

# CONTRACT SPECIFICATIONS

MIAMI-DADE COUNTY  
DEPARTMENT OF SOLID WASTE MANAGEMENT

## BID DOCUMENTS

60 YEAR RECERTIFICATION OF MOSQUITO  
CONTROL ADMINISTRATION BLDG. NO. 5 -  
STRUCTURAL & ELECTRICAL REPAIRS

CONTRACT No. CICC 7360 PLAN

RPQ No. 18624-25

CONTRACTING OFFICER: CARLOS PRIMO  
EMAIL: PRIMO@MIAMIDADE.GOV  
PHONE NO.: 305-514-6626

February 26, 2025



RPQ No. 18624-25

# INSTRUCTIONS TO BIDDERS

1. Only Bidders that attend the mandatory scheduled pre-bid/site visit meeting are eligible to submit a bid for this solicitation.
2. Please ensure all pertinent personnel, including subcontractors, are in attendance on the scheduled date and time of the mandatory pre-bid/site visit meeting. A second scheduled date is not guaranteed.
3. **VENDOR REGISTRATION:** Vendors seeking to do business with Miami-Dade County must register in INFORMS. Please click on this direct link <https://supplier.miamidade.gov> – Instructions on the following page.
4. Must be pre-qualified in the Miscellaneous Construction Contracts (MCC) program at the time of the award. Please contact the Small Business Development Certification Unit (**SBD**) at [sbdcert@miamidade.gov](mailto:sbdcert@miamidade.gov) or call 305-375-3111.
5. The unit price column in the bid form must be completed with a dollar amount per line item unless the requested total bid amount is for a lump sum. Failure to follow this instruction may cause your bid to be non-responsive.
6. Bids shall be submitted sealed with all necessary signed affidavits and supporting documentation included. Bids shall be mailed or delivered. No email bids shall be accepted.
7. In the case of a numerical or mathematical discrepancy in the bidder's submittal, the Grand Total Bid Amount, as listed in RPQ Bid Form - Attachment 5A, shall govern as the actual bid price. That number shall constitute the bidder's binding offer, notwithstanding contrary information elsewhere in the submittal.
8. Bidders are required to list the **four (4)** subcontractor firms on the Subcontracting Form. If your firm will perform the work, this information should be notated on the form. DO NOT leave any space blank next to a trade.
9. Method of Award: The method of award will be to the lowest responsive and responsible bidder. The prospective lowest bidder will be determined by calculating: Total Base Bid (sum of Lines **1** through **15** on the Bid Form), plus (+) Contingency Allowance (10% of Total Base Bid), plus (+) Reimbursable Expenses = Grand Total Bid Amount.

# MIAMI-DADE COUNTY VENDOR REGISTRATION

THANK YOU FOR YOUR INTEREST IN DOING BUSINESS WITH THE COUNTY

Please complete our easy to access online vendor registration at: <https://supplier.miamidade.gov>

1. Click **User Registration**
2. Click **Register Now**

## PART 1:

Complete the following General Business Information:

1. Welcome
2. Identifying Information
3. Addresses (include a Bill to Address)
4. Contacts
5. Categorization
6. Submit

Once completed, an email will be sent to you with login information. Log in and complete Part 2 of the registration.

## PART 2:

Requirements for PART 2 of the registration, complete **Affidavits Tab and Additional Information Tab.**

1. Click **My Bidder Profile**
2. Click **Affidavits Tab**
  - a. In the Affidavit 1 section, click the “owners” tab and enter all owners above 5% (if no owners above 5%, type “N/A”).
  - b. If another company owns this company, enter that information in the “Other Corps” field in the Affidavit 1 section.
  - c. Read and complete Affidavit 2-13
3. Click **Additional Information tab** (upload the below documents)
  - a. Local business tax receipt if company physical address is in Miami-Dade County
  - b. Certificate of Corporation
  - c. W-9 Form (<https://www.irs.gov/pub/irs-pdf/fw9.pdf>)
  - d. 147c IRS Form with your current business name and EIN number) OR any other preprinted IRS form issued by the IRS identifying your business name and EIN
  - e. Generate the Summary package, get it notarized, then re-upload to the system
4. Click **Submit**

If you have any questions or concerns, please contact the Vendor Outreach & Support Section at **(305) 375-5773**, or email [ISD-VSS@miamidade.gov](mailto:ISD-VSS@miamidade.gov).

To obtain this information in an accessible format, please contact Heidi Johnson-Wright at 305-375-2013.



Daniella Levine Cava, Mayor

June 25, 2024

**ATTENTION CONSTRUCTION FIRMS ON COUNTY CONTRACTS AND LEASES FOR CONSTRUCTION ON COUNTY OWNED LAND...**

On May 28, 2024, the Governor signed into law House Bill ("HB") 705. Prior to the adoption of HB 705, section 255.0992 of the Florida Statutes generally prohibited Miami-Dade County (the "County"), from requiring a contractor, subcontractor, or supplier to pay or provide a predetermined amount of wages or benefits to its employees or recruit or hire employees from a designated or restricted source in construction projects paid for with any state-appropriated funds. Additionally, under the same statute, the County could not apply small business measures or limit bidding among Small Business Enterprise-Construction ("SBE-Con") firms for construction projects paid for with any state funds. However, for contracts funded solely with County funds, prior to the adoption of HB 705, section 255.0992 did not limit the application of the County's SBE-Con program, responsible wages, or workforce requirements.

HB 705 revised the definition of the term "public works project" in Section 255.0992, Florida Statutes to **include activities paid for with local County funds, making the various prohibitions found in section 255.0992 applicable to County funded construction contracts.** Thus, in light of the passing of HB 705, effective July 1, 2024, the following prohibitions exist:

- The County's Responsible Wages & Benefits, Community Workforce, Residents First Training and Employment and Employ Miami-Dade Program requirements will not be applied to the County's capital construction projects, including design-build projects, **awarded after July 1, 2024.**
- The County's SBE-Con requirements cannot be applied on any capital construction projects, including design-build projects, **if initial bids or proposals are received on or after July 1, 2024.**

**Small Business Enterprise, Responsible Wages and Benefits, Community Workforce Program, Residents First Training and Employment and Employ Miami-Dade Program requirements applied to construction contracts awarded prior to July 1, 2024 remain in effect and shall continue to be applied throughout the life of the project.** As such, contractors and subcontractors must comply with all program requirements which include but are not limited to the following:

- Primes must enter into contracts with SBEs for scope and value listed on Utilization Plans and promptly pay requisitions within two days of receipt of payment from the County, or as provided in the Code, and meet established SBE contract goals or set-aside measures.
- Primes must report payments to SBEs in the Business Management Workforce System and SBEs must confirm payments reported by primes.
- Primes and subcontractors must continue to pay employees the Responsible Wages in effect at the time work is performed and submit certified payrolls by the 10<sup>th</sup> of each month in LCPtracker.
- Primes and subcontractors must continue to meet established workforce requirements.

Please contact the Office of Small Business Development at 305-375-3111 with any questions regarding compliance with your existing contracts.

c: Miami-Dade County Project Managers



# BID DOCUMENTS - TABLE OF CONTENTS

**PROJECT NAME: 60 YEAR RECERTIFICATION OF MOSQUITO CONTROL  
ADMINISTRATION BLDG. NO. 5 - STRUCTURAL & ELECTRICAL REPAIRS  
RPQ NO: 18624-25**

## REQUEST FOR PRICE QUOTATION (RPQ)

## MINIMUM QUALIFICATIONS AND REQUIREMENTS

### FORMS FOR BIDDING (MUST ACCOMPANY BID)

- RPQ Bid Form - Attachment 5A
- Bid Form
- Surety Bid Bond (*required for all bids over \$200k*) (*5% of Total Bid Price*)
- Confirmation of Addendums (*if applicable*) (*to be completed by Bidder*)
- All Addendum(s) (*if applicable*) (*must be signed by Bidder*)
- Bid Submittal Check List Questionnaire Appendix "D" (*select proper classification of your firm. Corporations must include a certified copy of their resolution of the Board of Directors*)
- Business References (*References provided must show experience/qualifications for similar services requested in this solicitation*)
- Firm's Responsibility Combined Affidavit (*sign and notarize*)
- Contracting with Entities of Foreign Countries of Concern Prohibited Affidavit
- Subcontracting Form

### CONTRACT FORMS (CONDITION OF AWARD)

- Surety Performance and Payment Bond (*required for all bids over \$200k*)
- Non Collusion Affidavit
- Kidnapping, Custody Offenses, Human Trafficking and Related Offenses Affidavit
- Certificate(s) of Insurance (*to be submitted by Bidder*)

### ADDITIONAL CONTRACT DOCUMENTS

- Standard Construction General Contract Conditions
- Special Provisions
- Indemnification and Insurance
- Attachments A through F

### SPECIFICATIONS

- Scope of Work
- Technical Specifications
- Drawings

Department of Solid Waste Management  
 Dr. Martin Luther King Jr. Office Plaza  
 2525 NW 62 Street, Suite 5100  
 Miami, FL 33147



MIAMI-DADE COUNTY, FLORIDA  
 REQUEST FOR PRICE QUOTATION (RPQ)  
 Contract No: MCC 7360 Plan  
 RPQ No: 18624-25

This RPQ is issued under the terms and conditions of the MCC 7360 Plan .

Date Issued: 1/22/2026 Bid Date Due: 3/26/2026 Time Due: 02:00 PM

Bid shall be Submitted Via: Sealed Envelope to:

Name: Department of Solid Waste Management Email: primo@miamidade.gov  
 Address: 2525 NW 62 ST, MIAMI, FL 33147 Fax: 305-000-0000

RPQ Added: 1/21/2026 User Bidder Request: 2/23/2026 Bond Adm./OMB Approval: 2/26/2026 Bidders Added: 2/26/2026

Project Number: 18624-25 Estimated Value: \$151,521.53  
 (excluding contingencies and dedicated allowances)

Project Name: 60 YEAR RECERTIFICATION OF MOSQUITO CONTROL ADMIN BLDG NO 5 - STRUCTURAL AND ELECTRICAL REPAIRS Emergency: N

Project Location: 8901 NW 58 ST, MIAMI, FL 33178 ESP: N

Department Contact: Carlos Primo Phone No: (305) 375-4956 Fax No: 305-000-0000

Project Manager: Carlos Primo Phone No: 3055146691 Fax No: 305-000-0000

Document Pickup: Contact: CARLOS PRIMO Phone: 3055146626 Date:

Document Pickup: Location: WILL BE SENT VIA EMAIL

	Mandatory:	Date:	Time:	Location:
PreBid Meeting: <u>Y</u>	<u>Y</u>	<u>3/5/2026</u>	<u>10:00 AM</u>	<u>8901 NW 58 ST, MIAMI, FL 33178</u>
Site Meeting: <u>Y</u>	<u>Y</u>	<u>3/5/2026</u>	<u>10:00 AM</u>	<u>8901 NW 58 ST, MIAMI, FL 33178</u>

Type of Contract: Multiple Trade Method of Award: Lowest Responsible Bidder

Performance/Payment Bond Required: N Bid Bond Required: N Insurance Required: Y

Addition Insurance Required: N Addition Insurance Amount: \$0.00

CIIP Funded: N Funded or reimbursed by LAP Agreements with FDOT: N

Comm Dist: District 12 Davis Bacon: N Maintenance Wages: N AIPP: N \$0.00

Date Advertised: 2/26/2026

SBE-S Requirements: N 0.00% SBE-Services Commodity Set-Aside: N

SBE-G Requirements: N 0.00% SBE-Goods Commodity Set-Aside: N

DBE Requirements: N 0.00% DBE Subcontract Forms Required: N

Trade(s): Building Contractor (Primary), General Building Contractor (Primary), Concrete Work (Sub), Electrical Contractor (Sub), Miscellaneous Metals (Sub), Painting (Sub)

Anticipated Start Date: 5/26/2026 Calendar Days for Project Completion: 120

Liquidated Damages / \$\$ Per day: Y \$349.20 Method of Payment: Scheduled Monthly Payments

CAPITAL BUDGET PROJECT # - DESCRIPTION	MCC ESTIMATE
999999999- Non Capital Project	\$151,521.53

FUNDING SOURCE:

SOURCE	PROJECT NUM	SITE #	MCC ESTIMATE
General Fund Contribution	<u>N/A</u>	<u>N/A</u>	<u>\$151,521.53</u>

<b>Awarded To:</b>	<b>SBE-Con. Exp Date:</b>	<b>Paid Amt: <u>\$0.00</u></b>	
<b>Collusion Affidavit Received: <u>N</u></b>	<b>Date Collusion Affidavit Received:</b>		
<b>Base Amt: <u>\$0.00</u></b>	<b>Cont Amt: <u>\$0.00</u></b>	<b>Ded Amt: <u>\$0.00</u></b>	<b>Award Amt: <u>\$0.00</u></b>
<b>Insurance:</b>	<b>SPD Reviewed: <u>N</u></b>	<b>Date Approved:</b>	<b>GL Ins Exp Dt:</b>
<b>P &amp; P Bond:</b>	<b>Risk Approved: <u>N</u></b>	<b>Date Approved:</b>	<b>WC Ins Exp Dt:</b>
			<b>AL Ins Exp Dt:</b>

**Scope of Work:** (Contractor must obtain and submit all permits prior to performing any work.)

Site Hours of Operation: Monday – Friday, 7am-3:30 pm  
 Work Hours: Monday – Saturday, 7am-5 pm

• Requests for approval to work outside of regular working hours must be submitted to the Owner at least 48 hours prior to any proposed work. This requirement applies to all weekend work and any extended work hours during weekdays.

**Project Description:**

The work consists of furnishing all materials, labor, and equipment to perform the necessary structural and electrical repairs required for the 60 Year Recertification of the Mosquito Control Administration Building (Building No. 5) located at 8901 NW 58th Street, Miami, FL 33178. These repairs are required to comply with the minimum inspection procedural guidelines for Building Recertification, Parking Lot Illumination and Parking Lot Guardrails.

The contractor shall be responsible for the following:

Structural repairs to include but are not limited to:

1. Repair of cracks on stucco and walls.
2. Repair of concrete spalling on exterior and interior walls.
3. Clean and paint rusted steel beams, purling, joists, columns and connections.
4. Clean and paint the exterior and interior masonry and concrete walls.
5. Replacement of damaged expansion joints.
6. Replacement of sealant around air conditioning ducts.

Electrical repairs to include but are not limited to:

1. Install new outdoor light above the main entrance door (on wall).
2. Secure existing low-voltage conductors.
3. Remove existing low-voltage communication cables.
4. Install new communications cables.
5. Verify the existing grounding system.

**Additional Information**

- Awarded Contractor shall coordinate with County personnel and with the Engineer to phase the work in a manner to minimize impact to office activities.
- Building No. 5 will be unoccupied for a period of ten (10) consecutive days to allow for the completion of steel purlin, beams, and columns cleaning and painting work. Work may begin on a Thursday after regular working hours or on a Friday morning.

<b>Design Drawings Included: <u>Y</u></b>	<b>Shop Drawings Included: <u>N</u></b>	<b>Specifications Included: <u>Y</u></b>
<b>Project Qualifier: SYLVIA RODRIGUEZ</b>	<b>Phone No: <u>3055146691</u></b>	<b>EMail: <u>Sylvia.Rodriguez@miamidade.gov</u></b>

**Comments:**

*In accordance with Miami-Dade County Implementing Order 3-9, Accounts Receivable Adjustments, if money is owed by the Contractor to the County, whether under this Contract or for any other purpose, the County reserves the right to retain such amount from payment due by County to the Contractor under this Contract. Such retained amount shall be applied to the amount owed by the Contractor to the County. The Contractor shall have no further claim to such retained amounts which shall be deemed full accord and satisfaction of the amount due by the County to the Contractor for the applicable payment due herein.*

*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).*

*All Projects, where the prices received are in excess of \$200,000 will require the submission of the Payment and Performance Bond as required by State of Florida Statute.*

1. DEADLINE FOR RECEIPT OF RFI QUESTIONS: By 4:00 P.M, EST., on 03/12/2026.

Submit Request for Information (RFI's) to primo@miamidade.gov with copy to gibsy.nunezdavila@miamidade.gov and clerkbcc@miamidade.gov

2. This Request for Price Quotation (RPQ) is for a Miscellaneous Construction Contract. All terms and conditions of the MCC Program are part of this contract and will be enforced.

3. Unless specified in the bid form, all applicable permit fees must be paid by selected contractor.

4. In the event the lowest responsible and responsive bid amount exceeds the project's cost estimate, Miami Dade County may hold a meeting to request further cost reductions to align the bid amount with the project's cost estimate. However, Miami Dade County will not engage in any type of negotiations or modifications of the original scope, terms or conditions other than the price reduction.

5. Refer to Article 2.14 below of the MCC Program to further clarify the license requirements:

#### 2.14 LICENSE QUALIFICATIONS OF CONTRACTORS:

A) All Contractors must hold a current valid State of Florida Certified General Contractor License, as required by the Florida Building Code, for the types of Work covered by the Contract at the time of RPQ submission and maintain the same throughout the duration of the project. The certificate(s) is to be issued by: The State of Florida Construction Industry Licensing Board, pursuant to the provisions of Section 489.115 of the Florida Statute and registered with the Miami-Dade County Building Department or, The Dade County Construction Trades Qualifying Board, pursuant to the provisions of Section 10-3(a) of the County Code. Holders of Miami-Dade County Certificates of Competency must also hold Certificates of Registration issued by the State of Florida Construction Licensing Board, pursuant to the provisions of Section 489.115 or Section 489.117 of the Florida Statutes.

B) 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.

C) Subsequent to the commencement of the Contract, the County may require specific qualifications based on a Project's scope of work. Such requirements will be included within the RPQ.

6. PRIME CONTRACTOR MUST BE ABLE TO PULL MASTER PERMIT.

7. Per Florida Statute 255.078, 5% retainage will be held for construction projects greater than \$200,000.00.

8. Inspector General fees are applicable to this project.

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## MINIMUM QUALIFICATIONS AND REQUIREMENTS

**Prime Contractor and or Subcontractor is highly preferred to have the following:**

- Highly preferred to have completed a minimum of three (3) similar repair, rehabilitation and restoration of concrete structures projects in facilities of similar scope, size, materials, and environmental exposures in the last five (5) years.

**Prime Contractor must provide with their bid the following information:**

- Provide complete description of capability and history of the Contractor.
- Proof of experience documentation must accompany bid submittal. Any prior experience of the Prime Contractor's key personnel will also be considered in meeting such minimum experience specifications.



## RPQ BID FORM - ATTACHMENT 5A

**Project Name: 60 Year Recertification of Mosquito Control Administration Bldg. No.5 - Structural & Electrical Repairs**

**RPQ No.: 18624-25**

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**GRAND TOTAL BID AMOUNT: \$** \_\_\_\_\_

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

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

Print/Type

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

**Bidder's Authorized Representative's Name:** \_\_\_\_\_

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

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

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**Note:** Quotes must be submitted on this form. All submittal envelopes 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. The 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*.

In accordance with Miami-Dade County Implementing Order 3-9, Accounts Receivable Adjustments, if money is owed by the Contractor to the County, whether under this Contract or for any other purpose, the County reserves the right to retain such amount from payment due by County to the Contractor under this Contract. Such retained amount shall be applied to the amount owed by the Contractor to the County. The Contractor shall have no further claim to such retained amounts which shall be deemed full accord and satisfaction of the amount due by the County to the Contractor for the applicable payment due herein.

**Attachment 5A**

**PROJECT NAME: 60 Year Recertification of Mosquito Control Administration Bldg. No. 5 –  
Structural & Electrical Repairs  
RPQ No. 18624-25**

**BID FORM**

**TO BE COMPLETED BY BIDDER AT BID SUBMISSION (A UNIT PRICE MUST BE ENTERED PER LINE)**

<b>Line Item</b>	<b>DESCRIPTION</b>	<b>UOM</b>	<b>EST. QTY</b>	<b>UNIT PRICE</b>	<b>TOTAL PRICE</b>
1	MOBILIZATION / DEMOBILIZATION	LS	1	\$	\$
2	CMU SPALLING REPAIRS	SF	9	\$	\$
3	CMU CRACKS	LF	21	\$	\$
4	STUCCO REPAIRS	SF	22	\$	\$
5	STUCCO CRACKS	SF	103	\$	\$
6	STEEL PURLINS, BEAMS, COLUMNS AND CONNECTIONS TO BE CLEANED AND PAINTED	LS	1	\$	\$
7	DAMAGED PANEL SKIRT TO BE REPLACED	SF	16	\$	\$
8	NEW HARD PANEL ON EXPOSED BUILDING SKIRT	SF	32	\$	\$
9	EXTERIOR STEPS EXPANSION JOINT REPLACEMENT	LF	5	\$	\$
10	JOINT SEALANT AROUND A/C WALL MOUNTED UNITS	LF	36	\$	\$
11	EXTERIOR PAINTING FACADE	SF	5,640	\$	\$
12	ATTACHING LOW-VOLTAGE CONDUCTORS TO WALL (PER NEC)	UNIT	1	\$	\$
13	WALLPACK LIGHT INSTALLATION	UNIT	1	\$	\$
14	REMOVING OLD LOW-VOLTAGE CABLE FROM HVAC DISCONNECT	UNIT	1	\$	\$
15	INSTALLING NEW COMMUNICATION CABLE / CONDUIT FROM HVAC TO THERMOSTAT	UNIT	1	\$	\$
<b>TOTAL BASE BID</b>					<b>\$</b>

<b>DESCRIPTION</b>	<b>TOTAL</b>
<b>ALLOWANCE ACCOUNT FOR UNFORESEEN CHANGES, 10 % OF BASE BID</b>	<b>\$</b>

(A *Contingency Allowance* has been established for the purpose of funding portions of the work which are unforeseeable at the time of contract award. It is understood that any unspent amount of the allowance account is to remain with the County.)

<b>DESCRIPTION</b>	<b>TOTAL</b>
<b>REIMBURSABLE EXPENSES (PERMITS)</b>	<b>\$ 4,248.27</b>

(It is understood that any unspent amount of *Reimbursable Expenses* is to remain with the County.)

**GRAND TOTAL BID AMOUNT:**

\$	
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THE GRAND TOTAL BID AMOUNT LISTED ABOVE SHALL BE INCLUSIVE OF TOTAL BASE BID PLUS 10% CONTINGENCY ALLOWANCE FOR UNFORESEEN CHANGES, AND ANY REIMBURSABLES.

**GRAND TOTAL BID AMOUNT for THE SUM OF:**

\_\_\_\_\_ Dollars and/ \_\_\_\_\_ Cents.  
(PRINT DOLLAR AMOUNT)

**\*\* YOU ARE REQUIRED TO TRANSFER THE GRAND TOTAL BID AMOUNT TO FORM ATTACHMENT 5A. \*\***

THE BIDDER UNDERSTANDS AND AGREES THAT THE ABOVE GRAND TOTAL BID AMOUNT IS INCLUSIVE OF ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS.

Pursuant to Miami-Dade County Ordinance 94-34, 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 prior to entering into a contract with or receiving funding from the County.

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

Please List: \_\_\_\_\_

**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.

**Acknowledgment of Waiver:**

**Bidder's Authorized Representative's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Print/Type Name:** \_\_\_\_\_ **Print/Type Title:** \_\_\_\_\_

It is hereby certified and affirmed that the bidder shall accept any awards made as a result of this solicitation. If awarded a purchases order or contract as a result of this solicitation, the Bidder further agrees that all work shall be performed as specified in the Contract Documents, and that prices quoted shall remain fixed and firm for the term of the contract.

Print/Type

**Bidder's Name:** \_\_\_\_\_ **F.E.I.N. No.:** \_\_\_\_\_

**Address:** \_\_\_\_\_ **City:** \_\_\_\_\_ **State:** \_\_\_\_\_

**Bidder's Authorized Representative's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Name:** \_\_\_\_\_ **Print/Type Title:** \_\_\_\_\_

**Email:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

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

## SURETY BID BOND

By this Bond, we \_\_\_\_\_, as Principal, whose principal business address is \_\_\_\_\_, as respondent to the contract offering due \_\_\_\_\_, 20 \_\_\_\_, For Miami-Dade County construction of Department of Solid Waste Management's *60 YEAR RECERTIFICATION OF MOSQUITO CONTROL ADMINISTRATION BLDG. NO. 5 – STRUCTURAL & ELECTRICAL REPAIRS*, Contract No. MCC 7360, RPQ No. 18624-25, (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 \_\_\_\_\_ (5% of the Total Bid Price in 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 Principal:

1. Whose submittal is found to be responsive to the solicitation, offered by a responsible contractor, is the lowest such responsive and responsible bid and is found to be in the best interest of the County shall be recommended for award by the County Manager; and
2. This Notice of Contract Award will be given to the successful respondent by a registered or certified letter to the address stated in the submittal package by the prospective Contractor; and
3. Upon receipt of Notice of Contract Award, the respondent to whom a Contract is awarded will be required to execute, in four (4) counterparts, each of which shall be deemed an original, including but not limited to, the prescribed Contract Document and if applicable, Performance and Payment Bonds within ten (10) calendar days from the date of notice to him that the Contract document is ready for execution. The required Insurance Certificates and Policies, as stated in the General Covenants and Conditions, shall also be delivered within this ten (10) day period.

The Respondent further agrees that, in the event he withdraws his bid, after proper notification of intent to Contract from the County, within ninety (90) days after the date of the submittal package opening, or fails to comply with all requirements to contract with Miami-Dade County or in the event he fails to comply with the Contract Documents or in the event he fails to enter into a written Contract with Miami-Dade-County, Florida, in accordance with the submittal package as accepted and provide required Bond(s) with good and sufficient surety and provide the necessary Insurance Certificates, as may be required, all within ten (10) days after the prescribed forms are presented to him for signature, the check or Bid Bond accompanying his submittal package, and the monies payable thereon, shall become the property of and be retained and used by Miami-Dade-County as liquidated damages, and not as a penalty; otherwise, the certified check or Bid Bond shall be returned by Miami-Dade-County to the undersigned.

By executing this instrument Surety agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the County. Notice to the Surety of extensions is waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

**SURETY BID BOND (Cont'd)**

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.

IN WITNESS WHEREOF, the above bounded 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 Venturer)

(SEAL OR INITIAL)

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)



MIAMI-DADE COUNTY
DEPARTMENT OF SOLID WASTE MANAGEMENT

Project Name: 60 Year Recertification of Mosquito Control
Administration Building (Bldg. No.5) - Structural & Electrical
Repairs
RPQ No.: 18624-25

Confirmation of Addendums

To: Miami-Dade County
Board of County Commissioners
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 referenced title project
name, the forms for the Submittal of Bids and

- 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), 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.

# QUESTIONNAIRE

## Appendix D



**IN ORDER TO PROVIDE INFORMATION NECESSARY IN DETERMINING THE QUALIFICATIONS OF THE PROPOSER, EACH PROSPECTIVE CONTRACTOR IS REQUIRED TO ANSWER THE FOLLOWING:**

#	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 a registered Contractor with the Miami-Dade County, Department of Procurement Management?	<input type="checkbox"/> YES <input type="checkbox"/> NO
7	Have you initialed each page and executed the last page of the Combined Affidavit?	<input type="checkbox"/> YES <input type="checkbox"/> NO
8	Have you completed the Ownership Disclosure Form?	<input type="checkbox"/> YES <input type="checkbox"/> NO
9	Have you made any changes or written any codicils to the Contract Proposal?	<input type="checkbox"/> YES <input type="checkbox"/> NO
10	How many previous Contracts with Miami-Dade County in the past five (5) years?	_____
11	Total dollar value of Contracts with Miami-Dade County in the past five (5) years?	_____
12	How many years has your Company been in business with the same Principals?	_____
13	Is your Bid Bond included with your submitted proposal?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A

# QUESTIONNAIRE

## Appendix D



### WHEN THE CONTRACTOR IS A CORPORATION:

**(CORPORATION SEAL)**

(Name of Corporation)

ATTEST

By: \_\_\_\_\_  
(Secretary) \_\_\_\_\_ (Signature of Officer)  
\_\_\_\_\_  
(Print or type name) \_\_\_\_\_ (Print or type name)  
\_\_\_\_\_  
(Official Title)  
\_\_\_\_\_  
\_\_\_\_\_  
(Address)

(PARTY OF THE SECOND PART)

Attach to each counterpart a certified copy of a resolution of the Board of Directors of the corporation authorizing the officer who signs the Contract, the Performance Bond and Payment Bond to do so in its behalf.

