field Representative, with respect to the Work to be performed under the subcontract so that the subcontracting thereof will not prejudice such rights;
  - 2) Require that such Work be performed in accordance with the requirements of the Contract Documents including the Contractor's approved schedule;
  - 3) Require submission to the Contractor of applications for payment under each subcontract to which the Contractor is a part, in reasonable time to enable the Contractor to apply for payment in accordance with any and all payment provisions of the Contract Documents;
  - 4) Require that all claims for additional costs, extensions of time, damages for delays or otherwise with respect to subcontracted portions of the Work shall be submitted to the Contractor (via any Subcontractor or Sub-subcontractor or Supplier where appropriate) in sufficient time so that the Contractor may comply in the manner provided in the Contract Documents for like claims by the Contractor upon the Owner;
  - 5) Require specific consent to all relevant provisions of the Contract Documents; and
  - 6) Incorporate all flow-down clauses specifically called for in the Contract, as directed.
- D. Contractor Participation: The Contractor shall perform not less than 25 percent of the Work, not inclusive of materials purchased, with his own organization. If the Contractor is a joint venture, the requirement shall be satisfied by any one, or a combination of any of the joint venture partners. Where a percentage of a Bid Item is subcontracted, the dollar value of that percentage subcontracted will be based on the estimated cost of such Bid Item, determined from information submitted by the Contractor, subject to approval by the Owner. The materials produced by other than the Contractor's forces shall be considered as being subcontracted. If, during the progress of the Work, the Contractor requests a reduction in such participation percentage, and the Owner determines that, due to the special nature of the conditions of the Work at the time, it would be to the Owner's advantage, the percentage of the Work required to be performed by the Contractor may be reduced, provided written approval of such reduction is obtained by the Contractor from the Owner. The Contractor shall not proceed with any such reductions until his request is approved in writing by the Owner or his authorized designee.

Under no circumstances shall less than ten percent (10%) of the Work be performed with the Contractor's own forces. E. Work Performed by Equipment-Rental Agreement:

- 1) The amount of work performed under equipment rental agreements shall not be considered Subcontractor work. However, for work to be performed by equipment-rental agreement, the Contractor shall notify the Architect/Engineer in writing of such intention before using the rented equipment, and shall indicate whether the equipment is being rented on an operated or non-operated basis. The Contractor's written notice shall contain a listing and description of the equipment and a description of the particular work to be performed with such equipment. As an exception to the above requirements for a written notice to the Architect/Engineer, such notice will not be required for equipment to be rented (without operators) from an equipment dealer or from a firm whose principal business is the renting or leasing of equipment.
- 2) The operators of rented equipment, whether rented on an operated or a non-operated basis, will be subject to wage rate requirements applicable to the Project. If equipment is being rented without operators, the Contractor shall be required to carry the operators on his own payroll. When equipment is rented on an operated basis, the Contractor, when required by the Contract or requested by the Architect/Engineer, shall submit payrolls from the lessor with the names of the operators shown thereon.

F. No work is to be performed at the Work site until the Contractor is in compliance with the Insurance Specifications, has furnished satisfactory evidence of required insurance to the Owner and obtained all required permits. G. Approval of Subcontractor:

- 1) Prior to entering into any subcontract for Work to be performed on the Project, the Contractor shall secure the approval of the Owner regarding the prospective subcontractor's qualifications, employment data and compliance with DBE program requirements. The forms used to provide the required information shall be the same as those included in the Forms for Bidding. The Owner will review the submittal from each Subcontractor, and will furnish written notification to the Contractor concerning approval of the award of the subcontract. If the Owner objects to the proposed award or fails to respond to the Contractor within five (5) business days of the complete submittal of the required information, the Contractor may furnish written notice of another subcontractor for consideration. The Owner may, at its discretion, waive or reduce subcontractor information submittal requirements as it deems appropriate.
- 2) In accordance with Ordinance 97-104, codified in Miami-Dade County Code Sections 2-8.1 and 10-33.01, the Contractor shall not, without written consent of the Owner, either replace any subcontractor or permit any such subcontract to be assigned or transferred, or allow that portion of the Work to be performed by anyone other than the approved subcontractor, except he may perform the work himself with qualified personnel upon written notice to the Owner in accordance with applicable law.

END OF ARTICLE



## 7. PROSECUTION OF THE WORK

(June 12, 2012)

### A. Workmanship and Unauthorized Work

- 1) Work under this Contract shall be performed in a skillful and workmanlike manner. Unless otherwise indicated in the Contract Documents, the Contractor shall be solely responsible for means and methods and for the coordination of all trades through completion of the Work and without damage to the existing or newly installed components and surfaces. The Architect/Engineer or Field Representative may, in writing, require the Contractor to remove from the work any employee the Architect/Engineer or Field Representative determines incompetent, careless or otherwise objectionable. Such request shall be at no cost to the Owner.
- 2) Unauthorized Work: Work performed beyond the lines and grades shown on the Contract Drawings and approved Shop Drawings or established by the Owner, and Extra Work done without a Work Order or Change Order, will be unauthorized work and the Contractor will receive no compensation therefor. If required by the Owner, unauthorized work shall be remedied, removed or replaced by the Contractor at the Contractor's expense. Upon failure of the Contractor to remedy, remove or replace unauthorized work, the Owner may at its discretion, remedy, remove or replace the unauthorized work and the Contractor shall bear the responsibility for any and all costs and for delays resulting from such work.
- 3) The entire work and each part thereof, unless otherwise specified in the Contract Documents, shall be placed at the location, elevation, grade and gradient specified, and in proper alignment and adjustment. The Contractor shall provide all frames, forms, falsework, shoring, guides, anchors and temporary structures required to ensure these results.
- 4) No deviation from the approved Contract Documents shall be permitted without the prior written approval of the Architect/Engineer and/or Owner, by Work Order or Change Order, which approved deviation(s) shall be documented to the extent required by the Contract Documents.
- 5) The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the Contract Documents. All workers shall have sufficient skill and experience to properly perform the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.
- 6) All proposed equipment shall be of sufficient size and in such mechanical condition as to meet requirements of the work, producing a satisfactory quality of work. Equipment used on any portion of the work shall be such that no damage to previously completed work, adjacent property, or existing facilities will result from its use.

- 7) When the Contract Documents specify the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized in writing by the Architect/Engineer by Work Order or Change Order. If the Contractor desires to use a method or type of equipment other than specified in the Contract, he may request permission from the Architect/Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with Contract requirements. If, after trial use of the substituted methods or equipment, the Architect/Engineer determines that the work produced does not meet Contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the Architect/Engineer may direct, at no additional cost to the Owner. No change will be made to the Contract price or the Contract Time as a result of authorizing a change in methods or equipment under this article.
- 8) The Contractor shall give constant attention to the work to facilitate the progress thereof, and he shall cooperate with the Architect/Engineer and its Field Representatives and with other Contractors in every way possible.
- 9) The Contractor warrants to the Owner that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that the work will be of good quality, free from faults and defects in materials and workmanship for a period of one year from the date of Substantial Completion, unless otherwise required under this Contract. Work not conforming to these standards may be considered defective. If required by the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

B. Material

- 1) Unless otherwise indicated in the Contract Documents, equipment, material and products incorporated in the Work covered by this Contract shall be new and of the grade specified for the purpose intended. Unless otherwise specifically indicated, reference to equipment, material, product, or patented process by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at his option and, subject to the approval of the Architect/Engineer, use any equipment, material, article, or process which is equivalent to that named, subject to the requirements of these Contract Documents or propose a substitute equipment, material, article or process as indicated below. The Contractor shall at all times comply with established Green Building or LEED standards, if applicable, and as established in the Contract Documents. Proposed alternative equipment, material, products, or patented processes shall be considered equivalent if the Architect/Engineer determines that the proposed alternative is functionally equal to and/or sufficiently similar to that specified in the Contract Documents.

- 2) The Architect/Engineer shall be the sole judge of the quality, suitability and cost of the proposed alternative equipment, material, article or process. A proposed alternative shall be considered equivalent and/or functionally equal to that specified in the Contract Documents if, in the exercise of reasonable judgment, the Architect/Engineer determines that the proposed alternative is at least equal in materials of construction, quality, durability, appearance, strength and design characteristics, will reliably perform at least equally well the function and achieve the results imposed by the design concept and has a proven record of performance and availability.
- 3) If the Architect/Engineer determines that a proposed alternative does not qualify as equivalent or functionally equal, the alternative may be proposed for consideration as a substitute subject to the Contractor submitting sufficient information as provided below to allow the Architect/Engineer to determine that the proposed alternative is essentially equivalent to or better than the specified item and is an acceptable substitute for that said specified item.
- 4) The burden of proving the quality, suitability and cost of an alternative shall be borne by the Contractor. All information required by the Architect/Engineer in judging an alternative shall be supplied by the Contractor at the Contractor's expense. The Architect/Engineer's costs in evaluating a proposed alternative, irrespective of its acceptance, will be reimbursed by the Contractor to the Owner. In the case of approved alternatives, the Contractor shall also reimburse the Owner for the Architect/Engineer's costs to revise the Contract Documents.
- 5) The Contractor certifies that, if approved and incorporated into the Work, there will be no increase in cost to the Owner or in Contract Time and the proposed alternative shall conform substantially to the detailed requirements of the item specified in the Contract Documents.
  - a. Where use of an alternative material involves redesign of or changes to other parts of the Work, the cost and the time required to affect such redesign or change will be considered in evaluating the suitability of the alternative material. All costs pertaining to redesign and changes in other parts of the Work, including remedial work to completed work, shall be at the Contractor's expense.
  - b. No action relating to the approval of alternative materials will be taken until the request for approval of the alternative materials is made in writing by the Contractor accompanied by complete data as to the quality, suitability and cost of the materials proposed. Such request shall be made at least 60 days before the early start date of the activity. Any delays in receiving approval shall be the responsibility of the Contractor.
  - c. The Architect/Engineer will examine and review the proposed alternative with the Owner and return it, within twenty-one (21) calendar days from the date of its receipt at the Architect/Engineer's office, to the Contractor noted with the final decision. If the final decision approves either an equal or a substitution, the approval must also contain the Owner's written approval.

When requested by the Architect/Engineer, the Contractor shall resubmit such Shop Drawings, descriptive data and samples as may be required.

- d. Where classification, rating, or other certification by a body such as, but not limited to, Underwriters' Laboratories Inc. (UL), National Electrical Manufacturer's Association (NEMA), or American Railway Engineering Association (AREA) is a part of the specification for any material, proposals for use of alternative materials shall be accompanied by reports from the listed body, or equivalent independent testing laboratory, indicating compliance with Contract Documents requirements. Testing required proving equality of the material proposed shall be at the Contractors expense.
  - e. Approval of an alternative material will be only for the characteristics and use named in such approval, and shall not change or modify any Contract requirement, or establish approval for the material to be used on any other Project for the Owner.
- 6) Source of Supply and Quality of Materials: The Contractor shall furnish all materials and products required to complete the Work except those designated to be furnished by the Owner.
- a. Notwithstanding prior inspection and approval by the Architect/Engineer, only materials conforming to the requirements of the Contract Documents shall be incorporated in the Work.
  - b. The materials shall be manufactured, handled and incorporated so as to ensure completed work in accordance with the Contract Documents.
- 7) Defective Materials: Contractor-furnished materials not conforming to the requirements of the Contract Documents will be rejected, whether in place or not. Rejected material shall be removed immediately from the Work site. No rejected material, the defects of which have been subsequently corrected, shall be used in the Work. The Owner may cause the removal and replacement of rejected material and the cost thereof will be deducted from any monies due or to become due to the Contractor.
- 8) Handling of Materials: Materials shall be transported, handled and stored by the Contractor in a manner which will ensure the preservation of their quality, appearance and fitness for the Work. Materials shall be stored in a manner to facilitate inspection.
- 9) The Owner will have no responsibility to the Contractor concerning local material sources.
- a. The Contractor shall make all necessary arrangements with the owners of material sources. The Contractor shall pay all costs in connection with making such arrangements, exploring, developing and using material sources, whether or not indicated, except such costs as the Owner expressly agrees in writing to assume.
- 10) Disposal of Material Outside the Work Site: Unless otherwise specified in the Contract Documents, the Contractor shall make his own arrangements for properly disposing of waste and excess materials outside the Work Site and he shall pay all costs therefore.

Contractor shall comply with all local, state and federal requirements when disposing of waste and excess materials.

- a. Prior to disposing of material outside the Work Site, the Contractor shall obtain written permission from the owner on whose property the disposal is to be made. The Contractor shall file with the Architect/Engineer said permit, or a certified copy thereof, together with a written release from the property owner absolving the Owner from any and all responsibility in connection with the disposal of material on said property.

11) Property Rights in Materials: The Contractor shall have no property right in materials after they have been attached or affixed to the Work or the soil, or after payment has been made by the Owner to the Contractor for materials delivered to the site of the Work, or stored subject to or under the control of the Owner, as provided in these Contract Documents. However, the Contractor shall be responsible for the security of the material on-site until Final Acceptance by the Owner.

C. Methods of Sampling and Testing

- 1) Sampling and testing of all materials shall be as set forth in the Contract Documents. Except for quality control testing and any other testing that may be the direct responsibility of the Contractor as set forth in the Contract Documents, the testing of samples and materials will be made at the expense of the Owner by the project testing laboratory. The Contractor shall furnish the required samples without charge. Any and all fees for non-conforming materials or work shall be solely borne by the Contractor. The Contractor shall give sufficient notification to the Field Representative of the placing of orders for or receipt of materials to permit testing.
- 2) The Field Representative may inspect, at its source, any specified material or assembly to be used in the Work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the Work and to obtain samples required for its acceptance of the material or assembly

Should the Field Representative conduct plant inspections, the following shall exist:

- a. The Field Representative shall have the cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.
  - b. The Field Representative shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of materials being furnished.
  - c. If required by the Field Representative, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space should be conveniently located with respect to the plant.
- 3) It is understood and agreed that the Owner shall have the right to retest any material which has been tested and approved at the source of supply after it has been delivered to

the site. The Field Representative shall have the right to reject only material which, when retested, does not meet the requirements of the Contract Documents. In such an event, the cost of re-testing shall be borne by the Contractor if it results in a rejected material.

- 4) All inspections and testing of materials, assemblies and equipment will be performed in Miami-Dade County. If the Contractor's material or manufacturing sources are such that inspections or tests cannot be made in Miami-Dade County, all traveling and lodging expenses in connections with such inspections and testing shall be borne by the Contractor.

D. Meetings

- 1) A pre-construction conference will be held prior to the issuance of the Notice to Proceed to discuss the work to be performed under this contract. The Contractor and its major Subcontractors shall be required to attend this meeting. The Contractor will be advised of the time, date and location of the meeting.
- 2) The Contractor shall attend weekly construction coordination meetings at a time and place to be designated by the Architect/Engineer. These meetings are intended to determine job progress, identify job problems, assist in solving and preventing job problems, and promote coordination with all entities involved in the Contract and with other Owner Contractors. The Contractor shall cause Subcontractors and suppliers to attend as he deems advisable, or as requested by the Architect/Engineer. Unless otherwise provided for in these Contract Documents, the Contractor shall be responsible for generating and distributing meeting minutes for all such meetings.

E. Permits and Compliance with Laws

- 1) Unless otherwise provided for in these Contract Documents, the Contractor shall be responsible for obtaining necessary licenses and permits and for complying with applicable Federal, State, County and Municipal laws and latest codes and regulations in connection with the prosecution of the Work. (For payment of permit(s), see Special Provisions). No time extensions will be allowed for delays in obtaining the required permits unless revisions directly caused by the Owner or its agents are required to the Contract Drawings due to changes in codes, regulations and applicable contract standards during the contract term. See Special Provisions for additional permit requirements.
- 2) The Owner will not pay or reimburse the Contractor for any penalties relating to his permits or fees as a result of the Contractor's failure to timely obtain all his permits, inspections, approvals, etc.
- 3) The Contractor shall observe and comply with all applicable Federal, State, County and other laws, codes, ordinances, rules and regulations of the Federal, State and County governments, all authorities having jurisdiction, and any and all programs developed in compliance therewith, in any manner affecting the conduct of the Work.
- 4) Dewatering of excavations shall be performed in accordance with the applicable provisions of the Department of Environmental Resources Management (DERM), Florida Department of Environmental Protection (DEP), U.S. Environmental Protection Agency (USEPA) and the South Florida Water Management District (SFWMD) Dewatering Permits and/or any and all authorities having jurisdiction and any other

requirements specified in the Contract Documents. The means and methods of dewatering shall be determined by the Contractor who shall bear the full cost of same as part of the contract price.

- 5) All construction activities shall be subject to the pollution prevention requirements established under the National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act regulating storm water discharge from construction sites.
- 6) Upon completion of all of the work contemplated under the Contract Documents, the Contractor shall obtain and deliver to the Field Representative such Certificate(s) of Occupancy or Certificate(s) of Completion as required by the Florida Building Code and/or authority having jurisdiction.
- 7) The Contractor shall be subject to and comply with all the provisions of Miami-Dade County Code Section 2-8.4.1, which provides that, whenever any individual or corporation or other entity attempts to meet its contractual obligations with the County through fraud, misrepresentation or material misstatement, the County shall, whenever practicable, terminate the Contract. The Contractor is further directed to Section 10-38 of the Miami-Dade County Code which provides for the debarment of County contractors.

#### F. Coordination and Access

- 1) Other Contracts: The Owner may undertake or award other contracts for additional work, and the Contractor shall fully cooperate and coordinate with other Contractors and the Owner and carefully fit his own work to such additional work. The Contractor shall not perform any act which will interfere with the performance of work by any other contractor or by the Owner. The Contractor shall be responsible for obtaining all necessary scheduling details from other Contractors and these requests must be provided, in writing, to the Owner. The Architect/Engineer shall have the authority to resolve conflicts related to coordination between Contractors.
- 2) In the event of interference between the work of the Contractor and other contractors working concurrently at the Site, the Field Representative will instruct the Contractor as to which work has priority in performance and such instructions shall be binding upon the Contractor.
- 3) Utility companies, railroads, and municipal agencies having facilities within the limits of the Work shall have access to their facilities at all times for inspection and repair.