-----  

### WHEN THE CONTRACTOR IS A JOINT VENTURE:

\_\_\_\_\_  
(Name of Joint Venture)

By: \_\_\_\_\_  
(Signature of Joint Venture) \_\_\_\_\_ (Signature of Joint Venture)  
\_\_\_\_\_  
(Print or type name) \_\_\_\_\_ (Print or type name)  
\_\_\_\_\_  
(Title) \_\_\_\_\_ (Title)  
\_\_\_\_\_  
\_\_\_\_\_  
(Address)

NOTE: Complete Joint Venture in accordance with Section 5 of the Instructions to Prospective Contractors.

# QUESTIONNAIRE

## Appendix D



WHEN THE CONTRACTOR IS A SOLE PROPRIETORSHIP  
OR OPERATES UNDER A TRADE NAME:

\_\_\_\_\_  
(Name of firm if applicable) (Address)

By: \_\_\_\_\_  
(Witness signature) (Signature of individual)

By: \_\_\_\_\_  
(Print or type name) (Print or type name)

By: \_\_\_\_\_  
(Witness signature)

By: \_\_\_\_\_  
(Print or type name)

### ACKNOWLEDGEMENT:

STATE OF )  
)SS.:  
COUNTY OF )

Before me personally appeared \_\_\_\_\_ to me well known and known to me to be the person described in and who executed the foregoing instrument, and acknowledged to and before me that \_\_\_\_\_ executed said instrument for the purposes therein expressed.

WITNESS my hand and official seal, this \_\_\_\_\_ day of \_\_\_\_\_, AD 20\_\_.

Notary Public \_\_\_\_\_

State of \_\_\_\_\_ at large

My Commission expires \_\_\_\_\_.

# QUESTIONNAIRE

## Appendix D



WHEN THE CONTRACTOR IS AN INDIVIDUAL:

By: \_\_\_\_\_  
(Witness signature) (Signature of individual)

By: \_\_\_\_\_  
(Print or type name) (Print or type name)

By: \_\_\_\_\_  
(Witness signature) (Address)

By: \_\_\_\_\_  
(Print or type name)

(PARTY OF THE SECOND PART)

ACKNOWLEDGEMENT:

STATE OF )  
)SS.:  
COUNTY OF )

Before me personally appeared \_\_\_\_\_ to me well known and known to me to be the person described in and who executed the foregoing instrument, and acknowledged to and before me that \_\_\_\_\_ executed said instrument for the purposes therein expressed.

WITNESS my hand and official seal, this \_\_\_\_\_ day of \_\_\_\_\_, AD 20\_\_.

Notary Public \_\_\_\_\_

State of \_\_\_\_\_ at large

My Commission expires \_\_\_\_\_.

**MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT LIST OF BUSINESS REFERENCES**

This list of references is an integral part of the Contractor's Bid and must be completed. All references, information and certifications shall be current and traceable.

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

List a minimum of three (3) projects which your organization has completed within the last five (5) years, and which demonstrate qualifications to perform the work of this Contract.

				CONTRACT INFORMATION OF OWNER / CLIENT AND ENGINEER OR ARCHITECT	
COMPLETION DATE	CONTRACT PRICE	TYPE OF CONSTRUCTION	LOCATION OF WORK	EMAIL ADDRESS / PHONE NUMBER	PHYSICAL ADDRESS / PHONE NUMBER



**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**

---

**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.

**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

Combined Affidavit Initial

\_\_\_\_\_



**CONTRACTING WITH ENTITIES OF FOREIGN COUNTRIES OF CONCERN PROHIBITED  
AFFIDAVIT**

The Contracting with Entities of Foreign Countries of Concern Prohibited Affidavit Form ("Form") is required by [Section 287.138, Florida Statutes \("F.S."\)](#), which is deemed as being expressly incorporated into this Form. The Affidavit must be completed by a person authorized to make this attestation on behalf of the Bidder/Proposer for the purpose of submitting a bid, proposal, quote, or other response, or otherwise entering into a contract with the County. The associated bid, proposal, quote, or other response will not be accepted unless and until this completed and executed Affidavit is submitted to the County.

_____ does not meet any of the criteria set forth in Paragraphs 2 (a) – (c) <small>Bidder's/Proposer's Legal Company Name</small> of <a href="#">Section 287.138, F.S.</a>
Pursuant to Section 92.525, F.S., under penalties of perjury, I declare that I have read the foregoing statement and that the facts stated in it are true.
Print Name of Bidder's/Proposer's Authorized Representative: _____
Title of Bidder's/Proposer's Authorized Representative: _____
Signature of Bidder's/Proposer's Authorized Representative: _____
Date: _____

## SUBCONTRACTING FORM

Solicitation/RPQ Number \_\_\_\_\_

Vendor Name \_\_\_\_\_

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

Complete "A" or "B":

- A. No subcontractors or direct suppliers will be utilized pursuant to this solicitation.
- B. The below listed subcontractors and/or suppliers will be utilized pursuant to this solicitation:

Business Name and Address of First Tier Subcontractor/ Subconsultant	FEIN	Name of Principal Owner	Scope of Work to be Performed by Subcontractor /Subconsultant	Subcontractor / Subconsultant License (if applicable)
Business Name and Address of First Tier Direct Supplier	FEIN	Name of Principal Owner	Supplies, Materials, and/or Services to be Provided by Supplier	

And

	<b>Below and/or attached is a detailed statement of the firm's policies and procedures for awarding subcontractors/subconsultants:</b>

**(Duplicate this form if additional space is needed to provide the required information)**

When Subcontracting is allowed and subcontractors will be utilized, the Contractor shall comply with Section 2-8.8 of the Code – Fair Subcontracting Practices: (1) Prior to contract award, the Bidder shall provide a detailed statement of its policies and procedures for awarding subcontracts and (2) As a condition of final payment under a contract, the Contractor shall identify subcontractors/subconsultants used in the work, the amount of each subcontract, and the amount paid and to be paid to each subcontractor/subconsultant via the Business Management Workforce System (BMWS) at <http://mdcsbd.gob2g.com>.

Pursuant to Section 2-8.1(f) of the Code – Listing of subcontractors required on certain contracts, for all contracts which involve the expenditure of one hundred thousand dollars (\$100,000) or more, the entity contracting with the County must report to the County the race, gender, and ethnic origin of the owners and employees of its first tier subcontractors/subconsultants and suppliers via the BMWS at <http://mdcsbd.gob2g.com>. The race, gender, and ethnic information must be submitted via BMWS as soon as reasonably available and, in any event, prior to final payment under the Contract. The Contractor shall not change or substitute first tier subcontractors/subconsultants or direct suppliers or the portions of the Contract work to be performed or materials to be supplied from those identified except upon written approval of the County.

*I certify that the information contained in this form is to the best of my knowledge true and accurate.*

\_\_\_\_\_  
**Signature of Vendor's Representative**                      **Print Name**                      **Print Title**                      **Date**

## CONTRACT FORMS (CONDTION OF AWARD)

- Surety Performance & Payment Bond (*required for all bids over \$200k*)
- Non-Collusion Affidavit
- Kidnapping, Custody Offenses, Human Trafficking & Related Offenses Affidavit
- Certificate(s) of Insurance (to be submitted by Bidder)

## 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 and Miami-Dade County for the construction of the Department of Solid Waste Management's *60 YEAR RECERTIFICATION OF MOSQUITO CONTROL ADMINISTRATION BLDG. NO. 5 – STRUCTURAL & ELECTRICAL REPAIRS* Contract No. MCC 7360, RPQ No. 18624-25 (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 BOND (Cont'd)**

IN WITNESS WHEREOF, the above-bounded 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 Venturer)

(SEAL OR INITIAL)

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)



**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:

[Empty rectangular box for listing related respondents]

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



**NON-COLLUSION AFFIDAVIT**

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

**Exhibit A**

Below listed are all other parties (legal entity) bidding/proposing in referenced competitive solicitation

Solicitation No.

Solicitation Title:

**Per section A of the Non-Collusion Affidavit, respondents shall be listed below after bid opening and provided during the clarification period to the apparent lowest bidder for final initials.**

1.	
2.	
3.	TO BE INITIALED AND DATED BY APPARENT LOWEST BIDDER
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Bidder Initials \_\_\_\_\_

Date \_\_\_\_\_



## KIDNAPPING, CUSTODY OFFENSES, HUMAN TRAFFICKING AND RELATED OFFENSES AFFIDAVIT

The Kidnapping, Custody Offenses, Human Trafficking and Related Offenses Affidavit is required by Section [787.06](#), Florida Statutes ("F.S."), as amended by [HB 7063](#), which is deemed as being expressly incorporated into this Form. The Form must be completed by a person authorized to make this attestation on behalf of the Contractor (Nongovernmental Entity) for the purpose of executing, amending, or renewing a Contract with the County (Governmental Entity). The term Governmental Entity has the same meaning as in [Section 287.138\(1\), F.S.](#)

\_\_\_\_\_ does not use coercion for labor or services as defined in Section [787.06, F.S.](#)  
Contractor's Legal Company Name

Pursuant to Section [92.525, F.S.](#), under the penalties of perjury, I declare that I have read the foregoing statement and that the facts stated in it are true.

Print Name of Contractor's Authorized Representative:

Title of Contractor's Authorized Representative:

Signature of Contractor's Authorized Representative:

Date:

## ADDITIONAL CONTRACT DOCUMENTS

- Standard Construction General Contract Conditions
- Special Provisions
- Indemnification and Insurance
- Attachments A through F

**STANDARD CONSTRUCTION**  
**GENERAL CONTRACT CONDITIONS**  
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[NOTE: THIS STANDARD CONSTRUCTION GENERAL CONTRACT CONDITIONS HAVE BEEN PREPARED FOR USE IN ALL CONSTRUCTION (DESIGN-BID-BUILD) CONTRACTS AND OTHERWISE IN ACCORDANCE WITH IMPLEMENTING ORDER 3-57.

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## 1. DEFINITIONS

Addendum/Addenda: A modification or clarification of the Contract Documents distributed to prospective Bidders prior to the opening of Bids.

Administrative Orders/Implementing Orders (AO/IO): a list of Miami-Dade County Administrative Orders and Implementing Orders is available online at:

<http://www.miamidade.gov/ao/home.asp?Process=completelista> Advertisement for Bids: The public notice inviting the submission of Bids for the Work.

Allowance Account (Contingency Account): 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. The performance of any work under this Allowance Account, shall be authorized by a 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 pre-identified 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, which may include but is not limited to the Owner's 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, or an Architect/Engineer is not otherwise specified in the Notice-to-Proceed, the term shall be read as coterminous with the term "Owner."

Art in Public Places: Miami-Dade County program established in Miami-Dade County Code Section 2-11.15 providing a one and a half percent (1.5%) of each County project's construction and engineering design 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. The cost of this program is budgetary, funded by the Department, and shall not be included in the Contractor's bid.

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-Builts"). Final payment is conditional upon the receipt of As-Built Documents.

Award: Action taken by the Owner to accept the Bid submitted by the Contractor to perform the Work described in the Contract Documents.

Baseline Construction 7360

: A schedule submitted by the Contractor in accordance with the Contract Documents, reviewed and approved by the Owner that is used by the Contractor to plan the performance of the Work. The Contract Documents may require interim Baseline Construction Schedules be submitted for only a portion of the initial Work to be followed by a Baseline Construction Schedule covering all the Work. The Baseline Construction Schedule shall also be used to quantify delays in accordance with the Contract Documents. While the Baseline Construction Schedule remains unchanged, updates to the Baseline Construction Schedule are prepared and submitted by the Contractor per the Contract Documents. The Baseline Construction Schedule shall only be revised and submitted again for review and approval by the Owner as required by the Contract 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: (Also known as Bid Bond) 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.

Claim: A Claim should include any request for additional compensation, time, or other relief arising out of or relating to the Contract Documents, including without limitation, requests for equitable adjustments and breach of contract.

Commissioning: A quality-focused process for enhancing the delivery of a project. The process focuses upon verifying and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the Owner's Project Requirements.

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.

Construction Inspection Services: Services performed by the Owner or a consultant to the Owner to verify that the Work is being performed in accordance with the Contract Documents. The use of these services shall not relieve the Design/Builder of their responsibilities under the Contract Documents.

Consultant: See Architect/Engineer.

Contract Documents: Bid Documents, Contract Summary, General Conditions, Special Conditions, Technical Specifications, Change Orders, Payment and Performance Bonds, Work Orders, Approved Schedules, 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 a Contract with Miami-Dade County, who is referred to throughout the Contract Documents by singular in number and masculine in gender.

Contract Summary: The written agreement between the County and the Contractor for performance of the Work in accordance with the requirements of the Contract Documents and for the payment of the agreed consideration.

Contract Time: The number of days allowed for completion of the Work commencing with the effective date of Notice to Proceed and ending with the date of Substantial Completion or Final Completion, including completion of punch list items, as determined by the Owner or the Owner's designee. 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 Mayor: The Mayor of Miami-Dade County, Florida, or the County Mayor's designee.

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.

Delays: May be Excusable or Non-Excusable. Excusable Delays may be Compensable or Non-Compensable, as further defined within the text of these General Conditions.

Days: Unless otherwise designated, days mean calendar days.

Department Director: The Director of the Miami-Dade County Department implementing the work or the Director's designee.

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, for 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.

Facility: The structure or items being constructed under the Contract, inclusive of all subsurface work, landscaping work, and other ancillary work. 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.

Fast Track: A design/build method where separate and often, intermediate phases of the Project are designed, permitted and constructed earlier in the schedule while the remainder and often, more complex portions of the Project are designed, permitted and constructed later in the schedule. For example, foundation design, permitting and construction earlier while the remainder of the structure takes longer to design, permit and construct. Fast-track construction is subject to the approval of the Owner and the permitting agencies.

Final Acceptance: The formal written acceptance by the Owner of the completed work.

Final Completion: Point in time when the Owner determines that all physical Work has been completed in accordance with the Contract Documents and all deficiencies listed within the Certificate of Substantial Completion and/or Punch List elements have been corrected to the satisfaction of the Owner and Architect/Engineer. Where the contract requires that Contractor provide the Owner with spares or surplus

material, provision of same in accordance with the Contract Documents shall be an additional requirement for Final Completion (See Article 8 Contract Time Paragraph D. Substantial Completion, Final Completion and Final Acceptance).

Force Account: A method of payment measured by actual cost of the labor, materials, and equipment plus the contractual approved 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 (See Article 10 Changes Paragraph G. Force Account).

Force Majeure: Force Majeure as used herein shall mean Acts of God, strikes, lockouts, any late delivery of the Owner's supplied material and equipment due to transportation delays beyond Department's control, or other industrial disturbances; acts of public enemy, blockades, wars, insurrections, or riots; epidemics, landslides, earthquakes, fire, storms, floods, or washouts; arrests, title disputes, or other litigation; governmental restraints, either Federal or County, civil or military; civil disturbances; explosions; nationwide inability to obtain necessary materials or equipment, supplies, labor, or permits whether due to existing or future rules, regulations, orders, laws, or proclamations, either Federal, State or County, civil or military, or otherwise; and other causes beyond the control of the Department or County, whether or not specifically enumerated herein. Changes in the market price of goods, materials, equipment, labor, or supplies shall not be considered an instance of Force Majeure, and Contractor's bid shall include all risks of market changes the price of such things. COVID-19 or any other catastrophic event shall not be considered a Force Majeure event.

Furnishing: Manufacturing, fabricating, or purchasing 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, which will be deducted from the Contract Sum for each day of delay due to a Non-Excusable Delay. The Liquidated Damages set forth herein are compensation for the County's inability to timely put the project into service, the continued disruption of County functions, for impacts to the County's reputation, and other

indirect damages which the parties agree are difficult to measure. (See Article 8 Contract Time Paragraph F. Liquidated Damages and Liquidated Indirect Costs).

Liquidated Indirect Costs Rate: The amount, stipulated in the Contract Documents, which 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', of any tier, for 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. (See Article 8 Contract Time, Paragraph F. Liquidated Damages and Liquidated Indirect Costs)

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.

Miami-Dade County Code of Ordinances: Central repository for Governing Legislation where Ordinances are codified and kept current with subsequent amendments. The Miami-Dade County Code of Ordinances can be viewed at the following hyperlink:

[https://library.municode.com/fl/miami\\_-\\_dade\\_county/codes/code\\_of\\_ordinances](https://library.municode.com/fl/miami_-_dade_county/codes/code_of_ordinances)

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 through its duly authorized agents. 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 Bond: Bond 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. This bond shall be a single instrument bond for twice the penal sum (to cover 100 percent of the total maximum contract amount for payment-related issues and 100 percent of the total maximum contract amount for performance-related issues).

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.

Resolution: An action taken by a vote of the Miami Dade County Board of County Commissioners setting policy and providing guidance to County Departments. Resolutions issued after 1995 can be viewed at the following hyperlink: <http://www.miamidade.gov/govaction/searchleg.asp>. Earlier Resolution can be obtained through request to the Clerk of the Board Division, Stephen P. Clark Center, 111 NW 1st Street, Suite 17-202 Miami, Florida 33128.

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. Shop Drawings are understood to be submitted for information purposes only, and the County's receipt of or acceptance of shop drawings shall not be deemed as the County agreeing that the selected materials will meet contract requirements or that the selected means and methods are appropriate; the Contractor shall at all times remain responsible for completion of the work in accordance with the contract documents, notwithstanding any approved shop drawings. .

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.

Small Business Enterprise – Architect/Engineer (SBE -A&E) Program: Architect/Engineering firms that are certified with Miami-Dade County Small Business Enterprise program

Small Business Enterprise – Construction (SBE -CON) Program: Construction firms that are certified with Miami-Dade County Small Business Enterprise program

Small Business Enterprise – GOODS (SBE -GOODS) Program: Goods, Manufactures, and Wholesalers firms that are certified with Miami-Dade County Small Business Enterprise program

Small Business Enterprise – SERVICES (SBE -SERVICES) Program: Services firms that are certified with Miami-Dade County Small Business Enterprise program

Special Provisions: Section of the Contract Documents 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. (See Article 8 Contract Time Paragraph D. Substantial Completion, Final Completion and Final Acceptance)

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 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

- 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, implied, or appurtenant 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. The Owner's determination of the more stringent standard shall control and be binding on the contractor, without limitation, and the Contractor's compliance with this determination shall not be considered as Extra Work.
- 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, all conditions under which the work is to occur, including but not limited to site access, lay down and staging areas, the presence of known utilities and utility connections, 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. The County does not warrant or guarantee the presence or absence of any particular site conditions, or the accuracy of any as-built information related to existing work in-place on the site. To the extent provided by or in the possession of the County, subsurface reports, soil borings, and as-builts are solely for the Contractors consideration and use, and the County does not represent that such materials accurately reflect the conditions of the Site.
- 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) Contract
  - 4) Addenda
  - 5) Special Provisions
  - 6) General Conditions
  - 7) Referenced Codes and Standards
  - 8) Technical Specifications
  - 9) Contract Drawings
  - 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. The Owner's determination of the more detailed shall control and be binding on the contractor, without limitation, and the Contractor's compliance with this determination shall not be considered as Extra Work. 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 stop 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 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 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, except that deviations with respect to line items may be paid for via Work Order, to the extent funds are available in the Allowance Account or applicable dedicated Allowance Account.
- Q. All Requests for Information by the Contractor shall be submitted to the Architect or Engineer, with a copy to the Owner, shall be in writing, shall specify, to the maximum extent possible, the particular sheet, page, or section for which the Contractor is requesting information, and shall identify with the maximum specificity possible the ambiguity or uncertainty which the Contractor claims exists.

END OF ARTICLE

### **3. ARCHITECT/ENGINEER/FIELD REPRESENTATIVE**

- 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 and 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, nor shall any work associated to remove, remediate, or correct such non-conforming work be considered Extra Work. 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.

- J. Inspectors may additionally be employed by the Owner or the Architect/Engineer. Inspectors will be authorized to inspect all work and materials which are to become a part of the completed Project. Inspectors will have no authority to revoke, alter or waive any requirements of the Specifications or to make any changes in the Plans. Each Inspector will be authorized to call the attention of the Contractor to any failure of the work to conform to the Plans or the Specifications and will have authority to suspend the work affected until any question at issue can be referred to and decided by the Engineer. The Inspector will have no authority to delay the Contractor by failure to inspect the work and materials with reasonable promptness.
- K. If authorized in writing by the Owner, 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 make initial determinations as to the amount and quality of the several kinds of work performed and materials furnished which are to be paid for under the Contract, subject to review and approval by the Owner.
- L. The Field Representative may 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. Owner reserves the right to observe the work via its own employees, Field Representatives, Inspector's, or the Architect/Engineer.
- M. 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.
- N. 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.
- O. The Field Representative is not authorized to revoke, alter, or waive any requirements of the Contract. If authorized in writing by the Owner, 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.
- P. 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 Owner, Field Representative and/or the Architect/Engineer so that the aforementioned portions of the Work may be inspected as needed.
- Q. 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.
- R. 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.
- S. 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.

- T. If authorized in writing by the Owner, the Field Representative shall decide all questions relating to the rights of different prime contractors on the Project or site.
- U. 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.

END OF ARTICLE

#### 4. OWNER

- 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 back charge the Contractor for the cost incurred. The cost of back charge 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, back charges as provided herein. The Owner's right to back charge is in addition to any or all other rights and remedies provided in this Contract, or by law. The performance of back-charge 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. 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 (DT&PW), Miami-Dade Fire-Rescue (MDFR) and Mia-Dade Water and Sewer Department (WASD), or their successors.

END OF ARTICLE

## 5. CONTRACTOR

- 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. If requested by the Owner, the Contractor will obtain written confirmation from impacted subcontractors agreeing to work within the timeframes specified in the Contractor's schedule as a condition of acceptance.
- 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. The 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. The Contractor shall replace the Superintendent only with written notice to the County five (5) days in advance of the proposed substitution, and only with a superintendent qualified to perform the work as reasonably determined by the Field Representative.
- 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.
- K. The Contractor shall notify the Owner of any changes of key personnel and all replacement personnel prior to assigning them to the jobsite.

END OF ARTICLE

## 6. SUBCONTRACTORS

- 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. Use of Subcontractors who were not listed on the Subcontracting Form, or equivalent, at the time of award may occur only with the express consent of the Owner.
- 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 accepted 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 10 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. 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 10 percent 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 and employment data. 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 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

### 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 Plans/Specifications shall be permitted unless (1) the Contractor has submitted an RFI requesting the deviation, and (2) the Contractor has prior written approval of the Architect/Engineer and/or Owner. Written approval shall be by Work Order or Change Order, shall be documented to the extent required by, and shall otherwise comply with the requirements of, 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 expressly specify the use of certain methods and equipment, such methods and equipment shall be used unless other methods 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 such that the work will be completed during the contract time and 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 expressly allowed in the Plans and Specifications, or otherwise expressly approved in writing by the Owner 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.
- 10) Contractors working in the Public Rights-of-Way shall be cognizant of and comply with Miami-Dade County Code Section 2-103.1 relating to restoration after construction of utilities or works in the public right of way; and Miami-Dade County Code Sections 21-221 through 228 relating to excavation and protection of underground utilities and requiring various Contractor activities; The Contractor shall make every effort to minimize construction impact to business in the area of the Project and as appropriate, the Department will recover any costs caused the County by Contract delays or other business impacting activities attributable to the Contractor. To this end the Contractor shall conduct its construction activities in a manner that will minimize these detrimental effects.
- 11) The Contractor shall at all times ensure that the work site is maintained in a clean and orderly fashion. As soon as the work in any one locality is completed, the accumulated rubbish or surplus materials thereat shall be promptly removed. The Contractor shall also restore all public and private property in a manner acceptable to the Engineer, to a condition equal to or better than pre-construction conditions. This shall apply to public and private property which has been displaced or damaged during the prosecution of the work, and the Contractor shall leave the site and vicinity unobstructed and in a neat and presentable condition. In the event of delay exceeding two days after written notice is given to the Contractor by the Engineer to remove such rubbish or materials, or to restore displaced or damaged property, the Engineer may employ such labor and equipment as he may deem necessary for the purpose, and the cost of such work, together with the cost of supervision, shall be charged to the Contractor and shall be deducted from any money due the Contractor on the monthly or final estimate. No Contract shall be considered as having been completed until all rubbish and surplus materials have been removed and disposed of properly.
- 12) The Architect/Engineer shall furnish the Contractor with horizontal and vertical controls which shall be utilized as specified elsewhere herein to layout the work. The Florida Registered Land Surveyor hired by the Contractor shall verify all controls provided by the Engineer of Record and it shall be the responsibility of the Contractor to preserve same.

- a. The Contractor shall retain the services of a Florida Registered Land Surveyor who, shall furnish and set stakes, establishing line and grade and shall solely be responsible for the layout of the work as well as the recording of all as-built dimensions and elevations. The Contractor shall furnish all additional stakes, templates, and other materials for marking and maintaining survey points and lines given and shall be responsible for their preservation. Should any of the horizontal and vertical control points furnished by the Engineer of Record be destroyed or disturbed, they shall be reset by the Contractor's Florida Registered Land Surveyor, at the Contractor's expense. All control points previously furnished by the Engineer of Record shall be verified by the Contractor's surveyor.
  - b. For pipeline Projects the Engineer of Record shall furnish the Contractor with horizontal and vertical control every 1,320 feet which shall be utilized as specified elsewhere herein to layout the work. If a pipeline Project is less than 1,320 feet, the Engineer of Record will provide the Contractor with two horizontal and vertical control points. At on-plant-site Projects, the Engineer of Record
  - c. shall furnish the Contractor with three horizontal and vertical controls.
  - d. No direct payment shall be made for the cost to the Contractor of any of the work occasioned by delay in giving lines and grades, or making other necessary measurements, or by inspection.
- 13) Chapter 446 of the Florida Statutes, as amended, which is by reference incorporated herein, provides labor standards for ratios of apprentices or trainees to journeymen on State, County, or municipal contracts. It shall be the responsibility of the Contractor, prior to the opening of bids, to inform themselves of the provisions of Chapter 446, Florida Statutes, as amended, which are, or may become, applicable to the Contract, and he shall abide by these provisions at no cost to the County. The Contractor is advised to direct all inquiries concerning Chapter 446, Florida Statutes, as amended to the Florida State Apprenticeship Advisory Council.

**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 Green Building or LEED standards, as established in the Contract Documents; unless otherwise specified, LEED Silver standards shall be the minimum standards acceptable to the County. 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. The Architect/Engineer and/or the Owner may consider the Department's current maintenance history, requirements for spare parts, training of personnel and conformity to existing systems when reviewing alternatives.

- 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 Professional's Basis of Design and has a proven record of performance and availability, and the procurement and installation of same will not impact project costs or schedule.
- 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 and cost 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. Contractor is solely responsible for submitting alternatives in a timely fashion so as not to impact project schedule; in the event that Owner's or Architect/Engineer's review of an alternative delays the project, or redesign of the

project required to accommodate the alternative delays the project, such delay shall be considered non-compensable delay.

- 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 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. Notwithstanding, the Owner may generate and disseminate supplemental meeting minutes, as may be necessary in the owner's discretion.

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, and approvals.
- 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 County's Department of Regulatory and Economic Resources (RER), Florida Department of Environmental Protection (DEP), U.S. Environmental Protection Agency (EPA) 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.
- 8) The use of explosives will not be permitted under this Contract, except that powder and/or explosive fasteners may be allowed with the prior written consent of the Owner.