#### G. Rights in Land and Improvements

The Contractor shall make no arrangements with any person to permit occupancy or use of any land, structure or building within the Work Site for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the Owner and any property owner, former property owner or tenant of such land, structure or building. The Contractor shall not occupy Owner-owned property outside the Work Site without obtaining prior written approval from the Owner.

#### H. Interference With Existing Utilities

- 1) Attention of the Contractor is specifically directed to the need for careful control of all aspects of his work to prevent damage to cables, ducts, water mains, sewers, fire mains, telephone cables, fuel lines, radar cables, and any other existing overhead or underground utilities and structures.
- 2) Before commencing work in any given area, the Contractor shall contact utility companies to identify any potential conflicts. Further, the Contractor shall also carefully review the Plans, survey and search the site for utility locations, and determine possible utility conflicts. All known above and underground utilities, including, but not limited to, electrical, telephone, communications, lighting cables, fuel lines, sewer, drainage and water pipes, and other existing structures are shown on the Plans for reference purposes only, but no guarantee is expressed or implied that the information is accurate. It shall be the sole responsibility of the Contractor to ascertain and/or verify the location of any and all such utilities or structures using magnetic and electronic detectors and by hand excavation or other appropriate measures before performing any work that could result in damage to such existing utilities or structures. The Contractor shall make a thorough search of the particular location for underground utilities or structures whether or not shown on the drawings, before excavation work is commenced in any particular location. To this end the Contractor shall provide and maintain throughout the term of the Contract, electronic and magnetic detecting devices capable of locating underground utilities or structures. The Contractor shall, after locating primary and critical existing utilities, mark their location with indelible material or other means satisfactory to the Field Representative and maintain above ground physical identification during the work.
- 3) In the event of damage to, or accidental disruption of utilities or other facilities as a result of the Contractor's operations, the Contractor shall take immediate steps to repair or replace all damage and to restore all services. Further, the Contractor shall engage any additional outside services which may be necessary to prosecute repairs on a continuous "around the clock" basis until services are restored. The Contractor shall also provide and operate any supplemental temporary services to maintain uninterrupted use of the facilities. All costs involved in making repairs and restoring disrupted service resulting from the Contractor's work shall be borne by the Contractor and the Contractor shall be fully responsible for any and all claims resulting from the damage.

I. Protection of Existing Facilities, Vegetation, Structures, Utilities and Improvements

- 1) The Contractor shall preserve and protect existing vegetation such as trees, shrubs, and grass on or adjacent to the work site which are not indicated to be removed and which do not unreasonably interfere with the construction Work and he shall replace in kind the vegetation, shrubs and grass damaged by him at his own expense.
- 2) The Contractor shall protect from damage all utilities, foundations, walls or other parts of adjacent, abutting or overhead buildings, railroads, bridges, structures, surface and subsurface structures at or near the site of the Work and shall repair or restore any damage to such facilities, except utilities, resulting from failure to comply with the requirements of this Contract or the failure to exercise reasonable care in the performance of the Work. If, after receipt of notification from the Architect/Engineer, the Contractor fails to or



refuses to repair any such damage promptly, the Owner may have the necessary Work performed and charge the cost thereof to the Contractor.

- 3) At points where the Contractor's operations are adjacent to utility facilities, damage to which might result in expense, loss, disruption of service or other undue inconvenience to the public or to the owners, Work shall not be commenced until all arrangements necessary for the protection thereof have been made by the Contractor. The Contractor shall be solely and directly responsible to the owners and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay, caused by the Contractor's operations.
  - a. Where public utilities or their appurtenances interfere with permanent construction, unless otherwise specified, work involved in permanently relocating or otherwise altering such public utilities and their appurtenances will not be a part of this Contract but will be done by utility owners at no cost to the Contractor. If the Contractor wishes to have utilities temporarily relocated, he shall make necessary arrangements with utility owners and reimburse them at his own expense for cost of the Work. The Contractor shall keep the Architect/Engineer advised of temporary relocation arrangements.
  - b. The Contractor shall not repair or attempt to repair utility damage but shall immediately contact the utility owner. The Contractor shall obtain the name, address and telephone number of each utility company that the work will affect and the person in such utility company to contact. He shall submit to the Architect/Engineer said names, addresses and telephone numbers.
- 4) The Contractor shall comply with the latest version of the Florida Building Code or the Code under which the Contract Documents were approved, whichever is applicable at the time the Work is performed.
- 5) In order to safeguard the owners and tenants of abutting property and at the same time prevent unjust or fraudulent claims against the Contractor the Government, State, the Owner and the Architect/Engineer in respect thereto, the Contractor shall cause a detailed examination of abutting property to be made before construction is begun. The owner or tenant of each parcel or structure or his or their duly authorized representative will be invited to be present during the examination by a notice in writing delivered by the Contractor to a person in charge of the premises or structure, or by the mailing of the notice to the owner at the premises. The Architect/Engineer will attend while the Contractor makes the detailed examination. A complete record including photographs of the existing conditions of each parcel or structure shall be made in triplicate, signed by the Contractor, Owner and the Architect/Engineer and one copy will be delivered to the Owner, one to the Architect/Engineer and one will be retained by the Contractor. At such time as the Architect/Engineer may direct, or upon the filing of the verified statement by the owner, tenant, lessee, operator or occupant of the building structure, and in any event, upon the completion of any work that in the opinion on the Architect/Engineer might affect the abutting property, the Contractor will make another detailed examination of such abutting property. A complete record of the then existing conditions of said property will be made in triplicate, signed by the Contractor and one copy will be delivered to the

Owner, one to the Architect/Engineer and one will be retained by the Contractor. In any action, which may be brought by any owner, tenant, lessee, operator or occupant of abutting property to recover under the provisions of this article or any paragraph hereof, the record of the existing conditions of each parcel will be prima facie evidence of the conditions thereof at the time of the making of the examination.

- 6) The Contractor shall maintain access to fire hydrants and fire alarm boxes throughout the prosecution of the Work. Hydrants, alarm boxes and standpipe connections shall be kept clear and visible at all times unless approved otherwise. If visibility cannot be maintained, the Contractor shall provide clearly visible signs showing the location of the fire hydrant, fire alarm box or standpipe connection. The Contractor shall promptly notify the authority having jurisdiction of any impairment to any fire systems.

J. Damage to the Work and Responsibility for Materials

- 1) The Contractor shall be responsible for materials delivered and work performed until completion and Final Acceptance of the entire construction thereof, except those materials and work which may have been accepted under the applicable sections of this article and shall take all necessary steps to protect the Work, from all causes, at his expense.
- 2) The Contractor shall bear the risk of injury, loss or damage to any and all parts of the Work for whatever cause, whether arising from the execution or from the non-execution of the Work, except as provided for in this article. The Contractor shall rebuild, repair or restore work and materials which have been damaged or destroyed from any cause before Completion and Acceptance of the Work and shall bear the expense thereof. The Contractor shall provide security including, but not limited to, security guards, temporary drainage systems and erection of temporary structures and temporary fencing as necessary to protect the Work and materials from damage.
- 3) The Contractor shall be responsible for materials not delivered to the site for which any progress payment has been made to the same extent as if the materials were so delivered.
- 4) The Contractor's responsibility for material shall be the same for Owner-furnished material, upon receipt of said material from the Owner, under this Contract as for Contractor-furnished material.
- 5) Relief from Maintenance and Responsibility: The Contractor may request, in writing, from the Owner, that the Owner relieve the Contractor of the duty of maintaining and protecting certain portions of the Work, as described in this paragraph, which have been completed in all respects in accordance with the requirements of the Contract. Such action by the Owner will relieve the Contractor of responsibility for injury or damage to said completed portions of the Work resulting from use by the Owner or the public for any cause, but not from injury or damage resulting from the Contractor's own operations or negligence. Portions of the Work for which the Contractor may be relieved of the duty of maintenance and protection, as provided in this paragraph, include the following:
  - a. Early possession by the Owner of any portion of the Work, in accordance with the Contract Documents.

- b. This Paragraph 5 does not relieve the Contractor of responsibility for repairing or replacing defective work or materials in accordance with the Contract requirements.

K. Emergencies

- 1) In an emergency affecting the safety of life, the Work, or adjacent property, the Contractor shall notify the Field Representative and the Architect/Engineer as early as possible that an emergency exists. In the meantime, without special instruction from the Architect/Engineer as to the manner of dealing with the emergency, the Contractor shall act at his own discretion to prevent such threatened loss or injury. As emergency work proceeds, the Field Representative and the Architect/Engineer may issue instructions, which the Contractor shall follow. The compensation to which the Contractor is entitled on account of emergency work, if any, shall be limited to emergencies not caused by actions or inactions of the Contractor determined in accordance with the Contract Documents, where applicable.
- 2) For purposes of this article, an emergency is defined as an act or event that has already occurred, not caused by actions or inactions of the Contractor, which, if no immediate action is taken may affect the safety of life, the work, or adjacent property. This article does not apply to steps taken by the Contractor to protect the Work, adjacent structures, utilities, existing vegetation, etc. under other sections of the Contract Documents. Furthermore, this article does not apply to preparations the Contractor may make prior to storms or hurricanes or other acts of God.

L. Accident Prevention

- 1) Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
  - a. All persons on the Site or who may be affected by the Work;
  - b. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and other property at the Site or adjacent thereto, including trees, shrubs lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.
- 2) Contractor shall comply with all applicable laws and regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection.
- 3) Upon notification from the Owner or its representative(s), the Contractor shall promptly correct any deficiencies affecting the safety and well being of the construction workers and the public that have been identified by the notice.
- 4) Should a situation of imminent danger be identified, work in the affected area must be suspended immediately until the condition has been corrected. Imminent danger is

defined as the exposure or vulnerability to harm or risk that is impending or about to occur as defined by the Field Representative or the Architect/Engineer. The Contractor will not be entitled to future claims alleging impacts caused by the Owner stoppage of the Work due to safety reasons.

M. Warranty of Work

- 1) Except where longer periods of warranty are indicated for certain items, the Contractor warrants the Work under the Contract to be free from faulty materials and workmanship for a period of not less than one (1) year from the date of Substantial Completion. This one-year period shall be covered by the Surety Performance Bond as specified in this Contract, except that in the case of defects or failure in a part of the work which the Owner takes possession of prior to Substantial Completion, such a period shall commence on the date the Owner takes possession. Upon receiving notification from the Owner or any public body, to whom the ownership of the Work has been transferred or who has agreed to maintain the Work, the Contractor shall immediately remedy, repair, or replace, without cost to the Owner or other notifying party and to the entire satisfaction of the notifying party, defects, damages, or imperfections due to faulty materials or workmanship appearing in said Work within said period of not less than one year. Remedial work shall carry the same warranty as the original work starting with the date of acceptance of the replacement or repair. Payment to the Contractor will not relieve him of any obligation under the Contract.
- 2) The Contractor, at no additional expense to the Owner, shall also remedy damage to equipment, the site, or the buildings or the contents thereof, which is the result of any failure or defect in the Work, and restore any Work damaged in fulfilling the requirements of the Contract. Should the Contractor fail to remedy any such failure or defect within ten (10) days after receipt of notice thereof, the Owner will have the right to replace, repair, or otherwise remedy such failure or defect and deduct all costs from the Contractor's pay request or Performance Bond if final payment has been made.
- 3) The Contractor will correct all latent defects discovered within ten (10) years after Substantial Completion provided that the Owner shall notify the Contractor of each latent defect within the time specified by law. The Contractor, without prejudice to the terms of the Contract, shall be liable to the Owner for all damages sustained by the Owner resulting from latent defects, fraud, or such gross mistakes as may amount to fraud, discovered after the stated guarantee and warranty periods have expired. If the Contractor fails to act within ten (10) days, the Owner reserves the right to have the work performed by others at the expense of the Contractor, and the Contractor agrees to pay the Owner the reasonable cost associated with procurement, implementation and management thereof upon demand. The Owner shall also be entitled to reasonable attorney's fees, necessarily incurred upon the Contractor's refusal to pay the above costs.
- 4) Subcontractors', manufacturers' and suppliers' warranties and guaranties, expressed or implied, with respect to any part of the Work and any material used therein shall be deemed obtained and shall be enforced by the Contractor for the benefit of the Owner provided that, if directed by the Owner, the Contractor requires such subcontractors,

manufacturers and suppliers to execute such warranties and guaranties, in writing, directly to the Owner.

- 5) The rights and remedies of the Owner provided in this article are in addition to and do not limit any rights and remedies afforded by the Contract or by law.
- 6) Nothing in the above intends or implies that this warranty shall apply to work that has been abused or neglected by the Owner, its agents or other public body, utility or railroad to which ownership has been transferred.

END OF ARTICLE

## **8. CONTRACT TIME**

(June 12, 2012)

### **A. Notice to Proceed**

- 1) The Owner may issue authorization to obtain permits to the Contractor after the Contractor has executed the Contract and has delivered the specified bonds and certificates of insurance in forms acceptable to the Owner, for the limited purpose of obtaining all necessary permits to complete the work. If the Contractor is unable to obtain all necessary permits within 30 days, through no fault of the Contractor, the Owner has the option, but not the obligation, to terminate the Contract, without fault to the Contractor or the Owner, effective immediately upon written notice by the Owner or give the Contractor additional time to obtain the permits. Upon the Contractor providing satisfactory evidence of obtaining the permits, the Owner will issue Notice to Proceed. Except as specifically authorized in writing by the Owner, the Contractor is not authorized to perform work (other than obtaining permits) under the Contract until the effective date of the Notice to Proceed, upon which the Contractor shall commence work and shall diligently prosecute the Work to completion within the time limits specified. The Contract time commences on the date shown on the Notice to Proceed.
- 2) Any Work Performed by the Contractor (other than obtaining permits) prior to Notice-To-Proceed shall be at the Contractor's own risk and shall not be considered as the basis for any claim.

### **B. Schedules**

- 1) The Contractor shall provide, maintain, and periodically update schedules in strict accordance with the Contract Documents. The Special Provisions shall contain specific requirements for the form, content and date of submission of the baseline schedule and all schedule updates.
- 2) The Contractor shall prosecute the Work in accordance with the approved baseline Schedule or most recently approved revision to the baseline schedule. In the event that progress along the critical path is delayed, the Contractor shall revise his planning to include additional forces, equipment, shifts or hours as necessary to meet the time or times of completion specified in this Contract at no additional cost to the Owner. In addition, the Contractor shall revise his schedule to reflect these recovery actions and submit it to the Owner for review and approval it being understood that such approval

will be as to the format and composition of the schedule and not the Contractor's means and methods. Additional costs resulting therefrom will be borne by the Contractor. Delayed progress is defined as:

- a. A delay in the start or finish of any activity on the critical path (critical path is defined as the path with the least amount of float) of the approved baseline schedule or most recently approved revision to the baseline; or
  - b. A delay in the start or finish of any non-critical activity which consumes more than the available float shown on the approved baseline schedule or most recently approved revision to the baseline, thereby making the activity critical and late; or
  - c. A projected completion date shown on a schedule update which is later than the contractual completion date; or
  - d. Any combination of the above.
- 3) Failure of the Contractor to comply with the requirements under this provision will be grounds for determination that the Contractor is not prosecuting the Work with such diligence as will ensure completion within the Contract Time. Upon such determination, the Owner may terminate the Contractor's right to proceed with the Work, or any separate part thereof, in accordance with the Contract Documents. If in the Contractor's estimation, the cause(s) of delay are beyond the Contractor's control, the Contractor shall adhere to the sections of the Contract Documents related to extensions of time, claims and others as appropriate.
- 4) The Contractor shall be responsible for scheduling and coordinating the work of all crafts and trades, subcontractors and suppliers, required to perform the Work and to complete the Work within the prescribed time. Any inefficiency or loss of productivity in the labor, materials, or special equipment of the Contractor or its subcontractors of any tier, from any cause, shall be the responsibility of the Contractor. No reimbursement of these or any other costs can be requested by or granted to the Contractor or any of its subcontractors of any tier for inefficiency or loss of productivity in labor, materials, or special equipment, except as specified in the paragraph in this article dealing with Liquidated Indirect Costs, for delays in the performance and completion of the Work directly caused by the Owner or its authorized representatives. Other than the exception described above, additional costs may only be paid to the Contractor as a result of additional Work added to the Contract scope of work. C. Extensions of Time and Classification of Types of Delays
- 1) Once a delay has been identified and it has been established through a scheduling analysis that a delay affects the Project's end date or contractually mandated milestone date, the delay must be classified to determine responsibility and to compute damages, if any. Before the Contractor can submit a request for time extension, claim or any request for additional compensation involving or related to time, the Contractor must classify the delay(s) in accordance with the following classifications. These delay classifications shall be used by the Owner and the Contractor in resolving any time-related disputes. Delays fall into three basic categories: non-excusable, excusable, and compensable.

- a. Non-excusable delays are those delays to the critical path which were foreseeable at the time of contract award or delays caused by the Contractor due to the Contractor's fault or negligence or his/her own inefficiencies or problems, due to his/her inability to coordinate subcontractors and/or other flaws in his/her planning. In these types of delays the Contractor is not entitled to extra time or compensation and the Owner may be allowed to assess Liquidated Damages or actual damages, depending on the contract provisions.
- b. Excusable delays are those delays to the critical path beyond the Contractor's control and without the active interference of the Owner, such as extreme weather (force majeure), strikes and delays caused by third parties (i.e. not the Contractor or the Owner). Contractors are granted a time extension but no additional compensation for the extended time of performance for excusable delays.
- c. Compensable delays are delays to the critical path caused by active interference or participation of the Owner or Owner's consultant. Examples of compensable delays are failure of the Owner to provide right-of-way, introducing late design changes, late review of shop drawings by the Owner or his Architect/Engineer and failure of the Owner to coordinate the work of various prime Contractors. In the case of a compensable delay, the compensation for the extended period of performance may cover, in addition to the direct cost due as a result of the changes, Liquidated Indirect Costs as specified in the Contract Documents.
- d. Concurrent delays involve two or more delays to the critical path occurring at the same time, either of which, had it occurred alone, would have affected the end date of the Project. In that event, the Contractor's sole remedy is a time extension and relief of Liquidated Damages with no compensation for extended cost for the concurrency delay period.
- e. The compensability of concurrent delays depends on the types of delays involved. The following shall determine the effects of concurrent delays on time extensions and compensable costs:
  - i. EXCUSABLE DELAY CONCURRENT WITH A NON-EXCUSABLE DELAY. For excusable delays concurrent with non-excusable delays, the Contractor is entitled to a time extension only. For example, it rains the day footings are to be excavated (excusable delay) but the excavation equipment was down for repairs (non-excusable delays).
  - ii. NON-EXCUSABLE DELAY CONCURRENT WITH A COMPENSABLE DELAY. For non-excusable delays concurrent with compensable delays, the Contractor is entitled to a time extension only. For example, if the Owner introduces a design change for a beam but the Contractor has failed to submit the shop drawings for said beam in a timely manner. This would be an example of a non-excusable delay (late shop drawings) concurrent with a compensable delay (Owner introducing design change).
  - iii. EXCUSABLE DELAY CONCURRENT WITH A

COMPENSABLE DELAY. For excusable delays concurrent with compensable delays, the Contractor is entitled to a time extension only. For example, the Owner does not provide the necessary right-of-way to begin construction (compensable delay) but the Contractor's forces are on strike (excusable delay).

2) Time Extensions: The Contractor may be granted an extension of time and will not be assessed Liquidated Damages for any portion of the delay in completion of the Work, arising from acts of God, acts of the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, strikes, labor disputes, or weather more severe than the norm, provided that the aforesaid causes were not foreseeable and did not result from the fault or negligence of the Contractor, and provided further that the Contractor has taken reasonable precautions to prevent further delays owing to such causes, and has given to the Architect/Engineer immediate verbal notification, with written confirmation within 48 hours, of the cause or causes of delay. Within thirty (30) days after the end of the delay, the Contractor shall furnish the Architect/Engineer with detailed information concerning the circumstances of the delay, the number of days actually delayed, the appropriate Contract Document references, and the measures taken to prevent or minimize the delay. All requests for extension of time shall be submitted in accordance with the Contract Documents. Failure to submit such information will be sufficient cause for denying the delay claims. The Owner will ascertain the facts and the extent of the delay and its findings thereon will be final and conclusive subject to the dispute provisions in the Contract Documents. The extensions of time granted for these reasons shall be considered excusable and shall not be the basis for any additional compensation.

a. Weather more severe than the norm shall apply only as it affects particular portions of the Work and operations of the Contractor, as determined by the Architect/Engineer. Weather more severe than the norm is defined as any situation exceeding the mean data as recorded by The National Climatic Data Center, Asheville, North Carolina and published by the National Oceanic and Atmospheric Administration (This data is taken from the table of normals, means, and extremes in the latest version of the "Local Climatological Data, Annual Summary with Comparative Data, Miami, Florida"). For the calculation of delays due to rain, precipitation of 0.01 inches or more a day shall be considered to be a rain day if the rain actually prevented the Contractor from performing work. The effects of weather less severe than the norm may be taken into account in granting time extensions at the Owner's sole discretion.

b. An extension of time will not be granted for a delay to the critical path caused by a shortage of materials, except Owner-furnished materials, unless the Contractor furnishes to the Architect/Engineer documentary proof that he has diligently made every effort to obtain such materials from every known source within reasonable reach of the Work. The Contractor shall also submit proof, in the form of a CPM network analysis data, that the inability to obtain such materials when originally planned, did in fact cause a delay in final completion of the Work which could not be compensated for by revising the



sequence of his operations. Only the physical shortage of material will be considered under these provisions as a cause for extension of time. No consideration will be given to any claim that material could not be obtained at a reasonable, practical, or economical cost, unless it is shown to the satisfaction of the Architect/Engineer that such material could have been obtained only at exorbitant prices, entirely inconsistent with current rates taking into account the quantities involved and the usual practices in obtaining such quantities.

- 3) Delays Caused by Consultant and/or the Owner: If the Contractor's performance of the Work along the critical path is delayed by any condition or action directly caused by the Owner, and which was not foreseeable by the Contractor at the time the Contract was entered into, the Contractor shall, provide notification in accordance with the Contract Documents, of any such delay and of the anticipated results thereof. The Contractor shall cooperate with the Owner and use its best efforts to minimize the impact on the schedule of any such delay. In instances where a Contract change extends the Contract beyond the completion date, the Contractor may claim Liquidated Indirect Costs as specified in the paragraph in this article dealing with Liquidated Indirect Costs. These delays shall be considered compensable, except for the period in which these delays may be concurrent with Contractor-caused delays. If a delay on the part of the Owner is concurrent, that is, if it occurs at the same time as a Contractor-caused delay, the Owner-caused delay shall be considered an excusable delay for the portion of the Owner-caused delay which is concurrent with the Contractor-caused delay.
- 4) Delays Beyond Contractor's Control Not Caused by Consultant and/ or the Owner: If Contractor's performance of the Work along the critical path is delayed by any conditions beyond the control and without the fault or negligence of Contractor and not caused by the Owner, and which was not foreseeable by Contractor at the time this Contract was entered into, Contractor shall, provide immediate verbal notification with written notification in accordance with the Contract Documents, of any such delay and of the anticipated results thereof. Within two (2) calendar days of the termination of any such delay, Contractor shall file a written notice with the Architect/Engineer specifying the actual duration of the delay. If the Owner determines that the delay was beyond the control and without the fault or negligence of the Contractor and not foreseeable by the Contractor at the time this Contract was entered into, the Owner will determine the duration of the delay and may extend the time of performance of this Contract provided, however, that Contractor shall cooperate with the Owner and use its best efforts to minimize the impact on the schedule of any such delay. These delays shall be considered excusable and the Contractor shall not be entitled to, and hereby expressly waives recovery of, any damages suffered by reason of the delays contemplated by this paragraph and extension of time shall constitute Contractor's sole remedy for such delays.
- 5) In addition to the delays in the Work specified in this section, delays in the Work directly caused by an act or omission by an owner of an adjoining property will not be considered an Owner-controlled delay. An owner of an adjoining property is a person, firm, corporation, partnership, or other organization who either owns or occupies, or both, structures or parcels or both, immediately adjacent to the Work Site. Extension of time

for those delays will be considered excusable and shall be treated as specified in this article, provided that:

- a. The Contractor has, in accordance with this article, given to the Architect/Engineer immediate verbal justification, with written confirmation within forty-eight (48) hours of the delay; and
  - b. The Contractor establishes, to the satisfaction of the Architect/Engineer, that:
    - i. The delay was caused directly by an act or omission by the owner of the adjoining property; and
    - ii. The Contractor has taken reasonable precautions and has made substantial effort to minimize the delay.
- 6) A Change Order will be furnished to the Contractor within a reasonable period of time, after approval by the BCC, of a request for extension of time, specifying the number of days allowed, if any, and the new dates for completion of the Work or specified portions of the Work. All requests for time extension shall be in accordance with the Contract Documents. With the exception of time extensions covered under the time contingency allowance in the contract, only the BCC shall grant final written approval of all Change Orders, including additional money or extensions of time. All change orders shall be in full accord with the Contract Documents.
- 7) For the proper format to be used in submitting requests or claims for time extensions, refer to applicable sections of the Contract Documents.
- 8) Extensions of time shall be in accordance with Section 9-3 of the Code of Miami-Dade County, as applicable.

D. Substantial Completion and Final Acceptance

- 1) The following items must be satisfied before Substantial Completion, as defined in the Contract Documents, will be approved:
  - a. All Work must be completed to the satisfaction of the appropriate permitting agencies having jurisdiction over the Work. The Contractor must furnish the Owner with a "Certificate of Occupancy" or a "Certificate of Completion", as applicable, from the permitting agency unless circumstances arise outside the contract scope that prohibits such certificates from being issued (i.e. utility connections).
  - b. All operational systems which may include but not be limited to: electrical systems, security systems, irrigation systems and fire systems, must be completed in accordance with the Contract Documents, tested and approved.
  - c. All plumbing, heating, ventilation, and air conditioning systems must be completed, tested and approved. Whenever the scope of work includes a facility or building, an HVAC test and balance report must be submitted and approved as a condition precedent to Substantial Completion.
  - d. The punch list may not be so extensive or of a nature that the Contractor's completion will significantly interfere with the Owner's beneficial use of the facility.

- 2) When the Contractor believes that all the Work or designated portion thereof required by the contract is substantially completed, the Contractor shall submit to the Field Representative and the Architect/Engineer a request for Substantial Completion inspection. The Contractor, the Field Representative, the Architect/Engineer, sub-consultants, and the Owner shall meet at the Project site for the purpose of making a combined inspection of the Work. During this inspection, any item of work remaining to be done or Work to be corrected shall be noted on a Punch List. If the Field Representative and/or the Architect/Engineer and the Owner indicate on this inspection report that the Work is substantially complete, a Certificate of Substantial Completion will be issued to the Contractor. The Certificate of Substantial Completion shall establish the date of Substantial Completion and shall have attached the Punch List reflecting any items to be completed or corrected, but which do not prevent beneficial use and occupancy, and shall state the date by which the Punch List is to be completed. The completion time for the Punch List shall not be greater than sixty (60) days from the date of issuance of the Certificate of Substantial Completion.
- 3) If any of the conditions listed in this article are not met and the Work has not been completed, or the Contractor determines that the final Punch List cannot be completed within sixty (60) days, a Certificate of Substantial Completion shall not be issued. The Contractor shall continue work, reducing the number of items on the Punch List that were not met. Additional inspections shall be scheduled as necessary until Substantial Completion is declared. However, costs incurred by the Owner for any inspections beyond a second inspection will be charged back to the Contractor.
- 4) In the event the Contractor fails to achieve Substantial Completion within the period specified in the Contract for completion, the Contractor shall be liable for Liquidated Damages and the Owner has, as its option, the right to, after ten (10) calendar days notice to the Contractor, have the work performed by others and backcharge the Contractor for all Direct and Indirect Costs related to performing this work. In the event that the Owner chooses to have the work completed by others, there shall not be any further non-excusable delays charged to the Contractor beyond the ten (10) days following notice to the Contractor. However, the Contractor shall not be relieved of any nonexcusable delays incurred through the date of termination. The Punch List and the Contract shall remain open until all the Work is complete and accepted. The current retainage will be used to offset any Liquidated Damages and any backcharges, after which, any surplus retainage will be released to the Contractor. If the retainage is insufficient to cover the Liquidated Damages and any backcharge, the Owner will bill the Contractor for the balance and the Contractor shall promptly remit to the Owner an amount equal to the billing.
- 5) Final Completion: When the Owner or Architect/Engineer considers all Work indicated on the Punch List to be complete, the Contractor shall submit written certification that:
  - a. Work has been inspected for the compliance with the Contract Documents.
  - b. Work has been completed in accordance with the Contract Documents, and that deficiencies listed within the Certificate of Substantial Completion and its attachments have been corrected.
  - c. Work is completed and ready for final inspection.

- 6) Should the Owner and/or Architect/Engineer inspection find that Work is incomplete, he will promptly notify the Contractor in writing listing all observed deficiencies. The Contractor shall be responsible for all Direct and Indirect Costs to the County resulting from the Contractor's failure to complete the Punch List items within the time allowed for completion.
- 7) The Contractor shall remedy deficiencies and send a second certification. Another inspection will be made that shall constitute the final inspection. Provided that work has been satisfactorily completed, the Architect/Engineer will notify the Contractor in writing of Final Acceptance as of the date of this final inspection.
- 8) Prior to Final Acceptance, the Contractor shall deliver to the Field Representative complete As-Builts, all approved Shop Drawings, maintenance manuals, pamphlets, charts, parts lists and specified spare parts, operating instructions and other necessary documents required for all installed materials, equipment, or machinery, all applicable warranties and guarantees, and the appropriate Certificate of Occupancy.
- 9) Upon notification of Final Acceptance to the Contractor, the Architect/Engineer will request and consider closeout submittals from the Contractor including but not limited to the final Contractor's Affidavit and Release of All Claims.
- 10) The Contractor, without prejudice to the terms of the Contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.
- 11) Re-Inspection Fees: Should the status of completion of the Work require reinspection of the Work by the Owner and the Architect/Engineer due to failure of the Work to comply with the Contractor's representations regarding the completion of the Work, the Owner will deduct from the final payment to the Contractor, fees and costs associated with re-inspection services in addition to scheduled Liquidated Damages.

E. Use and Possession

The Owner shall have the right to beneficially occupy, take possession of or use any completed or partially completed portions of the Work. Such possession or use will not be deemed an acceptance of work not completed in accordance with the Contract. While the Owner is in such possession, the Contractor, notwithstanding the provisions of the Contract Documents, will be relieved of the responsibility for loss or damage to the Work other than that resulting from the Contractor's fault or negligence or breach of warranty. If such prior possession or use by the Owner delays the progress of the Work or causes additional expense to the Contractor, a Contract change in the Contract price or the time of completion will be made and the Contract will be modified in writing accordingly.

F. Liquidated Damages and Liquidated Indirect Costs

- 1) The parties to the Contract agree that time, in the completion of the Work, is of the essence. The Owner and the Contractor recognize and agree that the precise amount of actual damages for delay in the performance and completion of the Work is impossible to determine as of the date of execution of the Contract and that proof of the precise amount will be difficult. Therefore, the Contractor shall be assessed Liquidated Damages on a daily basis for each Day that individual milestones, both interim and cumulative as

specified in the Contract Documents, are not timely achieved or that Contract Time is exceeded due to a non-excusable delay. These Liquidated Damages shall be assessed, not as a penalty, but as compensation to the Owner for expenses which are difficult to quantify with any certainty and which were incurred by the Owner due to the delay. The amount of Liquidated Damages assessed shall be an amount, as stipulated in the Contract Documents, per day for each calendar day that individual milestones as specified in the Contract are not timely achieved or that the Project is delayed due to a non-excusable delay.

- 2) The Owner and the Contractor recognize and agree that the precise amount of the Contractor's Indirect Costs for delay in the performance and completion of the Work is impossible to determine as of the date of execution of the Contract, and that proof of the precise amount will be difficult. Therefore, Liquidated Indirect Costs recoverable by the Contractor shall be assessed on a daily basis for each Day the Contract Time is delayed due to compensable delay. These Liquidated Indirect Costs shall be paid to the Contractor in full satisfaction of all costs and damages caused by compensable excusable delays, except for Direct Costs. There shall be no Liquidated Indirect Costs payable for time directly related to Extra Work for which a Change Order has been issued.
- 3) The amount of Liquidated Indirect Costs recoverable shall be an amount, as stipulated in the Contract Documents per day for each day the Contract is delayed due to compensable excusable delay. For lump sum contracts, the daily amount of Liquidated Indirect Costs will be calculated by dividing the total amount in the Contractor's approved Schedule of Values for General Requirements by the Contract duration (in days) after deducting any general conditions costs directly paid by the Owner during the execution of the Project. The amount of the Liquidated Indirect Costs calculated in accordance with this formula shall be stated in the Notice-to-Proceed. For unit price contracts, the daily amount of Liquidated Indirect Costs will be calculated as defined in the formula below:
- 4) In the event the Contractor fails to perform any other covenant or condition (other than time-related) of this Contract relating to the Work, the Contractor shall become liable to the Owner for any actual damages which the Owner may sustain as a result of such failure on the part of the Contractor. The Owner reserves the right to retain these amounts from monies due the Contractor.
- 5) Nothing in this article shall be construed as limiting the right of the Owner to terminate the Contract and/or to require the Surety to complete said Project and/or to claim damages for the failure of the Contractor to abide by each and every one of the terms of this Contract as set forth and provided for in the Contract Documents.

END OF ARTICLE

## 9. PROGRESS PAYMENTS

(June 12, 2012)

### A. Payments

- 1) The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials, for performing all work under the Contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the prosecution thereof.
- 2) The Owner will make progress payments monthly as the work proceeds. Unless the Special Provisions provide for the payment to be determined by using a cost-loaded CPM, the Contractor shall, within 15 days after Notice-to-Proceed, furnish a Schedule of Values for review and approval by the Owner consisting of a detailed cost breakdown of each lump sum bid item in the bid form in such detail as the Architect/Engineer shall request, showing the amount included therein for each principal category of the work, to provide the basis for determining the amount of progress payments. Unit price bid items shall be paid for in accordance with the Bid Form. The Schedule of Values shall clearly indicate the amount to be paid by the Contractor to each individual Subcontractor.
  - a. The unit prices shall be in proper balance and shall be subject to approval by the Owner. In the preparation of estimates, the Owner, at its sole discretion, may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the Work Site may also be taken into consideration under this article when the Contractor furnishes satisfactory evidence that it will be utilized on the work covered by this Contract.
- 3) In making such progress payments, a maximum of five-percent (5%) or a minimum of two and a half-percent (2.5%), as may be amended in the Contract Documents, of the estimated amount shall be retained from each progress payment made to the Contractor until Fifty-Percent (50%) Completion of the work has been established. Fifty-Percent (50%) completion is defined as the point in time when at least 50% of the Work under contract has been physically and satisfactorily completed in accordance with the intent of the Contract Documents as determined by the Architect/Engineer. At this point, the retainage amount withheld from each subsequent progress payment shall be reduced by 50% or not to exceed two and a half-percent (2.5%) and the accumulated excess amount of retainage will be released to the Contractor, unless such amount is the subject of a good faith dispute, the subject of a claim brought pursuant to Florida Statute 255.05, or otherwise the subject of a claim or demand by the Owner or Contractor. If, at the discretion of the Owner, any time after FiftyPercent (50%) Completion of the work has been established, the Owner finds that satisfactory progress is being made, it may authorize any of the remaining progress payments to be made in full. Also, whenever the Work is Substantially Complete, the Owner, if it considers the amount retained to be in excess of the amount adequate for its protection, may release to the Contractor all or a portion of such excess amount.