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 Owner, or, if authorized in writing by 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, municipal agencies, and County tenants/lessees having facilities within the limits of the Work shall always have access to their facilities for operations, inspection, and repair.
- 4) Lands to be furnished by the County for construction operations, roads, or for other purposes, will be specifically shown on the drawings or provided for in the Specifications. Should the Contractor find it necessary to use any additional land for the construction operations or for other purposes during the construction of the work, they shall provide for the use and restoration of such lands at their own expense.
- 5) Rights-of-way for work to be done under the Contract will be provided by the County. Nothing herein contained, however, and nothing marked on the drawings, shall be interpreted as giving the Contractor exclusive occupancy of the territory provided. When two or more contracts are being executed at one time on the same or adjacent land in such a manner that work on one contract may interfere with that on another, the Owner, or, if directed in writing by the Owner, the Architect/Engineer will decide which Contractor shall cease work, and which shall continue, or whether the work of both contracts shall progress at the same time, and in what manner. When the territory of one contract is a necessary or convenient means of access for the execution of another contract, the Engineer may grant to the Contractor so desiring such privilege of access to the territory as the Engineer shall deem to be appropriate, and no such decision shall be made the basis of any claim for delay or damage, except as provided in Article 8 herein.

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 County-owned property outside the Work Site without obtaining prior written approval from the County.

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 or other non-observable 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, Florida Fire Prevention 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
- 6) If it is specifically stated in the Specifications that the Department will furnish materials or equipment to the Contractor for incorporation into the work for which this Contract pertains, the County shall not be liable for any: expenses, losses, damages, claims or demands including but not limited to, all direct costs of Contractor such as labor, material, job

overhead, and profit markup but also includes any costs for modifications or changes in sequence of work to be performed, delays, rescheduling, disruptions, extended direct overhead or general overhead, acceleration, material or other escalation which includes wages, and other impact cost, or inflationary factors, arising out of any late delivery of such materials or equipment caused by any force Majeure. Compliance with delivery schedules by the Department shall be excused when delays are caused by force Majeure, and, if the delay causes the Contractor to exceed the Contract time stipulated for the final completion of the Project, a non-compensable time extension in the Contract time. An extension in this Contract time will be allowed equal to the length of the delay.

K. Emergencies

- 1) In an emergency affecting the safety of life, the work, or adjacent property, the Contractor shall notify the Owner, the Field Representative, or the Architect/Engineer as early as possible that an emergency exists. In the meantime, without special instruction 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 Owner, the Field Representative, or the Architect/Engineer may issue instructions, which the Contractor shall follow. Contractor shall present any claims for compensation for emergency work under this section as claims for Extra Work; however, the Contract shall not be entitled to claim Extra Work for if the Contractor did not cause or contribute to the occurrence of the emergency via its actions or omissions.
- 2) For purposes of this article, an emergency is defined as an act or event that has occurred or may imminently occur and which is 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 wellbeing 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.
- 5) When the Contract involves work on a plant, pump station or other site or restricted area, the Contractor shall comply with the Owner's Process Safety Management Plan, or other safety management plan or Operation Directives as may be promulgated by Owner prior to the commencement of the work and shall instruct their personnel as required by that plan.

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. Notwithstanding, the correction of latent defects shall not be considered as warranty work.
- 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 Payment and 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 and shall provide the Contractor with an opportunity to conduct test as contemplated in Chapter 558, Fla. Stat. 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 actual 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

### A. Notice to Proceed

- 1) The Contract shall be effective 10 days after notice is provided to the Contractor of contract award (“the effective date”) The Contractor shall, immediately after the effective date of the contract: deliver the specified bonds and certificates of insurance to the Owner, if same were not delivered prior to the effective date; apply for all necessary permits; provide a schedule and a schedule of values in accordance with the requirements herein. Contract time shall not begin on the effective date, but instead shall begin upon issuance of a Notice to Proceed. Contractor shall use continuous diligent good faith efforts to provide bonds, insurance, schedules, schedule of values, and to cause the issuance of permits. The failure of Contractor to utilize such continuous diligent good faith efforts shall render the Contractor in default of this Agreement. Alternatively, 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.
- 2) Upon receipt of all required bonds and insurance, issuance of all required permits, and approval by the Owner of the Schedule and the Schedule of values, the Owner may issue a 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 start date shown on the Notice to Proceed. The Notice to Proceed shall be effective as of the day it is issued by Owner.
- 3) 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 submit monthly updated schedules in strict accordance with the Contract Documents. The Contractor shall at all times maintain an electronic schedule in the critical path methodology (“CPM”) format or in a format as designated in the technical specifications (e.g., Microsoft Project, Primavera, etc). The Special Provisions and Division 01 of the Technical Specifications may contain further specific requirements for the form, content and date of submission of the baseline schedule and all schedule updates. The County shall approve this schedule prior to issuance of Notice to Proceed. The approved schedule shall be the Baseline Construction Schedule.
- 2) The Contractor shall prosecute the Work in accordance with the approved Baseline Construction 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, unless the Contractor has demonstrated it is entitled a compensable time extension pursuant to the terms of this Contract. In addition, the Contractor shall revise his schedule to reflect these recovery actions

and submit it to the Owner for review and acceptance it being understood that such acceptance 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 of the approved baseline schedule or most recently approved revision to the baseline such that the last activity in the critical path occurs after the contract time; 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 Time Impact 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 shall be the Liquidated Indirect Costs as specified in the Contract Documents. Where a delay is caused by Extra Work, the direct costs of the Extra Work shall be paid for in accordance with Section 9 herein.
- d. Concurrent delays involve two or more delays to the critical path occurring at the same time (irrespective of whether each delay would if analyzed alone, be compensable or non-compensable), either of which had it occurred alone, would have affected the end date of the Project.
- 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 start of the delay of: (1) the cause or causes of delay, (2) the schedule activities impacted by the delay, (3) a rough order of magnitude estimate of the duration of the delay, and (4) potential measures to recover the schedule. 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 actual number of days actually delayed, the appropriate Contract Document references, and the measures taken to prevent or minimize the delay; notwithstanding, where monthly schedule updates are required prior to the end of the delay, that monthly updated schedule shall reflect all delay experienced through the date of the submittal. 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, irrespective of the Contractors entitlement to a time extension or liquidated damages. 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 normal, 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 occurring during normal work hours shall be considered to be a rainy 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 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 the Owner causes a delay which is responsible for extending 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 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 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 based on the documentation provided by Contractor, 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, or by tenants or permittees on County 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 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 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, pursuant to Section 9-3 of the Code of Miami-Dade County. All change orders shall be in full accord with the Contract Documents. The Board of County Commissioners shall not be bound by the recommendation of County Staff with respect to time extensions, and may accept, reject, or modify change orders in its sole discretion.
- 7) Additional requirements for the submittal of time extension requests may be included in the Technical Specifications,

**D. Substantial Completion, Final 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 “Temporary 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 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 Owner 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 10 calendar day-notice to the Contractor, to remove such work from the Contract, in which case the value of the work, as measured by the Owners' cost to have such work performed by others, shall be deducted from Contractor's final payment, whether or not the Owner causes such work to be performed. In the event that the Owner chooses to remove such work, there shall not be any further non-excusable delays charged to the Contractor beyond the 10 days following notice to the Contractor. However, the Contractor shall not be relieved of any non-excusable 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 back charges, after which, any surplus retainage will be released to the Contractor. If the retainage is insufficient to cover the Liquidated Damages and any back charge, 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-Built drawings, 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 re-inspection 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 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 those portions of the Work occupied by Owner, excepting those resulting from the Contractor's fault or negligence or breach of warranty. The Contractor shall be responsible for maintenance of all equipment in these areas until these responsibilities are turned over to the County in writing. 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. Unless otherwise specified in the Contract, 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:

$$\frac{(\text{Amount of Bid} \times 8\%) \text{ less any General Requirements items paid independently/individually}}{\text{Original Contract Duration (In Days)}}$$

- 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.
- 6) Consequential Damages: This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination. Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. Notwithstanding anything whatsoever contained in this Agreement to the contrary, the Parties expressly agree that no Party to this Agreement shall be liable to any other Party or Parties to this Agreement for any special, consequential, or exemplary damages of any kind whatsoever, whether arising in contract, warranty, tort (including but not limited to negligence), strict liability, or otherwise, including without limitation losses of use, profits, business reputation and financing.

END OF ARTICLE

## 9. PROGRESS PAYMENTS

### 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. Prior to issuance of the Notice to Proceed, unless the Special Provisions provide for the payment to be determined by using a cost-loaded CPM, the Contractor shall, 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. Notice to Proceed shall not be issued, and the Contractor cannot submit monthly invoices, without an approved Schedule of Values.
- 3) In making such progress payments, a maximum of 5 percent of the estimated amount shall be retained from each progress payment made to the Contractor until 50 percent Completion of the work has been established. 50 percent completion is defined as the point in time when at least 50 percent 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 may be reduced, at the discretion of the Owner, provided the Owner finds that satisfactory progress is being made. 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, materialmen and suppliers. The contractor shall remit payment due to subcontractors within 10 days after the contractors' receipt of payment. The subcontractor shall remit payment due to sub-subcontractors and suppliers within seven (7) days after the subcontractors' receipt of payment. Dispute resolution is provided within the Statute.
  - b. The Contractor's attention is further directed to Miami Dade County Code Section 10-33.02, Section 2-8.1.4 , Section 2-8.1.1.1.1 and Section 2-8.1.1.1.2 , providing for prompt payments of fourteen (14) days upon receipt of an approved invoice are made

to prime contractor certified as Miami Dade County certified small businesses or prime contracts with Miami Dade County certified small businesses are participating as subcontractors by County agencies and the Public Health Trust; creating dispute resolution procedures for payment of County and Public Health Trust obligations; and requiring the prime Contractor to issue prompt payments within two (2) days upon receipt of payment from the owner, and have the same dispute resolution procedures as the County, for all small business subcontractors. Failure of the Contractor to issue prompt payment to small businesses, or to adhere to its dispute resolution procedures, may be cause for suspension, termination, and debarment, in accordance with the terms of the County contract or Public Health Trust contract and debarment procedures of the County.

- 6) No progress payments will knowingly be made for work not in accordance with this Contract, but payment of a requisition shall not constitute acceptance of non-conforming work or otherwise constitute a waiver of any of the Owner's rights under the 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, based on work installed and approved at the time of the application. The Contractor shall certify, pursuant to the Miami-Dade County False Claims Ordinance, 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 cost-reimbursable 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; materials paid for in this manner shall be kept segregated from other materials purchased by Contractor and shall not be used for other projects undertaken by Contractor. 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 70 percent 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) 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.
- 13) In accordance with Miami-Dade County Implementing Order 3-9, Accounts Receivable Adjustments, if money is owed by the Contractor to the County, whether under this Contract or for any other purpose, the County reserves the right to retain such amount from payment due by County to the Contractor under this Contract. Such retained amount shall be applied to the amount owed by the Contractor to the County. The Contractor shall have no further claim to such retained amounts which shall be deemed full accord and satisfaction of the amount due by the County to the Contractor for the applicable payment due herein.

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. Tax Exempt Owner Purchase Materials

The owner may incorporate specifications for tax exempt owner purchase in all covered contracts. A tax-exempt owner purchase is one made directly by the County which is intended to be tax exempt in accordance with Section 212.08(6) of the Florida Statutes and Rule 12A-1.094 of the Florida Administrative Code, as the same may be amended. A covered contract is a contract for the construction, improvement or rehabilitation of property which is estimated to exceed ten million dollars (\$10,000,000.00) in cost.

The contractor must include Florida State Sales Tax and other applicable taxes in his bid for materials, supplies, and equipment. The owner, being exempt from sales tax, reserves the right to make direct purchases of various construction equipment, materials or supplies included in the Contractor's bid and/or contract, substantially in accordance with the contract.

**OWNER DIRECT PURCHASE PROCEDURES**

- A) Contractor shall provide Owner's Representative a list of all intended suppliers, vendors, and materialmen for consideration as Owner Direct Purchased materials. This list shall be submitted at the same time as the preliminary schedule of values and the Project schedule. The Contractor shall submit a description of the materials to be supplied, estimated quantities and prices.
- B) Upon request from Owner, and in a timely manner, Contractor shall submit the attached Purchase Order Requisition Form to the Owner's Representative, to specifically identify the materials which Owner has, at its sole option, elected to purchase directly. On the Purchase Order Requisition Form, the Contractor will provide the Owner the required quantities of material at the price established in the vendor's quote to the Contractor, less any sales tax associated with such price.
- C) Such Purchase Order Requisition Forms are to be submitted to Owner's designated representative no less than two (2) weeks prior to the need for ordering such Owner Direct Purchased Materials, in order to provide sufficient time for Owner review and approval and to assure that such Directly Purchased Materials may be directly purchased by Owner and delivered to the Project site so as to avoid any delay to the Project.
- D) After receipt of the Purchase Order Requisition Form, Owner shall prepare its Purchase Order for equipment, materials or supplies which the Owner chooses to purchase directly. Promptly, within two (2) business days of receipt of each Purchase Order, the Contractor shall verify the terms and conditions of the Purchase Order prior to its issuance to supplier and in a manner to assure proper and timely delivery of items. After such verification by the Contractor, The Owner shall issue the Purchase Order to the supplier or vendor. The Purchase Order shall require that the supplier provide the required shipping and handling insurance. The Purchase Order shall also require the delivery of the Owner Direct Purchased Materials on the delivery dated provided by the Contractor in the Purchase Order Requisition Form and shall indicate F.O.B. jobsite. The Owner's Purchase Order shall also provide that the supplier shall invoice the Owner directly for the items purchased and not the Contractor. Owner shall immediately provide Contractor with copies of such invoices it receives. The Owner's Purchase Orders shall contain or be accompanied by the Owner's exemption certificate and must include the Owner's name, address, and exemption number with issue and expiration date shown. The Owner shall issue each supplier or vendor a Certificate of Entitlement on the Certificate of Entitlement Form attached hereto with each Purchase Order.
- E) All shop drawings and submittals shall be made by the Contractor in accordance with the Project Specifications.
- F) Contractor shall be fully responsible for all matters relating to the receipt of materials in accordance with these Procedures, including, but not limited to, verifying correct

quantities, verifying documentation of orders in a timely manner, coordinating purchases, providing and obtaining all warranties and guarantees in favor of and for the benefit of the Owner required by the Contract Documents, inspection and acceptance of the goods at the time of delivery. At the time of, and subsequent to, the delivery of such materials, the Owner shall be liable for all loss or damage to equipment and materials purchased pursuant to the Purchase Order. The Contractor shall coordinate delivery schedules, sequence of delivery, loading orientation, and other arrangements normally required by the Contractor for the particular materials furnished. The Contractor shall provide all services required for the unloading, handling and storage of materials through installation. The Contractor agrees to indemnify and hold harmless the Owner from any and all claims of whatever nature resulting from non-payment of goods to suppliers arising from the actions or directions of Contractor. Notwithstanding the foregoing, the Owner shall be responsible for payment of the invoices issued by the supplier or vendor pursuant to the procedures in Paragraph G below.

- G) As Owner Direct Purchased Materials are delivered to the jobsite, the Contractor and the Owner's Representative, shall visually inspect all shipments from the suppliers, and approve the vendor's invoice issued to the Owner for material delivered. The Contractor shall assure that each delivery of Owner Direct Purchased Material is accompanied by documentation adequate to identify the Purchase Order against which the purchase is made. This documentation may consist of a delivery ticket and an invoice from the supplier delivered to the Owner (and provided to Contractor) conforming to the Purchase Order, together with such additional information as the Owner or Contractor may require. The Contractor shall verify in writing to the Owner's Representative that the Materials were received in order for the Owner to agree to approve the invoice for payment of the invoice issued. The Owner shall have the right to assign Owner personnel to verify and audit the accuracy of all Direct Purchase documents.
- H) The Contractor shall insure that Owner Direct Purchase materials conform to the Specifications, and determine prior to incorporation into the Work if such materials are patently defective, and whether such materials are identical to the materials ordered and match the description on the bill of lading. If the Contractor discovers defective or nonconformity's in the Owner Direct Purchased Material upon such visual inspection, the Contractor shall not utilize such nonconforming or defective materials in the Work and instead shall promptly notify the Vendor of the defective or non-conforming condition in order to pursue repair or replacement of those materials without any undue delay or interruption to the Project. Additionally the Contractor shall notify the Owner of such occurrence. If the Contractor fails to perform such inspection and otherwise incorporates Owner Direct Purchased materials, the condition of which it either knew or should have known by performance of an inspection, Contractor shall be responsible for all damages to Owner resulting from Contractor's incorporation of such materials into the Project, including liquidated or delay damages. In the event that materials furnished are found to be defective or nonconforming, the Contractor shall promptly take action to remedy the defect or nonconformance so as not to delay the work.
- I) The Contractor shall be responsible for obtaining and managing all warranties and guarantees in favor of and for the benefit of the Owner for all materials and products as

required by the Contract Documents. All repairs, maintenance or damage repair calls shall be forwarded to the Contractor for resolution with the appropriate supplier or vendor.

- J) The transfer of possession of Owner Direct Purchased Materials from the Owner to the Contractor shall constitute a bailment for mutual benefit of the Owner and the Contractor. The Owner shall be considered the bailor and the Contractor the bailee of the Owner Direct Purchased materials. Owner Direct Purchased Materials shall be considered returned to the Owner for purposes of its bailment at such time as they are incorporated into the Project or consumed in the process of completing the Project. Bailee shall have the duty to safeguard, store and protect all Owner Direct Purchased Materials.
- K) The Contractor shall maintain insurance in favor of and for the benefit of the Owner pursuant to the requirements set forth in the Owner and Contractor Agreement which shall be sufficient to protect against any loss of or damage to Owner Direct Purchased equipment, materials or supplies. Such insurance shall cover the value of any Owner Direct Purchased Materials not yet incorporated into the Project from the time the Owner first takes title which shall be at the time of delivery and acceptance of the materials by the Contractor as provided in Paragraph F above.
- L) On a monthly basis, Contractor shall be required to review invoices submitted by all suppliers of Owner Direct Purchased Materials delivered to the Project site during that month and either concur or object to the Owner's issuance of payment to the supplier, based upon Contractor's records of materials delivered to the site and any defects in such materials.
- M) In order to arrange for the prompt payment to the supplier, the Contractor shall provide to the Owner, a list indicating the acceptance of the goods or materials in accordance with the established monthly Payment Request Schedule. The list shall include a copy of the applicable Purchase Order, invoices, delivery tickets, written acceptance of the delivered items, and such other documentation as may be reasonably required by the Owner. Upon receipt and verification of the appropriate documentation, the Owner shall prepare a payment to the supplier based upon the receipt of data provided. This payment will be released, delivered and remitted directly to the supplier by the Owner. The Contractor agrees to assist the Owner to immediately obtain partial or final release of lien waivers as appropriate.
- N) Salvage materials shall be the property of the Owner and stored or removed from the site by the Contractor at the Owner's discretion.
- O) From the time of delivery and acceptance, the Owner shall have and retain title to any and all Owner Direct Purchased materials.

- P) Upon completion of the project, the Contractor shall execute and deliver to the Owner, one or more deductive Change Orders, referencing the full value of all Owner Direct Purchased materials purchased directly, plus all sales tax savings associated with such materials in Contractor's bid to Owner's Representative.

D. 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 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.

E. Contract Prices - Bid Form

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.

F. 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.
- 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.

5) Escalation of Bid Items

Q) A dedicated allowance account has been established in this contract for escalation of contractor Unit Prices. The funds in the dedicated allowance account may not be used for any purpose other than escalation of Unit Prices as provided for below. Funds in the dedicated allowance account are the property of the Owner, and any unused funds at the end of the Contract shall remain property of the Owner. The Contractor expressly agrees that it is solely responsible for all cost escalations which exceed the value of the dedicated allowance account. Payment shall be made in a lump sum, based on escalation occurring in the preceding 365 days, as outlined below.

R) The Contractor shall be entitled to escalation of its Unit Prices 365 days after award of the contract, and every 365 days thereafter.

S) The Contractor shall utilize the most recent statistical data available as published by the Bureau of Labor Statistics.

T) The formula for the alteration of the Unit Prices shall be the percentage change for the previous 12 months with a not-to-exceed percentage change of five percent (5%) for each bid item. Should the Bureau of Labor Statistics make a major CPI revision, such as a change to the applicable CPI base period, it remains that the Unit Prices shall be altered utilizing the percentage change of the most recent 12 months as published within the

changed CPI. The percentage change in Unit Prices shall be computed similar to the following example:

CPI for the most recent month ..... 135.8  
Less CPI for the month 12 months previous ..... 129.9  
Equals the index point change ..... 5.9  
Divided by previous period CPI. .... 129.9  
Equals ..... 0.0454  
The result is multiplied by 100 ..... 0.0454 x 100  
Which equals the percentage change multiplier ..... 4.54

The percentage multiplier shall be rounded to two decimal places using the 5/4 rounding method, e.g., if the 3rd digit to the right of the decimal is a 5 through 9, then the 2nd digit to the right of the decimal is rounded up one value; or if the 3rd digit to the right of the decimal is 0 through 4, then the 2nd digit to the right of the decimal remains as is.

- E) Following each escalation period, the Contractor shall submit a request for escalation during the prior 365 days. The Owner shall, upon receipt of a proper request submitted in accordance with the provisions of these General Conditions, issue a work order for a lump sum amount representing the cost of escalation for all Unit Price items accepted and paid by the Owner during the preceding 365 days (Unit Price work accepted and paid multiplied times the percentage change multiplier). The Contractor shall at all times throughout the contract submit monthly invoices based on the Unit Prices contained in the bid, and shall not submit monthly invoices based on escalated pricing. Escalation Unit Prices shall only be paid retroactively and in a lump sum. Where the Dedicated Allowance Account is insufficient to pay for Escalated Unit Prices, the Owner shall pay the Contractor to the remaining value in the Dedicated Allowance Account and Owner shall have no further liability for escalated costs.

**In the event that base contract work is not broken out into Unit Prices (i.e., for projects which were bid on a lump sum basis) escalation shall apply to the costs of such project as broken out in the approved Schedule of Values as if such costs were Unit Prices.**

END OF ARTICLE

## 10. CHANGES

### A. Changes

**NOTE: "OVERHEAD" AS USED IN THIS SECTION IS DEFINED IN SECTION 1 DEFINITIONS - PAGE 8**

- 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.

The Owner may authorize, via Allowance Account Work Order, Extra Work which does not change any provision of the General Covenants and Conditions or the Contract Documents, if the value of such work is less than the value remaining in the applicable Allowance Account and/or Time Contingency Account.

- 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 five days 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 dispute 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 proposed cost to perform said Extra Work will in no event include a rate for total overhead in excess of 20 percent of the actual costs of the Extra Work.
  - b. For Extra Work performed by a subcontractor's forces, the Contractor agrees that the overhead, for each sub-contractors, sub-subcontractors, and suppliers, shall not exceed 15% of the total of all sub-contractor's actual direct costs of the Extra Work. 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 Extra 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 Board of County Commissioners; where the Board of County Commissioners has delegated via Ordinance authority to County Staff to execute change orders, such change orders are subject to ratification by the Board of County Commissioners as described in such ordinance. 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 (Contingency) 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: Owner directed changes in the work, unforeseen conditions (if compensation for same is otherwise allowed under the contract), revised regulatory requirements, work required by any Authority Having Jurisdiction (if not required

due to errors or omissions of the Contractor), 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 percent 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 percent, 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 percent or below 75 percent 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, if the Owner and Contractor cannot agree on entitlement to a claim, a

reservation of the specific claims at issue; such reservation must, to be effective: identify each specific claim reserved, the scope of the work, the maximum cost of the work associated with the claim, and the maximum number of days of Contract time requested.

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 30 days, use the weekly rate.
    - iii. Greater than 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 40, or the monthly rate divided by 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 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 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 176 to establish a per hour rate that the special equipment and machinery is in use on the Work, plus any required re-mobilization.
- h. For indirect costs, the Contractor shall be allowed a percentage mark-up as set forth in paragraph (6) above...

F. Differing Site Conditions

- 1) The Contractor shall immediately, upon discovery and before such conditions are further 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 from those warranted by the County, and if same 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 subject to the maximum markups specified in this Contract for changes in the work.
- 2) 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

The Contractor may at any time submit to the Architect/Engineer for review proposed modifications to the Work, 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:

- 1) Will result in a net reduction in the total Contract amount;
- 2) 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;
- 3) Will not require an unacceptable extension of the Contract completion time; and
- 4) Will require a change in the Contract Documents and such change is not already under consideration by the Owner.
  - a. 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.

- b. 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.
- c. 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, they will be liable for the cost incurred by the Owner in reviewing the proposal.
- d. 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

### 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 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 on-going 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 (schedule information shall be provided in electronic format with all logic visible):
  - 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. 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).
- h. 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.
- i. Cost information shall be submitted in sufficient detail to allow for review. The basis for the budgeted or actual costs shall include man-hours by trade, labor rates, material, and equipment costs etc. These costs shall be broken down by pay item and Construction Specification Institute (CSI) Division.
- j. The documentation for budgeted cost shall, as a minimum, include:
  - i. Copies of all the Contractor's bid documents, bid quotes, faxed quotes, emailed quotes etc.
  - ii. Copies of all executed subcontracts.
  - iii. Other related budget documents as requested by the Architect/Engineer.
- k. 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.

1. The Contractor shall make all his books, employees, work sites and records available to the Owner or its representatives for inspection and audit.
- 6) No payment shall be made to the Contractor by the Owner for loss of anticipated profit(s) from any deleted work. Contractor shall not be entitled to any compensation for loss of efficiency, loss of productivity, disruption, loss of opportunity, or other similar indirect costs except via entitlement to Liquidated Indirect Damages as provided for herein. 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 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 in the form provided for above 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 further limited or waived 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 Office of the Mayor (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 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 basis, 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 all of which shall be a criterion 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 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 ten (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 (Notice to Cure). The Contract may 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 they 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

### 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 Florida Fire Prevention Code.

2) The Contractor(s) shall comply with all applicable laws including, but not limited to, the Small Business Enterprise (SBE) programs (including, without limitation, SBE-Construction, SBE-Architectural and Engineering, and SBE-Goods, SBE-Services); as set forth in Sections 10-33.02, 2-10.4.01, 2-8.1.1.1.2, 2-8.1.1.1.1, 2-11.16, 2-1701, and 2-11.17 of the Code; the Sustainable Buildings Program; Chapter 119 of the Florida Statutes regarding public records laws; the State of Florida and the County's Prompt Payment laws as set forth in Sections 2-8.1.4 and 10-33.02 of the County's ordinances; the County's Inspector General requirements as set forth herein; the County's Art in Public Places requirements as set forth herein; and provide the requisite bonding in accordance with Section 255.05 of the Florida Statutes, as well as the insurance requirements set forth in this Agreement

Specifically, the Contractor and his subcontractors shall comply with Miami-Dade County Resolution Nos. R-1386-09 and R-138-10 governing the treatment of SBE-CON firms.

3) In addition, the Contractor agrees to abide by all federal, state, and local procedures, as may be amended from time to time, regarding how documents that the Contractor has access to, 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 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

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 Bond

- 1) A single instrument Payment and Performance Bond, satisfactory to the Owner, for twice the penal sum (no less than 100 percent of the total maximum contract amount for payment-related issues and 100 percent of the total maximum contract amount for performance-related issues), shall be required of the Contractor.
- a. The bond 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:

Bond (Total Contract) Amount	Best's Rating
\$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. 9304-9308.

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 amount 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 a Payment and Performance Bond for a surety company must file with such Bond 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 Bond 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 Bond 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 Bond 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 a good and sufficient Bond in lieu of Bond executed by such Surety.
- 10) Cancellation of any bond, or non-payment by the Contractor of any premium for any Bond 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 non-infringing 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, know-how, 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. The Contractor shall be responsible for acknowledging the County's Recycling Programs when hauling materials that meets the requirement for a commercial business establishment. Please contact the Department of Solid Waste Management at [dswm@miamidade.gov](mailto:dswm@miamidade.gov) or visit [www.earth911.com](http://www.earth911.com) to search for recycling or disposal options and locations.
- O. 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.
- P. 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.
- Q. Accounts Receivable Adjustments  
In accordance with Miami-Dade County Implementing Order 3-9, Accounts Receivable Adjustments, if money is owed by the Contractor to the County, whether under this Contract or for any other purpose, the County reserves the right to retain such amount from payment due by County to the Contractor under this Contract. Such retained amount shall be applied to the amount owed by the Contractor to the County. The Contractor shall have no further claim to such retained amounts which shall be deemed full accord and satisfaction of the amount due by the County to the Contractor for the applicable payment due herein.
- R. User Access Program (UAP)  
Pursuant to Miami-Dade County Code Section 2-8.10. User Access Program in County Purchases 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 two percent (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 two percent (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.
- S. Public Records and Contracts for Services Performed on Behalf of Miami-Dade County  
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, F.S. to the contractor's duty to provide public records relating to this contract, contact the custodian of public records via phone at (305) 375-5773, or via email at isd-vss@miamidade.gov. Offices are located at 111 NW 1st Street, Suite 1300, Miami, FL 33128.**

END OF ARTICLE

### 13. APPLICABLE LEGISLATION

Contractors and subcontractors are required to abide by all applicable federal, state, and local laws and ordinances, as they may be amended from time to time. Applicable local laws and ordinances include, but are not limited to, the following:

#### A. Resolutions

<http://www.miamidade.gov/govaction/searchleg.asp>

- 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-894-05 - Independent Private Sector Inspector General (IPSIG) Services
- R-183-00 - Family Leave Requirements
- R-185-00 - Domestic Violence Leave
- R-1386-09 - Community Small Business Development Program; directing County Mayor to include additional subcontractor provisions in all future contracts, where applicable unless waived by the Board of County Commissioners
- R-138-10 - Resolution requiring that construction contracts include language mandating that the scope of work of SBEs be separately stated and accounted for in schedule of values.
- R-63-14 - Contractor Due Diligence

#### B. Administrative Orders

<http://www.miamidade.gov/ao/home.asp?Process=completelist>

- 3-20 - Independent Private Sector Inspector General (IPSIG) Services
- 3-39 - Standard Process for Construction of Capital Improvements, Acquisition of Professional Services, Construction Contracting, Change Orders and Reporting
- 10-10 - Duties and Responsibilities of County Departments for Compliance with the Americans with Disabilities Act (ADA)

#### C. Implementing Orders

<http://www.miamidade.gov/ao/home.asp?Process=completelist>

- 3-9 - Accounts Receivables Adjustments
- 3-21 - Bid Protest Procedure
- 3-22 - Small Business Enterprise (SBE) Program for the Purchase of Construction Services
- 3-41 - Small Business Enterprise (SBE) Program for the Purchase of Goods and Services

#### D. Code of Miami-Dade County:

- [https://library.municode.com/fl/miami\\_-\\_dade\\_county/codes/code\\_of\\_ordinances](https://library.municode.com/fl/miami_-_dade_county/codes/code_of_ordinances)Section 2-1 Rule 5.09 Statement of consideration of impact of sea level rise.
- Section 2-1076 - Office of the Inspector General
- Section 2-2113 First Source Hiring Referral Program
- Section 2-8.1 - Contracts and Purchases
- Sections 2-8.1.1 Bids from related parties and bid collusion for the purchase of goods and services, leases, permits, concessions, and management agreements.
- Section 2-8.1(d) Disclosure required of contractors and entities transacting business with Miami-Dade County.
- Section 2-8.1(f) Listing of subcontractors required
- Section 2-8.2.6.1 Buy American Iron and Steel Products
- Section 2-8.2.6.2 Cybersecurity and Information Technology
- Section 2-8.2.7 Economic Stimulus Ordinance
- Section 2-8.4 - Protest Procedures
- Section 2-8.5 - Local Preference
- Section 2-8.5.1 - Local Certified Veteran Business Enterprise
- Section 2-8.8 - Fair Subcontracting PracticesSection 2-8.8(4) Reporting of subcontracting policies procedures and payments
- Section 2-8.10. - User Access Program in County Purchases.
- Section 2-10.4.01 Small Business Enterprise – Architecture & Engineering Program
- Section 2-10.33.02 Small Business Enterprise – Construction Program
- Section 2-10.7 Sales Tax Exemption Program
- Section 2.11.1 - Conflict of Interest and Code of Ethics
- Section 2-11.1 (i)-(r) Financial Disclosure
- Section 2-11.16.1 Construction Contract Fee for Affordable Housing
- Section 2-1076 Office of the Inspector General
- Section 9-71 through 9-75 Sustainable Building Program
- Section 10-34 - Listing of Subcontractors Required
- Section 11A-38 through 11A-52 Discrimination
- Section 21-255 through 21-266 False Claims Ordinance

END OF ARTICLE

**SECTION 14**

**SPECIAL PROVISIONS TO BE ATTACHED**

## SPECIAL PROVISIONS

### 1.0 SCOPE OF WORK:

The Contractor is responsible for verifying all quantities to perform this work. The quantities provided are an approximation only.

### 2.0 ALLOWANCE ACCOUNTS:

- A. **Contingency Allowance** - A Contingency Allowance Account has been established for the exclusive use of the Department of Solid Waste Management 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.
- B. **Dedicated Allowance** (if applicable) - A Dedicated Allowance Account has not been established for this solicitation.

### 3.0 INSURANCE REQUIREMENTS:

*Refer to the Indemnification and Insurance section below.*

### 4.0 CONTRACTOR USE OF PREMISES:

- 4.1 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 the work in a manner which allows continuous use of adjoining facilities by DSWM. The Contractor shall always maintain safe access to all project areas.
- 4.2 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.
- 4.3 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.

- 4.4 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 DSWM operations personnel.

## **5.0 EQUIPMENT:**

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

## **6.0 INSPECTIONS/MATERIAL TESTING:**

- A. **Inspections:** Daily inspections may be performed by the DSWM Representative at their sole discretion. Inspections by the DSWM 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 DSWM 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 DSWM Representative prior to installation. The Contractor will be responsible for scheduling a meeting with the DSWM Representative to identify the pertinent work activities. Refer to technical specifications/notes provided in the project drawings. Installation Procedures recommended by the manufacturer shall be submitted by the Contractor to the DSWM 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.

## **7.0 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 the percentage of work completed if a lump sum contract or by unit price quantities as agreed upon by the DSWM Representative. The Schedule of Values will be used for payment and negotiation of additions/deletions to scope. DSWM 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.

#### **8.0 TIME OF WORK:**

Refer to Request for Price Quotation/Technical Specification and related technical documents.

#### **9.0 PRE-CONSTRUCTION MEETING:**

A Pre-Construction Meeting will be scheduled prior to the NTP date. The DSWM 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.

#### **10.0 CONSTRUCTION COORDINATION MEETINGS:**

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

#### **11.0 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 Contractor shall complete all work included in the Contract Documents, including punch list, no later than **120** calendar days after NTP.

#### **12.0 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 RPQ, the Contractor and his/her sureties will be assessed Liquidated Damages as follows:

**Final Completion**

Liquidated Damages shall be assessed in the amount of \$349.20, 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.

**13.0 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 DSWM.

**14.0 SUBCONTRACTOR / SUPPLIER LISTING (WHEN APPLICABLE):**

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).

**15.0 E-VERIFY:**

**Obligations of State Funded Contracts**

Executive Order 11-116, which supersedes Executive Order 11-02, directs all agencies under the direction of the Governor to verify the employment eligibility of all new agency employees through the U.S. Department of Homeland Security's E-Verify system. Further agencies are directed to include as a condition of all contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employee hired by the subcontractor during the contract term.

In accordance with Executive Order 11-116, Miami-Dade County required 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 ensure compliance with E-Verify requirements (as applicable). 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 Form for inspection.

#### **16.0 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; [ISD-VSS@MIAMIDADE.GOV](mailto:ISD-VSS@MIAMIDADE.GOV); 111 NW 1 STREET, SUITE 1300, MIAMI, FLORIDA 33128.**

**17.0 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.

**18.0 PRE-BID MEETING:**

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

**19.0 METHOD OF AWARD:**

The award shall be made to the lowest, responsive and responsible bidder. DSWM reserves the right to negotiate additional or deductive services related to this project with the low bidder. DSWM reserves the right to reject all bids if deemed in the best interest of Miami-Dade County.

**20.0 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 DSWM 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 (**when applicable**).

**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 (**when applicable**).

**23.0 CONTRACTOR DUE DILIGENCE AFFIDAVIT:**

The attention of the Contractor is hereby directed to the requirements of Resolution R63-14 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 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.

**25.0 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.

**26.0 PROMPT PAYMENT:**

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

**27.0 ASSIGNABILITY/ASSIGNMENT:**

ASSIGNABILITY - Department of Solid Waste Management (DSWM) 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 DSWM 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 DSWM. DSWM's consent for any assignment will not be unreasonably withheld.

**28.0 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): 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.*

**29.0 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.

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

Pursuant to Section 2-8.2.6.1 of the County Code, this section shall be known as the "Buy American Iron and Steel Products Procurement Program" and is intended to set forth requirements to use iron and steel products produced in the United States for construction contracts that are subject to approval or ratification by the Board of County Commissioners.

**31.0 CYBERSECURITY AND INFORMATION TECHNOLOGY PROCUREMENT AND PROTECTION PROGRAM (When Applicable)**

Pursuant to Section 2-8.2.6.2 of the County Code, this section shall be known as the "Cybersecurity and Information Technology Procurement and Protection Program" and is intended to set forth requirements to purchase cybersecurity products produced in the United States for contracts that are subject to approval or ratification by the Board of County Commissioners and to provide heightened review of vendors with access to County cybersecurity systems.

**32.0 AMERICANS WITH DISABILITY ACT (ADA)**

Pursuant to Administrative Order No. 10-10, it is the policy of Miami-Dade County to ensure that all Miami-Dade County departments adhere to the Americans with Disabilities Act (ADA). The ADA is a federal law that prohibits public entities from discriminating on the basis of disability by providing comprehensive civil rights protections to individuals with disabilities in the areas of employment, state and local government services, telecommunications, and public accommodations. This Administrative Order establishes the duties and responsibilities of Miami-Dade County departments, and their respective ADA Coordinators and designated staff, to ensure compliance and improve equity and engagement with the disability community.

**33.0 KIDNAPPING, CUSTODY OFFENSES, HUMAN TRAFFICKING AND RELATED OFFENSES AFFIDAVIT**

The Kidnapping, Custody Offenses, Human Trafficking and Related Offenses Affidavit is required by Section 787.06, Florida Statutes ("F.S."), as amended by HB 7063, which is deemed as being expressly incorporated into this Form. The Form must be completed by a person authorized to make this attestation on behalf of the Contractor (Nongovernmental Entity) for the purpose of executing, amending, or renewing a Contract with the County (Governmental Entity). The associated Contract shall not become effective unless and until this completed and executed Form is submitted to the County (Governmental Entity). The term Governmental Entity has the same meaning as in Section 287.138(1), F.S.

**\*\*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.**



## INDEMNIFICATION AND INSURANCE

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 Solid Waste Management, Dr. Martin Luther King Jr. Office Plaza, 2525 NW 62 Street, Suite 5100, Miami, FL 33147*, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

### **For contracts of a value under \$1,000,000.00**

- 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 \$300,000 per occurrence, and \$600,000 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. Automobile Liability Insurance covering all owned, non-owned and hired vehicles used in connection with the work, in an amount not less than \$300,000 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.

### **For contracts of a value over \$1,000,000.00**

- 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 not to exclude Products and Completed Operations. **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.

**The following additional insurance coverages might be applicable. Please contact Risk Management if further clarification is needed:**

- If asbestos abatement or removal operations, environmental work as in extraction of contaminated soil, and/or transportation/delivery/unloading of hazardous materials is required of the Contractor shall furnish to *Department of Solid Waste Management, Dr. Martin Luther King Jr. Office Plaza, 2525 NW 62 Street, Suite 5100, Miami, FL 33147*, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirement as outlined above in letter A-C and below:
  - a. Pollution Liability insurance, in an amount not less than \$1,000,000 covering third party claims, remediation expenses, and legal defense expenses arising from on-site and off-site loss, or expense or claim related to the release or threatened release of Hazardous Materials that result in contamination or degradation of the environment and surrounding ecosystems, and/or cause injury to humans and their economic interest.
- If construction of a building(s) or structure(s) occurs as either ground-up new, addition or structural renovation of an existing structure is required, the Contractor shall furnish to *Department of Solid Waste Management, Dr. Martin Luther King Jr. Office Plaza, 2525 NW 62 Street, Suite 5100, Miami, FL 33147*, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirement as outlined above in letter a below:
  - a. Builders' Risk Insurance on an "all risk" basis in an amount not less than one hundred (100%) percent of the completed contract value of the building(s) or structure(s). The policy shall be in the name of Miami Dade County and the Contractor. *If work being done involves existing structure, then coverage needs to include coverage for existing structure.*
- For renovation or equipment install projects with values greater than \$1,000,000:
  - a. Installation Floater on an "all risk" basis in an amount not less than one hundred percent (100%) of the insurable value of the equipment and materials. The policy shall list Miami Dade County as a Loss Payee A.T.I.M.A.
- For contracts that requires professional services such as testing, design, engineering, architectural or other related professional services the Contractor shall furnish to *Department of Solid Waste Management, Martin Luther King Office Plaza, 2525 NW 62 Street, Suite 5100, Miami, FL 33147*, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirement as outlined above in letter A-C and below
  - a. Professional Liability in the 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**

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, DSWM 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:  
Consultant:

Contractor:  
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**

:

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

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***

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*

\_\_\_\_\_  
*Print Name*

\_\_\_\_\_

*Date*

FINAL AFFIDAVIT

***RPQ No.:***

The undersigned Contractor, \_\_\_\_\_, certifies and warrants to **Department of Solid Waste Management** 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 :*** \_\_\_\_\_

LABOR STANDARDS PROVISIONS

FINAL CERTIFICATE

**RPO 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 :** \_\_\_\_\_

## MEMORANDUM OF UNDERSTANDING

**RPO No.:**

**WHEREAS,** \_\_\_\_\_, ( hereafter referred to as the " Contractor " ) and the **Department of Solid Waste Management**, 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 **RPO 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 Department of Solid Waste Management.
- (2) In consideration of the payment by DSWM 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. DSWM 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) DSWM 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.

( COMPANY SEAL )

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

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

*Print Name* : \_\_\_\_\_

*Print Title* : \_\_\_\_\_

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

**RECOMMENDED**

By : \_\_\_\_\_  
Resident Engineer/Project Manager

By : \_\_\_\_\_  
Chief, Construction Division

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*



ATTACHMENT "C"

Sub-Contractor's/Supplier's Release of Claim

Consent of Surety Company to Requisition Payment

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 \_\_\_\_\_.

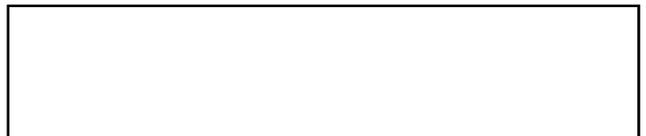
[ ] who is personally known to me or [ ] who has produced \_\_\_\_\_ as identification and who

[ ] did [ ] did not take an oath.

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

Type or Print Name: \_\_\_\_\_

Notary Seal:



**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\_\_\_\_.

\_\_\_\_\_  
SURETY COMPANY

ATTEST:  
(SEAL)

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED REPRESENTATIVE

\_\_\_\_\_  
TITLE

ATTACHMENT "D"

"Contractor Agent to Accept Service"

## CONTRACTOR AGENT TO ACCEPT SERVICE

RPQ No.: \_\_\_\_\_

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

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

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

NOTICE TO PROCEED (NTP) DATE: \_\_\_\_\_

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

CONTRACTOR TELEPHONE No.: \_\_\_\_\_

CONTRACTOR E-MAIL ADDRESS: \_\_\_\_\_

AGENT'S NAME: \_\_\_\_\_

AGENT'S TITLE: \_\_\_\_\_

AGENT'S ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

AGENT'S TELEPHONE No. \_\_\_\_\_

AGENT'S E-MAIL ADDRESS \_\_\_\_\_

***Contractor Corporate Representative***

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

SIGNATURE

CONTRACTOR

ATTACHMENT "E"

Force Account Daily Report:  
Labor, Material & Equipment



**FORCE ACCOUNT DAILY REPORT:  
LABOR, MATERIAL & EQUIPMENT**

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

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

CONTRACT No. \_\_\_\_\_ REPORT No. \_\_\_\_\_

CONTRACT CHANGE NOTICE / DSWM 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. NO INVOICE OLDER THAN 30 DAYS ACCEPTED.	ALL EQUIPMENT RATES ARE ADJUSTED TO REFLECT CALIFORNIA BLUE BOOK

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: 5px;">FOR ENGINEER'S USE</div> APPROVED AS TO SUBSTANCE		EXTENSION OF LABOR, MATERIAL & EQUIPMENT VERIFIED BY:
BY: _____	DATE _____	INSPECTOR _____ DATE _____
RESIDENT ENGINEER		

ATTACHMENT "F"

Certification of the Contractor

CERTIFICATION OF THE CONTRACTOR

The Contractor shall execute this Affidavit and submit it with all releases.  
RPQ No.

According to the best of my knowledge and belief, I certify that as of the date of this release all work has been performed and materials supplied in full accordance with the terms and conditions of the Contract.

I further certify that to the best of my knowledge and believe there are no outstanding claims for Labor, material or Time by or against Contractor unless otherwise noted below and that payments in full have heretofore been made by the Contractor, for which payment has been received, to all persons, firms and corporations supplying labor, materials, equipment or supplies, used directly or indirectly by the Contractor or by any subcontractor in the prosecution of the work provided for in said Contract.

Estimate No. \_\_\_\_\_

For period ending: \_\_\_\_\_

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

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

Affix corporate seal if corporation

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

Exception(s) for claims and to appropriate payment to subcontractors and obtaining a Miami-Dade County Release of Lien is/are:

Signed, Sealed and Delivered in the presence of:

State of \_\_\_\_\_

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

On this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, before me, a Notary Public, in aforesaid County, personally appeared \_\_\_\_\_, the \_\_\_\_\_ of \_\_\_\_\_ who acknowledged that he/she executed the above Affidavit on behalf of the Corporation or Entity as its free act and deed.

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

My Commission Expires: \_\_\_\_\_

# SPECIFICATIONS

- Scope of Work
- Technical Specifications
- Drawings

# Scope of Work

**Project name: 60 Year Recertification of Mosquito Control Administration Building (Bldg. No. 5) – Structural & Electrical Repairs**

**RPQ NO. 18624-25**

**Site Address: 8901 NW 58 Street, Miami, FL 33178**

**Site Hours of Operation: Monday – Friday, 7am-3:30pm**

**Work Hours: Monday – Saturday, 7am – 5pm**

- Requests for approval by the Owner to work other than regular working hours must be submitted to the Owner at least 48 hours prior to any proposed weekend work or extended work hours during the week.

## Project Description

The work consists of furnishing all materials, labor, and equipment to perform the necessary structural and electrical repairs required for the 60 Year Recertification of the Mosquito Control Administration Building (Building No. 5) located at 8901 NW 58<sup>th</sup> Street, Miami, FL 33178. These repairs are required to comply with the minimum inspection procedural guidelines for Building Recertification, Parking Lot Illumination and Parking Lot Guardrails.

The Contractor shall be responsible for the following:

### Structural repairs to include but are not limited to:

1. Repair of cracks on stucco and walls.
2. Repair of concrete spalling on exterior and interior walls.
3. Clean and paint rusted steel beams, purling, joists, columns and connections.
4. Clean and paint the exterior and interior masonry and concrete walls.
5. Replacement of damaged expansion joints.
6. Replacement of sealant around air conditioning ducts.

### Electrical repairs to include but are not limited to:

1. Install new outdoor light above the main entrance door (on wall).
2. Secure existing low-voltage conductors.
3. Remove existing low-voltage communication cables.
4. Install new communications cables.
5. Verify the existing grounding system.

### Additional Information

- Awarded Contractor shall coordinate with County personnel and with the Engineer of Record (EOR) to phase the work in a manner to minimize impact to office activities.
- Building No. 5 will be unoccupied for a period of ten (10) consecutive days for the completion of steel purlin, beams, and columns cleaning and painting

work. Work may begin on a Thursday after working hours or on a Friday morning.

MIAMI-DADE COUNTY  
DEPARTMENT OF SOLID WASTE MANAGEMENT

**PROJECT #: EDP-SW-18572-24**

60 YEAR RECERTIFICATION OF  
MOSQUITO CONTROL BUILDING ADMINISTRATION  
(BUILDING NO. 5) AT 58<sup>TH</sup> STREET FACILITY  
STRUCTURAL AND ELECTRICAL REPAIRS

STRUCTURAL AND ELECTRICAL SPECIFICATIONS

BUILDING UNDER  
SCOPE OF WORK



8795 NW 58TH STREET, MEDLEY, FL 33178

NOVEMBER 2025

PREPARED BY:



782 NW 42<sup>ND</sup> AVE, SUITE 635 MIAMI, FL 33126

**FOR REVIEW**

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# STRUCTURAL SPECIFICATIONS

**DIVISION 01**  
**GENERAL REQUIREMENTS**  
**SECTION 01 10 00**  
**SUMMARY OF WORK**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Structural and Electrical Repairs at Mosquito Control Building Administration (Building No. 5) located at 8795 NW 58TH Street, Medley, FL 33178, to comply with the minimum Inspection procedural guidelines for Building Recertification, Parking Lot Illumination, and Parking Lot Guardrails.
- B. This Section describes the project in general and provides an overview of the extent of the work to be performed under this Contract. Detailed requirements and extent of work is stated in the applicable Specification sections and shown on the Plans. The Contractor shall, except as otherwise specifically stated herein or in any applicable parts of the Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, testing, and completion of the work under this Contract.

**1.02 SPECIFICATIONS**

- A. The Specifications included in these Contract Documents establish the minimum performance and quality requirements for materials and equipment with the minimum standards for quality of the workmanship and appearance.
- B. The work shown on the Plans is intended to be comprehensive and descriptive, not an exact and complete representation of the actual finished work. Installed work shall include fittings, joints, supports, nuts, bolts, and all other accessories required to provide complete and satisfactory systems as specified, even though some items may not be specifically shown on the Plans.
- C. It is the intent of Miami-Dade County Department of Solid Waste Management (DSWM) to obtain a complete functional, satisfactory and legally operable installation under this project, and any items of labor, equipment or materials which may be reasonably assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein. The Contractor shall provide all materials for the project unless they are specifically called out in these specifications as being supplied by the Department. The Contractor shall also supply all other labor, material or equipment required to preclude damage to or loss of functionality of any existing facility or system.
- D. No request for additional compensation or Contract time (except for a non-compensable item extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered.

### **1.03 REASONABLY IMPLIED PARTS OF THE WORK SHALL BE DONE THOUGH ABSENT FROM SPECIFICATIONS**

- A. Any part of the work which is not mentioned in the Specifications but is shown on the Plans, or any part not shown on the Plans but described in the Specifications, or any part not shown on the Plans nor described in the Specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make each installation satisfactorily and legally operable, shall be performed by the Contractor as incidental work without extra cost to DSWM, as if fully described in the Specifications and shown on the Plans, and the expense thereof shall be included in the applicable unit prices or lump sum bid for the work.

### **1.04 SUMMARY OF WORK**

- A. Summary of the scope of work:

#### **STRUCTURAL:**

1. Repair of cracks on stucco and walls.
2. Repair of concrete spalling on exterior and interior walls.
3. Clean and paint rusted steel beams, purling, joists, columns and connections.
4. Clean and paint exterior and interior masonry and concrete walls.
5. Replacement of damaged expansion joints.
6. Replacement of sealant around air conditioning ducts.

#### **ELECTRICAL:**

1. Install new outdoor light on wall.
2. Secure existing low-voltage conductors.
3. Remove existing low-voltage communication cables.
4. Install new communications cables.
5. Verify the existing grounding system.

### **1.05 PARAMETERS DURING CONSTRUCTION**

- A. Contractors' requirements and restrictions

1. Contractors must perform the work strictly in accordance with the specifications.
2. The contractors must rectify all damages of stucco, concrete repair, and restoration on site.
3. The contractors may use equivalent products, always with the prior approval of the Engineer.
4. Contractors must provide the competent and specialized personnel to execute, in the best possible way, the work to which the specifications refer.
5. Before starting, the contractors must present a work program, which allows establishing the order and duration of each of the stages of the work.
6. The contractors will be responsible for the protection and conservation of the work until delivery.
7. Contractor shall protect all existing equipment and structure to remain from damages. If damage occurs, the contractor is responsible for repairing damaged surfaces and material as required to restore them to their original condition.
8. Contractor shall provide safeguards during construction to provide safety and protection of the adjacent public and private areas.
9. Contractor must provide the necessary shoring where the concrete damage is moderate to

severe on structural members.

## **1.06 TESTING**

- A. Testing procedure shall be submitted to the Engineer and will be subject to review and approval. The Contractor is advised that all testing shall be carried out in accordance with the best practices of the trade, best management practices (bmp) and as recommended in writing by the engineering/technical/test staff of the manufacturer of the equipment and he should plan and price his test work accordingly.

## **1.07 MINIMUM CONSTRUCTION EXPERIENCE OF THE CONTRACTOR**

- A. With his bid, the successful Bidder shall submit proof that his/her firm has at least the minimum successful contract experience as required below for this Contract being bid. Such proof shall consist of a list of projects, completed prior to the bid date, with the names and telephone numbers of the owners or representatives that the OWNER can contact to confirm the listed experience.
- B. The Bidder must demonstrate that it has full-time personnel with the necessary experience to perform the Project's Scope of Work. The Bidder shall provide a list of no less than three (3) references who can confirm that they have developed similar concrete restoration and painting projects in the last five (5) years. Each reference shall include the following: contact's name, telephone number, e-mail address, and location. As preferred the years of experience requested for the Contractor in similar recertification projects.

## **1.08 PERMITS**

- A. Contractor shall obtain all Building Permits. Permit cost will be reimbursed by the Owner.
- B. Contractor is responsible, with the approval of the owner, to pay for all permits necessary for the execution and completion of the work. Permits cost will be reimbursed by the Owner.
- C. Contractor shall notify Owner in writing before starting any work contrary to the contract documents.

## **1.09 UTILITIES**

- A. Contractor may use, water and electricity available on the building for the performance of the work. Contractor to coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate the use of temporary utilities to minimize waste. The contractor needs to bring a water meter, generators and temporary toilets.

## **1.10 WORK HOURS**

- A. Regular working hours are defined as up to 10 hours per day, Monday through Saturday, beginning no earlier than 7:00 a.m. and ending no later than 5:00 p.m., excluding Sundays and OWNER observed Holidays.
- B. Construction Quality Assurance (CQA) shall be the responsibility of the OWNER and CQA CONSULTANT who will act as the OWNER'S representative. The CQA CONSULTANT

is a party independent of the CONTRACTOR and is responsible for field-testing, observing, and documenting activities related to the construction and/or permit documents and the CQA Plan.

- C. Requests for approval by the OWNER to work other than regular working hours must be submitted to the OWNER at least 48 hours prior to any proposed weekend WORK or extended workweek hours.
- D. Periodic unscheduled WORK hours on weekdays will be permitted provided that 24 hours notice is provided to the OWNER. Maintenance and cleanup may be performed during hours other than regular working hours.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

1. Visitors must continue to use the building installation throughout the working period covered by the work.
2. Work must comply with the Florida Building Code and local ordinances.
3. Remove all debris from the job site as soon as possible. Transport and legally dispose materials off site.
4. Secure and protect undamaged areas noted as to remain.
5. Prevent access of unauthorized persons to the work site. Demolition areas will be closed until repair process is completed.
6. Contractor shall take care of removed items to be reinstalled.
7. Contractor shall provide all the necessary safety equipment to personnel.
8. Contractor shall execute all the restoration accordingly with the construction details provided in Appendix and contract documents.
9. The Contractor shall be responsible for the legal disposal of excess and demolition materials in area without incurring any liability against the Owner.
10. The Contractor shall provide a full-time on-site Safety Manager for each Task Order for construction services under the Contract, who shall be responsible for all safety and health requirements.