- 4) Material and work covered by progress payments shall become the sole property of the Owner. This provision shall not be construed as relieving the Contractor from the sole responsibility for material and work upon which payments have been made, the restoration of damaged work or as waiving the right of the Owner to require the fulfillment of the terms of the Contract.
- 5) Progress payments will be made in accordance with the Miami-Dade County Code, Florida Statute, s. 218.70 Florida Prompt Payment Act, and Florida Statute, s. 218.735.
  - a. The Contractor's attention is directed to Florida Statute, s. 218.735, revising provisions regarding timely payment, revising deadlines for the payment of contractors, subcontractors, sub-subcontractors, material-men and suppliers. The contractor shall remit payment due to subcontractors within ten (10) days after the contractors' receipt of payment. The subcontractor shall remit payment due to subsubcontractors and suppliers within seven (7) days after the subcontractors' receipt of payment. Dispute resolution is provided within the Statute.
- 6) No progress payments will knowingly be made for work not in accordance with this Contract.
- 7) Applications for progress payments shall be in the format as prescribed by the Owner. These applications shall be supported by evidence, which is required by this article. Each application for payment shall clearly indicate the amount to be paid to the Contractor as well as the amount to be paid to each of the Contractor's Subcontractors and suppliers. The Contractor shall certify that the work for which payment is requested has been done and that the materials listed are stored where indicated. Those items on the progress payment application that, in accordance with the applicable sections of the Contract Documents, compensate for Force Account Work, for materials not yet incorporated in the work, or for work under change orders negotiated on a costreimbursable basis will, under procedures of the Owner, be subject to the Owner's audit review of the Contractor's records supporting the payment application. Audits will be performed so as not to interfere with timely processing of applications for payment. If audit indicates the Contractor has been overpaid under a previous payment application, that overpayment will be credited against current progress payment applications. For a period of five years from Final Acceptance of the Contract, the Contractor shall maintain and make available for audit inspection and copying by the Owner, State and the Government and their authorized representatives, all records subject to audit review.
- 8) The Owner, at its discretion, may authorize payment for materials not yet incorporated into the Work, whether or not delivered to the Work Site. The value of materials on hand but not incorporated into the Work will be determined by the Field Representative, based on actual invoice costs to the Contractor, and such value will be included in a monthly application for payment only if the materials have been properly stored on the Site, provided that such materials meet the requirements of the Contract Documents, and are delivered to acceptable locations on Site or in bonded warehouses that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next application for payment after the following conditions are met:

- a. The material has been stored and stockpiled in a manner acceptable to the Field Representative at or on the Work site or in a secure storage facility within Miami-Dade County or other location as approved by the Architect/Engineer. If such materials are stored outside Miami-Dade County, the Contractor shall accept responsibility for and pay all personal and property taxes that may be levied against the Owner by any state or subdivision thereof on account of such storage of such material. The Owner will permit the Contractor, at his own expense, to contest the validity of any such tax levied against the Owner and in the event of any judgment or decree of a court against the Owner, the Contractor agrees to pay same.
- b. The Contractor has furnished the Field Representative with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the Field Representative with satisfactory evidence that the materials and transportation costs have been paid including but not limited to certified bills of sale for such materials and insurance certificates or other instruments, in writing, and in a form as required by the Owner. The Architect/Engineer may allow only such portion of the amount represented by these bills as, in his opinion, is consistent with the reasonable cost of such materials.
- d. The Contractor has furnished the Owner legal title (free of debts, claims, liens, mortgages, taxes or encumbrances of any kind) to the material so stored and stockpiled and subject only to the Owner's payment for the materials as reflected in the application for payment. All such materials so accepted shall become the property of the Owner. The Contractor at his own expense shall mark such material as the property of the Owner and shall take such other steps, if any, the Owner may require or regard as necessary to vest title in the Owner to such material.
- e. The Contractor has furnished the Owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work. The cost of the material included in an application for payment which may subsequently become lost, damaged or unsatisfactory shall be deducted from succeeding applications for payment irrespective of the cause and whether or not due to the negligence, carelessness or fault of the Owner.
- f. It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of its responsibility for furnishing and placing such materials in accordance with the requirements of the Contract Documents and does not waive Owner's right to reject defective material when it is delivered to the Site until such material is delivered to the Site and satisfactorily incorporated into the work.
- g. In no case will the amount in an application for payment for material on hand exceed the Contract price for such material, the Contract price for the Contract



item in which the material is intended to be used or the value for such material established in the approved Schedule of Values. Payment for material furnished and delivered as indicated above will be based on 100 percent of the cost to the Contractor and retention will be withheld as specified in the Contract Documents. In any event, partial payments for materials on hand will not exceed seventy percent (70%) of the item's Bid Price, including taxes and shipping, or the agreed amount within the Schedule of Values.

- h. No partial payment will be made for stored or stockpiled living or perishable plant materials.
  - i. The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this Article.
  - j. Materials may be subject to being purchased by the Owner directly under the County's "Direct Material Purchase Program" and installed by the Contractor, as applicable, in accordance with the Special Provisions.
- 9) Payment of the Contract lump sum price for General Requirements, if applicable, will be made in the following manner:
- a. The General Requirements Lump Sum amount, including cost for bonds and insurance, shall be paid in proportion to the total percent of completion. The Owner will consider requests for payment for bonds and insurance under the General Requirements after receipt of certified invoices from the Contractor showing that the Contractor has paid them.
  - b. The Owner reserves its right to withhold payment for General Requirements, in whole or in part, at the Owner's sole discretion, in accordance with Paragraph 11 below.
- 10) If any claim is filed against the project for labor, materials, supplies or equipment which the Owner has determined to have been incorporated on the site and the Contractor has not paid for, the Owner will have the right to retain from payments otherwise due the Contractor, in addition to other amounts properly withheld under this article or under other provisions of the Contract, an amount equal to such amounts claimed.
- 11) In addition to the provisions of this article and other relevant sections of the Contract Documents, payment may also be withheld proportionately for the following reasons:
- a. Reasonable doubt that the Work can be completed for the unpaid balance of the Contract Sum,
  - b. Reasonable indication that the Work will not be completed within the Contract Time,
  - c. Damage to another Contractor,
  - d. Unsatisfactory prosecution of the Work by the Contractor,
  - e. Failure of the Contractor, or his Subcontractors, to pay wage rates, when applicable as required by the Contract.

- f. In the event the Surety on the Performance and Payment Bond provided by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has its right to do business in the State of Florida suspended or revoked as provided by law. In this case, payment will continue when the Contractor provides a good and sufficient Bond(s) as required by the Contract Documents, in lieu of the Bond(s) so executed by such Surety.
- g. If any work or material is discovered which, in the opinion of either the Architect/Engineer or the Field Representative, is defective, or should a reasonable doubt arise on the part of either the Architect/Engineer or the Field Representative as to the integrity of any part of the work completed previous to the final acceptance and payment. In this case, there will be deducted from the first application for payment subsequent to the discovery of such work, an amount equal in value to the defective or questioned work, and this work will not be included in any subsequent applications for payment until the defects have been remedied or the causes for doubt removed.

12) The Contractor shall submit with each monthly invoice the certified payroll forms for all employees on the job in accordance with applicable Responsible Wages and Benefits (Ordinance No. 90-143 and codified in Miami-Dade County Code Section 2-11.16). Failure to provide this information will cause

the Field Representative and/or Architect/Engineer to return the invoice to the Contractor until such time as the Contractor properly submits the information.

13) Failure to comply with the insurance requirements listed in the Contract Documents may result in the Owner's withholding or delaying payment to the Contractor.

#### B. Taxes

- 1) Except as may be otherwise provided for in the Contract Documents, the price or prices bid for the Work shall include full compensation for all federal, state, local and foreign taxes, fees and duties that the Contractor is or may be required to pay and the Contractor shall be responsible for the payment thereof during the prosecution of the work.
- 2) The Contractor's attention is directed to the fact that materials and supplies necessary for the completion of this Contract are subject to the Florida Sales and Use Tax, in accordance with Section 212.08, Florida Statutes, as amended. The Contractor shall not collect taxes upon making delivery to the Owner.
- 3) The Owner, at its sole discretion, upon request of the Contractor and where appropriate, may furnish to the Contractor appropriate evidence to establish exemption from any taxes, fees or duties which may be applicable to the agreement and from which the Owner is exempt.

#### C. Payments to Subcontractors and Suppliers

- 1) The Contractor shall pay all Subcontractors for and on account of work performed by such Subcontractors in accordance with the terms of their respective subcontracts and in accordance with Ordinance Nos. 94-40, and 0229, Miami-Dade County Code Section 10-33.02 and Florida Statute s. 218.735.

- 2) Before the Contractor can receive any payment, except the first payment, for monies due him as a result of a percentage of the work completed, he must provide the Architect/Engineer with duly executed release of claim from all subcontractors and suppliers who have performed any work or supplied any material on the project as of the date, stating that said subcontractors or suppliers have been paid their proportionate share of all previous payments. In the event such affidavits cannot be furnished, the Contractor may, at the Owner's sole discretion after the Contractor demonstrates justifiable reasons, submit an executed Consent of Surety to Requisition using the form provided in the Contract Documents identifying the subcontractors and the amounts for which the Statement of Satisfaction cannot be furnished.
- 3) The Contractor's failure to provide a Consent of Surety to Requisition Payment will result in the amount in dispute being withheld until (1) the Statement of Satisfaction is furnished, or (2) Consent of Surety to Requisition Payment is furnished. The Subcontractor(s) shall submit with each monthly invoice the Certified Payroll forms for all employees on the job in accordance with applicable Provisions. Failure to provide this information will cause the Architect/Engineer to return the invoice to the Contractor until such time as the Contractor properly submits the information.

D. Contract Prices – Bid Form

- 1) Payment for the various Bid Items listed in the Bid Form shall constitute full compensation for furnishing plant, labor, equipment, appliances and materials and for performing operations required to complete the Work in conformity with the Contract Documents. All costs for work shown or indicated by the Contract Documents, although not specifically provided for by a Bid Item in the Bid Form, shall be included in the most appropriate Bid Item price for the items listed. Except for the relief provided by the applicable section of the Contract Documents governing Differing Site Conditions, the Contractor will not be entitled to additional compensation for providing an activity or material necessary for the completion of the Work in accordance with the Contract even though the activity or material is not included in a specific Bid Item or indicated in the Contract Documents.

E. Final Payment

- 1) After the Work has been accepted by the Owner, subject to the provisions of the Contract Documents, a final payment will be made as follows:
  - a. Prior to Final Acceptance of the Work, the Contractor shall prepare and submit a proposed final application for payment to the Architect/Engineer showing the proposed total amount due the Contractor, segregated as to Bid Item quantities, force account work, and other bases for payments; deductions made or to be made for prior payment; amounts to be retained; any claims the Contractor intends to file at that time or a statement that no claims will be filed; and any unsettled claims, stating amounts. Prior applications and payments shall be subject to correction in the proposed final application for payment. Claims filed with the final application for payment must be otherwise timely under these General Conditions.

- b. The Owner will review the Contractor's proposed final application for payment and necessary changes or corrections will be forwarded to the Contractor. Within 10 days thereafter, the Contractor shall submit a final application for payment incorporating changes or corrections made by the Architect/Engineer together with additional claims resulting therefrom. Upon approval by the Owner, the corrected proposed final application for payment will become the approved final application for payment.
  - c. If the Contractor files no claims with the final application for payment and no claims remain unsettled within 30 days after final inspection of the Work by the Architect/Engineer and the Owner, and agreements are reached on all questions regarding the final application for payment, the Owner, in exchange for an executed release of all claims and properly executed close-out documents specified in Paragraph 3 below, will pay the entire sum found due on the approved final application for payment.
  - d. Upon final determination of any and all claims, the Owner, in exchange for properly executed close-out documents specified in Paragraph 3 below, will pay the entire sum found due on the approved final application for payment, including the amount, if any, allowed on claims.
  - e. The release from the Contractor will be from any claims arising from the Work under the Contract. If the Contractor's claim to amounts payable under the Contract has been authorized by the Owner for assignment pursuant to the relevant sections of the Contract Documents, a release may be required from the assignee.
  - f. Final payment will be made within 30 days after approval of the final notice and resolution of Contractor's claims, or 30 days after Final Acceptance of the Work by the Owner, whichever is later. If a final application for payment has not been approved within 30 days after final inspection of the Work, the Owner shall make payment of sums not in dispute without prejudice to the rights of either the Owner or the Contractor in connection with any disputed items.
  - g. Prior to payment of a claim settlement, the claim may be audited by the Owner and may be subject to approval by the funding agencies.
  - h. Final payment made in accordance with this article will be conclusive and binding against both parties to the Contract on all questions relating to the amount of work done and the compensation paid therefore.
- 2) With the final application for payment, the Contractor shall return and submit final releases of claim from himself, from each Subcontractor of record and from other Subcontractors or material suppliers who may have notified the Owner that they were furnishing labor or materials for this project. These releases from Subcontractors and suppliers shall be final, originals, notarized and executed on the form provided by the Owner and included in the Contract Documents, all in accordance with all applicable Florida Statutes. In addition, the Contractor shall execute and return to the Owner all the

enclosed close-out documents. In the event that all of the above releases cannot be furnished, the Contractor may, at the Owner's sole discretion after the Contractor demonstrates justifiable reasons, submit a Consent of Surety to Final Payment in a form acceptable to the Owner, recognizing lack of such releases of claim. Furthermore, the Contractor and the Surety shall agree in writing, in a form acceptable to the Owner, to indemnify, defend and hold harmless the Owner from any claims of Subcontractors and suppliers who refuse to execute final releases.

- 3) The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:
  - a. Faulty or defective Work appearing after Final Completion;
  - b. Failure of the Work to comply with the requirements of the Contract Documents, discovered after Final Completion;
  - c. The performance of audits to seek reimbursement of any overpayments discovered as a result of an audit as provided in the Contract Documents;
  - d. The enforcement of those provisions of the Contract Documents which specifically provide that they survive the completion of the Work;
  - e. The enforcement of the terms of the Payment and Performance Bonds against the Surety;
  - f. Terms of all warranties/guarantees required by the Contract Documents.
- 4) The acceptance of final payment shall constitute a waiver of all claims by the Contractor.

END OF ARTICLE

## 10. CHANGES

(June 12, 2012)

### A. Changes

- 1) The Owner reserves the right to, at any time, without notice to the sureties and without invalidating the Contract, by written notice or order designated as a Change Notice or Change Order, make any change in the Work within the general scope of the Contract including but not limited to changes:
  - a. In the Contract Documents;
  - b. In the method or manner of performance of the Work;
  - c. In Owner-furnished facilities, equipment, materials, services, or site or;
  - d. Directing acceleration in performance of the Work.
- 2) In the event the Owner exercises its right to change, delete or add work under the Contract, such work will be ordered and paid for as provided for in the Contract Documents.
- 3) Changes in the work may be initiated by the issuance of a Change Notice by the Architect/Engineer. The Contractor shall submit a proposal to the Architect/Engineer and the Owner for their review, in accordance with the Contract Documents, within a reasonable time after receipt of a Change Notice. The Contractor shall maintain this proposal, for acceptance by the Owner, for a minimum of 90 calendar days after submittal. The cost or credit to the Owner for any change in the work shall be determined in accordance with the provisions of the Contract Documents. The Contractor shall not be compensated for effort expended in preparing and submitting price quotes.
- 4) In the event the Contractor fails to provide the full cost and time estimate for the change work or refuses to execute a full accord Change Order, the Owner will, at its sole discretion, (1) determine the total cost and time impacts of the change and compensate the Contractor and/or extend the Contract Time, if applicable, through a unilateral Change Order signed only by the Owner; or (2) direct the Contractor to proceed with the Work under the Force Account provisions of this article. Failure of the Contractor to submit his total and final estimated cost and time impact within the time period specified on the Change Notice form shall constitute a waiver by the Contractor to claim additional costs or time beyond that which has been determined by the Owner. Any disputes arising out of an Owner determination shall be resolved in accordance with the disputes provisions in the Contract Documents. Pending the Owner's final decision, the Contractor shall proceed diligently with the performance of the Work under the Contract.
- 5) Changes in the work covered by Unit Prices, as stated in the Contract Documents shall be all inclusive. These prices will include all Direct and  
Indirect Costs and means and methods of execution. To be compensable, units must be measured daily by the Contractor and approved in writing by the Owner or his authorized representative.

- 6) The following mark-ups on Extra Work shall apply to all changes in the Work performed under this article:
  - a. For Extra Work performed by the Contractor's own forces, the Contractor agrees that his proposed cost to perform said Extra Work will in no event include a rate for overhead in excess of fifteen percent (15%).
  - b. For Extra Work performed by a Subcontractor's forces, the Contractor agrees that his proposed cost to perform said Extra Work will in no event include Overhead in excess of fifteen percent (15%). The Contractor may then add five percent (5%) times the Subcontractor's or sub-tier Subcontractor's actual Direct Cost as direct compensation for the Contractor's Overhead and all other costs associated with the Subcontractors Work at all tiers.
- 7) Increases to the Contract Amount shall be authorized by a Change Order executed by the Contractor, the Contractor's Surety and the Owner and approved by the BCC. Decreases to the Contract amount shall be by Change Order or Work Order as determined by the Owner and shall also be subject to BCC approval when the decrease results from a reduction in the scope of the work.
- 8) A cost of bonds for Change Orders that impact the Contract price shall be established by the Contractor's actual reimbursement costs, as approved by the Owner, based on the original Contract Amount and the original amount reimbursed to the Contractor for bonds at the commencement of the Work. This cost of bonds shall be added to all credit amounts allowed by the Owner. For Change Orders paid under the Allowance Account, no additional bond cost will be allowed unless the Allowance Account is not included in the original Contract Amount. In this case, additional bond costs for these Change Orders will be considered.
- 9) Any claim for payment of Extra Work that is not covered by a Change Order or Work Order will be rejected by the Owner.

B. Allowance Accounts

- 1) Certain portions of work which may be required to be performed by the Contractor under this Contract are either unforeseeable or have not yet been designed, and the value of such work, if any, is included in the Contract as a specific line item(s) entitled "Allowance Account(s)".
  - a. The Allowance Account (General) can be used to reimburse the Contractor for (1) furnishing all labor, materials, equipment and services necessary for modifications or Extra Work required to complete the Project because of unforeseeable conditions and; (2) for performing construction changes required to resolve: oversight in design, Owner oversight, unforeseen conditions, revised regulations, technological and product development, operational changes, schedule requirements, program interface, emergencies and delays; and for making final adjustment to estimated quantities shown on the Schedule of Values or amounts bid in the Bid Form to conform to actual quantities installed.
  - b. Other Allowance Account(s) (Dedicated) may be used as specified in the Contract Documents to fund specific items of work at the sole discretion of

the Owner. These dedicated allowance accounts shall be used only for the purposes approved pursuant to a written Work Order issued by the Owner or his authorized representative.

- 2) At such time as work is to be performed under the Allowance Account(s), if any, the work shall be incorporated into the Schedule and the Schedule of Values, and shall in all respects be integrated into the construction as a part of the Contract as awarded.
- 3) The Work Order for the required work will be issued by the Owner or Architect/Engineer upon receipt from the Contractor of a satisfactory proposal for performance of the work, and the acceptance thereof by the Architect/Engineer and the Owner. If the Contractor and the Owner are unable to agree upon an amount of compensation or; if the nature of the work is such that a Unit Price or Lump Sum price is not economically practical or if the change work is deemed essential to the Project and actual conditions require work to be swiftly conducted to avoid or minimize delays, the Work Order may be issued to perform the work on a Force Account basis. In the event that an equitable adjustment for the said change work cannot be arrived at, either by mutual agreement or under the dispute provisions of the Contract Documents, the compensation hereunder will be the total compensation for this work.
- 4) No Work Orders shall be issued against an Allowance Account if such Work Orders in the aggregate exceed the authorized amount of that Allowance Account, provided however that such excess may be authorized by appropriate Change Order.
- 5) The unexpended amounts under the allowance accounts shall remain with the Owner and the Contractor shall have no claim to the same.

C. Deletion or Addition of Work

- 1) In the event the Owner exercises its right to delete any portion(s) of the work contemplated herein, such deletion will be ordered and the Contract Total Amount and Time may be adjusted as provided for in these Contract Documents by Change Order or by Work Order, as appropriate. The Contractor shall be reimbursed for any actual reasonable expenses incurred prior to the notice of deletion of work as a result of preparing to perform the work deleted. In the event of a dispute between Owner and Contractor as to the adjustment to the amount of time, the dispute shall be handled in accordance with these General Conditions.
- 2) Deleted Work - Lump Sum Bid Item(s): The Contractor shall credit the Owner for the reasonable value of the deleted work determined from the approved Schedule of Values, subject to approval by the Architect/Engineer. If the reasonable value of the deleted work cannot be readily ascertained from the Schedule of Values submitted in accordance with these General Conditions, or if requested by the Architect/Engineer, the Contractor shall supply all data required by the Architect/Engineer, including the actual agreements executed by the Contractor with the Subcontractors and suppliers affected by the deleted work, to substantiate the amount of the credit to be given the Owner. The Contractor shall also submit for the Owner's approval a revised schedule of values reflecting the work remaining under the Contract following the deletion.
- 3) No payment(s) shall be made to the Contractor by the Owner for loss of anticipated profit(s) from any deleted work.



- 4) In the event the Owner exercises its right to add to any portion of the work contemplated herein, such addition will be ordered and the Contract Total Amount and Contract Time will be adjusted as provided for in these Contract Documents, by Change Order or by Work Order as appropriate. In the event of a dispute between Owner and Contractor as to the adjustment to the Amount or the Time, the dispute shall be handled in accordance with the Contract Documents.

D. Increased or Decreased Quantities (Unit Prices)

- 1) This section applies to Owner-initiated additions or deletions from the Work and to the unit prices contained within this contract and controls payments or credits for variations between estimated and actual quantities required to complete the Work, even though the additions or deletions may be distinct or separate structures or activities and regardless of the fact that the addition or deletion is a result of field adjustments, site conditions, a design change or any other cause. Increases or decreases will be determined by comparing the actual quantity required to the Architect/Engineer's estimated quantity in the Bid Form.
- 2) If the actual quantity of Bid Item varies from the Architect/Engineer's quantity estimate by 25% or less, payment for the Bid Item will be made at the Contract unit price. If the actual quantity varies from the Bid quantity by more than 25%, the compensation payable to the Contractor will be the subject of review by the Contractor and the Architect/Engineer and a Contract adjustment will be made by means of a Change Order in accordance with the Contract Documents to credit the Owner with any reduction in unit prices or to compensate the Contractor for any increase in unit price resulting from variations between estimated and actual quantities. The unit price to be re-negotiated shall be only for that quantity above 125% or below 75% of the original bid quantities.
- 3) The Contractor shall submit to the Architect/Engineer all data required to substantiate the amount of compensation requested therefore. In no event shall the Contractor be entitled to compensation greater than the aggregate amount of all the Unit Prices times the original bid quantities of Work reflected in the Bid Form.
- 4) No compensation will be made in any case for loss of anticipatory profits, loss of bonding capacity or consequential damages.

E. Extra Work

- 1) Except as otherwise expressly provided above, all additional work ordered, work changed or work deleted shall be authorized by Work Order(s) or Change Order(s). All changed or added work so authorized shall be performed by the Contractor at the time and in the manner specified. The Change Order shall include, as a minimum:
  - a. Scope of work to be added, deleted or modified;
  - b. Cost of work to be added, deleted or modified;
  - c. The Contract time extension or reduction in contract time in the case of deleted work required to perform the work to be added, deleted or modified;

- d. Full release of claims associated with the Contract through the date of the change order, or a reservation of claims identified as to each claim reserved, the scope of the work, the maximum cost of the work, and the maximum number of days of Contract time requested, shall be specified.

The Work Order shall include, at a minimum:

- a. Scope of work to be added, deleted or modified;
- b. Cost of work to be added, deleted or modified;
- c. The Contract time extension required to perform the work to be added, deleted or modified;
- d. Full release of claims associated with the work order work, or a reservation of claims identified as to each claim reserved, the scope of the work, the maximum cost of the work, and the maximum number of days of Contract time requested, shall be specified.

2) If Work is ordered, changed, or deleted which is not covered by Unit Prices, then, the Owner and the Contractor shall negotiate an equitable adjustment to the Contract Price for the Direct Costs for the performance of such work in accordance with this article. Indirect Costs for Work ordered, changed or deleted may be reimbursed for Excusable and Compensable Delay as defined in these Contract Documents.

- a. In order to reimburse the Contractor for additional Direct Costs, either by Work Order, Change Order or any other means, the Contractor must have additional work added to the Contract Scope of Work. The additional cost of idle or inefficient labor, from any cause, or the additional cost of labor made idle or inefficient from any cause will not be considered a reimbursable additional Direct Cost. Special equipment or machinery, which is made idle or inefficient by the Work ordered, changed or deleted, may be reimbursable if approved by the Architect/Engineer as an unavoidable cost to the Contractor, caused by the Owner.
- b. Costs of special equipment or machinery, not already mobilized on the site, approved by the Architect/Engineer, shall be calculated using the current issue of the Associated Equipment Distributors (AED) Manual plus any required mobilization. The selection of which of the AED rates (daily, weekly, monthly) to be used to calculate these costs shall be as follows:
  - i. Between one (1) day and seven (7) days, use the daily rate.
  - ii. Between seven (7) days and thirty (30) days, use the weekly rate.
  - iii. Greater than thirty (30) days, use the monthly rate.
- c. For less than one (1) day hourly rates, use the daily rate divided by eight (8).
- d. For overtime hourly rates use the daily rate divided by eight (8), the weekly rate divided by forty (40), or the monthly rate divided by one hundred and seventy-six (176) as appropriate.

- e. Costs for Special Equipment and Machinery already mobilized on the site, shall not exceed the monthly rate stated in the AED Manual, divided by one hundred and seventy-six (176), per hour that the Special Equipment and Machinery is in use on the work plus any required re-mobilization.
- f. The cost calculation shall not combine rates within the range of a time extension. It shall use decimals of the time extension rate that the extension falls under. For example, the cost calculation for a piece of Special Equipment with an approved delay of forty five (45) days shall be one and one-half (1.5) months times the monthly rate, not one (1) month at the monthly rate, plus two (2) weeks at the weekly rate, plus one (1) day at the daily rate.
- g. Rental for special equipment and machinery, not already mobilized to the site, shall be an amount equal to the appropriate daily, weekly, or monthly rental rate for such equipment, in accordance with the current issue of Associated Equipment Distributors' (AED) "Compilation of Nationally Averaged Rental Rates and Model Specifications for Construction Equipment" (notwithstanding the caveats contained therein that such rental rates are not for use by government agencies) for each and every rental period (in weeks, days, or months as applicable) that the special equipment or machinery is in use on the work plus any required mobilization. Payment for special equipment and machinery already mobilized to the site shall not exceed the monthly rate stated in the AED standards divided by one hundred and seventy six (176) to establish a per hour rate that the special equipment and machinery is in use on the Work, plus any required remobilization.
- h. For indirect costs, the Contractor shall be allowed a percentage markup as set forth in Paragraph G. 2 below.

F. Differing Site Conditions

- 1) The Contractor shall immediately, and before such conditions are disturbed, notify the Architect/Engineer in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.
- 2) The Architect/Engineer will promptly investigate the conditions, and if such conditions materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under the Contract, a Contract change may be made and the Contract modified in writing in accordance with the Contract Documents.
- 3) No claim of the Contractor under this article will be allowed unless the Contractor has given the notice required in the Contract Documents.
- 4) No claim by the Contractor for a Contract change hereunder will be allowed if asserted after final payment under this Contract.

- 5) If the Owner is not given written notice prior to the conditions being disturbed, the Contractor will be deemed to have waived his right to assert a claim for additional time and compensation arising out of such changed conditions.

G. Force Account

- 1) If the Owner and the Contractor cannot reach agreement on an equitable adjustment to the Contract Price for any work as prescribed above, then the Extra Work will be performed on a Force Account basis as directed by the Architect/Engineer and paid for as specified below.
- 2) The following percentages will be allowed as mark-ups over Direct Costs for all negotiated adjustments to the Contract Amount or for work performed on either a negotiated lump sum basis or a Force Account basis:
  - a. Extra Work Performed directly by Contractor's Own Forces: The Contractor may add up to a maximum fifteen percent (15%) mark-up on the actual Direct Cost of the Extra Work, subject to review and approval by the Architect/Engineer, as direct compensation for Overhead. A 10% mark-up will be added to all negotiated credit amounts for deleted work not performed to cover Overhead.
  - b. Extra Work Performed by a Subcontractor or any Sub-tier Subcontractor: The Subcontractor may add up to a maximum fifteen percent (15%) mark-up on the actual Direct Cost of the Extra Work as direct compensation for Overhead. The Contractor may add a five percent (5%) mark-up on the Subcontractor's actual Direct Cost as Contractor's Overhead. A 10% additional credit will be added to all Subcontractor negotiated credit amounts for deleted work not performed to cover quality control, supervision, coordination, overhead, small tools and incidentals.
- 3) In the event Extra Work is performed on a Force Account basis, then the Contractor and the Subcontractor(s), as appropriate, shall maintain itemized daily records of costs, quantities, labor and the use of authorized Special Equipment or Machinery. Copies of such records, maintained as follows, shall be furnished to the Architect/Engineer daily for approval, subject to audit.
  - a. Comparison of Record: The Contractor, including its Subcontractor(s) of any tier performing the work, and the Architect/Engineer shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor, the Subcontractor performing the work, and the Architect/Engineer or their duly authorized representatives.
  - b. Statement: No payment will be made for work performed on a force account basis until the Contractor has furnished the Architect/Engineer with duplicate itemized statements of the cost of such force account work detailed as follows:
    - i. Name, classification, date, daily hours, total hours, rate and extension for each laborer, tradesman, and foreman.

- ii. Designation, dates, daily hours, total hours, rental rate, and extension of each unit of special machinery and equipment.
- iii. Quantities of materials, prices, and extensions.
- iv. Transportation of materials.

The statements shall be accompanied and supported by a receipted invoice of all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from its stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

- c. Authorization of Special Equipment and Machinery: No compensation for special equipment or machinery shall be made without written authorization from the Architect/Engineer. The Architect/Engineer shall review and evaluate any special equipment or machinery proposed by the Contractor for use on a force account basis. As part of its evaluation, the Architect/Engineer shall determine whether any of the special equipment or machinery being proposed by the Contractor will be concurrently used on the Project, including approved changes, or on other force account work on the Project. If the Architect/Engineer determines that such a concurrent use of special equipment or machinery is being proposed by the Contractor, prior to the authorization of such special equipment or machinery, the Architect/Engineer and thereto Contractor shall establish a straight-line prorated billing mechanism based on the actual percentage of time that the equipment or machinery is required to be used on the force account work(s).

Special equipment or machinery which is approved for use by the Architect/Engineer shall be reviewed and accounted for on a daily basis as provided in the Comparison of Record and Statement paragraphs of this section of the Contract.

- d. Inefficiency in the Prosecution of the Work: If in the Owner's or Architect/Engineer's opinion, the Contractor or any of its Subcontractors, in performing Force Account Work, is not making efficient use of labor, materials or equipment or is proceeding in a manner which makes Force Account Work unnecessarily more expensive to the Owner, the Owner or Architect/Engineer may, in whole or part, direct the Contractor in the deployment of labor, material and equipment. By way of illustration, inefficiency may arise in the following ways, including but not limited to: (1) the timing of the Work, (2) the use of unnecessary labor or equipment, (3) the use of a higher percentage of journeymen than in non-force

account Work, (4) the failure to procure materials at lowest price, or (5) using materials of quality higher than necessary.

H. Contractor Proposals - General

- 1) The Contractor may at any time submit to the Architect/Engineer for his review proposed modifications to the Contract Documents, including but not limited to, changes in the Contract Time and/or Contract Amount, supported by a cost/price proposal. Upon acceptance of the proposed modifications by the Owner, a Work Order or Change Order will be issued. Denial of a proposed modification will neither provide the Contractor with any basis for claim for damages nor release the Contractor from contractual responsibilities. A Contract change in the form of a Contract price reduction will be made if the change results in a reduction of the cost of performance and the Contractor will not be entitled to share in said savings unless the proposal is made in accordance with Paragraph I of this article. Except as provided in Paragraph I below, the Contractor will not be compensated for any direct, incidental or collateral benefits or savings the Owner receives as a result of the proposal.

I. Value Engineering Change Proposals: The Contractor may submit to the Architect/Engineer one or more cost reduction proposals for changing the Contract requirements. The proposals shall be based upon a sound study made by the Contractor indicating that the proposal:

- a. Will result in a net reduction in the total Contract amount;
- b. Will not impair any essential function or characteristic of the Work such as safety, service life, reliability, economy of operation, ease of maintenance and necessary standardized features;
- c. Will not require an unacceptable extension of the Contract completion time; and
- d. Will require a change in the Contract Documents and such change is not already under consideration by the Owner.
  - i. The Owner may accept in whole or in part any proposal submitted pursuant to the previous paragraph on Value Engineering Change Proposals by issuing a Change Order which will identify the proposal on which it is based. The Change Order will provide for a Contract change in the Contract price and will revise any other affected provisions of the Contract Documents. The equitable adjustment in the Contract price will be established by determining the net savings resulting from the accepted change. The net savings resulting from the change will be shared between the Contractor and the Owner on the basis of 50 percent for the Contractor and 50 percent for the Owner and will be limited to one Value Engineering Change Proposal per Change Order. Net savings will be determined by deducting from the proposal's estimated gross savings (1) the Contractor's costs of developing and implementing the proposal (including any amount attributable to a subcontractor) and (2) the estimated amount of increased costs to the Owner resulting from the change, such as

evaluation, implementation, inspection, related items, and Owner - furnished material. Estimated gross savings will include Contractor's labor, material, equipment, overhead, profit and bond. The Contract price will be reduced by the sum of the Owner's costs and share of the net savings. For the purposes of this article, the applicable provisions of the Contract Documents shall be used to determine the equitable adjustment to the Contract price.

- ii. The Owner will not be liable for delay in acting upon, or for failure to act upon, any proposal submitted pursuant to of this article. The decision of the Owner as to the acceptance or rejection of any such proposal under the Contract will be final. The submission of a proposal by the Contractor will not in itself affect the rights or obligations of either party under the Contract.
- iii. The Contractor shall have the right to withdraw part or all of any proposal he may make under Paragraph 2 of this article at any time prior to acceptance by the Owner. Such withdrawal shall be made in writing to the Architect/Engineer. Each such proposal shall remain valid for a period of 60 days from the date submitted. If the Contractor wishes to withdraw the proposal prior to the expiration of the 60 day period he will be liable for the cost incurred by the Owner in reviewing the proposal.
- iv. The Contractor shall specifically identify any proposals under Paragraph 2 of this article with the heading "Value Engineering Change Proposal", or the proposal will be considered as made under Paragraph 1 of this article.

- 2) The Contractor, in connection with each proposal for a Contract Change Notice under this article, shall furnish the following information:
- a. A description of the difference between the existing Contract requirement and the proposed change, and the comparative advantages and disadvantages of each, justification when a function or characteristic of an item is being altered, and the effect of the change on the performance of the end item;
  - b. An analysis and itemization of the requirements of the Contract which must be changed if the Value Engineering Change Proposal is accepted and a recommendation as to how to make each such change (e.g., a suggested specification revision);
  - c. A separate detailed cost estimate for both the existing Contract requirement and the proposed change to provide an estimate of the reduction in costs, if any, that will result from acceptance of the Value Engineering Change Proposal taking into account the costs of development and implementation by the Contractor;

- d. A prediction of any effects the proposed change would have on collateral costs to the Owner such as government-furnished property costs, costs of related items, and costs of maintenance and operation;
  - e. A statement of the time by which a Contract modification accepting the Value Engineering Change Proposal must be issued so as to obtain the maximum cost reduction, noting any effect on the Contract completion time or delivery schedule; and
  - f. Identification of any previous submission of the Value Engineering Change Proposal to the Owner, including the dates submitted, the numbers of the contracts involved, and the previous actions by the Owner.
- 3) The Contractor waives any and all claims relating to any delay that may arise out of a Value Engineering Change Proposal.

END OF ARTICLE

## **11. CLAIMS AND DISPUTES**

(June 12, 2012)

### **A. Notice of Claims**

- 1) The Contractor will not be entitled to additional time or compensation otherwise payable for any act or failure to act by the Owner, the happening of any event or occurrence, or any other cause, unless he shall have given the Architect/Engineer a written notice of claim therefore as specified in this article.
- 2) The Contractor shall provide immediate verbal notification with written confirmation within forty-eight (48) hours of any potential claims and of the anticipated time and/or cost impacts resulting thereof. The written notice of claim shall set forth the reasons for which the Contractor believes additional compensation and/or time will or may be due, the nature of the costs involved and the approximate amount of the potential claim.
- 3) It is the intention of this article, that differences between the parties arising under and by virtue of the Contract shall be brought to the attention of the Architect/Engineer at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken.
- 4) The notice requirements of this article are in addition to those required in other articles of these Contract Documents.
- 5) The Contractor shall segregate all costs associated with each individual claim including but not limited to labor, equipment, material, subcontractor and supplier costs, and all other costs related to the claim. In the event that the Contractor has multiple claims, the Contractor will segregate each claim individually including the respective costs



associated with each claim. Failure to segregate claims and their respective costs will be grounds for the Owner's rejection of the claim. No "total cost claims" shall be allowed under this Contract.