**END OF SECTION**

**SECTION 01 20 00**  
**MEASUREMENT AND PAYMENT**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. The CONTRACTOR shall receive and accept the compensation provided in the Contract as full payment for furnishing all labor, equipment, and materials and for performing all construction/operations necessary to complete the WORK as described in the Contract, and in full payment for all losses or damages incurred during the WORK, for any discrepancies between actual and estimated quantities, or from any unanticipated difficulties which may arise during the WORK until final acceptance by the DSWM.
  
- B. Payment for the various items on the Contractor's Bid Form, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles and for all labor, operations, supervision, overhead, and profit, and incidentals appurtenant to the items of work being described as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor.
  
- C. No separate payment will be made for any item that is not specifically set forth on the Contractor's Bid Form and all costs therefore shall be included in the prices named on the Contractor's Bid Form for the various appurtenant items of work. Payment for complying with the safety requirements for construction on the work site shall be included in the contract unit price paid for the various items of work wherein it is required, and no separate payment will be made therefore.
  
- D. The total Bid Amount shall cover all work required by the Contract Documents. All costs in connection with the proper and successful completion of the WORK, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction equipment and tools; including all costs and expenses for taxes, commissions, transportation charges and expenses, permit fees, patent fees, royalties, handling and tests; and performing all necessary labor and supervision to fully complete the WORK shall be included in the bid. All work not specifically set forth as a pay item on the CONTRACTOR's Bid Form shall be considered a subsidiary obligation of CONTRACTOR and all costs in connection therewith shall be included in the unit prices bid.

- E. All estimated quantities stipulated on the CONTRACTOR's Bid Form are approximate and are to be used only (a) as a basis for estimating the probable cost of the WORK and (b) for the purpose of comparing the bids submitted for the WORK. The actual amounts of work done and materials under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished unless it exceeds the estimated quantities in which case a change order must be approved prior to payment for quantities exceeding the estimated quantity.
- F. The CONTRACTOR shall field verify all quantities and dimensions shown on the Drawings or contained in the Contract Specifications.
- G. The CONTRACTOR shall be responsible for establishing contracts with its subcontractors, which have a measurement and payment in accordance with this Section. If the CONTRACTOR establishes a contract with its subcontractors, which is in conflict with this Section, any additional cost incurred will be borne by the CONTRACTOR.
- H. Restoration is not a separate pay item but is considered to be an integral part of the work under the contract, and all contracts bid prices include the cost of restoration necessitated by the work related to that bid item. Restoration includes existing structure and property, paving, stabilized roads, drainage piping and ditches, catch basins, head walls, yard culverts, driveways, lawns and ground areas, walkways, and irrigation systems, which are altered, removed or damaged during construction. Cleanup is an integral part of restoration.
- I. The CONTRACTOR shall be responsible for all building, concrete and other permits associated to the design to complete the installation of all appurtenances related to the WORK.

## **1.2 COMPUTATION OF QUANTITIES**

- A. Measurement of quantities expressed as area shall be based upon a horizontal, planimetric projection to the work.
- B. Measurement of linear items will be for quantities actually field installed to the specified work limits and should be measured by the Contractor in conjunction with the Engineer.

- C. Payment will be made to the limits as specified in the Contract Documents. If the constructed limits are less than the specified limit, payment will be made to the actual limits of construction as shown on the Record Drawings. Payment for quantities that exceed the specified contract limits will only be made with the approval of the DSWM with acceptable supporting documentation from the CONTRACTOR.
- D. No partial payments shall be made for the installation of items which have not been tested and approved.
- E. Payment will be made monthly until completion of each unit price item based on quantity completed by CONTRACTOR, and verified by the DSWM. Final payment will be based on quantity calculated from Record Drawings and confirmed by field measurement by the DSWM and ENGINEER.
- F. Payment for Lump Sum items will be made as described for each individual lump sum Bid Item, as described in the PAYMENT section.

### **1.3 VARIATIONS IN ESTIMATED QUANTITIES**

- A. The quantities given in the Contract Documents are approximate and are given as a basis for the uniform comparison of bids. The DSWM does not expressly, or by implication, agree that the actual amount of work will correspond therewith.
- B. The CONTRACTOR must provide, for Unit Price WORK, a proposed contract price determined on the basis of estimated quantities required for each item. The estimated quantities of items are not guaranteed and are solely for the purpose of comparing bids. Each such unit will be deemed to include an amount for overhead, profit and indirect costs for each separately defined item.

### **1.4 BID FORM**

- A. The Bid Form for the items contained within this project can be found in the contract documents.

### **1.5 MEASUREMENT OF QUANTITIES**

- A Measurement by Weight: Reinforcing steel, rolled or formed steel or other metal shapes will be measured by CRSI or AISC Manual of Steel Construction weights. Welded assemblies will be measured by CRSI or AISC Manual of Steel Construction or scale weights.
- B Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.

- C Measurement by Area: Measured by square dimension using mean length and width or radius.
- D Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- E Stipulated Price Measurement: By unit designated in the agreement.
- F Other: Items measured by weight, volume, area, or lineal means or combination, as appropriate, as a completed item or unit of the Work.

## **1.6 PAYMENT**

- A Payment includes full compensation for all required supervision, labor, products, tools, equipment, plant, transportation, services, and incidentals; and erection, application or installation of an item of the Work; and Contractor's overhead and profit. The price bid shall include the total cost for required Work. Claims for payment as Unit Price Work not specifically covered in Bid Proposal Documents will not be accepted.
- B Progress Payments for Unit Price Work will be based on the Engineer's observations and evaluations of quantities incorporated in the Work multiplied by the unit price.
- C Progress Payments for Lump Sum Work will be based on the Engineer's observations and evaluations of the percentage of quantities included in the schedule of values incorporated in the Work.
- D Final Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities determined by Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

## **1.7 NONCONFORMANCE ASSESSMENT**

In the case of non-conforming Work:

- A Remove and replace the Work, or portions of the Work, not conforming to the Contract Documents.
- B If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:
  - 1. The nonconforming Work will remain as is, but the unit price will be adjusted to a lower price at the discretion of the Engineer.
  - 2. The nonconforming Work will be modified as authorized by the Engineer, and the unit price will be adjusted to a lower price at the discretion of the Engineer, if the modified Work is

deemed to be less suitable than originally specified.

- C Individual Technical Specifications may modify these options or may identify a specific formula or percentage price reduction.
- D The authority of the Engineer to assess the nonconforming Work and identify payment adjustment is final.

## **1.8 NONPAYMENT FOR REJECTED PRODUCTS**

Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable to the Engineer.
2. Products determined as nonconforming before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work, unless specified otherwise.
6. Loading, hauling, and disposing of rejected products.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

**SECTION 01 20 10**  
**PROJECT MEETINGS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

This Section specifies administrative and procedural requirements for project meetings including but not limited to:

- A. Pre-Construction Conference
- B. Progress Meetings
- C. Coordination Meetings

**1.2 DESCRIPTION**

- A. The PROJECT MANAGER will schedule and administer a preconstruction conference, bi-weekly construction progress meetings, and specially called meetings throughout the progress of work. The ENGINEER or PROJECT MANAGER will be responsible for preparing the agenda, making arrangements, preparing the meeting summaries, and presiding at these meetings.
- B. Representatives of CONTRACTOR, Subcontractor(s), and Suppliers attending these meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. The CONTRACTOR shall attend meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules.

**1.3 PRECONSTRUCTION CONFERENCE**

After award of the contract, but prior to the notice to proceed, a joint meeting shall be held with representatives of the DSWM, ENGINEER, CONTRACTOR, including the Project Superintendent, and other invited parties, which may be affected by the project.

This meeting is intended to introduce the various key personnel from each organization and to discuss the Contract Documents, the start of construction, order of work, labor and legal requirements, approved insurance requirements, names of the major subcontractors, method of payment, shop drawing submittal schedule, protection of existing facilities and other pertinent items associated with the Project. The CONTRACTOR shall bring five (5) copies of a construction schedule, schedule of values, and shop drawing submittal log to this meeting.

The suggested agenda for the preconstruction meeting is as follows:

- A. Introduction of key personnel and roles
- B. Overview of project
  - 1. Project summary
  - 2. Contract completion time
  - 3. Liquidated damages
  - 4. Guarantee of work
- C. Project schedule
- D. Critical work sequencing
- E. Labor requirements
- F. Relationship and coordination with:
  - 1. Other Contracts
- G. Use of premises
  - 1. Site access and traffic control
  - 2. Office, work and storage areas
  - 3. Temporary facilities/utilities
  - 4. Safety and first aid procedures
  - 5. Security procedures
  - 6. Posting of signs
  - 7. Clean-up procedures
  - 8. Other DSWM requirements
- H. Procedures and processing of:
  - 1. Shop drawings

2. Applications for payment
  3. Partial payments
  4. Change orders
  5. Requests for information
  6. Record documents
- I. Construction facilities, controls and aids
  - J. Staking of work
  - K. Equipment to be used
  - L. Material/manufacturers/suppliers to be used
  - M. Major equipment/material deliveries
  - N. On-site material storage requirements
  - O. Project inspections
  - P. Record documentation

#### **1.4 PROGRESS MEETINGS**

During the course of the Contract, progress meetings will be organized and conducted by the PROJECT MANAGER and/or ENGINEER to discuss the progress of the Work weekly. The CONTRACTOR and Project Superintendent shall attend these meetings.

The suggested agenda for these meetings:

- A. Review summary of previous meeting
- B. Work progress
  1. Since last meeting
  2. Expected progress during next work period
- C. Field observations, problems, conflicts
- D. Construction schedule
  1. Problems which impede the construction schedule

2. Revisions to schedule
  3. Critical/long-lead items
  4. Off-site fabrication and delivery schedules
- E. Coordination of work items with DSWM activities
- F. Shop drawing submittals
1. Status of reviews
  2. Submittal requirements
  3. Remaining submittals
- G. Record documents
1. Contractor Daily Work Logs
  2. Photographs
  3. Red-line mark-ups
  4. Survey Notes
- H. Maintenance of quality standards
- I. Pending changes and substitutions
1. Effect on construction schedule and on completion date
  2. Effect on other Contracts of the project
- J. Other Business

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## SECTION 01 30 10

### CONTRACTOR SUBMITTALS

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. Whenever CONTRACTOR SUBMITTALS are required hereunder, all such SUBMITTALS shall be provided to the ENGINEER or as designated by the ENGINEER.
- B. The CONTRACTOR shall submit to the ENGINEER for review and exception, if any, such working drawings, shop drawings, test reports, data on materials and equipment, material samples, certificates, and affidavits as are required for the proper control of WORK, including but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the SPECIFICATIONS and in the CONTRACT DRAWINGS.
- C. Within fifteen (15) calendar days after the effective date of the Agreement, the CONTRACTOR shall submit to the ENGINEER a complete materials list of preliminary data on items for which Shop Drawings are to be submitted. Included in this materials list shall be the names of all proposed MANUFACTURERS furnishing specified items. Review of this list by the ENGINEER shall in no way expressed or implied relieve the CONTRACTOR from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the SPECIFICATIONS.
- D. Within ten (10) calendar days after CONTRACTOR award, and prior to the preconstruction meeting, the CONTRACTOR shall submit the following items to the ENGINEER for review and approval:
  - 1. Preliminary schedule of SUBMITTAL'S and target dates for the following, at a minimum:
    - a. Concrete Repair and Electrical Products Data Sheet.
    - b. Construction Quality Control (CQC) Plan.
    - c. Qualifications of the geotechnical Construction Quality Control Consultant (CQC CONSULTANT) and CQC LABORATORY.
    - d. Schedule of Values.
    - e. Construction Schedules.

- f. Final Measurements and As Built Drawings.
- 2. PROJECT schedule.
- 3. Health and Safety Plan.
- 4. Schedule for conducting preconstruction survey.
- 5. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit and the expected date of SUBMITTAL for the permit and required date for receipt of the permit.
- 6. Written confirmation the SPECIFICATIONS have been received and WORK shall be performed in compliance with the SPECIFICATIONS.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 CONTRACTOR SUBMITTALS**

- A. When used in the CONTRACT DOCUMENTS, the term “SUBMITTAL” shall be understood to include Shop Drawings, calculations, fabrication and installation drawings, lists, graphs, operating instructions, administrative documents and similar items on how the CONTRACTOR communicates what it intends to construct or what it or its subcontractors have designed.
- B. When used in the CONTRACT DOCUMENTS, the term “Shop Drawing” shall be considered to mean the CONTRACTOR'S plans for materials and equipment, which become an integral part of the PROJECT. Shop Drawings are drawings, diagrams, schedules, and other data specially prepared by the CONTRACTOR, distributor, supplier, manufacturer, etc. to show some part of the WORK. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data, shall be considered only as supportive to required Shop Drawings.
- C. Wherever called for in the CONTRACT DOCUMENTS, or where required by the ENGINEER, the CONTRACTOR shall furnish to the ENGINEER for review electronic SUBMITTALS (PDF format) unless otherwise requested, (AutoCAD r18 or later version, Excel, etc.).
- D. Any SUBMITTAL, which is not complete or does not provide the level of detail

outlined in the SPECIFICATIONS shall not be considered acceptable for review and may be returned for resubmittal. Unless otherwise required, said SUBMITTALS shall be provided to the ENGINEER fifteen (15) calendar days minimum prior to planned WORK activity to allow review of same by the ENGINEER, and to accommodate the rate of construction progress required under the CONTRACT. Should any SUBMITTAL be a part of any schedule milestone and is considered to be unacceptable by the OWNER, the appropriate milestone shall be considered as not having been met until a complete and properly detailed SUBMITTAL is received.

- E. Attach to the front of each SUBMITTAL a Transmittal Form, or other form mutually agreed upon at the preconstruction meeting, stating the pertinent product information submitted and reference the appropriate SPECIFICATION Section and paragraph. Apply stamp, signed or initialed, certifying that all quantities, dimensions, field construction criteria, materials, catalog numbers, and specified performance criteria has been reviewed in accordance with the requirements of the WORK and the CONTRACT DOCUMENTS. SUBMITTALS shall indicate any deviations from requirements of the CONTRACT DOCUMENTS. If the CONTRACTOR takes exception to the SPECIFICATIONS, the CONTRACTOR shall note the exception in the letter of transmittal to the ENGINEER.
  - 1. If this information is not provided with each SUBMITTAL, the SUBMITTAL shall be returned to the CONTRACTOR without action taken by the ENGINEER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR. Ultimate responsibility for the accuracy and completeness of the information contained in the SUBMITTAL shall remain with the CONTRACTOR.
- F. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a SUBMITTAL is required. Transmittal of a SUBMITTAL of various items using a single transmittal form will be permitted only when the items taken together constitute a MANUFACTURER'S "package" or are so functionally related that expediency indicates review of the group or package as a whole. A multiple-page SUBMITTAL shall be collated into sets and each set shall be stapled or bound, as appropriate, prior to transmittal to the ENGINEER. SUBMITTALS shall be a complete package for each system.
- G. All CONTRACTOR SUBMITTALS shall be carefully reviewed by an authorized representative of the CONTRACTOR prior to submission to the ENGINEER. Each SUBMITTAL shall be dated, signed, and certified by the CONTRACTOR as being correct. No consideration for review by the ENGINEER of any CONTRACTOR SUBMITTAL will be made for any items, which have not been so certified by the CONTRACTOR. All non-certified SUBMITTALS will be returned to the CONTRACTOR without action taken by the ENGINEER and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

- H. Submit pages from MANUFACTURER'S catalog sheets, brochures, diagrams, illustrations and other standard descriptive data which are pertinent; clearly mark each copy of standard printed data to identify pertinent materials, product or models, and reference it to the SPECIFICATION Section and paragraph number.
- I. Modify MANUFACTURER'S standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the WORK. Delete information not applicable.
- J. The CONTRACTOR shall submit a Submittal Log which lists each required SUBMITTAL and which has columns for the actual submitted date as well as the date that the review was completed.

### 3.2 TRANSMITTAL OF SUBMITTAL'S

- A. Transmit all submittals to:

DESIGNATED CONSTRUCTION MANAGER  
Miami Dade DSWM Department of Solid Waste Management

### 3.3 ENGINEER'S REVIEW OF SUBMITTALS

- A. Except as may otherwise be provided herein, the ENGINEER will return electronic responses of each SUBMITTAL to the CONTRACTOR, with comments noted thereon, within a reasonable number of calendar days following receipt. It is considered reasonable the CONTRACTOR shall make a complete and acceptable SUBMITTAL to the ENGINEER. Each SUBMITTAL will be reviewed and stamped according to the following by the ENGINEER:
  - 1. **NO EXCEPTIONS TAKEN** - If a SUBMITTAL is returned to the CONTRACTOR marked in this manner a formal revision and resubmission of said SUBMITTAL will not be required.
  - 2. **MAKE CORRECTIONS NOTED** - If a SUBMITTAL is returned to the CONTRACTOR marked in this manner a formal revision and resubmission of said SUBMITTAL will not be required. However, the CONTRACTOR shall address the comments/corrections in the final WORK. Revisions indicated on SUBMITTALS shall be considered as changes necessary to meet the requirements of the CONTRACT DOCUMENTS and shall not be taken as the basis of claims for extra WORK.
  - 3. **AMEND - RESUBMIT** - If a SUBMITTAL is returned to the CONTRACTOR marked in this manner the CONTRACTOR shall revise said SUBMITTAL per ENGINEER'S comments and shall resubmit said

revised SUBMITTAL to the ENGINEER. Any delays caused thereby for tardy resubmittals (longer than 5 calendar days) shall be the total responsibility of the CONTRACTOR.

4. **REJECTED - RESUBMIT** - If a SUBMITTAL is returned to the CONTRACTOR marked in this manner the CONTRACTOR shall revise said SUBMITTAL and resubmit said revised SUBMITTAL to the ENGINEER. Any delays caused thereby for tardy resubmittals (longer than 5 calendar days) shall be the total responsibility of the CONTRACTOR.

5. **NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED** - Fabrication of an item shall not commence before the ENGINEER has reviewed the pertinent SUBMITTALS and returned to the CONTRACTOR marked in this manner. Revisions indicated on SUBMITTALS shall be considered as changes necessary to meet the requirements of the CONTRACT DOCUMENTS and shall not be taken as the basis of claims for extra WORK.

B. Resubmittals will be handled in the same manner as first SUBMITTALS. On resubmittals, the CONTRACTOR shall direct specific attention, in writing or on SUBMITTALS, to revisions other than the corrections requested by the ENGINEER on previous submissions. The CONTRACTOR shall make any corrections required by the ENGINEER.

C. The ENGINEER'S review of the SUBMITTALS shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in the SUBMITTALS. Any fabrication or other WORK performed in advance of the receipt of approved SUBMITTALS shall be entirely at the CONTRACTOR'S risk and expense. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.

D. The OWNER shall deduct from the CONTRACTOR'S compensation all costs and expenses of the ENGINEER which the OWNER incurs as a result of:

1. Additional reviews or multiple reviews of SUBMITTALS. The OWNER reserves the right to withhold monies due the CONTRACTOR to cover additional cost of the ENGINEER'S review when multiple SUBMITTALS are required due to the CONTRACTOR'S failure to comply with the SPECIFICATIONS. It shall be considered reasonable that if any single submittal is rejected due to not complying with the SPECIFICATIONS in excess of 2 times ("multiple"), the additional reviews shall be at the CONTRACTOR'S expense and will be deducted from the monies due the CONTRACTOR.

- E. Unless otherwise authorized in writing by the ENGINEER, the substantiation of offers of substitutes or “of equal” items must be submitted within 30 calendar days after execution of the agreement. The CONTRACTOR, at the CONTRACTOR'S sole expense, shall furnish data concerning items offered as equivalent to those specified in the CONTRACT DOCUMENTS. The CONTRACTOR shall have the materials as required by the ENGINEER to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the items will fulfill the intended function. Installation and use of a substitute item shall not be made until approved by the ENGINEER. If a substitute offered by the CONTRACTOR is found to be not equal to the specified material by the ENGINEER, the CONTRACTOR shall furnish and install the material specified in the CONTRACT DOCUMENTS.
  
- F. The CONTRACTOR'S attention is further directed to the requirement that failure to submit data substantiating a request for a substitution or “of equal” item within the said thirty (30) calendar days period after execution of the agreement shall be deemed to mean the CONTRACTOR intends to furnish and install one of the specific products named in the CONTRACT DOCUMENTS, and the CONTRACTOR does hereby waive all rights to offer or use substitute products in each such case. Wherever a proposed substitute product has not been submitted within said thirty (30) calendar days period, or wherever the SUBMITTAL of a proposed substitute product fails to meet the requirements of the CONTRACT DOCUMENTS and an acceptable resubmittal is not received by the ENGINEER within said thirty (30) calendar day period, the CONTRACTOR shall furnish and install one of the specific products named in the CONTRACT DOCUMENTS.

### **3.4 PROGRESS REPORTS**

- A. A progress report shall be furnished to the ENGINEER with each Application for Payment. If the WORK falls behind schedule, the CONTRACTOR shall submit additional progress reports at such intervals as the ENGINEER may request.
  
- B. Each progress report shall include sufficient narrative to describe any current and anticipated delaying factors, their effect on the construction schedule, and proposed corrective actions. Any WORK reported complete, but which is not readily apparent to ENGINEER, must be substantiated with satisfactory evidence.
  
- C. Each progress report shall include a list of the activities completed with their actual start and completion dates, a list of the activities currently in progress, and the number of working days required to complete each.
  
- D. Construction Photographs - The CONTRACTOR shall provide a photographic record of construction progress every 2 weeks to the OWNER in electronic format (PDF, Jpeg, etc.). The ENGINEER and CQAR shall reserve the right to select the views to be photographed. The photographs shall be of good quality as determined by the ENGINEER and CQAR, and camera date stamped. Polaroid or similar instant type photographs will not be acceptable.
  
- E. Construction Photographs shall be taken Weekly or during execution of individual

WORK items, whichever is more frequent, beginning prior to the start of construction (preconstruction conditions) and continuing through the completion of WORK. Photographs shall be taken to document each major WORK item.

### **3.5 DAILY REPORT**

- A. The CONTRACTOR shall submit to the ENGINEER daily reports on a Weekly basis. The reports shall be delivered no later than 10:00 a.m. of the first workday following the weekend. The daily reports shall include the following:
1. Day of week, date, CONTRACTOR name, and report number.
  2. Summary of WORK in process (segregated by CONTRACTOR and subcontractor).
  3. Details for WORK accomplished including quantities of WORK installed.
  4. Summary of equipment working and where working.
  5. Summary of manpower by WORK element and subcontractor.
  6. Receipt of major equipment or materials.
  7. QC inspection report in accordance with Section 01 70 00 Contract Completion, Startup, and Closeout.

### **3.6 PROJECT SCHEDULE**

- A. The schedule shall be comprehensive, covering both activities at the site of the WORK and offsite activities such as design, procurement, and fabrication. The schedule shall be orderly and realistic and shall be revised as necessary to meet this requirement. The CONTRACTOR shall promptly advise the ENGINEER of any occurrence that may impact the schedule. No revision to the schedule can be made without the review and acceptance by the ENGINEER.
- B. The schedule and each revision thereof shall be subject to approval by the OWNER and ENGINEER for conformity with the requirements of the CONTRACT DOCUMENTS. Schedules which are not accepted and which are returned to the CONTRACTOR shall be revised to correct the defects noted and shall be resubmitted to the ENGINEER within five (5) calendar days after receipt.
- C. When required to perform and complete the changed WORK in accordance with the revised schedule, the Contractor shall provide additional labor, materials,

equipment, or other factors of production in excess of those in use before the changed WORK was ordered.

### **3.7 SAMPLES**

- A. Unless otherwise specified, whenever in the SPECIFICATIONS samples are required, the Contractor shall submit one (1) sample of each such item or material to the Engineer for approval at no additional cost to the OWNER.
- B. Samples, as required herein, shall be submitted for approval a minimum 15 calendar days prior to ordering such material for delivery to the job site and shall be submitted in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delays in the Work.
- C. All samples shall be individually and indelibly labeled or tagged, indicating thereon all specified physical characteristics and manufacturer's names for identification and submittal to the Engineer for approval.
- D. Unless otherwise specified, all colors and textures of specified items will be selected by the OWNER from the manufacturer's standard colors and standard product lines.

### **3.8 QUALITY CONTROL**

- A. The CONTRACTOR shall prepare and submit a QC Plan for the WORK contained in the CONTRACT prior to beginning the WORK. This QC Plan will indicate the actions, documentation, and responsible party or parties that will assure compliance with the SPECIFICATIONS and CONTRACT DOCUMENTS, and that quality requirements for inspections and testing are implemented. The QC Plan will contain a checklist of quality related activities applicable to various construction activities for scheduling and implementation purposes.
- B. The CONTRACTOR shall submit for approval a testing log, which lists all of the required quality control tests and if the test result is satisfactory. The CONTRACTOR will submit updated testing logs with each application for payment.
- C. The CONTRACTOR'S QC responsibilities shall be in accordance with Section 01 70 00 Contract Completion, Startup and Closeout.

1. No construction activities shall commence until the Erosion and Pollution Control Plan has been reviewed and written approval received from the ENGINEER.
2. The CONTRACTOR shall be responsible for compliance with the approved Erosion and Pollution Control Plan.
3. Temporary drainage measures shall be addressed.

### **3.9 RECORD DRAWINGS**

The CONTRACTOR shall keep and maintain at the job site one set of Record Drawings. On these, the CONTRACTOR shall mark all PROJECT conditions, locations, configurations, and any other changes or deviations (Redlines) which may vary from the details represented on the original CONTRACT DRAWINGS, including buried or concealed construction and utility features, which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated or which were not indicated on the CONTRACT DRAWINGS. Record Drawings shall be supplemented by any detailed sketches or typewritten changes to the SPECIFICATIONS, as necessary or directed to indicate fully the WORK as actually constructed. These Record Drawings of the CONTRACTOR'S representation of as-built conditions, including all revisions made necessary by addenda, change orders, and the like shall be maintained up-to-date during the progress of the WORK.

- A. In the case of those drawings which depict the detail requirements for equipment to be assembled as wired in the factory, such as motor control centers and the like, the Record Drawings shall be updated by indicating those portions which are superseded by change order drawings or final Shop Drawings and by including appropriate reference information describing the change orders by number and the Shop Drawings by MANUFACTURER, drawing, and revision number.
- B. Record Drawings shall be accessible to the ENGINEER at all times during the construction period and shall be delivered to the ENGINEER, upon completion of the WORK prior to final acceptance of PROJECT.
- C. Applications for Payment will not be approved if the Record Drawings are not kept current and not until the completed Record Drawings, showing all variations

between the WORK as actually constructed and as originally shown on the CONTRACT DRAWINGS or other CONTRACT DOCUMENTS have been inspected and accepted by the ENGINEER.

- D. The OWNER shall provide, at the preconstruction conference, a reproducible set of CONTRACT DRAWINGS. The record information shall be transferred from the CONTRACTOR'S redline drawings to the reproducible drawings.
- E. Upon substantial completion of WORK and prior to final acceptance, the CONTRACTOR shall complete and deliver five (5) complete sets of Record Drawings to the ENGINEER for transmittal to the OWNER, conforming to the construction records of the CONTRACTOR. This set of Record Drawings shall consist of corrected CONTRACT DRAWINGS showing the reported location of the WORK. The information submitted by the CONTRACTOR and incorporated into the final PROJECT Record Drawings will be assumed to be reliable, and the ENGINEER will not be responsible for the accuracy of such information, nor for any errors or omissions, which may appear on the final PROJECT Record Drawings as a result.
- F. Requests for partial payments will not be approved if the Redline Drawings are not kept current and not until the completed Redline Drawings showing all variations between the WORK as actually constructed and as originally shown on the CONTRACT DRAWINGS or other CONTRACT DOCUMENTS have been inspected by the ENGINEER or OWNER.
- G. Final payment will not be approved until the CONTRACTOR prepared Record Drawings have been approved by the ENGINEER. Record Drawings will be provided in the form of a set of prints with carefully plotted information overlaid in red pencil and in electronic format compatible with AutoCAD r18 or later version.

**END OF SECTION**

## **SECTION 01 40 00**

### **QUALITY CONTROL**

#### **PART 1 - GENERAL**

##### **1.1 SITE INVESTIGATION AND CONTROL**

- A. CONTRACTOR shall verify all dimensions in the field and check field conditions continuously during construction. CONTRACTOR shall be solely responsible for any inaccuracies built into the WORK due to CONTRACTOR's failure to comply with this requirement.
- B. CONTRACTOR shall inspect related and appurtenant WORK and report in writing to PROJECT MANAGER any conditions, which will prevent proper completion of the WORK. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the CONTRACTOR at CONTRACTOR's sole cost and expense.

##### **1.2 INSPECTION OF THE WORK**

- A. All work performed by the CONTRACTOR shall be inspected by the ENGINEER and nonconforming WORK shall be noted and promptly corrected. The CONTRACTOR is responsible for the WORK conforming to the Contract Documents.
- B. The WORK shall be conducted under the general observation of the PROJECT MANAGER and is subject to inspection by representatives of the DSWM acting on behalf of the DSWM to ensure compliance with the requirements of the Contract Documents. Such inspection may include mill, plant, shop, or field inspection, as required. The PROJECT MANAGER or any inspector(s) shall be permitted access to all parts of the WORK, including plants where materials or equipment are manufactured or fabricated.
- C. The presence of the PROJECT MANAGER or any inspector(s), however, shall not relieve the CONTRACTOR of the responsibility for the proper execution of the WORK in accordance with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR, and said duty shall not be avoided by any act or omission on the part of the PROJECT MANAGER or any inspector(s). Inspection of WORK, later determined to be nonconforming shall not be cause or excuse for acceptance of the nonconforming WORK. The acceptance of nonconforming WORK shall be approved by the DSWM when adequate compensation is offered and it is in the DSWM best interest.

- D. All materials and articles furnished by the CONTRACTOR shall be subject to inspection, and no materials or articles shall be used in the WORK until they have been inspected and accepted by the PROJECT MANAGER or other designated representative. No WORK shall be backfilled, buried, cast in concrete, hidden, or otherwise covered until it has been inspected. Any WORK so covered in the absence of inspection shall be subject to uncovering at the CONTRACTOR's expense. Where uninspected WORK cannot be uncovered, such as in concrete cast over reinforcing steel, all such WORK shall be subject to demolition, removal, and reconstruction under proper inspection, and no additional payment will be allowed.

### **1.3 TIME OF INSPECTION AND TESTS**

- A. Any samples and test specimens required under these Specifications shall be furnished and prepared for testing in ample time for the completion of the necessary tests and analyses before said articles or materials are to be used. CONTRACTOR shall furnish and prepare all required test specimens at CONTRACTOR's own expense. Whenever the CONTRACTOR is ready to backfill, bury, cast in concrete, hide, or otherwise cover any WORK under this Contract, the PROJECT MANAGER shall be notified not less than 24 hours in advance to request inspection before beginning any such WORK of covering. Failure of the CONTRACTOR to notify the PROJECT MANAGER at least 24 hours in advance of any such inspections shall be reasonable cause for the PROJECT MANAGER to order a sufficient delay in the CONTRACTOR's schedule to allow time for such inspection, any remedial, or corrective work required, and all costs of such delays, including its impact on other portions of the WORK, shall be borne by the CONTRACTOR.

### **1.4 SAMPLING AND TESTING**

- A. When not otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered. However, the DSWM reserves the right to use any generally-accepted system of inspection, which, in the opinion of the ENGINEER, will ensure the DSWM that the quality of the workmanship is in full accord with the Contract Documents.
- B. Any waiver of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial work, shall not be construed as a waiver of any technical or qualitative requirements of the Contract Documents.

- C. Notwithstanding the existence of such waiver, the ENGINEER shall reserve the right to make independent investigations and tests as specified in the following paragraph and, upon failure of any portion of the WORK to meet any of the qualitative requirements of the Contract Documents, shall be reasonable cause for the ENGINEER to require the removal or correction and reconstruction of any such WORK.
- D. In addition to any other inspection or quality assurance provisions that may be specified, the ENGINEER shall have the right to independently select, test, and analyze, at the expense of the DSWM, additional test specimens of any or all of the materials to be used. Results of such tests and analyses shall be considered along with the tests or analyses made by the CONTRACTOR to determine compliance with the applicable specifications for the materials tested or analyzed provided that wherever any portion of the WORK is discovered, as a result of such independent testing or investigation by the ENGINEER, which fails to meet the requirements of the Contract Documents, all costs of such independent inspection and investigation and all costs of removal, correction, reconstruction, or repair of any such WORK shall be borne by the CONTRACTOR.

## **1.5 RIGHT OF REJECTION**

- A. The PROJECT MANAGER or designated representative, acting for the DSWM, shall have the right at all times and places to reject any articles or materials to be furnished hereunder which, in any respect fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the WORK at the site. If the PROJECT MANAGER or designated representative, through an oversight or otherwise, has accepted materials or WORK which is defective or which is contrary to the Contract Documents, such material, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected.
- B. CONTRACTOR shall promptly remove or replace rejected articles or materials from the site of the WORK after notification of rejection.
- C. All costs of removal and replacement of rejected articles or materials, as specified herein, shall be borne by the CONTRACTOR.
- D. Failure to promptly remove and replace rejected work shall be considered a breach of this specification and the DSWM may after seven (7) days notice, terminate the CONTRACTOR'S right to proceed with the affected work and remove and replace the WORK and issue a back charge to cover the cost of the WORK.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

**SECTION 01 50 05**  
**MOBILIZATION AND DEMOBILIZATION**

**PART 1 - GENERAL**

**1.01 DEFINITION AND SCOPE**

- A. Mobilization shall include the obtaining of all permits, bonds, and insurance; transportation to the site of all equipment and construction facilities; and all other preparatory work and operations required for the proper performance, clean-up, and completion of the WORK. Mobilization shall include the following submittals:
1. Established fire protection and safety program.
  2. Required permits.
  3. Finalized detailed construction schedule, approved by the DSWM and ENGINEER.
  4. Finalized schedule of values of the WORK in the DSWM's approved format.
  5. Finalized schedule of submittals, approved by the DSWM and ENGINEER.
- B. Demobilization includes removing from the site any private or public properties which are accessed by the CONTRACTOR to perform the WORK, all resources, equipment, materials, temporary support facilities, utilities, and all remaining construction debris at the completion of the project.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## **SECTION 01 50 10**

### **TEMPORARY FACILITIES AND CONTROLS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. The CONTRACTOR shall provide temporary utilities, facilities and controls for protection of the WORK, existing facilities, and adjacent properties from damage from construction operations as described herein.
- B. If the CONTRACTOR uses the designated area, to stage the CONTRACTOR field office trailer, the CONTRACTOR will be responsible for coordinating with the utility provider to bring service to the trailer area from existing utilities.

##### **1.2 TEMPORARY ELECTRICITY**

- A. The CONTRACTOR shall provide and pay for required power service from Utility source.
- B. The CONTRACTOR shall provide a temporary electric feeder from an existing electrical service. Power consumption shall not disrupt the OWNER'S need for continuous service.
- C. The CONTRACTOR shall provide power outlets for construction operations, with branch wiring and distribution boxes as required. The CONTRACTOR shall provide flexible power cords as required for his use.

##### **1.3 TELEPHONE SERVICE**

- A. The CONTRACTOR shall provide and maintain at all times during the progress of the WORK, at the CONTRACTOR'S own expense, not less than one phone number that can be reached by PROJECT personnel at any time.

##### **1.4 TEMPORARY WATER SERVICE**

- A. General - The CONTRACTOR may utilize existing, on-site sources of non-potable water, for construction purposes, following coordination with the OWNER.
- B. The CONTRACTOR shall be solely liable for any claims arising from the CONTRACTOR'S use of OWNER supplied non-potable water.
- C. Potable Water - Drinking water on the site during construction shall be furnished by the CONTRACTOR and shall be potable water furnished in approved dispensers. Notices shall be posted conspicuously throughout the site warning the CONTRACTOR'S personnel of non-potable water sources.

- D. Water Connections - The CONTRACTOR shall not make connection to or draw water from any fire hydrant, stormwater pond, or pipeline without first obtaining permission of the authority having jurisdiction over the use of said system.
- E. Removal of Water Connections - Before final acceptance of the WORK on the PROJECT, all temporary connections and piping installed by the CONTRACTOR shall be entirely removed, and all affected improvements shall be restored to their original condition or better and to the satisfaction of the ENGINEER and the agency owning the affected utility.
- F. Fire Protection - Portable fire extinguishers, hose connections, hoses, water casks, chemical equipment, or other sufficient means shall be provided for fighting fires that occur in any portion of the WORK, and responsible persons shall be designated and instructed in the operation of such fire apparatus so as to prevent or minimize the hazard of fire. The CONTRACTOR'S fire protection program shall conform to the requirements of Subpart F of the OSHA Standards of Construction.

## **1.5 TEMPORARY SANITARY FACILITIES**

- A. Toilet Facilities - Portable chemical toilets shall be provided, and maintained, wherever needed for use of the CONTRACTOR employees. Existing facilities shall not be used. Toilets shall conform to the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.
- B. Sanitary and Other Organic Wastes (Municipal Solid Waste, MSW) - The CONTRACTOR shall establish a regular collection of all sanitary and organic wastes (MSW). This would be items the CONTRACTOR may generate during the construction period such as paper, plastic, food waste, beverage containers, etc. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR'S operations shall be disposed of away from the site in a manner satisfactory to the ENGINEER and in accordance with all laws and regulations pertaining thereto. Disposal of all such wastes shall be at the CONTRACTOR'S expense.

## **1.6 BARRIERS**

- A. The CONTRACTOR shall provide barriers to prevent unauthorized entry to construction areas.
- B. The CONTRACTOR shall protect vehicular traffic, stored materials, site and structures from damage during construction.

## **1.7 CONTRACTOR'S WORK AND STORAGE AREA**

- A. DSWM designated PROJECT MANAGER will arrange for CONTRACTOR a use a portion of site property as storage and shop area until completion of the WORK.

- B. Any area occupied by the CONTRACTOR shall be maintained in a clean and orderly condition satisfactory to the PROJECT MANAGER.
- C. At the completion of the contract, all CONTRACTOR's and subcontractor's facilities and storage shall be removed promptly and the area left clean and free of all debris or surplus material.
- D. Contractor shall remove temporary equipment and facilities when no longer required and shall restore ground to original or specified conditions.
- E. Contractor shall make arrangements for any offsite storage or shop areas necessary for the proper execution of the WORK hereunder, and all costs therefor shall be borne by the Contractor.

## **1.8 PROTECTION OF INSTALLED WORK**

- A. The CONTRACTOR shall protect installed WORK and provide special protection as specified in the CONTRACT DOCUMENTS.
- B. The CONTRACTOR shall provide temporary and removable protection for installed products. The CONTRACTOR shall control activity in the immediate WORK area to minimize damage to surrounding area.
- C. Traffic is prohibited in landscaped areas.

## **1.9 SECURITY**

- A. The CONTRACTOR shall provide the security to protect WORK, existing facilities and operations from unauthorized entry, vandalism, and theft.
- B. The CONTRACTOR shall coordinate with the OWNER regarding existing security program.

## **1.10 ACCESS ROADS**

- A. The CONTRACTOR shall extend and relocate access roads as WORK progress requires. Provide construction detours necessary for unimpeded traffic flow on site.
- B. The CONTRACTOR shall provide and maintain access to fire hydrants free of obstructions.
- C. Existing on-site roads may be used for construction traffic. The CONTRACTOR shall repair damage resulting from the WORK.

## **1.11 PARKING**

- A. The OWNER shall provide temporary parking areas to accommodate CONTRACTOR personnel.

## **1.12 PROGRESS CLEANING**

- A. During the progress of the WORK, the CONTRACTOR shall keep the site of the WORK and other areas used by the CONTRACTOR in a neat and clean condition and free from any accumulation of rubbish. Do not allow hazardous, dangerous or unsanitary conditions, nor public nuisances, to develop or persist on the site.
- B. The CONTRACTOR shall dispose of all rubbish and waste materials of any nature occurring at the work site and establish regular intervals of collection and disposal of all such materials and waste.
- C. Equipment and material storage shall be confined to areas approved by the ENGINEER.
- D. Disposal of rubbish and surplus materials shall be onsite as designated by the OWNER at the CONTRACTOR'S expense.

## **1.13 DUST ABATEMENT**

- A. The CONTRACTOR shall furnish all labor, equipment, and means required and shall carry out effective dust abatement measures wherever and as often as necessary and as directed by the ENGINEER or CQAR to prevent CONTRACTOR'S operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals or causing a nuisance to persons living in or occupying buildings in the vicinity. The CONTRACTOR shall be responsible for any damage resulting from any dust originating from CONTRACTOR'S operations. The dust abatement measures shall be continued until CONTRACTOR is relieved of further responsibility by the ENGINEER. No separate payment will be allowed for dust abatement measures and all costs therefore shall be included in the CONTRACTOR'S Bid Price.

## **1.14 EQUIPMENT MAINTENANCE AREA**

- A. The CONTRACTOR shall designate an equipment maintenance and repair area for completion of the WORK. The location of this area shall be approved by the OWNER. Maintenance and repair of equipment shall be conducted within this area.

## **1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS**

- A. The CONTRACTOR shall remove temporary above grade or buried utilities, equipment, facilities, and materials prior to Final Application for Payment inspection.
- B. The CONTRACTOR shall clean and repair damage caused by installation or use of temporary WORK.
- C. The CONTRACTOR shall restore existing facilities used during construction to original condition and restore permanent facilities used during construction to

specified condition.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## SECTION 01 50 30

### PROTECTION OF EXISTING FACILITIES

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements specified herein, and in accordance with the requirements of the Contract Documents.

##### 1.2 RIGHTS-OF-WAY

The CONTRACTOR shall not do any work that would affect any oil, gas, sewer, or water pipeline; any fiber, telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the CONTRACTOR enter upon the rights-of-way involved until notified by the PROJECT MANAGER that the DSWM has secured authority therefor from the property owner. After authority has been obtained, the CONTRACTOR shall give said owner due notice of the CONTRACTOR intention to begin WORK, and shall give said owner convenient access and every facility for removing, shoring, supporting, or otherwise protecting such pipeline, transmission line, ditch, fence, or structure and for replacing same. When two (2) or more Contracts are being executed at one time on the same or adjacent land in such manner that WORK on one Contract may interfere with that on another, the DSWM shall decide which CONTRACTOR shall have priority to perform and in what manner. When the territory of one Contract is the necessary or convenient means of access for the execution of another Contract, such privilege of access or any other reasonable privilege may be granted by the DSWM to the CONTRACTOR so desiring, to the extent, amount, manner, and times permitted. No such decision regarding the method or time of conducting the work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the WORK in DSWM Contract.

##### 1.3 EXISTING UTILITIES AND IMPROVEMENTS

- A. General. The CONTRACTOR shall protect all utilities and other improvements, which may be impaired during construction operations. The CONTRACTOR shall take all possible precautions for the protection of unforeseen utility lines for uninterrupted service and such special protection as may be directed by the PROJECT MANAGER.
- B. Utilities to Be Moved. In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon proper application by the CONTRACTOR, be notified by the PROJECT

MANAGER to move such property within a specified reasonable time. The CONTRACTOR shall not interfere with said property until after the expiration of the time stipulated.

- C. DSWM's Right of Access. The right is reserved to the DSWM and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this Contract.
- D. Approval of Repairs. All repairs to a damaged improvement shall be inspected and approved by an authorized representative of the improvement before being concealed.

#### **1.4 SUBSURFACE OBSTRUCTIONS**

- A. CONTRACTOR shall field determine, the location and dimensions of all structural damages to be repaired and relocate any obstruction before proceeding with the work.
- B. In the concrete restoration process, care shall be taken not to remove, disturb, or injure existing pipes, conduits, or structures. If necessary, the CONTRACTOR at his own expense shall sling, shore-up, and maintain such structures in operation.
- C. CONTRACTOR shall obtain the permission of and give sufficient notice to the proper authorities of the CONTRACTOR's intention to remove or disturb any equipment, pipe, conduit, etc., and shall abide by their regulations governing such work.
- D. In the event subsurface structures are broken or damaged in the execution of the WORK, the CONTRACTOR shall immediately notify the proper authorities and, at the option of said authorities, either repair the damage at once at his own expense or pay the proper charges for repairing said damage. Repairs shall be made to the satisfaction of the PROJECT MANAGER. The CONTRACTOR shall be responsible for any damage to persons or property caused by such breaks or due to his own neglect in reporting and/or repairing such damages.

#### **1.5 CONFLICTS WITH OTHER UTILITIES**

- A. CONTRACTOR shall coordinate and cooperate with the DSWM to ensure that no damages to existing utilities occur.
- B. DSWM will not be responsible for any delay or inconvenience to the CONTRACTOR resulting from the existence, removal, or adjustment of any public or private utility that could have been reasonably identified. Additional costs incurred as a result thereof shall be borne by the CONTRACTOR and considered as included in the Contract Price.

#### **1.6 EXISTING FENCE LINES**

- A. Any fence removed or temporarily relocated shall be restored to its original

condition and location.

- B. All cost for such temporary removal or replacement shall be included as indicated in the unit prices bid. No direct payment will be made for fence replacement unless specifically noted otherwise.

#### **1.7 PROTECTION OF THE WORK**

- A. Provide protection of installed products to prevent damage from subsequent operations.
- B. Remove protection facilities when no longer needed, prior to completion of the Work.
- C. Control traffic to prevent damage to equipment, materials, and surfaces.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## SECTION 01 60 00

### MATERIAL AND EQUIPMENT

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION OF REQUIREMENTS

- A. CONTRACTOR furnished materials and equipment shall be new and shall not have been in service at any other installation. Material and equipment shall conform to applicable specifications unless otherwise approved in writing by the ENGINEER.
- B. Fabricated and manufactured products shall be designed, fabricated, and assembled in accordance with the best engineering and shop practices.
- C. Two or more things of the same kind shall be identical, by the same manufacturer.
- D. Products shall be suitable for the intended service conditions.
- E. Equipment dimensions, sizes, and capacities shown or specified shall be adhered to unless variations are specifically approved in writing by the ENGINEER.
- F. Equipment and material shall not be used for any purpose other than that for which it is specified or designed.
- G. Where equipment or material is specifically shown or specified to be reused in the Work, special care shall be used in removal, handling, storage, and reinstallation, to assure proper function in the completed Work. Any items specified to be reused that are damaged by the CONTRACTOR shall be replaced with new units at no additional cost to the DSWM.
- H. The CONTRACTOR shall arrange for transportation, storage, and handling of products, which require off-site storage, restoration, or renovation.
- I. Installation of all Work shall comply with manufacturer's printed instructions. All equipment and products shall be handled, installed, connected, cleaned, conditioned, and adjusted in accordance with the manufacturer's instructions and specified instructions. Should specified requirements or job conditions conflict with the manufacturer's instructions, these conflicts shall be called to the ENGINEER's attention for review and revised instructions.
- J. All materials and equipment, which are furnished and/or installed by the CONTRACTOR shall be guaranteed.

## **1.2 TRANSPORTATION AND HANDLING**

- A. Equipment and materials shall be loaded and unloaded by methods affording adequate protection against damage. Precaution shall be taken to prevent injury to the equipment or materials during transportation and handling. Suitable equipment will be used and the materials or equipment shall be under control at all times. Under no condition shall the material or equipment be dropped, bumped, or dragged.
- B. Equipment and materials shall be delivered to the job site by means that will adequately support it and not subject it to undue stress.

## **1.3 STORAGE AND PROTECTION**

- A. All equipment, products, and materials shall be stored in accordance with the manufacturer's instructions, with seals and labels intact and legible. Humidity and temperature shall be maintained within the ranges required by the manufacturer's instructions.
  - 1. Products subject to damage by the elements shall be stored in weather-tight enclosures.
  - 2. Fabricated products shall be stored above the ground on blocks or skids.
  - 3. Products, which are subject to deteriorations, shall be covered with impervious coatings with adequate ventilation to avoid condensation.
  - 4. Loose granular materials shall be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- B. Storage shall be arranged in such a manner so as to provide easy access for inspection. Periodic inspections shall be made of all stored products to assure that they are maintained under specified conditions and free from damage or deterioration.

## **1.4 SALVAGED MATERIAL AND EQUIPMENT**

The DSWM reserves all rights to salvage any abandoned material and equipment. Materials not used or salvaged by the DSWM shall be disposed of by the CONTRACTOR at no additional cost to the DSWM.

## **1.5 SUBMITTALS**

The CONTRACTOR shall obtain and distribute copies of the manufacturer's instructions

to the parties involved in the installation, including two (2) copies to the ENGINEER. A set of instructions also shall be available at the job site during installation and until completion. This requirement is separate from the requirements for installation and operations manual for the record drawings.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## SECTION 01 70 00

### CONTRACT COMPLETION, STARTUP, AND CLOSEOUT

#### PART 1 - GENERAL

##### 1.1 COMPLETION PROCEDURES

- A. Substantial Completion shall be considered achieved when the CONTRACTOR has demonstrated that all final repairs are met, all areas are cleaned and structural or electrical equipment are installed in accordance with the CONTRACT DOCUMENTS and TECHNICAL SPECIFICATIONS, and all other items of WORK, as described in the CONTRACT DOCUMENTS, are fully operational.
- B. When the CONTRACTOR believes Substantial Completion has been achieved, CONTRACTOR shall request, in writing, to the ENGINEER that Substantial Completion be recognized as having been achieved and request that the OWNER issue a Certificate of Substantial Completion. The CONTRACTOR shall also forward a copy of this request to the OWNER. Prior to making such a request, the CONTRACTOR must have:
  - 1. Completed all WORK necessary for the safe, proper and complete use or operation of the facility as intended. At a minimum, this will include completion of all WORK in the CONTRACT DOCUMENTS and TECHNICAL SPECIFICATIONS necessary for the PROJECT to function as designed.
  - 2. Prepared a CONTRACTOR-generated punch list for submission with the request for issuance of a Certificate of Substantial Completion.
  - 3. Submitted and received acceptance of accurate Record Drawings for all WORK completed to date.
- C. Upon receipt of the request from the CONTRACTOR, the ENGINEER and designated representatives shall review the request, the WORK and the above requirements to determine whether the CONTRACTOR has achieved Substantial Completion. If this review fails to support Substantial Completion, the ENGINEER shall so notify the CONTRACTOR in writing citing the reasons for rejection. If the ENGINEER determines the CONTRACTOR has reached Substantial Completion, the following procedures will be followed:
  - 1. The ENGINEER will review the WORK and the CONTRACTOR'S punch list to assure all deficiencies are noted on a final punch list.

2. The ENGINEER will schedule and conduct a pre-final walk-through of the building with the OWNER'S representatives, the CONTRACTOR, and others, for the purpose of formally reviewing the WORK, and the final punch list. A copy of the final punch list will be provided to all participants and any additional items noted during the walk-through will be added to the list.
  3. Upon completion of the pre-final walk-through the ENGINEER shall prepare a request to the OWNER requesting they establish the date for Substantial Completion as the date of the walk-through, provided the walk-through has verified that the construction is in fact Substantially Complete. Upon approval of this request by the OWNER, the construction will be considered Substantially Complete.
- D. Final Completion will be deemed to have occurred when all WORK is completed in accordance with the CONTRACT DOCUMENTS including the following:
1. Throughout this Section, all references to "SURVEYOR" shall mean a professional land surveyor licensed in the State of Florida.
  2. All final punch list items have been corrected, signed off by the CONTRACTOR and the ENGINEER, and demonstrated to the OWNER during the final walk-through.
  3. All updates to the Record Drawings have been submitted to, and accepted by, the ENGINEER.
  4. Demobilization and site cleanup are complete.
  5. The ENGINEER has issued a Certificate of Final Completion.
  6. All facilities have been properly demonstrated to be functioning as required.
- E. Beneficial Occupancy will normally not occur before Substantial Completion but can occur for a discrete element of a PROJECT when desired by the OWNER. When Beneficial Occupancy is requested, the same procedure specified above will be used except no notice or request will be forwarded to the OWNER. Upon completion of the procedure, the OWNER will accept occupancy of that element of WORK.

## **1.2 CLOSE-OUT PROCEDURE**

- A. The ENGINEER and CONTRACTOR shall meet and resolve all outstanding issues including, but not limited to:

1. Claims and adjustments for time or costs.
  2. Outstanding, unused allowances.
  3. Procedures for handling warranty issues.
- B. A Final Change Order shall be processed if required. Final payment and close out procedures shall comply with all requirements of the CONTRACT DOCUMENTS.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## **SECTION 01 80 00**

### **HEALTH AND SAFETY REQUIREMENTS**

#### **PART 1 - GENERAL**

##### **1.1 GENERAL**

- A. The CONTRACTOR shall comply with all federal, state, and local safety codes, ordinances, and regulations, including the requirements of the United States Occupational Safety and Health Administration (OSHA), and other such safety measures as may be required by the above-mentioned regulatory agencies as required for WORK being performed.
- B. The CONTRACTOR shall comply with the requirements of 29 CFR 1910.132 for worker personal protection equipment requirements.
- C. All WORK shall be performed in strict accordance with the CONTRACTOR'S Health and Safety Plan, as described below in this Section.
- D. The CONTRACTOR will use a Health and Safety Officer for construction oversight that is currently trained in accordance with OSHA regulations 29 CFR 1910.120. The Health and Safety Officer must have completed the 8-hour Management and Supervisor Training, 40-hour Health and Safety Training course and necessary refresher courses, and Medical Monitoring. Copies of current training certificates will be provided to the ENGINEER for the Health and Safety Officer prior to the start of the WORK. The Health and Safety Officer shall be on- site during all intrusive activities and shall inspect ongoing activities on a daily basis. The Health and Safety Officer shall conduct a weekly site safety meeting for all on-site personnel.
- E. No smoking will be allowed on the field or WORK areas within the station property.
- F. Actions that potentially endanger workers should be stopped immediately and brought to the OWNER or ENGINEER'S attention. Health and Safety for the CONTRACTOR'S and subcontractor's forces is the responsibility of the CONTRACTOR.

##### **1.2 DESCRIPTION OF HEALTH AND SAFETY PLAN**

- A. The CONTRACTOR shall submit a Health and Safety Plan to the ENGINEER. The Health and Safety Plan shall include descriptions of the methods, equipment and safety procedures to be used during construction activities, including excavating, trenching, backfilling, and other construction activities. In preparing the Health and Safety Plan, the CONTRACTOR shall consider the various materials such as municipal solid waste (MSW), industrial waste, solvents, petroleum hydrocarbons, caustics, animal carcasses, asbestos, etc. that may be encountered while conducting all operations necessary to complete the WORK.
- B. At a minimum, the Health and Safety Plan shall address the following:
  - 1. Organizational Structure - To include general supervision, Health and Safety officer, lines of authority, and responsibility and communication. The Health

and Safety Officer shall be a worker who will be present at all times during site construction, in addition to his/her other site duties.

2. Comprehensive Work Plan - To include the work tasks and objectives, resources needed, and training requirements for workers (health and safety, machine operations license, etc.). This shall also include a section on safety procedures to be followed for excavation and well drilling.
  3. Asbestos Work Plan - To include approach for workers to excavation and in environments possibly containing asbestos material. Plan shall include the WORK tasks and objective and resources needed.
  4. Health and Safety - To include identification of possible site hazards, training levels for each category of site workers, personal protective equipment and medical surveillance needed, site control measures, and confined space entry procedures.
  5. Emergency Response Plans - To include all emergency telephone numbers, a highlighted map showing the quickest route to the nearest emergency care facility, and directions to such facility.
  6. Respiratory Protection Program - To include written documentation of the CONTRACTOR'S respiratory program.
  7. A signature page for all site workers covered by the Plan (CONTRACTOR and SUBCONTRACTOR site workers).
- C. In addition to addressing issues related to activities associated with construction activities in solid waste stations, the Health and Safety Plan shall address issues including safety of operations adjacent to heavy equipment, traffic safety, first aid, heat stress and environmental monitoring, site security (including security of open excavations), and other PROJECT specific topics.
- D. The review of the Health and Safety Plan by the ENGINEER shall be for method and content only, and to inform the ENGINEER of the health and safety procedures which must be followed by the ENGINEER and OWNER. The CONTRACTOR shall retain responsibility and liability for the application, adequacy and safety of the methods and monitoring. However, the WORK shall not begin until the Health and Safety Plan has been submitted and reviewed by the ENGINEER.
- E. The CONTRACTOR'S duties and responsibilities for safe connection with the WORK shall continue until such a time WORK is complete and the OWNER has released CONTRACTOR from WORK.