- 6) The Contractor must maintain a cost accounting system as a condition for making a claim against the Owner. The cost accounting system must segregate the costs of the work under the Contract (non-claims-related) from claims-related and other Contractor costs through the use of a job cost ledger and be otherwise in compliance with general accounting principles.
- 7) If the Owner decides to pay all or part of a claim for which notice was not timely made, the Owner does not waive the right to enforce the notice requirements in connection with any other claim.
- 8) Inasmuch as the notice of claim requirements of this article are intended to enable the Architect/Engineer to investigate while facts are fresh and to take action to minimize or avoid a claim which might be filed thereafter, the Contractor's failure to make the required notice on time is likely to disadvantage the Owner. Therefore, a claim that does not comply with the notice requirements above shall not be considered unless the Contractor submits with his claim proof showing that the Owner has not been prejudiced by the Contractor's failure to so comply and, in the event the Owner has been prejudiced by the Contractor's failure to submit a timely notice of claim, the Owner will reduce any equitable adjustment claimed by the Contractor to reflect the damage.

#### B. Claim Submittals

- 1) Claims or requests for equitable adjustments filed by the Contractor shall be filed in full accordance with this article no later than 30 calendar days after the act giving rise to the claim and in sufficient detail to enable the Owner to ascertain the basis and amount of said claims. In the case of continuing or ongoing claim events, the Contractor shall be allowed to periodically amend his claim to more accurately reflect the impact of said claim, until the end of the claim event. No claims for additional compensation, time extension or for any other relief under the Contract shall be recognized, processed, or treated in any manner unless the same is presented in accordance with this Article. Failure to present and process any claim in accordance with this Article shall be conclusively deemed a waiver, abandonment or relinquishment of any such claim, it being expressly understood and agreed that the timely presentation of claims, in sufficient detail to allow proper investigation and prompt resolution thereof, is essential to the administration of this Contract.
- 2) The Owner will review and evaluate the Contractor's claims. It will be the responsibility of the Contractor to furnish, when requested by the Architect/Engineer, such further information and details as may be required to determine the facts or contentions involved in his claims. The cost of claims preparation or Change Order negotiations shall not be reimbursable under this Contract.
- 3) Any work performed by the Contractor prior to Notice-to-Proceed (NTP) shall not be the basis for a claim from the Contractor of any kind.
- 4) Each claim must be certified by the Contractor as required by the Miami-Dade Code, False Claims Act (see Code Section 21-255, et seq.), and accompanied by all materials

required by Miami-Dade County Code Section 21-257. A "certified claim" shall be made under oath by a person duly authorized by the claimant, and shall contain a statement that:

- a. The claim is made in good faith;
  - b. The claim's supporting data is accurate and complete to the best of the person's knowledge and belief;
  - c. The amount of the claim accurately reflects the amount that the claimant believes is due from the Owner; and
  - d. The certifying person is duly authorized by the claimant to certify the claim.
- 5) In order to substantiate time-related claims (delays, disruptions, impacts, etc.), the Contractor shall, if applicable and as determined by the Owner, submit, in triplicate, the following information:
- a. Copy of Contractor's notice of claim in accordance with this article. Failure to submit the notice is sufficient grounds to deny the claim.
  - b. The approved, as-planned Schedule in accordance with the applicable section of the Contract Documents and computer storage media, if applicable.
  - c. The as-built Schedule reflecting changes to the approved schedule up to the time of the impact in question and computer storage media if applicable.
  - d. The basis for the duration of the start and finish dates of each impact activity and the reason for choosing the successor and predecessor events affected in the schedule shall be explained. Also, the basis for the duration of any lead/lags inserted into the schedule and the duration in related activity duration shall be explained.
  - e. A marked-up as-built Schedule indicating the causes responsible for changes between the as-planned and as-built schedule and establishing the required cause and effect relationships.
  - f. After indicating specific time related changes on the as-built schedule, the documentation must be segregated into separate packages with each package documenting a specific duration change identified previously. This documentation package shall include Change Orders, Change Notices, Work Orders, written directions, meeting minutes, etc., related to the change in duration.
  - g. Any loss of efficiency, acceleration, disruption and loss of productivity claims shall be compensated as part of the Liquidated Indirect Costs paid for compensable, excusable delays and mark-up on Direct Cost of changes as allowed by the Contract. Total cost and modified total cost claims will not be accepted and the Contractor agrees to waive the right to seek recovery by these methods. The claimed delay shall not result from a cause specified in the Contract Documents as a non-excusable delay.

- h. The Contractor assumes all risk for the following items, none of which shall be the subject of any claim and none of which shall be compensated for except as they may have been included in the compensation described under Liquidated Indirect Costs: (1) home office expenses or any Direct Costs incurred allocated from the headquarters of the Contractor; (2) loss of anticipated profits on this or any other project, (3) loss of bonding capacity or capability; (4) losses due to other projects not bid upon; (5) loss of business opportunities; (6) loss of productivity on this or any other project; (7) loss of interest income on funds not paid; (8) costs to prepare, negotiate or prosecute claims and (9) costs spent to achieve compliance with applicable laws and ordinances (excepting only sales taxes paid shall be reimbursable expense subject to the provisions of the Contract Documents).
- i. All non-time-related claim items for additional compensation for Direct Costs shall be properly documented and supported with copies of invoices, time sheets, rental agreements, crew sheets and the like.
- j. Cost information shall be submitted in sufficient detail to allow for review. The basis for the budgeted or actual costs shall include manhours by trade, labor rates, material and equipment costs etc. These costs shall be broken down by pay item and Construction Specification Institute (CSI) Division.
- k. The documentation for budgeted cost shall, as a minimum, include:
  - i. Copies of all the Contractor's bid documents, bid quotes, faxed quotes, etc.
  - ii. Copies of all executed subcontracts.
  - iii. Other related budget documents as requested by the Architect/Engineer.
- l. The documentation for actual cost shall, as a minimum, include:
  - i. Time Sheets.
  - ii. Materials invoices
  - iii. Equipment invoices
  - iv. Subcontractors' payments
  - v. Other related documents as required by the Architect/Engineer.
- m. The Contractor shall make all his books, employees, work sites and records available to the Owner or its representatives for inspection and audit.
- n. No payment shall be made to the Contractor by the Owner for loss of anticipated profit(s) from any deleted work.

6) As indicated above, the Architect/Engineer and the Field Representative shall be allowed full and complete access to all personnel, documents, work sites or other information

reasonably necessary to investigate any claim. Within sixty (60) days after a claim has been received, the claim shall either be rejected with an explanation as to why it was rejected or acknowledged. Once the claim is acknowledged, the parties shall attempt to negotiate a satisfactory settlement of the claim, which settlement shall be included in a subsequent Work Order or Change Order. If the parties fail to reach an agreement on a recognized claim, the Owner shall pay to the Contractor the amount of money it deems reasonable, less any appropriate retention, to compensate the Contractor for the recognized claim.

- 7) Failure of the Contractor to make a specific reservation of rights regarding any such disputed amounts in the body of the Change Order which contains the payment shall be construed as a waiver, abandonment, or relinquishment of all claims for additional monies resulting from the claims embodied in said Change Order. However, once the Contractor has properly reserved rights to any claim, no further reservations of rights shall be required and the Contractor shall not be required to repeat the reservation in any subsequent change order. Prior reservation of rights may however be modified, by express reference, in subsequent change orders. Notwithstanding the aforementioned, at the time of final payment under the Contract, the Contractor shall specify all claims which have been denied and all claims for which rights have been reserved in accordance with this section. Failure to so specify any particular claim shall be constructed as a waiver, abandonment, or relinquishment of such claim.

#### C. Disputes

- 1) The following provisions shall govern disputes under this Contract unless the Special Provisions to this Contract contain the requirement for the use of an alternate dispute resolution method. For example, for large projects of great complexity, a Dispute Review Board (DRB) may be employed by the Owner to settle disputes in lieu of the Department Director or OOM designee as specified below. In this case, the DRB alternative shall be specified by the individual department in the Special Provisions and, if utilized, shall supersede this dispute provision.
  - a. In the event the Contractor and Owner are unable to resolve their differences concerning any determination made by the Architect/Engineer or Owner on any dispute or claim arising under or relating to the Contract (referred to in this Section as a "Dispute"), either the Contractor or Owner may initiate a dispute in accordance with the procedure set forth in this article. Exhaustion of these procedures shall be a precondition to any lawsuit permitted hereunder.
  - b. For contracts with a value of \$5 million or less, all Disputes under this Contract shall be decided by the Department Director or his designee. For contracts valued at more than \$5 million, Disputes shall be decided by a designee appointed by the Office of the Mayor (OOM). Decisions rendered by the Department Director or OOM designee shall not be binding but shall be admissible in a court of competent jurisdiction.
  - c. As soon as practicable, the Department Director or OOM designee shall adopt a schedule for the Contractor and Owner to file written submissions stating their

respective positions and the bases therefore. The written submissions shall include copies of all documents and sworn statements in affidavit form from all witnesses relied on by each party in support of its position. Within 20 working days of the date on which such written submissions are filed, the Department Director or OOM designee shall afford each party an opportunity to present a maximum of one hour of argument. The Department Director or OOM designee may decide the Dispute on the basis of the affidavits and other written submissions if, in his opinion, there is no issue of material fact and the party is entitled to a favorable resolution pursuant to the terms of this Contract. As part of such decision, the Department Director or OOM designee shall determine the timeliness and sufficiency of each notice of claim and claim at issue as provided in this article. The Department Director or OOM designee shall have the authority to rule on questions of law, including disputes over contract interpretation, and to resolve claims, or portions of claims, via summary judgment where there are no disputed issues of material fact. Furthermore, the Department Director or OOM designee is authorized by both parties to strike elements of claims seeking relief or damages not available under the contract (such as, but not limited to, claims for lost profits, off-site overhead, loss of efficiency or productivity claims or claim's preparation costs) by summary disposition.

- d. In the event that the Department Director or OOM designee determines that the affidavits or other written submissions present issues of material fact, he shall allow the presentation of evidence in the form of lay or expert testimony directed solely to the issues which he may specifically identify to require factual resolution. The testimonial portion of the process shall not exceed one day in duration per side, including opening statements and closing arguments, if allowed by the Department Director or OOM designee at his reasonable discretion.
- e. No formal discovery shall be allowed in connection with any proceeding under this article. Notwithstanding the foregoing, both parties agree that all of the audit, document inspection, information and documentation requirements set forth elsewhere in this contract shall remain in force and effect throughout the proceeding. The Department Director or OOM designee shall not schedule the hearing until both parties have made all their respective records available for inspection and reproduction and the parties have been afforded reasonable time to analyze the records. The continued failure of a party to comply with the document inspection, examination, or submission requirements set forth in this contract shall constitute a waiver of that party's claims and/or defenses, as applicable. Hearsay evidence shall be admissible but shall not form the sole basis for any finding of fact. Failure of any party to participate on a timely basis, to cooperate in the proceedings, or to furnish evidence in support or defense of a claim shall be a criteria in determining the sufficiency and validity of a claim.
- f. The Department Director or OOM designee shall issue a written decision within 15 working days after conclusion of any testimonial proceeding and, if no testimonial proceeding is conducted, within 45 days of the filing of the last written submission. This written decision shall set forth the reasons for the disposition of the claim and a

breakdown of any specific issues or subcontractor claims. As indicated previously, the decision of the Department Director or OOM designee is not binding on the parties, but will be admissible in a court of competent jurisdiction.

- g. If either party wishes to protest the decision of the Department Director or OOM designee, such party may commence an action in a court of competent jurisdiction, within the periods prescribed by law, it being understood that the review of the court shall be limited to the question of whether or not the Department Director or OOM designee's determination was arbitrary and capricious, unsupported by any competent evidence, or so grossly erroneous to evidence bad faith.
- h. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the Architect/Engineer's interpretation. Any presentation or request by the Contractor under this article will be subject to the same requirements for Submittal of Claims in this article.

#### D. Terminations

##### 1) Termination for Convenience

- a. The Owner may at its option and discretion terminate the Contract, in whole or, from time to time in part, at any time without any default on the part of the Contractor by issuing a written Notice of Termination to the Contractor and its Surety, specifying the extent to which performance of work under the Contract is terminated and the date upon which such termination becomes effective, at least ten (10) days prior to the effective date of such termination.
- b. In the event of Termination for Convenience, the Owner shall pay the Contractor for all labor performed, all materials and equipment furnished by the Contractor and its Subcontractors, materialmen and suppliers and manufacturers of equipment less all partial payments made on account prior to the date of cancellation as determined by the Field Representative and approved by the Architect/Engineer. The Contractor will be paid for:
  - i. The value of all work completed under the Contract, based upon the approved Schedule of Values and/or Unit Prices,
  - ii. The value of all materials and equipment delivered to but not incorporated into the work and properly stored on the site,
  - iii. The value of all bonafide irrevocable orders for materials and equipment not delivered to the construction site as of the date of cancellation. Such materials and equipment must be delivered to the Owner to a site or location designated by the Department prior to release of payment for such materials and equipment.
  - iv. The values calculated under i., ii. and iii. above shall be as determined by the Field Representative and approved by the Architect/Engineer.
- c. In the event of termination under this article, the Contractor shall not be entitled to any anticipated profits for any work not performed due to such termination.

- d. In the event of termination under this article, the Owner does not waive or void any credits otherwise due the Owner at the time of termination, including Liquidated Damages, and back charges for defective or deficient work.
- e. Upon termination as indicated above, the Field Representative shall prepare a certificate for Final Payment to the Contractor.

2) Termination for Default of Contractor

- a. The Contract may be terminated in whole or, from time to time in part, by the Owner for failure of the Contractor to comply with any requirements of the Contract Documents including but not limited to:
  - i. Failure to perform the work or failure to provide sufficient workers, equipment or materials to assure completion of work in accordance with the terms of the Contract, and the approved Schedule, or
  - ii. Failure to provide the Schedule for the Project by the date due, or
  - iii. Failure to provide adequate shop drawings by the dates indicated in the approved Schedule for the Project, or
  - iv. Failure to replace the superintendent in the time allotted, if required, or
  - v. Performing the work unsuitably or neglecting or refusing to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, after written directions from the Field Representative, or
  - vi. Violating the terms of the Contract or performing work in bad faith, or
  - vii. Discontinuing the prosecution of the work, or
  - viii. Failure to resume work which has been discontinued within a reasonable time after notice to do so, or
  - ix. Abandonment of the Contract, or
  - x. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or failure to maintain a qualifier, or
  - xi. Allowing any final judgment to stand against him unsatisfied for a period of 10 days, or
  - xii. Making an assignment for the benefit of creditors, or
  - xiii. For any other cause whatsoever, fails to carry out the work in an acceptable manner or to comply with any other Contract requirement.
- b. Before the Contract is terminated, the Contractor and its Surety will be notified in writing by the Architect/Engineer or the Field Representative of the

conditions which make termination of the Contract imminent. The Contract will be terminated by the Owner ten

(10) days after said notice has been given to the Contractor and its Surety unless a satisfactory effort acceptable to the Owner has been made by the Contractor or its Surety to correct the conditions. If the Contractor fails to satisfactorily correct the conditions giving rise to the termination, the Owner may declare the Contract breached and send a written Notice of Termination to the Contractor and its Surety.

- c. The Owner reserves the right, in lieu of termination as set forth in this article, to withhold any payments of money which may be due or become due to the Contractor until the said default(s) have been remedied. In the event of Termination for Default, the Owner also reserves the right, in cases where the damages calculated by the Owner are expected to exceed the amount the Owner anticipated recovering from the Surety, to withhold amounts for work already performed.
- d. In the event the Owner exercises its right to terminate the Contract for default of the Contractor as set forth herein, the Owner shall have the option of finishing the work, through any means available to the Owner, or having the Surety complete the Contract in accordance with its terms and conditions. In case that the Owner decides to have the Surety take over the remaining performance of the Work, the time or delay between Notice of Default and start of work by the Surety is a non-excusable delay. If the Surety fails to act promptly, but no longer than thirty (30) calendar days after the Owner notifies the Surety of the Owner's decision to have the Surety complete the work, or after such takeover fails to prosecute the Work in an expeditious manner, the Owner may exercise any of its other options including completing the Work by whatever means and method it deems advisable. No claims for loss of anticipated profits or for any other reason in connection with the termination of the Contract shall be considered.
- e. Payments for the various Bid Items listed in the Bid Form will constitute full compensation for all expenses incurred in consequence of discontinuance of all or any portion of the Work except as provided in this section of the Contract Documents. In no event will compensation be made for anticipatory profits or consequential damages as a result of a discontinuance of all or any portion of the Work.
- f. The Contractor shall immediately upon receipt communicate any Notice of Termination for Default issued by the Owner to the affected Subcontractors and suppliers at any tier.
- g. If, after Notice of Termination of the Contractor's right to proceed under the provisions of this article, it is determined for any reason that the Contractor was not in default under the provisions of this article, or that the Contractor was entitled to an extension of time under the Contract Documents, the rights and obligations of the parties shall be the same as if the Notice of Termination



had been issued pursuant to the section of this article dealing with Termination for Convenience.

3) Termination for National Emergencies

- a. The Owner shall terminate the Contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction Contract as a direct result of an Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.
- b. When the Contract, or any portion thereof, is terminated before completion of all items of work in the Contract, payment will be made for the actual number of units or items of work completed at the Contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits or for any other reason in connection with the termination of the Contract shall be considered.