### **1.3 SAFETY EQUIPMENT**

- A. At a minimum, the CONTRACTOR shall have the following equipment on site:
1. Hard hats, work gloves, reflective work vests and hard toe shoes for all personnel.
  2. First aid kit.

3. Fire extinguishers.

#### **1.4 SUBMITTALS**

- A. The CONTRACTOR shall submit 2 copies of the site-specific Health and Safety Plan to the ENGINEER at the preconstruction meeting. The ENGINEER will review the plan for information purposes only. It is the CONTRACTOR'S responsibility to prepare and implement a Health and Safety Plan appropriate for the WORK.

#### **1.5 GENERAL SAFETY REQUIREMENTS**

- A. One person, to be present at all times during the construction, shall be designated to assure observance of the safety procedures. This person shall be trained in the use of all of the recommended safety equipment.
- B. Smoking or open flame shall be prohibited on the property.
- C. No worker shall be allowed to work alone at any time in or immediately near a construction area.
- D. Site operations will take place in conditions of adequate light only.
- E. All personnel must wear hard hats.
- F. The CONTRACTOR shall comply with all provisions of state, federal, or local codes regarding WORK in confined spaces, including the need for monitoring, safety harnesses, and documentation of confined space activity. The atmospheric condition within confined spaces shall be monitored for oxygen, combustible gas, and hydrogen sulfide before entry. No confined spaces shall be entered without first verifying the safety of the environment.
- G. When construction and/or working in a manhole, vault, or other subgrade enclosure in and/or adjacent to the solid waste station site, the interior atmosphere shall be tested for the presence of oxygen, hydrogen sulfide, and combustible gas before entry and continuously when occupied. The person entering should wear a parachute-type safety harness with attached tether secured to the surface. A SCBA shall be available for use if needed. Forced air ventilation fans shall be used to provide a fresh air stream.
- H. In addition to conforming to the safety rules and regulations of governmental authorities having jurisdiction, the CONTRACTOR is advised of the presence of methane gas emanating from the natural decomposition of refuse buried at the job site and shall take precautions to ensure the safety of workers and the public.
- I. The CONTRACTOR shall demonstrate to the ENGINEER on a daily basis that all safety equipment is functioning properly, that all monitoring instruments are calibrated, and that the instrument operators are sufficiently knowledgeable in the use of the safety equipment.

## **1.6 ACCIDENT PREVENTION**

- A. Precaution shall be exercised by the CONTRACTOR at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws and of building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded or eliminated. First aid kits shall be provided in a readily accessible location or locations.
- B. The CONTRACTOR shall make all reports as are, or may be, required by any authority having jurisdiction, and permit all safety inspections of the WORK being performed under this CONTRACT. Before proceeding with any construction WORK, the CONTRACTOR shall take the necessary action to comply with all provisions for safety and accident prevention.

## **1.7 PAYMENT FOR SAFETY REQUIREMENTS**

- A. Payment for complying with the safety requirements for construction on the WORK site shall be included in the contract unit price paid for the various items of WORK wherein it is required and no separate payment will be made therefore.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

**DIVISION 03**  
**CONCRETE**  
**SECTION 03 01 00**  
**CONCRETE REPAIRS**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Material, labor, and equipment required for concrete surface restoration and crack injection.

**1.02 QUALITY ASSURANCE**

- A. Contractor Qualifications: Acceptable to the manufacturer with documented experience of at least five (5) years on projects of similar nature.
- B. Comply with Manufacturer's instructions related to mixing and placing of the materials.
- C. Protection of Work: Protect installed work and prohibit traffic or storage upon waterproofed or coated surfaces.
- D. Protection of surrounding non-working areas. Perform work in such a manner that surrounding non-working areas are protected from damage, spills, over sprays etc.

**1.03 REFERENCES**

- A. Codes and standards referenced in this Section include:
  - 1. American Concrete Institute.
    - a. ACI 301 - Specifications for Structural Concrete for Buildings
    - b. ACI 546R - Concrete Repair Guide
  - 2. American Society for Testing and Materials.
    - a. ASTM C94 - Standard Specification for Ready-Mixed Concrete
    - b. ASTM C150 - Standard Specification for Portland Cement

**1.04 SUBMITTALS**

- A. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.
- B. Submit a copy of manufacturer's product installation instruction.

## **1.05 DELIVERY, STORAGE AND HANDLING**

- A. General: Failure to comply with the following shall be sufficient cause for rejection of materials by the Engineer and his/her requiring its removal from the site. Supply new material at no additional expense to the DSWM.
  - 1. Delivery of Materials:
    - a. Deliver materials in manufacturer's original unopened and undamaged containers, with information accurately representing container contents as approved by the Engineer at time of Shop Drawing submission.
    - b. Include the following information on the label:
      - i. Name of material and supplier.
      - ii. Installation, handling and protection requirements.
      - iii. Deliver materials in sufficient quantities to allow uninterrupted continuity of the work.
  - 2. Storage of Materials:
    - a. Only approved materials on project site.
    - b. Materials in original, undamaged containers with manufacturer's labels and seals intact.
    - c. All materials in a dry, enclosed area, off the ground and away from all possible contact with water and out of direct sunlight.
    - d. Prevent damage to materials during storage primarily by minimizing the amount of time they are stored at the job-site before being incorporated into construction systems.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Sika Corporation.
- B. BASF.
- C. Or approved equal.

### **2.02 SURFACE REPAIR PRODUCTS**

- A. Mortar for structural repair: One component shrinkage compensated, cement-based mortar for horizontal, vertical or overhead repair of structural concrete.
  - 1. Sikacrete – 211 SCC Plus by Sika.
  - 2. MasterEmaco S440 by BASF.
  - 3. Or approved equal.
- B. Mortar for horizontal, vertical, and overhead concrete surface repair:
  - 1. Sikaquick VOH by Sika.
  - 2. MasterEmaco N425 by BASF.

3. Or approved equal.

C. Patching Mortar:

1. Sikaquick 1000 by Sika.
2. Emaco R-300 by BASF.
3. Or approved equal.

D. Water: Potable and shall comply with the requirements of ASTM C1602.

## **2.03 CRACK INJECTION PRODUCTS**

A. Sikadur Crack-Repair by Sika.

B. Or approved equal.

## **PART 3 - EXECUTION**

### **3.01 SURFACE REPAIR**

A. PREPARATION

1. For all types of patches repair all defective and delaminated concrete and existing repair materials shall be broken back to a sound and dense concrete surface. Defective concrete shall be removed using light hand-held percussive equipment or high-pressure water jetting.
2. Hammer sounding shall be conducted on completion of breakout to ensure that all delamination has been removed.
3. All concrete surfaces and mortar substrates shall be sound, clean and free from dust, oils, and grease and surface contaminants. All loose and unsound materials and surface laitance shall be removed.

B. MIXING

1. Materials shall be evenly distributed and dry as good workability will allow.
2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions.
3. Mix all materials in mechanical batch mixer for minimum of five (5) minutes.
4. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

C. APPLICATION

1. A. Place repair mortar according to manufacturer's recommendations.

## 3.02 CRACK REPAIR

### A. EPOXY INJECTION

1. Preparation
  - a. Inspect surfaces to receive epoxy resin adhesive repair material; ensure that substrate is clean, sound, properly cured, free of standing water, coatings, or curing compounds, foreign particles, oil, dust, grease, or laitance, that will adversely affect the bond of repair materials.
  - b. Remove loose material by hand or mechanically, in accordance with standard practice.
  - c. Clean cracks prior to injection using clean, oil-free compressed air.
  - d. Clean surfaces adjacent to cracks adequately to allow cap-seal epoxy to form a proper bond.
  - e. Ensure that air, material, and surface temperature is at least 40 degrees F (5 degrees C) and rising prior to beginning application.
2. Equipment
  - a. General. Portable equipment shall be used employing positive displacement metering pumps which are interlocked to provide resin delivery in proportions required by the composition of the two- component injection adhesive. Mixing of the adhesive shall be accomplished in line with a static mixer. The equipment shall be driven by air or electric power.
  - b. Specific Equipment Requirements.
    - i. Ratio tolerance. The injection equipment shall be capable of maintaining the volume ratio of the specified adhesive components during uninterrupted flow within a tolerance of +/- 5%.
    - ii. Pressure Control. The injection equipment shall have an automatic pressure control device that allows operation at any preset pressure.
    - iii. Automatic Shut-Off. The injection equipment shall have an automatic shut-off feature to prevent delivery of one adhesive component only, when the other component supply is exhausted.
3. Crack sealing by Injection
  - a. Injection of the epoxy adhesive shall begin at the lowest entry port and continue until there the adhesive emerges from the next adjacent port.
  - b. As soon as the adhesive emerges from the adjacent port, injection shall be stopped, the port sealed, and the injection transferred to the adjacent port. The process of injection, waiting for emergence of adhesive from the next adjacent port, sealing of the injection port and continuation of injection in the adjacent port shall continue until the crack is filled.
  - c. Injection shall be performed until cracks are completely filled.

**END OF SECTION**

**SECTION 07 95 00**  
**EXPANSION JOINTS**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. The Work specified in this Section consists of providing all labor, materials, and incidentals necessary to furnish and install joints, joint materials and embedded items as indicated on the Contract Drawings, specified herein and as needed for a complete installation.
- B. Types of joints in concrete shall be as follows:
  - 1. Expansion Joints - Joints in concrete which allow thermal expansion and contraction of concrete. Reinforcement terminates within concrete on each side of joint.

**1.02 QUALITY ASSURANCE**

- A. Reviews of Shop Drawings shall be obtained before custom fabrication is started and before delivery of materials to the project site.
- B. Joint installation procedures and health and safety of the work force shall be the responsibility of the Contractor. The requirements of authorities having jurisdiction shall be complied with.

**1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Materials shall be delivered to the site in an undamaged condition and at such intervals as will avoid delay in the Work.
- B. Materials shall be stored and protected in a clean, properly drained location and shall be kept off the ground under a weather-tight covering permitting good air circulation. Materials shall be stored on dry wood sleepers, pallets, platforms or other appropriate supports which have slope for positive drainage.

**PART 2 - PRODUCTS**

**2.01 EXPANSION JOINT**

- A. Type M: Multi-component, non-sag, low-modulus polyurethane rubber sealant meeting ASTM C 920, Type M, Grade NS, Class 25, use T, NT, M, G, A, and O Capable of withstanding 25 percent in extension or compression shall be:
  - 1. Sikaflex 2C NS TG as manufactured by Sika Corporation, Lyndhurst, NJ.
  - 2. Or approved equal.

## **2.02 BACKING ROD**

- A. Backing rod shall be an extruded closed-cell, polyethylene foam rod. The material shall be compatible with the joint sealant material used and shall have a tensile strength of not less than 40 psi and a compression deflection of approximately 25 percent at 8 psi. The rod shall be 1/8-inch larger in diameter than the joint width except that a one-inch diameter rod shall be used for a 3/4inch wide joint.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until the substrates have been properly prepared.

### **3.02 PREPARATION**

- A. The Contractor shall examine the areas and conditions under which the Work of this Section is to be performed. Conditions detrimental to the proper and timely completion of the Work shall be corrected. Work shall not be proceeded until unsatisfactory conditions have been corrected.
- B. The contractor shall clean the joint opening of all contaminants immediately prior to installation of expansion joint system. Repair spalled, irregular or unsound joint surfaces using accepted industry practices for repair of the substrates in question. Remove protruding roughness to ensure joint sides are smooth. Ensure that there is sufficient depth to receive the full depth of the size of the expansion joint system.

### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

### **3.04 CLEAN AND PROTECT**

- A. Protect the system and its components during construction. Subsequent damage to the expansion joint system will be repaired at the general contractor's expense. After work is complete, clean exposed surfaces with a suitable cleaner that will not harm or attack the finish.

**END OF SECTION**

**SECTION 09 24 23**  
**CEMENT STUCCO**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES.**

- A. Stucco and accessory products.

**1.02 SUBMITTALS**

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
- B. Mixing and preparation instructions and recommendations.
- C. Surface preparation instructions and recommendations.
- D. Storage and handling requirements and recommendations.
- E. Installation methods.

**1.03 PROJECT CONDITION**

- A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's published recommendations.
- B. Proceed with work after all surfaces and conditions comply with requirements indicated in manufacturer's published instructions.

**PART 2 - PRODUCTS**

**2.01 MANUFACTURERS**

- A. Acceptable Manufacturer: Amerimix.

**2.02 PORTLAND CEMENT STUCCO:**

- A. Product: AMX 700 SBF by Amerimix Companies

**2.03 ACCESSORY MATERIALS:**

- A. Water: clean and free from deleterious acids, alkalis, and organic matter.
- B. Sand: mason's sand, ASTM C 144 standard specification for aggregate for masonry mortar.

- C. Hydrated lime: ASTM C 207 standard specification for hydrated lime for masonry purposes.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify owner's representative of unsatisfactory preparation before proceeding.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Remove all loose particles, dirt, dust, or any foreign objects which would inhibit proper bonding to substrate.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.03 INSTALLATION**

- A. Stucco Crack Repair
  - 1. Install in accordance with manufacturer's instructions. Limited quantities of debonded stucco repairs are expected. All areas will be inspected by the engineer to identify areas in need of repair. Stucco repairs are to be conducted in accordance with ASTM C 926-11 standard specification for application of Portland cement-based plaster.
  - 2. All cracks in masonry larger than hairline (over 1/16") are to be ground out mechanically to form a "v" or "u" shape measuring ¼" blown or brushed out to remove all dust, debris, and dried of all moisture.
  - 3. Fill the void with polyurethane caulk sealant.
  - 4. Once cured, the filled crack shall be overcoated with paint manufacturer's recommendation.
  - 5. Side of the crack to match the surrounding surface as closely as possible.
  - 6. All hairline cracks (less than 1/16") will be filled using paint manufacturer's recommendation.
- B. Stucco Patches repair
  - 1. Straight line or saw cuts must be made irregular by chipping away the edge.
  - 2. Remove any loose material and expose approximately 2" of the existing lath (if applicable) at all edges of the repair area.
  - 3. Cut new lath to fit and lap the existing (if applicable).

4. Stucco shall be 3-coat application, thickness to match existing.

C. Stucco Patches repair

1. Straight line or saw cuts must be made irregular by chipping away the edge. Remove any loose material and expose approximately 2" of the existing laths at all edges of the repair area.
2. Cut new lath to fit and lap the existing.
3. Stucco shall be 2-coat application, thickness to match existing.

### **3.04 MIXING**

- A. Use of a standard stucco-mixing machine is recommended. Use only clean, potable water when mixing. Material and water must be mixed for fifteen (15) minutes to yield good plasticity. All stucco tools and equipment must be maintained in a usable, clean condition.

### **3.05 CURING**

- A. Cure and provide time between coats in accordance with ASTM C 926 and manufacturer's instructions.
- B. Provide sufficient moisture in the plaster mix by curing to permit continuous hydration of the cementitious materials.
- C. Allow sufficient time between coats to permit each coat to cure and develop sufficient strength to resist cracking or other physical damage before the next coat is applied.

**END OF SECTION**

**SECTION 09 01 00**  
**PAINTING**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation and the application of paint systems on exterior masonry walls, concrete elements (walls, column, beams) and metal structures (beams, joists, columns).

**1.02 REFERENCES**

- A. ASTM: American Society for Testing and Materials (ASTM) D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

**1.03 SUBMITTALS**

- A. Product Data: Manufacturer's data sheets on each paint and coating product should include:
  - 1. Product characteristics.
  - 2. VOC content.
  - 3. Surface preparation instructions and recommendations.
  - 4. Primer requirements and finish specification.
  - 5. Storage and handling requirements and recommendations.
  - 6. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.

**1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

**1.05 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label.

## **1.06 PROJECT CONDITION**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's limits.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Acceptable Manufacturer: The Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
- B. Or approved equal.

### **2.02 PAINT MATERIALS**

- A. Primer: Sherwin Williams Pro-Cryl Universal Primer.
- B. Masonry and concrete finish coat: Sherwin Williams Emerald Acrylic Latex.
- C. Steel elements finish coat: Sherwin Williams Pro Industrial Acrylic Coating.
- D. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- E. According to County requirements, all paint must be low VOC (as close to 5 G/L VOC as possible) or Zero-VOC and lead-free.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared; notify Engineer of unsatisfactory conditions before proceeding.
- B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- C. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead-based paints, notify Engineer immediately if lead based paints are encountered.

### **3.02 PREPARATION**

- A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

- B. Cementitious Substrates: Prepare concrete, brick, concrete masonry block, and cement plaster surfaces to be coated. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.
- C. Use abrasive blast-cleaning methods and other abrasive methods for cleaning of metal structures.

### **3.03 APPLICATION**

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
- B. General: Apply high-performance coatings according to manufacturer's written instructions.
- C. Use applicators and techniques best suited for the material being applied.
- D. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
- E. Coating surface treatments, and finishes are indicated in the coating system descriptions.
- F. Provide finish coats compatible with primers used.
- G. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
- H. The number of coats and film thickness required is the same regardless of application method.
- I. Completed Work: Match approved Samples for color, texture, and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.

### **3.04 CLEANING**

- A. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

### **3.05 WARRANTY**

- A. Provide minimum ten (10) year manufacturer's standard material and labor warranty.

**END OF SECTION**

# DATA SHEETS

# **SIKACRETE 211 SCC**

## PRODUCT DATA SHEET

# Sikacrete<sup>®</sup>-211 SCC Plus

One-component, cementitious, polymer-modified, self consolidating concrete mix with an integral migrating corrosion inhibitor

### PRODUCT DESCRIPTION

Sikacrete<sup>®</sup>-211 SCC Plus is a one-component, self consolidating concrete containing factory blended coarse aggregate. This self consolidating concrete bag is silica fume and polymer modified and also contains a migrating corrosion inhibitor.

### USES

- Full depth repairs
- On grade, above and below grade on concrete
- On horizontal surfaces
- Vertical and overhead surfaces when formed and pumped or poured
- As a structural repair material for parking facilities, industrial plants, walkways, bridges, tunnels, dams, and balconies
- Filler for voids and cavities

### CHARACTERISTICS / ADVANTAGES

- Self Consolidating Concrete - Excellent placement characteristics
- Polymer-modified
- Integral penetrating corrosion inhibitor
- Silica fume enhanced
- Prepackaged coarse aggregate. Eliminates the need to extend material in the field. Eliminates the risk of reactive aggregate
- Can be pumped or poured into forms and gets excellent consolidation without vibrating

### PRODUCT INFORMATION

<b>Packaging</b>	65 lb. (29.5 kg) bag
<b>Shelf Life</b>	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging
<b>Storage Conditions</b>	Store dry at 40–95 °F (4–35 °C) Protect from moisture. If damp, discard material

## TECHNICAL INFORMATION

<b>Compressive Strength</b>	1 day	2,000 psi (13.8 MPa)	(ASTM C-39)
	7 days	5,500 psi (37.9 MPa)	73 °F (23 °C)
	28 days	6,500 psi (44.8 MPa)	50 % R.H.
<b>Flexural Strength</b>	1 day	500 psi (3.4 MPa)	(ASTM C-293)
	7 days	750 psi (5.2 MPa)	73 °F (23 °C)
	28 days	1,000 psi (6.9 MPa)	50 % R.H.
<b>Splitting tensile strength</b>	7 days	750 psi (5.2 MPa)	(ASTM C-496)
	28 days	1,000 psi (6.9 MPa)	73 °F (23 °C) 50 % R.H.
<b>Tensile Adhesion Strength</b>	1 day	250 psi (1.7 MPa)	(ASTM C-1583)
	7 days	300 psi (2.1 MPa)	73 °F (23 °C) 50 % R.H.
<b>Slant Shear Strength</b>	1 day	1,000 psi (6.9 MPa)	(ASTM C-882 modified)*
	7 days	1,500 psi (10.3 MPa)	
	28 days	2,500 psi (17.2 MPa)	
* Mortar scrubbed into substrate at 73 °F (23 °C) and 50 % R.H.			
<b>Shrinkage</b>	28 days	< 0.05 %	(ASTM C-157 modified)
<b>Rapid Chloride Permeability</b>	28 days	< 650 Coulombs	(ASTM C-1202 AASHTO T-277)
<b>Sulfate Resistance</b>	0.006*		(ASTM C-1012)
*Length change after 6 months at 73 °F (23 °C) and 50 % R.H.			
<b>Freeze-Thaw Stability</b>	300 cycles	> 99 %	(ASTM C-666)
<b>Freeze Thaw De-Icing Salt Resistance</b>	50 cycles	2	(ASTM C-672)

## APPLICATION INFORMATION

<b>Mixing Ratio</b>	5.5-6 pints (2.6-2.8 L)		
<b>Coverage</b>	0.50 ft <sup>3</sup> (0.01 m <sup>3</sup> ) per bag (Coverage figures do not include allowance for surface profile and porosity or material waste)		
<b>Layer Thickness</b>	<b>Min.</b>	<b>Max.</b>	
	1" (25 mm)	8" (203 mm)	
<ul style="list-style-type: none"> <li>▪ Thicker applications have been done successfully.</li> <li>▪ Please consult Sika® Technical Service.</li> </ul>			
<b>Consistency</b>	Initial spread	25-30" (6.4-7.6 cm)	(ASTM C-1611)
	Spread at 30 min.	> 15" (3.9 cm)	
<b>Product Temperature</b>	65–75 °F (18–24 °C)		
<b>Ambient Air Temperature</b>	> 45 °F (7 °C)		
<b>Substrate Temperature</b>	> 45 °F (7 °C)		
<b>Pot Life</b>	~ 60 minutes As the temperature will affect the pot life, application temperature:		

- Above 73 °F (23 °C) will reduce the pot life and slump
- Below 73 °F (23 °C) will extend the pot life and slump

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## LIMITATIONS

- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts, with an appropriate epoxy such as Sikadur® 32 Hi-Mod.
- Refer to Sika® Antisol®-250 W product data sheet for use.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

### DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

0 g/L (EPA Method 24)

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

#### Concrete

- Surface must be clean and sound. Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired.
- Be sure repair area is not less than 1" (25 mm) deep.
- Preparation work should be done by appropriate means. Obtain an exposed aggregate surface with a minimum surface profile of  $\pm 1/8"$  (3 mm) (CSP-7-8) on clean, sound concrete.
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.

#### Reinforcing Steel

- Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust.
- Where corrosion has occurred, the steel should be high-pressure washed with clean water after mechanical cleaning.
- For priming and protection of reinforcing steel use

Sika® Armatec® 110 EpoCem (consult PDS).

### MIXING

- Start mixing with 5.5 pints (2.6 L) of water.
- An additional 0.5 pint (0.2 L) can be added if needed.
- Do not over water as excess water will cause segregation.
- Add Sikacrete®-211 SCC Plus while continuing to mix.
- Mechanically mix to a uniform consistency, for 3 minutes with a low-speed drill (400–600 rpm) and paddle or in appropriate-size mortar mixer or concrete mixer.

### APPLICATION

- Pre-wet surface to SSD.
- Ensure good intimate contact with the substrate is achieved. To accomplish this, material should be scrubbed into the substrate or other suitable means should be employed such as vibration of the material or pumping under pressure.
- Tap form lightly while pouring or pumping, do not vibrate.
- Pump with a variable pressure pump.
- Continue pumping until a 3 to 5 psi increase in normal line pressure is evident then STOP pumping.
- Form should not deflect.
- Vent to be capped when steady flow is evident, and forms stripped when appropriate.

### CURING TREATMENT

- As per ACI recommendations for Portland cement concrete, curing is required.
- Moist cure with wet burlap and polyethylene, a fine mist of water or Sika® Antisol®-250 W\*.
- Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings.
- Moist curing should commence immediately after finishing.
- Protect newly applied material from direct sunlight, wind, rain and frost.

\* Pretesting of curing compound is recommended.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Product Data Sheet  
Sikacrete®-211 SCC Plus  
August 2022, Version 01.05  
020302020010000040



Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs.

**NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/group/SikaCorp/termsandconditions.html> or by calling 1-800-933-7452.

**Sika Corporation**

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**Product Data Sheet**

Sikacrete®-211 SCC Plus  
August 2022, Version 01.05  
020302020010000040

Sikacrete-211SCCPlus-en-US-(08-2022)-1-5.pdf



# **SIKAQUICK VOH**

## PRODUCT DATA SHEET

# SikaQuick® VOH

Fast Setting, one component, cementitious vertical and overhead repair mortar with superior high build properties

### PRODUCT DESCRIPTION

SikaQuick® VOH is a fast setting, one component, ready-to-use repair mortar for vertical and overhead applications using specialty cement blends. SikaQuick® VOH LD is a low dust formula also available as a separate item.

### USES

- Fast repairs to overhead and vertical concrete and mortar surfaces on grade, above and below grade.
- As a repair material for building facades, parking structures, industrial plants, bridges, etc.
- As a fast setting repair material for new construction defects.

### CHARACTERISTICS / ADVANTAGES

- Minimal time required between lifts.
- Fast finishing time
- Time/labor-saving material; application up to 3" (76.2 mm) on vertical surfaces in one layer
- Easy to use; just add water
- High bond strength ensures excellent adhesion
- High early and ultimate strength
- Increased freeze/thaw durability and resistance to deicing salts
- Suitable for exterior and interior applications.
- Overhead thickness up to 2" (50 mm)
- Fiber reinforced and polymer modified
- Contains corrosion inhibitor
- Use in cold temperatures with SikaQuick WinterBoost (20° - 45 °F)
- Low dust version available

### APPROVALS / STANDARDS

- Meets ASTM C-928, type R2

### PRODUCT INFORMATION

<b>Chemical Base</b>	<ul style="list-style-type: none"> <li>▪ SikaQuick® VOH is a polymer modified, cement blends.</li> <li>▪ SikaQuick® VOH LD is a polymer modified, cement blends with dust reduction technology.</li> </ul>
<b>Packaging</b>	<ul style="list-style-type: none"> <li>▪ 44 lb (20 kg) bag</li> </ul>
<b>Appearance / Color</b>	Gray powder
<b>Shelf Life</b>	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging.
<b>Storage Conditions</b>	Store dry at 40–95 °F (4–35 °C)

**TECHNICAL INFORMATION**

<b>Compressive Strength</b>		<b>73 °F (23 °C)</b>	<b>20 °F (-7 °C) with 1 cup of SikaQuick® Winter Boost</b>	(ASTM C-109) 50 % R.H.
	3 hours	> 1,500 psi (10.3 MPa)	400 psi (2.8 MPa)	
	1 day	> 3,000 psi (20.7 MPa)	1,800 psi (12.4 MPa)	
	7 days	> 4,500 psi (31.0 MPa)	2,400 psi (16.6 MPa)	
	28 days	5,500 psi (37.9 MPa)	4,500 psi (31.0 MPa)	
* Consult SikaQuick® Winter Boost Product Data Sheet.				
<b>Modulus of Elasticity in Compression</b>	7 days	2.2x10 <sup>6</sup> psi (15.2 GPa)		(ASTM C-469)
<b>Flexural Strength</b>	1 day	400 psi (2.8 MPa)		(ASTM C-293) 73 °F (23 °C) 50 % R.H.
	7 days	600 psi (4.1 MPa)		
	28 days	1,000 psi (6.9 MPa)		
<b>Splitting tensile strength</b>	1 day	200 psi (1.4 MPa)		(ASTM C-496) 73 °F (23 °C) 50 % R.H.
	7 days	250 psi (1.7 MPa)		
	28 days	500 psi (3.4 MPa)		
<b>Slant Shear Strength</b>	1 day	1,000 psi (6.9 MPa)		(ASTM C-882 modified*)
	7 days	1,600 psi (11.0 MPa)		
	28 days	2,000 psi (13.8 MPa)		
* Mortar scrubbed into substrate at 73 °F (23 °C) and 50 % R.H.				
<b>Pull-Out Resistance</b>	> 250 psi (1.7 MPa) Substrate failure			(ASTM C-1583) 73 °F (23 °C) 50 % R.H.
<b>Shrinkage</b>	< 0.05 %			(ASTM C-157 modified per ASTM C-928)
<b>Rapid Chloride Permeability</b>	28 days	Low range		(ASTM C-1202 AASHTO T-277)

**APPLICATION INFORMATION**

<b>Mixing Ratio</b>	6–6.5 pts (2.8-3.1 L) per bag		
<b>Fresh mortar density</b>	125 lb/ft <sup>3</sup> (2.0 kg/L)		(ASTM C-138)
<b>Coverage</b>	0.44 ft <sup>3</sup> (0.01 m <sup>3</sup> ) per bag (Coverage figures do not include allowance for surface profile and porosity or material waste)		
<b>Layer Thickness</b>		<b>Min.</b>	<b>Max.</b>
	Overhead	1/8" (3 mm)*	2" (51 mm)
	Vertical	1/8" (3 mm)*	3" (75 mm)
* Minimum thickness is 1/2" (12.7 mm) with the use of SikaQuick® Winter Boost			
<b>Product Temperature</b>	65–75 °F (18–24 °C)		

<b>Ambient Air Temperature</b>	> 45 °F (7 °C) 20 - 45 °F (-6.7 - 7 °C) with the use of SikaQuick® Winter Boost	
<b>Substrate Temperature</b>	> 45 °F (7 °C) 20 - 45 °F (-6.7 - 7 °C) with the use of SikaQuick® Winter Boost	
<b>Set Time</b>	10-25 min	(ASTM C-266)
<b>Final set time</b>	< 35 min	(ASTM C-266)
* To control setting times, cold water should be used in hot weather and hot water used in cold weather.		
<b>Application Time</b>	~ 15 minutes	
<b>Finishing time</b>	20–30 minutes	
<b>Waiting / Recoat Times</b>	Time between lifts	Final set time
	Acrylic water based	4 hrs
	Epoxy/PU based	6 hrs
Compatibility and adhesion testing is always recommended.		