4) Implementation of Termination

- a. If the Owner cancels or terminates the Contract or any portion thereof, the Contractor shall stop all work on the date and to the extent specified in the Notice of Termination and shall:
  - i. Cancel all orders and Subcontracts, to the extent that they relate to the performance of the work terminated and which may be terminated without costs;
  - ii. Cancel and settle other orders and Subcontracts, except as may be necessary for completion of such portion of the Work not terminated, where the cost of settlement will be less than costs which would be incurred were such orders and subcontracts to be completed, subject to prior approval of the Field Representative;
  - iii. Settle outstanding liabilities and claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Owner, to the extent it may require, which approval or ratification shall be final for the purposes of this Article;
  - iv. Transfer title and deliver to the Owner, in the manner, at the time, and to the extent, if any, directed by it, in accordance with directions of the Field Representative, all fabricated or un-fabricated parts, all materials, supplies, work in progress, completed work, facilities, equipment, machinery or tools acquired by the Contractor in connection with the performance of the work and for which the Contractor has been or is to be paid;
  - v. Assign to the Owner in the manner, at the times and to the extent directed by it, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Owner will have the right, at its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

- vi. Deliver to the Field Representative As-Built Documents, complete as of the date of cancellation or termination, plans, Shop Drawings, sketches, permits, certificates, warranties, guarantees, specifications, three (3) complete sets of maintenance manuals, pamphlets, charts, parts lists, spare parts (if any), operating instructions required for all installed or finished equipment or machinery, and all other data accumulated by the Contractor for use in the performance of the work.
- vii. Perform all work as may be necessary to preserve the work then in progress and to protect materials, plant and equipment on the site or in transit thereto. The Contractor shall also take such action as may be necessary, or as the Architect/Engineer may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Owner has or may acquire an interest.
- viii. Complete performance of each part of the work not terminated by the Notice of Termination;
- ix. Use his best efforts to sell, in the manner, at the time, to the extent, and at the price or prices directed or authorized by the Owner, property of the types referred to above; provided, however, that the Contractor (a) shall not be required to extend credit to any purchaser, and (b) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner; provided, further, that the proceeds of any such transfer or disposition will be applied in reduction of any payments to be made by the Owner to the Contractor under this Contract or will otherwise be credited to the price or cost of the work covered by this Contract or paid in such other manner as the Owner may direct;
- x. Termination of the Contract or a portion thereof shall neither relieve the Contractor of its responsibilities for the completed work nor shall it relieve its Surety of its obligation for and concerning any just claim arising out of the work performed.
- xi. In arriving at the amount due the Contractor under this article, there will be deducted, (1) any claim which the Owner may have against the Contractor in connection with this Contract and (2) the agreed price for, or the proceeds of sale of materials, supplies or other items acquired by the Contractor or sold, pursuant to the provisions of this article, and not otherwise recovered by or credited to the Owner.

#### 5) Suspension of Work

- a. The Owner reserves the right to temporarily suspend execution of the whole or any part of the Work without compensation to the Contractor.
- b. In case the Contractor is actually and necessarily delayed by any act or omission on the part of the Owner, as determined by the Owner in writing, the

time for completion of the Work shall be extended by the amount of the time of such delay as determined by the Owner, and an allowance may be made for actual direct costs, if any, which may have been borne by the Contractor. Such requests for additional time and/or compensation must be made in accordance with the applicable sections of the Contract Documents.

- c. Only the actual delay necessarily resulting from the causes specified in this Article, shall be grounds for extension of time. In case the Contractor is delayed at any time or for any period by two or more of the causes specified in this Article, the Contractor shall not be entitled to a separate extension for each one of the causes but only one period of extension will be granted for the delay.
- d. In case the Contractor is actually and necessarily delayed in the performance of the Work from one or more of the causes specified in this Article, the extension of time to be granted to the Contractor shall be only for such portion of the Work so delayed. The Contractor shall not be entitled by reason of such delay to an extension of time for the completion of the remainder of the Work. If the Contractor shall be so delayed as to a portion of the Work he shall nevertheless proceed continuously and diligently with the prosecution of the remainder of the Work. No demand by the Contractor that the Owner determine and certify any matter of extension of time for the completion of the Work or any part thereof will be of any effect whatsoever unless the demand be made in writing at least 30 days before the completion date of the Work or any part thereof for which Liquidated Damages are established when meeting those dates is claimed to have been delayed by a suspension under this Article. Owner's determination as to any matter of extension of time for completion of the Work or any part thereof shall be binding and conclusive upon the Contractor.
- e. Permitting the Contractor to finish the Work or any part thereof after the time fixed for completion or after the date to which the time for completion may have been extended or the making of payments to the Contractor after any such periods shall not operate as a waiver on the part of the Owner of any rights under this contract.
- f. The Contractor shall insert in each subcontract a provision that the Subcontractor shall comply immediately with a written order of the Owner to the Contractor to suspend the Work, and that they shall further insert the same provision in each subcontract of any tier.

END OF ARTICLE

## 12. MISCELLANEOUS PROVISIONS

(June 12, 2012)

### A. Third Party Beneficiary

No contractual relationship will be recognized under the Contract other than the contractual relationship between the Owner and the Contractor. There shall be no third party beneficiary to this Contract.

### B. Venue

Any litigation which may arise out of this Contract shall be commenced either in the Eleventh Judicial Circuit Court in and for Miami-Dade County, Florida, or in the United States District Court, Southern District of Florida.

### C. Governing Laws

- 1) The Contractor shall, during the term of this Contract and in the prosecution of the work, be governed by the statutes, regulatory orders, ordinances and procedures of the United States of America, the State of Florida and Miami- Dade County including but not limited to the Florida Building Code and the provisions of the Code of Miami-Dade County governing Disadvantaged Business Enterprises (DBEs) as applicable.
- 2) Not Used.
- 3) In addition, the Contractor agrees to abide by all federal, state, and County procedures, as may be amended from time to time, regarding how documents to which the Contractor has access are handled, copied, and distributed, particularly documents that contain sensitive security information.

### D. Successors and Assigns

The Owner and the Contractor each bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any moneys due or to become due the Contractor hereunder, without the previous written notice to the Owner. Consent will not be given to any proposed assignment which would relieve the Contractor or his Surety of their responsibilities under the Contract.

### E. Written Notice

- 1) Written notice to the Contractor shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to any officer of the corporation for whom it was intended or if delivered at or sent by registered or certified mail to the last business address known to those who give the notice.
- 2) Written notice to the Owner shall be deemed to have been duly served if delivered in person, delivered at or sent by registered or certified mail to the individual identified in the Special Provisions.

### F. Indemnification

- 1) In consideration of this Agreement, and to the maximum extent permitted by Chapter 725, Florida Statutes, as may be amended, the Contractor agrees to indemnify, protect, defend, and hold harmless the Government, State, County, their elected officials, officers, employees, consultants, and agents from claims, liabilities, damages, losses, and costs including, but not limited to reasonable attorney's fees at both the trial and appellate levels to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of the Work.
- 2) The indemnification obligation under this clause shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor and/or any Subcontractor under worker's compensation acts, disability benefit acts, or other employee benefit acts.
- 3) In the event that any claims are brought or actions are filed against the Owner with respect to the indemnity contained herein, the Contractor agrees to defend against any such claims or actions regardless of whether such claims or actions are rightfully or wrongfully brought or filed. The Contractor agrees that the Owner may select the attorneys to appear and defend such claims or actions on behalf of the Owner. The Contractor further agrees to pay at the Contractor 's expense the attorneys' fees and costs incurred by those attorneys selected by the Owner to appear and defend such claims or actions on behalf of the Owner. The Owner, at its sole option, shall have the sole authority for the direction of the defense, and shall be the sole judge of the acceptability of any compromise or settlement of any claims or actions against the Owner.
- 4) To the extent this indemnification clause or any other indemnification clause in this Agreement does not comply with Chapter 725, Florida Statutes, as may be amended, this provision and all aspects of the Contract Documents shall hereby be interpreted as the parties' intention for the indemnification clauses and Contract Documents to comply with Chapter 725, Florida Statutes, as may be amended.
- 5) This Section shall survive expiration or termination of this Agreement.

#### G. Audit Rights

- 1) Access to Records
  - a. The Contractor shall, during the term of this Contract and for a period of five years thereafter, allow the Owner and its duly authorized representatives to inspect all payroll records, invoices for materials, books of account, job cost ledgers, Project correspondence and Project-related files and all relevant records pertinent to the Contract.
  - b. The Owner retains the right to audit accounts and access all files, correspondence and documents in reference to all work performed under this Contract. The Owner shall be provided full access upon request to all documents, including those in possession of Subcontractors or suppliers during the work and for a period of five years after the completion of the Work. In case of any litigation regarding this Project, such rights shall extend until final settlement of such litigation. Failure to allow the Owner access shall be deemed a waiver of Contractor's claims.

- c. The Contractor shall maintain a banking account within Miami-Dade County for all payments to laborers, Subcontractors and vendors furnishing labor and materials under this Contract. All records shall be maintained in Miami-Dade County for the term of this Contract.

## 2) Inspector General

- a. According to Section 2-1076 of the Code of Miami-Dade County, Miami-Dade County has established the Office of the Inspector General (IG) which may, on a random basis, perform audits, inspections, and reviews of all, on any County/Trust contracts, throughout the duration of said contracts. This random audit is separate and distinct from any other audit by the County. To pay for the functions of the Office of the Inspector General, any and all payments to be made to the Contractor under this contract will be assessed one quarter (1/4) of one (1) percent of the total amount of the payment, to be deducted from each progress payment as the same becomes due unless this Contract is federally or state funded where federal or state law or regulations preclude such a charge or where such a charge is otherwise precluded by Special Condition. The Contractor shall, in stating its agreed prices, be mindful of this assessment which will not be separately identified, calculated or adjusted in the proposal or Bid Form.
- b. The Miami-Dade Office of the Inspector General is authorized to investigate County affairs and empowered to review past, present and proposed County and Public Health Trust programs, accounts, records, contracts and transactions. In addition, the Inspector General has the power to subpoena witnesses, administer oaths, require the production of witnesses and monitor existing Projects and programs. Monitoring of an existing Project or program may include a report concerning whether the Project is on time, within budget and in conformance with the Contract Documents and applicable law. The Inspector General shall have the power to audit, investigate, monitor, oversee, inspect and review operations, activities, performance and procurement process including but not limited to Project design, bid specifications, (bid/proposal) submittals, activities of the (Contractor/ Vendor/ Consultant), its officers, agents and employees, lobbyists, County and Public Health Trust staff and elected officials to ensure compliance with the Contract Documents and to detect fraud and corruption.
- c. Upon ten (10) days written notice to the Contractor, the Contractor shall make all requested records and documents available to the Inspector General for inspection and copying. The Inspector General is empowered to retain the services of independent private sector inspectors general to audit, investigate, monitor, oversee, inspect and review operations, activities, performance and procurement process including but not limited to Project design, bid specifications, (bid/proposal) submittals, activities of the (Contractor/ Vendor/ Consultant), its officers, agents and employees, lobbyists, County staff and elected officials to ensure compliance with the Contract Documents and to detect fraud and corruption.

- d. The Inspector General shall have the right to inspect and copy all documents and records in the (Contractor/Vendor/Consultant's) possession, custody or control which in the Inspector General's sole judgment, pertain to performance of the contract, including, but not limited to original estimate files, change order estimate files, worksheets, proposals and agreements from and with successful subcontractors and suppliers, all Project-related correspondence, memoranda, instructions, financial documents, construction documents, (bid/proposal) and contract documents, back-change documents, all documents and records which involve cash, trade or volume discounts, insurance proceeds, rebates, or dividends received, payroll and personnel records and supporting documentation for the aforesaid documents and records.
- e. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence regarding the acquisition (bid preparation) and performance of this contract, for examination, audit, or reproduction, until three (3) years after final payment under this contract or for any longer period required by statute or by other clauses of this contract. In addition:
  - i. If this contract is completely or partially terminated, the Contractor shall make available records relating to the work terminated until three (3) years after any resulting final termination settlement; and
  - ii. The Contractor shall make available records relating to appeals or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.
- f. The provisions in this section shall apply to the (Contractor/Vendor/Consultant), its officers, agents, employees, subcontractors and suppliers. The (Contractor/Vendor/Consultant) shall incorporate the provisions in this section in all subcontracts and all other agreements executed by the (Contractor/Vendor/Consultant) in connection with the performance of this contract.
- g. Nothing in this section shall impair any independent right to the Owner to conduct audits or investigative activities. The provisions of this section are neither intended nor shall they be construed to impose any liability on the Owner by the (Contractor/Vendor/Consultant) or third parties.

#### H. Severability

- 1) In the event any article, section, sub-article, paragraph, sentence, clause or phrase contained in the Contract Documents shall be determined, declared or adjudged invalid, illegal, unconstitutional or otherwise unenforceable, such determination, declaration or adjudication shall in no manner affect the other articles, sections, sub-articles,

paragraphs, sentences, clauses or phrases of the Contract Documents, which shall remain in full force and effect as if the article, section, sub-article, paragraph, sentence, clause or phrase declared, determined or adjudged invalid, illegal, unconstitutional or otherwise unenforceable was not originally contained in the Contract Documents.

I. Payment and Performance Bonds

1) The Contractor shall, as a condition of contract, provide to the County two separate bonds, one bonding payment and one bonding performance. Each bond shall be for no less than 100% of the total maximum contract amount. The payment bond and performance bond shall be in the forms requested under Sections 713.23 and 255.05, respectively, of the Florida Statutes. These bonds shall be in substantial compliance with the requirements of the forms attached hereto as \_\_\_\_\_.

a. The bonds shall be written through surety insurers authorized to do business in the State of Florida as Surety, with the following qualifications as to management and financial strength according to the latest edition of Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey:

<u>Bond (Total Contract) Amount</u>	<u>Best's Rating</u>
\$500,001 to \$1,500,000 .....	B V
\$1,500,001 to \$2,500,000 .....	A VI
\$2,500,001 to \$5,000,000 .....	A VII
\$5,000,000 to \$10,000,000 .....	A VIII Over
\$10,000,000 .....	A IX

2) On Contract amounts of \$500,000 or less, the Bond provisions of Section 287.0935, Florida Statutes shall be in effect and surety companies not otherwise qualifying with this paragraph may optionally qualify by:

- a. Providing evidence that the surety has twice the minimum surplus and capital required by the Florida Insurance Code at the time the Invitation to Bid is issued.
- b. Certifying that the surety is otherwise in compliance with the Florida Insurance Code, and
- c. Providing a copy of the currently valid Certificate of Authority issued by the United States Department of Treasury under 31 U.S.C. 93049308.

Surety insurers shall be listed in the latest Circular 570 of the U.S. Department of the Treasury entitled "Surety Companies Acceptable on Federal Bonds", published annually. The Bond amounts shall not exceed the underwriting limitations as shown in this circular.

3) For Contracts in excess of \$500,000 the provisions of the Contract Documents will be adhered to, plus the surety insurer must have been listed on the U.S. Treasury list for at



least three consecutive years, or currently hold a valid Certificate of Authority of at least 1.5 million dollars and listed on the Treasury list.

- 4) Payment and Performance Bonds guaranteed through U.S. Government Small Business Administration or Contractors Training and Development Inc. will also be acceptable.
- 5) The attorney-in-fact or other officer who signs Payment and Performance Bonds for a surety company must file with such Bonds a certified copy of his/her power of attorney authorizing him/her to do so.
- 6) The cost of the Bonds shall be included in the Bid.
- 7) The required Bonds shall be written by or through and shall be countersigned by, a licensed Florida agent of the surety insurer, pursuant to Section 624.425 of the Florida Statutes.
- 8) The Bonds shall be delivered to the Contracting Officer in accordance with the instructions within the Notice of Award.
- 9) In the event the Surety on the Payment and Performance Bonds given by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has its right to do business in its State of domicile or the State of Florida suspended or revoked as provided by law, the Owner shall withhold all payments under the provisions of these Contract Documents until the Contractor has given good and sufficient Bonds in lieu of Bonds executed by such Surety.
- 10) Cancellation of any Bonds, or non-payment by the Contractor of any premium for any Bonds required by this Contract, shall constitute a breach of this Contract. In addition to any other legal remedies, the Owner at its sole option may terminate this Contract or pay such premiums, and deduct the costs thereof from any amounts that are or may be due to the Contractor.

#### J. Insurance

The Contractor shall maintain the insurance set forth in the Special Provisions throughout the performance of this Contract until the Work has been completed by the Contractor and accepted by the Owner.

#### K. Conflict of Interest

- 1) The Contractor or his employees shall not enter into any Contract involving services or property with a person or business prohibited from transacting such business with Miami-Dade County pursuant to Section 2-11.1 of the Code of Miami-Dade County, Florida, known as the Miami-Dade County Conflict of Interest and Code of Ethics Ordinance.
- 2) In the event the Contractor, or any of its officers, partners, principals or employees are convicted of a crime arising out of, or in connection with, the work to be done or payment to be made under this Contract, this Contract, in whole or any part thereof may, at the discretion of the Owner, be terminated without prejudice to any other rights and remedies of the Owner under the law.

- 3) In accordance with the Code of Miami-Dade County, no officer or employee of Miami-Dade County during his tenure or for two years thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof.

L. Rights in Shop Drawings

- 1) Shop Drawings submitted to the Architect/Engineer by the Contractor, pursuant to the Work, may be duplicated by the Owner and the Owner may use and disclose, in any manner and for any purpose Shop Drawings delivered under this Contract.
- 2) This paragraph shall be included in all subcontracts hereunder at all tiers.

M. Patent and Copyright

- 1) If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the surety shall indemnify and save harmless the Owner, the Field Representative, and the Architect/Engineer from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the prosecution or after the completion of the work.
- 2) The Contractor shall warrant that the materials, equipment or devices used on or incorporated in the Work shall be delivered free of any rightful claim of any third party for infringement of any United States patent or copyright. The Contractor shall defend, or may settle, at his expense, any suit or proceeding against the Owner or the Architect/Engineer so far as based on a claimed patent or copyright infringement which would result in a breach of this warranty, and the Contractor shall pay all damages and costs awarded therein against the Owner or the Architect/Engineer due to such breach. The Contractor shall report to the Architect/Engineer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this Contract of which the Contractor has knowledge. In the event of any claim or suit against the Owner on account of any alleged patent or copyright infringement arising out of the performance of this Contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Owner when requested, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Contractor.
- 3) The Contractor shall bear all costs arising from the use of patented materials, equipment, devices or processes used on or incorporated in the Work. In such case materials, equipment, devices or processes are held to constitute an infringement and their use enjoined, the Contractor, at his expense shall:
  - a. Secure for the Owner the right to continue using said materials, equipment, devices or processes by suspension of the injunction or by procuring a license or licenses; or
  - b. Replace such materials, equipment, devices or processes with noninfringing materials, equipment, devices or processes; or

- c. Modify them so that they become non-infringing or remove the enjoined materials, equipment, devices or processes and refund the sum paid therefore without prejudice to any other rights of the Owner.
- 4) The preceding paragraph shall not apply to any materials, equipment or devices, specified by the Owner or the Architect/Engineer or manufactured to the design of the Owner or the Architect/Engineer or in accordance with the details contained in the Contract Documents; and as to any such materials, equipment or devices the Contractor assumes no liability whatsoever for patent or copyright infringement and the Owner will hold the Contractor harmless against any infringement claims arising therefrom.
- 5) Patent rights to patentable invention, item or ideas of every kind or nature arising out of the Work, as well as information, designs, specifications, knowhow, data and findings shall be made available to the Government for public use, unless the Owner shall, in specific cases where it is legally permissible, determine that it is in the public interest that it not be so made available.
- 6) The sense of this article shall be included in all subcontracts. The foregoing states the entire liability of the Contractor for patent or copy infringement by use of said materials, equipment or devices.

#### N. Historical, Scientific and Archaeological Discoveries

All articles of historical, scientific or archaeological interest uncovered by the Contractor during progress of the Work shall be preserved and reported immediately to the Architect/Engineer. Further operations of the Contractor with respect to the find, including disposition of the articles, will be decided by the Owner.

#### O. Use of Owner's Name in Contractor Advertising or Public Relations

The Owner reserves the right to review and approve Owner-related copy prior to publication. The Contractor shall not allow Owner-related copy to be published in Contractor's advertisement or public relations programs until submitting the Owner-related copy and receiving prior approval from the Owner. The Contractor shall agree that published information on the Owner or the Owner's program shall be factual and in no way imply that the Owner endorses the Contractor's firm, service or product. The Contractor shall insert the substance of this provision, including this sentence, in each subcontract and supply Contract or purchase order.

END OF ARTICLE

## **13. ATTACHMENTS**

(June 12, 2012)

END OF ARTICLE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT

WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

STANDARD GENERAL CONTRACT CONDITIONS

ATTACHMENT “ A “

Certificate of Acceptance for Substantial Completion

Certificate of Final Acceptance

**CERTIFICATE OF ACCEPTANCE FOR SUBSTANTIAL COMPLETION**

**RPQ No.:** \_\_\_\_\_

**Date :** \_\_\_\_\_

**Description :** \_\_\_\_\_

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

**Contractor :** \_\_\_\_\_

**Consultant :** \_\_\_\_\_

**Surety :** \_\_\_\_\_

*The work performed under the subject Contract has been reviewed, and subject to the Contract requirements of **Article 29, Substantial Completion, Final Inspection and Acceptance**, all remaining work has been found to be Substantially Completed as of \_\_\_\_\_.*

*A **Punch List** of items to be completed or corrected, is appended hereto.*

*In the event that the Work, including the Punch List items, is not corrected by the Contract Completion date, the Contract stipulations regarding **Liquidated Damages** will be imposed until such time as the work is certified by the County's Resident Engineer or its Consultant and the Director, MDT to be complete in all respects and a **Certificate of Final Acceptance** is issued.*

( COMPANY SEAL)

Signed : \_\_\_\_\_

**Contractor**

Recommended : \_\_\_\_\_

**Resident Engineer/Project Manager**

Recommended : \_\_\_\_\_

**Chief, Construction**

Certificate of Final Acceptance

RPQ No.:

Description:

Address:

Contractor:

Consultant:

Surety:

The **UNDERSIGNED** hereby certify that, to the best of our knowledge and belief, based on observations of the punch list work required under the terms of the Agreement, we have found that the Work items identified in the **PUNCH LIST**, dated \_\_\_\_\_ (“**PUNCH LIST**”) were completed as of \_\_\_\_\_. We therefore recommend that the **FINAL ACCEPTANCE DATE** be established as: \_\_\_\_\_

Notwithstanding the above, this Certificate shall not be construed as a finding regarding whether work performed on this Contract was done in accordance with all applicable Contract requirements, and the County expressly reserves all of its rights and claims under the Contract, or otherwise, to seek recovery or indemnity for any defects in materials, equipment, or workmanship, or for non-conformance with any Contract requirements.

Recommended : \_\_\_\_\_

**Resident Engineer/Project Manager**

Recommended : \_\_\_\_\_

**Chief, Construction**

:

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

STANDARD GENERAL CONTRACT CONDITIONS

ATTACHMENT “ B “

Contractor Release

Agreement on Final Quantities and Amounts

Final Affidavit

Labor Standards Provisions Final Certificate

Memorandum of Understanding

Certificate of Sub-Contractor Status

Final Release of Lien



**DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS**

**CONTRACTOR RELEASE**

**RPO No.:**

**KNOW ALL MEN BY THESE PRESENTS :** Pursuant to the terms of the Contract and in consideration of the sum of \_\_\_\_\_ paid by the *Miami-Dade County* under the Contract, the undersigned Contractor does, and by the receipt of said sum shall, for itself, its successors and assigns, remise, release and forever discharge MDC, its officers , agents and employees, of and from all liabilities, obligations, and claims whatsoever, in law and in equity, under or arising out of said Contract.

**IN WITNESS WHEREOF,** this release has been executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

( *COMPANY SEAL* )

\_\_\_\_\_

*Contractor*

\_\_\_\_\_

*Signature*

WITNESS :  
\_\_\_\_\_  
\_\_\_\_\_

*Print Name :* \_\_\_\_\_

*Print Title :* \_\_\_\_\_

**NOTE :** In the case of a corporation, witnesses are not required , but the *CERTIFICATE* below must be completed.

**CERTIFICATE**

I, \_\_\_\_\_, certify that I am the *Secretary* of the corporation named as Contractor in the foregoing release; that \_\_\_\_\_ who signed said release on behalf of the Contractor, was then \_\_\_\_\_ of said Corporation; that said release was duly signed for and on behalf of said corporation under the authority of its governing body, and within the scope of its corporate powers.

( *CORPORATE SEAL* )

\_\_\_\_\_

*Signature*

**DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS**

**AGREEMENT**

**ON**

**FINAL QUANTITIES AND AMOUNTS**

**RPO No.:**

The Contractor and Resident Engineer agree that the **QUANTITIES** as shown on the **FINAL PAY REQUEST No.** are **EQUITABLY** paid for by application of the agreed **LUMP SUM PRICES**.

It is finally agreed that the right in the Contract clause to request negotiation of a different amount is **WAIVED** by the Contractor and the Authorized Representative of the Contracting Officer.

( *Company Seal* )

\_\_\_\_\_  
*Contractor*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Print Name*

\_\_\_\_\_  
*Print Title*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Resident Engineer*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Print Name*

**DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS**

**FINAL AFFIDAVIT**

***RPQ No.:***

The undersigned Contractor, \_\_\_\_\_, certifies and warrants to ***Department of Transportation and Public Works*** that \_\_\_\_\_ has paid in full and completely discharged any and all claims, demands, obligations and liabilities of \_\_\_\_\_ in connection with or arising out of ***RPQ No.*** \_\_\_\_\_, including without limitation, all claims for labor performed and materials, supplies, equipment and other items furnished or used in connection with performance of said Contract.

( ***COMPANY SEAL*** )

***Contractor :*** \_\_\_\_\_

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

***Print Name :*** \_\_\_\_\_

***Print Title :*** \_\_\_\_\_

***Date :*** \_\_\_\_\_

**DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS**

**LABOR STANDARDS PROVISIONS**

**FINAL CERTIFICATE**

**RPQ No.:**

The undersigned Contractor, \_\_\_\_\_, hereby certifies that all laborers, mechanics, apprentices and trainees employed by him or by any Subcontractor performing work under the Contract on the project have been paid **wages at rates no less than those required by the Contract provisions**, and that the work performed by each laborer, mechanic, apprentice or trainee conformed to the classifications set forth in the Contract or training program provisions applicable to the wage rate paid.

EXCEPTION (S) :

**Contractor :** \_\_\_\_\_

( **COMPANY SEAL** )

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

**Print Name :** \_\_\_\_\_

**Print Title :** \_\_\_\_\_

**Date :** \_\_\_\_\_

## DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

### MEMORANDUM OF UNDERSTANDING

**RPQ No.:**

**WHEREAS,** \_\_\_\_\_, ( hereafter referred to as the " Contractor " ) and the *Miami-Dade Transit*, the parties hereto, have mutually agreed to the **total Contract amount** in the sum of \_\_\_\_\_ and a final payment of \_\_\_\_\_ for a **COMPLETE CLOSE-OUT** of *RPQ No.*

It is understood and expressly agreed that :

- (1) This Memorandum of Understanding is subject to the recommendations of the Assistant Director and the Director of Miami-Dade Transit.
- (2) In consideration of the payment by MDT of a **total Contract amount** of \_\_\_\_\_, ( inclusive of all finalized Change Orders ), the Contractor hereby withdraws with prejudice all Claims, Disputes, and Appeals of the Contractor or any of its Subcontractors or Suppliers under the subject Contract. MDT likewise, withdraws with prejudice, all Claims and/or Backcharges it has against the Contractor.
- (3) The retention withheld in *Pay Request No.* \_\_\_\_\_ is \_\_\_\_\_ and will be paid in full. Therefore, the Contractor acknowledges the final payment of \_\_\_\_\_ in *Pay Request No.* \_\_\_\_\_ as the outstanding balance due to date on the Contract.
- (4) MDT reserves the right to complete an audit upon the request of the Assistant Director, Engineering Services when warranted.
- (5) All terms and conditions of the Contract otherwise remain unchanged including the Contractor's liabilities for warranties, latent defects and the like.
- (6) The execution of this Memorandum and payment in accordance with these terms, and the finalized Contract Change Orders, shall constitute a full accord and satisfaction of all Claims and all rights of the parties against each other, except for claims of the Owner for latent defects discussed after the date of this Memorandum or for warranty items.

Memorandum of Understanding

Page 2

( COMPANY SEAL )

*Contractor* : \_\_\_\_\_

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

*Print Name* : \_\_\_\_\_

*Print Title* : \_\_\_\_\_

*Date* : \_\_\_\_\_

**RECOMMENDED**

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

Resident Engineer/Project Manager

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

Chief, Construction Division

**DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS**

**CERTIFICATE OF SUB-CONTRACTOR STATUS**

This is to certify that the following is a complete list of sub-contractors who worked on

**RPO No.:**

Name	Description of work	Original Contract Amount	Paid to date	Amount Owed

( COMPANY SEAL )

\_\_\_\_\_  
*Contractor*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Print Name & Title*

\_\_\_\_\_  
*Date*

ALL SUBCONTRACTORS WORKING ON THIS PROJECT MUST COMPLETE THIS FORM.

FINAL RELEASE OF LIEN

KNOW ALL PERSONS BY THESE PRESENTS:

That the undersigned, for and in consideration of the payment of the sum of \_\_\_\_\_ and \_\_\_\_\_ /100 dollars (\$\_\_\_\_\_) paid by the \_\_\_\_\_ receipt of which is hereby acknowledged, hereby releases and quit claims to the said \_\_\_\_\_ it successors and assigns, and \_\_\_\_\_ the owner, all liens, lien rights, claims or demands of any kind whatsoever, which the undersigned now has or might have against the building or premises legally \_\_\_\_\_ described \_\_\_\_\_ as \_\_\_\_\_ on account of labor performed and/or material furnished for the construction of any improvements thereon. That all labor and materials used by the undersigned in the erection of said improvements have been fully paid for.

IN WITNESS THEREOF, I have hereunto set my hand seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WITNESSES:

\_\_\_\_\_ (SEAL)

By \_\_\_\_\_

State of \_\_\_\_\_ )  
 ) ss

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

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_ by \_\_\_\_\_ on behalf of \_\_\_\_\_ [ ] who is personally known to me or [ ] who has produced \_\_\_\_\_ as identification and who [ ] did [ ] did not take an oath.

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

Notary Seal:



Type or Print Name: \_\_\_\_\_



DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

STANDARD GENERAL CONTRACT CONDITIONS

ATTACHMENT "C"

Sub-Contractor's/Supplier's Release of Claim

Consent of Surety Company to Requisition Payment

MIAMI-DADE COUNTY  
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
SUBCONTRACTOR'S / SUPPLIER'S RELEASE OF CLAIM

NOTE: The General Contractor shall attach this statement, completed by each Subcontractor whose work appears on the prior requisition for payment or has work in place since the last requisition for payment.

Project No.: \_\_\_\_\_ Date: \_\_\_\_\_

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

Subcontractor:  
\_\_\_\_\_

Requisition No.: \_\_\_\_\_ From: \_\_\_\_\_ To: \_\_\_\_\_

Before me, the undersigned authority, authorized to administer oaths and take acknowledgments appeared: \_\_\_\_\_ who, after being first duly sworn, upon oath, deposes and says that pursuant to the provisions of his contract for said project, all money due him under prior requisitions for payment have been paid to him by \_\_\_\_\_, the General Contractor.

(COMPANY SEAL)

\_\_\_\_\_  
Legal Name of Subcontractor

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

State of \_\_\_\_\_)

) ss

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

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ by \_\_\_\_\_ on behalf of \_\_\_\_\_.

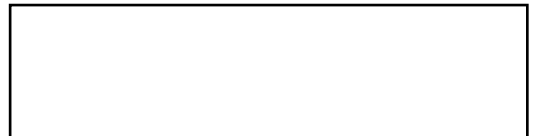
[ ] who is personally known to me or [ ] who has produced \_\_\_\_\_ as identification and who [ ] did [ ] did not take an oath.

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

Type or Print Name: \_\_\_\_\_

Notary Seal:

RPQ No.: TP-0000017889



**CONSENT OF SURETY COMPANY TO REQUISITION PAYMENT**



PROJECT No. \_\_\_\_\_

PROJECT TITLE: \_\_\_\_\_

PROJECT LOCATION: \_\_\_\_\_

TO: \_\_\_\_\_ Re: PAY REQUEST No. \_\_\_\_\_ DATE: \_\_\_\_\_

IN THE AMOUNT OF: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ RPQ No. \_\_\_\_\_

THE UNDERSIGNED SURETY COMPANY \_\_\_\_\_,

(INSERT NAME OF SURETY COMPANY)

\_\_\_\_\_, ON BOND OF

(ADDRESS)

THE CONTRACTOR LISTED ABOVE, HEREBY APPROVES THIS PAYMENT TO THE CONTRACTOR AND AGREES THAT THE PAYMENT TO THE CONTRACTOR SHALL NOT RELIEVE THE SURETY COMPANY OF ANY OF ITS OBLIGATIONS TO MIAMI-DADE COUNTY, INCLUDING THE SECURITY FROM ANY AND ALL LIENS, CLAIMS OR DEMANDS WHATSOEVER THAT MAY NOW EXIST OR BE MADE IN THE FUTURE BY ANY SUB-CONTRACTOR OR MATERIAL SUPPLIERS AGAINST THIS PROJECT AND CONTRACT.

THIS CONSENT OF SURETY RECOGNIZES THAT CLAIMS HAVE BEEN MADE BY THE FOLLOWING SUB-CONTRACTORS AND MATERIAL SUPPLIERS AGAINST THE CONTRACT IN THE AMOUNTS LISTED BELOW:

_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

SURETY RECOGNIZES THAT RELEASES OF LIEN OR RELEASES AND ASSIGNMENT OF CLAIM HAVE NOT BEEN REQUESTED OR RECEIVED FROM ALL THE SUB-CONTRACTORS AND MATERIAL SUPPLIERS FOR THIS FACILITY.

IN WITNESS THEREOF,

THE SURETY COMPANY HAS HEREUNTO SET ITS HAND THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

STANDARD GENERAL CONTRACT CONDITIONS

ATTACHMENT "D"

"Contractor Agent to Accept Service"



**DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS**

**CONTRACTOR AGENT TO ACCEPT SERVICE**

RPQ No.: \_\_\_\_\_

DATE: \_\_\_\_\_

CONTRACT TITLE: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

NOTICE TO PROCEED (NTP) DATE: \_\_\_\_\_

CONTRACTOR ADDRESS: \_\_\_\_\_

CONTRACTOR TELEPHONE No.: \_\_\_\_\_

AGENT'S NAME: \_\_\_\_\_

AGENT'S TITLE: \_\_\_\_\_

AGENT'S ADDRESS: \_\_\_\_\_

AGENT'S TELEPHONE No. \_\_\_\_\_

***Contractor Corporate Representative***

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

SIGNATURE

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

STANDARD GENERAL CONTRACT CONDITIONS

ATTACHMENT "E"

Force Account Daily Report:  
Labor, Material & Equipment

**FORCE ACCOUNT DAILY REPORT:**

DATE: \_\_\_\_\_



CONTRACTOR: \_\_\_\_\_

CONTRACT No. \_\_\_\_\_ REPORT No. \_\_\_\_\_

CONTRACT CHANGE NOTICE / MDT LETTER: \_\_\_\_\_ PAGE No. \_\_\_\_\_ of \_\_\_\_\_

**IMPORTANT-THIS FORM MUST BE SIGNED AND SUBMITTED NOT LATER THAN THE DAY FOLLOWING DATE WORK WAS PERFORMED.**

**The following work was performed this date requiring the use of the Labor Force, Materials, Equipment, Special Forces and Services listed hereon:**

Description of work performed:

LABOR					EQUIPMENT					
NAME	CRAFT	HRRAT	HOURS	TOTALS	MAKE	MODEL	DESCRIPTION	HOURS	RATE	EXT.

CERTIFIED CORRECT BY: _____	DATE _____
MATERIAL INVOICE ON UNIT PRICES TO BE PROVIDED.	

QUAN.	UNIT	DESCRIPTION	MATERIALS	RECAP
				LABOR
				MATERIALS
				EQUIPMENT

CERTIFIED CORRECT BY: _____	DATE _____	TOTAL THIS SHEET _____
<div style="border: 1px solid black; display: inline-block; padding: 2px;">FOR ENGINEER'S USE</div> APPROVED AS TO SUBSTANCE		EXTENSION OF LABOR, MATERIAL & EQUIPMENT VERIFIED BY:
BY: _____	DATE _____	INSPECTOR _____ DATE _____
RESIDENT ENGINEER		