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

- Surface must be clean, sound and free of frost.
- Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired.
- Preparation work should be done by high pressure water blast, scabbling or other appropriate mechanical means to obtain an exposed aggregate surface profile of  $\pm 1/16"$  (1.6 mm) (CSP-5).
- To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a pull-off test.
- Saw cutting of edges is preferred and a dovetail is recommended.
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.

#### With SikaQuick® Winter Boost

- All the above recommendations must be followed.
- The concrete must be frost free before the application.

### PRIMING

- **Reinforcing steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult PDS).
- **Concrete Substrate:** A scrub coat of SikaQuick® VOH / SikaQuick® VOH LD can be applied prior to placement of the mortar. The repair mortar must be applied into the wet scrub coat before it dries.

### MIXING

- Wet down all tools and mixer to be used.
- Mix mechanically with a low-speed drill (400–600 rpm) and mixing paddle or mortar mixer.
- Mix to a uniform consistency, maximum 3 minutes.
- Manual mixing can be tolerated only for less than a full unit.
- Thorough mixing and proper proportioning of the powder and liquid is necessary.
- Inaccurate proportioning of the powder to liquid will result in a finished product that may not conform to the typical published performance property values.

#### **With water**

- Start mixing with 6 pints (2.8 L) of water per bag.
- Adjust the water dosage by a maximum amount of +/- 1/2 pint, if necessary, to achieve the desired consistency.
- Do not over-water. Over-watering may result in difficulty handling and/or not meeting stated property values.

#### **With Sika Latex R**

- Start mixing with 6 pints (2.8 L) of Sika Latex® R per bag.
- Adjust the Sika Latex® R dosage by a maximum amount of +/- 1/2 pint, if necessary, to achieve the desired consistency.
- Do not overdose with SikaLatex® R. Using too much SikaLatex®-R may result in difficulty handling and/or not meeting typical published performance property values.

#### **With SikaQuick® Winter Boost**

- Pour the recommended volume of clean, potable water [ $> 34^{\circ} F (-1^{\circ} C)$ ] into a suitably sized and clean mixing container.
- Add 1/2 or 1 cup per bag into the water and mix until it is dissolved.
- Add the contents of the SikaQuick® VOH / SikaQuick® VOH LD bag while continuing to mix.

- Refer to the current Product Data Sheet for complete and detailed instructions on the use of the SikaQuick® Winter Boost.

## APPLICATION

- The mixed SikaQuick® VOH / SikaQuick® VOH LD must be worked well into the prepared substrate, filling all pores and voids.
- Compact well. Force material against edge of repair working towards the center. Thoroughly compact the mortar around exposed reinforcement.
- After filling repair, consolidate, then screed.
- Finish with steel, magnesium, wood, plastic floats, or damp sponges, depending on the desired surface texture.

## MULTIPLE LIFTS

- Where multiple lifts are required, score top surface on each lift to produce a roughened substrate for next lift.
- Allow preceding lift to harden and achieve initial set before applying fresh material.
- SSD previous lift by lightly misting with clean water. Remove all standing droplets.
- Repeat procedure until desired installation thickness is achieved. Finish the final lift of SikaQuick® VOH / SikaQuick® VOH LD as described above.
- If previous layers are over 6 hours old, mechanically prepare the substrate and dampen.

## CURING TREATMENT

- As per ACI recommendations for Portland cement concrete, curing is required.
- Moist cure with wet burlap and polyethylene, a fine mist of water or Sika® Antisol®-250 W\*.
- Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings.
- Moist curing should commence immediately after finishing.
- Protect freshly applied mortar from direct sunlight, wind, rain and frost.

\* Pretesting of curing compound is recommended.

## CLEANING OF TOOLS

- Uncured product may be cleaned from tools and surfaces with water.
- Cured product must be removed mechanically.

## LIMITATIONS

- Do not use solvent based curing compounds.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.
- Remixing product after it begins to set is prohibited.
- Bonding agents like Sika® Armatec® 110 EpoCem and others, which cure at a slower rate than SikaQuick®

VOH / SikaQuick® VOH LD, should not be used. If bonding agents are used, follow cure times for the bonding agents used as a guide prior to putting SikaQuick® VOH / SikaQuick® VOH LD in service. Assure suitability with the manufacturer of the bonding agent.

- Not a vapor barrier
- If a bonding agent is absolutely necessary, and surfaces are not scheduled to receive a vapor barrier coating, consider Sikadur® 32, Hi-Mod and moist cure for a minimum 24 hours prior to putting SikaQuick® VOH / SikaQuick® VOH LD into service.
- SikaQuick® VOH / SikaQuick® VOH LD is not a vapor barrier after cure.
- Ensure temperature do not drop below 20°F the first 3 hours after application of the SikaQuick® VOH mixed with SikaQuick® Winter Boost.
- Refer to Sika® Antisol®-250 W product data sheet for use.

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
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Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety

Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs.

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**Product Data Sheet**

SikaQuick® VOH  
September 2020, Version 01.04  
020302040040000019

SikaQuickVOH-en-US-(09-2020)-1-4.pdf



# **SIKAFLEX 2C NS**

## PRODUCT DATA SHEET

# Sikaflex<sup>®</sup>-2c SL

### TWO-COMPONENT, SELF-LEVELING, POLYURETHANE ELASTOMERIC SEALANT

#### PRODUCT DESCRIPTION

Sikaflex<sup>®</sup>-2c SL is a 2-component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a self-leveling consistency. ASTM C-920, Type M, Grade P, Class 25, use T, NT, M, G, A, O, I. Federal Specification TT-S-00227E, Type 1, Class A.

#### USES

- Intended for use in all properly designed working joints with a minimum depth of 1/4 inch.
- Ideal for horizontal applications.
- Placeable at temperatures as low as 40 °F.
- Adheres to most substrates commonly found in construction.
- Submerged conditions, such as canal and reservoir joints.

#### CHARACTERISTICS / ADVANTAGES

- True self-leveling properties.
- Capable of ±50% joint movement.
- Chemical cure allows the sealant to be placed in non-moving joints exceeding 1/2 in. in depth.
- High elasticity with a tough, durable, flexible consistency.
- Exceptional cut and tear resistance.
- Exceptional adhesion to most substrates without priming.
- Available in 35 architectural colors.
- Color uniformity assured via Color-pak system.
- Available in pre-pigmented Limestone (no Color-pak needed).
- Self-leveling consistency, easy to apply in horizontal joints.
- Easy to mix.
- Paintable with water-, oil-, and rubber-base paints.
- Jet fuel resistant.

#### PRODUCT INFORMATION

<b>Packaging</b>	1.5 gal. unit. 3 gal. units. Color-pak is purchased separately. Limestone Gray color available pre-pigmented.
<b>Color</b>	A wide range of architectural colors are available. Special colors available on request.
<b>Shelf Life</b>	One year in original, unopened containers.
<b>Storage Conditions</b>	Store dry at 40–95 °F (4–35 °C). Condition material to 65–75 °F before using.

#### TECHNICAL INFORMATION

<b>Shore A Hardness</b>	35 ± 5	(21 days at 73 °F (23 °C) and 50 % R.H.) (ASTM D-2240)
<b>Tensile Strength</b>	175 psi	(21 days at 73 °F (23 °C) and 50 % R.H.) (ASTM D 412)

<b>Tensile stress at specified elongation</b>	100 psi (at 100 %)	(21 days at 73 °F (23 °C) and 50 % R.H.) (ASTM D 412)
<b>Elongation at Break</b>	650 %	(21 days at 73 °F (23 °C) and 50 % R.H.) (ASTM D-412)
<b>Adhesion in peel</b>	Peel Strength (concrete) 21 lbs.	Adhesion loss 0 % (73 °F (23 °C) and 50 % R.H.) (ASTM C-794)
<b>Tear Strength</b>	>45 lbs./in.	(73 °F (23 °C) and 50 % R.H.) (ASTM D-624)
<b>Chemical Resistance</b>	Good resistance to water, diluted acids, diluted alkalines, and residential sewage. Consult Technical Service for specific data.	
<b>Resistance to Weathering</b>	Excellent	
<b>Service Temperature</b>	-40 °F to +170 °F (-40 °C to 77 °C)	

## APPLICATION INFORMATION

<b>Coverage</b>	<b>1 gallon: Yield in Linear feet</b>			
	<b>Width/Depth</b>	<b>1/4"</b>	<b>3/8"</b>	<b>1/2"</b>
	<b>1/4"</b>	307.9		
	<b>3/8"</b>	205.3	136.8	
	<b>1/2"</b>	153.9	102.6	77.0
	<b>3/4"</b>	102.6	68.4	51.3
	<b>1"</b>			38.5
	<b>1.25"</b>			30.8
	<b>1.5"</b>			25.7
<b>Ambient Air Temperature</b>	40 °F (4 °C) to 100 °F (38 °C). Sealant should be installed when joint is at mid-range of its anticipated movement.			
<b>Substrate Temperature</b>	40 °F (4 °C) to 100 °F (38 °C). Sealant should be installed when joint is at mid-range of its anticipated movement.			
<b>Cure Time</b>	Tack-free Time	6-8 hours	(73 °F (23 °C) and 50 % R.H.) (ASTM C 679)	
	Final Cure	3 days		
<b>Application Time</b>	4h	(73 °F (23 °C) and 50 % R.H.) (TT-S-00227E)		

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## LIMITATIONS

- The ultimate performance of Sikaflex-2c, depends on good joint design and proper application.
- Minimum depth in working joint is 1/4 in.
- Maximum expansion and contraction should not exceed 50 % of average joint width.
- Do not cure in the presence of curing silicones.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Allow 3 day cure before subjecting sealant to total water immersion. Primer is required if sealant will be subjected to total water immersion.
- Avoid exposure to high levels of chlorine. (Maximum level is 5 ppm).
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant.
- Avoid over-mixing sealant.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating elements.
- When overcoating: an on-site test is recommended to determine actual compatibility.
- Rigid paints, coatings or primers will crack when placed over elastomeric sealants experiencing expansion or contraction.
- The minimum depth of sealant in horizontal joints subject to traffic is 1/2 inch.
- Do not tool with detergent or soap solution.

## ENVIRONMENTAL, HEALTH AND SAFETY

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## APPLICATION INSTRUCTIONS

### SUBSTRATE PREPARATION

Joint wall surfaces must be clean, sound, and frost-free. Joint walls must be free of oils, grease, curing compound residues, and any other foreign matter that might prevent bond. Ideally this should be accomplished by mechanical means. A roughened surface will also enhance bond. Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Priming is typically not necessary. Most substrates only require priming if sealant will be subjected to water immersion after cure. Testing should be done, however, on questionable substrates, to determine if priming is needed. Consult Technical Service or Sikaflex Primer Product Data Sheet for additional information on priming.

### MIXING

Pour entire contents of Component 'B' into pail of Component 'A'. Add entire contents of Color-pak into pail and mix with a low-speed drill (400–600 rpm) and Sikaflex paddle. \* Mix for 3–5 minutes to achieve a uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing. Color-pak must be used with tint base. Note: When mixing 3 gal. unit, two containers of Component B and two color-paks must be used. \*For pre-pigmented Limestone base, just mix with low speed drill and Sikaflex paddle (no Color-pak needed).

### APPLICATION METHOD / TOOLS

Recommended application temperatures 40–100 °F. Pre-conditioning units to 65–75 °F is necessary when working at extremes. Move pre-conditioned units to work areas just prior to application. Apply sealant only

to clean, sound, dry, and frost-free substrates. Sikaflex-2c should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. To place, pour or extrude the SL grade in one direction and allow it to flow and level as necessary. If extruding, load mixed sealant directly into bulk gun or use follower plate loading system. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air.

### Tooling and Finishing

Tool as necessary. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio.

### Removal

Uncured material can be removed with an approved solvent. Strictly follow solvent manufacturer's warnings and instructions for use. Cured material can only be removed mechanically. For spillage, collect, absorb, and dispose of in accordance with current, applicable local, state, and federal regulations.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## LEGAL DISCLAIMER

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SIKA warrants this product for one year from date of

installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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**Product Data Sheet**

Sikaflex®-2c SL  
May 2021, Version 01.03  
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# **SIKADUR CRACK REPAIR**

## PRODUCT DATA SHEET

# Sikadur® Crack Repair Kit

### Concrete crack repair system

#### PRODUCT DESCRIPTION

Sikadur® Crack Repair Kit is a two multicomponent, low viscosity, fast curing, epoxy sealing system for the repair of cracks that occur in solid concrete and solid masonry substrates.

#### USES

Sikadur® Crack Repair Kit may only be used by experienced professionals.

Sikadur® Crack Repair Kit may only be used by experienced professionals.

- For manual, low pressure injection of horizontal flat and/or vertical static cracks in solid concrete, solid masonry, wood, etc.
- For gravity feed of static cracks (using the Sikadur® Injection Resin component only) in horizontal flat concrete, solid masonry, wood, etc.
- For the sealing of minor, static surface cracks, voids or gaps (using the Sikadur® Capseal component only) in horizontal flat, vertical and/or overhead surfaces in concrete, masonry, wood, etc.
- As a flowable, liquid epoxy grout to fill thin voids below baseplates

#### CHARACTERISTICS / ADVANTAGES

- Convenient easy to use, single tube cartridges that fit standard caulk guns
- Easily mixed when dispensed through flow restrictor (needed for the Sikadur® Injection Resin component only) and static mixers
- Up to three times stronger than existing concrete when cured
- Penetrating and bonding of cracks in concrete when injected (reference: ACI Rap Bulletin 1)
- Excellent for notch and fill, isolated crack repair by gravity feed method using the Sikadur® Injection Resin component (reference: ACI Rap Bulletin 2)
- Early strength developing adhesives for “can’t dry” surfaces (i.e. tolerates dampness with no standing water present)
- Excellent chemical resistance; prevents chloride ion intrusion and further water absorption when cured
- Prolongs life of cracked concrete elements

#### APPROVALS / STANDARDS

Sikadur® Injection Resin conforms to the current requirements of ASTM C881 / M 235, Types I and II, Grade 1, Class C.\*

\* except for Gel Time and Slant Shear (Bond) Strength

#### PRODUCT INFORMATION

##### Packaging

##### Kit contents:

- Sikadur® Capseal 300 ml cartridge (2 pcs)
- Sikadur® Injection Resin 250 ml cartridge (2 pcs)
- Sikadur® Capsealr mixer nozzle (2 pcs)
- Sikadur® Capseal applicator fan (2 pcs)
- Cartridge flow restrictor (2 pcs)
- Sikadur® Injection Resin mixer nozzle with extended tube (2 pcs)
- Push fit connector (1 pc)

##### Product Data Sheet

Sikadur® Crack Repair Kit

October 2022, Version 01.04

020205010020000014

- Injection ports (16 pcs)
- Pair of gloves (2 pcs)
- Wooden applicator (Spatula) (2 pcs)

<b>Shelf Life</b>	18 months from date of production if stored properly in original, unopened and undamaged, sealed packaging.	
<b>Storage Conditions</b>	Store in cool, dry, well ventilated conditions, out of direct sunlight at 40 - 75°F (4 - 24 °C).	
<b>Color</b>	Sikadur® Capseal (Parts A+B mixed)	Concrete grey
	Sikadur® Injection Resin (Parts A+B mixed)	Transparent / Amber
<b>Density</b>	Sikadur® Capseal (A+B mixed)	~1.6 g/cm <sup>3</sup>
	Sikadur® Injection Resin (A+B mixed)	~1.1 g/cm <sup>3</sup>
<b>Viscosity</b>	Sikadur® Capseal (A+B mixed)	Non-sag Consistency
	Sikadur® Injection Resin (A+B mixed)	~500 cps (0.500 Pa-sec)

## TECHNICAL INFORMATION

Compressive Strength	Sikadur® Injection Resin			(ASTM D695)
	Time	Temperature		
		+40°F (5°C)	+68°F (20°C)	
4 hours			500 psi (3.4 MPa)	
8 hours			2000 psi (13.7 MPa)	
16 hours		2000 psi (13.7 MPa)	3500 psi (24.1 MPa)	
1 day		3000 psi (20.7 MPa)	5000 psi (34.5 MPa)	
3 days	1500 psi (10.3 MPa)	8500 psi (58.6 MPa)	5500 psi (37.9 MPa)	
7 days	6500 psi (44.8 MPa)	9000 psi (62.1 MPa)	7000 psi (48.3 MPa)	
14 days	7500 psi (51.7 MPa)	9500 psi (65.5 MPa)	7500 psi (51.7 MPa)	
28 days	9000 psi (62.1 MPa)	10,000 psi (68.9 MPa)	10,000 psi (68.9 MPa)	

Product cured and tested at temperatures indicated in table. Test specimen size: 1/2" × 1/2" × 1"

<b>Modulus of Elasticity in Compression</b>	200,000 psi	(ASTM D 695)
<b>Tensile Strength</b>	6,000 psi	(ASTM D 638)
<b>Elongation at Break</b>	25 %	(ASTM D 638)
<b>Heat deflection temperature</b>	~110 ° F (~43 °C)	(ASTM D 648)
<b>Water Absorption</b>	0.24 %	(ASTM D 570)

## APPLICATION INFORMATION

<b>Mixing Ratio</b>	Sikadur® Capseal	Part A : Part B = 10:1
	Sikadur® Injection Resin	Part A : Part B = 1:1

## Coverage

Sikadur® Capseal: Placed at 1 inch (25 mm) wide x 1/8 inch (3 mm) thick yields approximately 10 linear feet (3 linear meters) per cartridge\*  
Sikadur® Injection Resin: Injected or gravity fed into a 1/8 inch (3 mm) wide (3 mm) wide x 1 inch (25 mm) deep crack yields approximately 10 linear feet (3 linear meters) per cartridge\*

(1) Sikadur® Crack Repair Kit kit typically repairs approximately 15 to 20 linear feet (4.5 to 6.0 linear meters) of cracked concrete.\*

\* Estimates based on theoretical calculation. Actual field coverage rates may vary based on actual concrete conditions.

<b>Layer Thickness</b>	Sikadur® Capseal	5/16" (8 mm)		
	Sikadur® Injection Resin	1/32" - 1/4" (0.1–6 mm)		
<b>Sag Flow</b>	Sikadur® Capseal (A+B mixed)	Non-sag, including overhead		
	Sikadur® Injection Resin (A+B mixed)	Liquid		
<b>Product Temperature</b>	Condition cartridges to 65 - 75 °F (18 - 24 °C) before set-up and mixing / dispensing.			
<b>Ambient Air Temperature</b>	40 °F (4 °C) minimum / 95 °F (35 °C) maximum			
<b>Dew Point</b>	Beware of surface condensation! To avoid dew point conditions during application, substrate temperature must be at least 5 °F (3 °C) above measured dew point temperature.			
<b>Substrate Temperature</b>	40 °F (4 °C) minimum / 95 °F (35 °C) maximum			
<b>Cure Time</b>	<b>Sikadur® Capseal</b>			
	<b>Temperature</b>	<b>Open time - T<sub>gel</sub></b>	<b>Curing time - T<sub>cur</sub> (Injection Time)</b>	
	+86 °F (30 °C)	4 minutes	30 minutes	
	+77 °F (25 °C)	5 minutes	40 minutes	
	+68 °F (20 °C)	6 minutes	50 minutes	
	+50 °F (10 °C)	10 minutes	85 minutes	
	+41 °F (5 °C)	18 minutes	145 minutes	
	<b>Sikadur® Injection Resin</b>			
	<b>Temperature</b>	<b>Open time - T<sub>gel</sub></b>	<b>Peel-off time (Capsel removal)</b>	<b>Curing time - T<sub>cur</sub></b>
	+86 °F (30 °C)	20 minutes	3 hours	12 hours
	+68 °F (20 °C)	30 minutes	6 hours	24 hours
	+41 °F (5 °C)	2 hours	18 hours	72 hours

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## LIMITATIONS

- Minimum recommended ambient and substrate temperature is 40 °F (4 °C).
- Maximum recommended ambient and substrate temperature is 95 °F (35 °C).
- Avoid application in direct sunlight, during precipitation and/or when high winds prevail.
- Not for treating cracks under hydrostatic pressure (i.e. actively leaking or with the presence of standing water) at time of installation. Do not apply over wet, glistening surfaces.
- Do not gravity feed or inject cracks greater than 1/4 inch (6 mm) wide. Contact Sika's Technical Services Department.
- Preferred minimum age of concrete is 21 - 28

- days, depending on curing and drying conditions.
- Use fine oven dried aggregate only for filling cracks greater than 1/8 inch (3 mm) wide prior to gravityfeed, and to seed (i.e. broadcast). When following up with another construction product or creating slip resistance, sprinkle or broadcast fine oven dried aggregate only.
- Not for use in dynamic (i.e. moving; expanding and contracting) cracks or joints.
- Not an aesthetic product. Blotchy and hazy appearances may develop. Color may alter due to variations in lighting and/or UV exposure.
- The Sikadur® Injection Resin cartridge is a uniquely designed package. It stores two liquid epoxy components within a single tube and fits standard caulk gun dispensers. Be aware this cartridge does not behave identically to typical sealant caulk tubes. As the installer dispenses the mixed epoxy, there will be a point approximately half way into the length of the cartridge where the caulk gun will no longer advance. At this point, the contents of the cartridge have been exhausted. To avoid damage to the caulk gun, make no further attempt to force additional epoxy out.
- Occasionally actual concrete crack conditions will result in an imbalance where the Sikadur® Crack Repair Kit kit does not include enough Sikadur® Injection Resin to complete the installation. It is permissible to use cartridges of Sikadur® Crack Fix [PRO SELECT] to continue an injection procedure provided the tip of the static mixer is pressed directly into the injection port. The static mixer for the Sikadur® Crack Fix [PRO SELECT] cartridge will not permit secure attachment to the Sikadur® Crack Repair Kit Push Fit Connector. For additional information, please consult the current Product Data Sheet for Sikadur® Crack Fix [PRO SELECT] cartridges.
- Beyond 48 hours of cure time and based on actual temperature and relative humidity conditions, the cured surfaces of Sikadur® Injection Resin and/or Sikadur® Capseal tend to develop an amine blush (i.e. a slight oily residue). Amine blush may prevent Sikadur® Injection Resin and/or Sikadur® Capseal from bonding to itself, and/or prevent adhesion by a follow-up construction product (e.g. protective coating, cementitious mortar, etc.). To avoid additional Substrate Preparation, after a gravity feed installation of Sikadur Injection Resin, seed, sprinkle or broadcast oven dried aggregate onto the wetted surface while the adhesive is still tacky and uncured.

After cure, remove unadhered aggregate before proceeding with follow-up construction product installation. Otherwise, cured Sikadur® Injection Resin and/or Sikadur® Capseal surfaces may require light mechanical abrasion (e.g. sanding, screening, etc.) and/or a solvent wipe (i.e. dampening a clean, white cloth with an approved solvent mentioned in the Cleaning Equipment section of this

document). Contact Sika's Technical Services Department for additional information.

- **NOT FOR USE AS AN ANCHORING ADHESIVE.**

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

## APPLICATION INSTRUCTIONS

### General:

- Surfaces must be clean, sound, dust-free and as dry as possible. Surfaces may be damp, but free of standing water and frost.
- Remove dust, laitance, grease, oil, tar, curing compounds, impregnations, waxes, loosely adhering bond inhibiting foreign particles, disintegrated materials and all other contaminants.
- If a wet method of substrate preparation is considered, allow surfaces to thoroughly dry for a minimum 24 to 48 hours.
- Mask off and protect any adjacent surfaces that should not receive contact with Sikadur® Capseal or Sikadur® Injection Resin.

### Solid Concrete, Solid Masonry:

#### Pressure Injection of static (i.e. nonmoving) cracks

- Cracked substrate must be solid and not allow Sikadur® Injection Resin to pass through its thickness and/or escape when injected.
- Mechanically prepare (i.e. roughen; profile to a minimum ICRI CSP-2 to CSP-3) surfaces using a wire brush, abrasive grinder or similar.
- Remove dust, standing water and obstructions visible within the crack void using brushes, a wet/dry vacuum and/or oil free compressed air.
- After injection ports are mounted and cap seal gel adhesive is sufficiently cured, use oil free compressed air to force any standing water that may be present out of the crack void. Start at injection port located at the highest elevation to force standing water downward and out of lower injection ports.

#### Gravity Feed of static (i.e. nonmoving) cracks

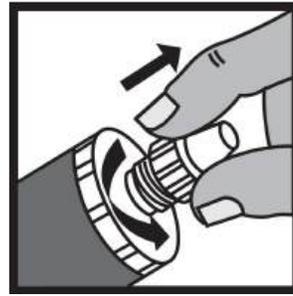
- Cracked substrate must be solid and not allow Sikadur® Injection Resin to pass through its thickness and/or escape when gravity fed.
- Notch cracks open to approximately 1/8 inch (3 mm) wide by 1/8 inch (3 mm) deep minimum. Do not exceed 1/4 inch (6 mm) wide by 1/4 inch (6 mm) deep maximum.
- Remove dust, standing water and obstructions visible within the crack void using brushes, a wet/dry vacuum and/or oil free compressed air.

### SUBSTRATE QUALITY

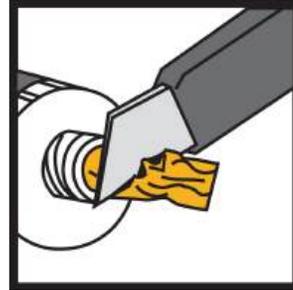
- Minimum age of concrete must be 21–28 days, depending on curing and drying conditions.
- Substrate surfaces along the line of the crack required for the Sikadur® Capseal, must be sound, clean and dry. Free from standing water, ice, dirt, oil, grease, coatings, laitance, efflorescence, old surface treatments, all loose particles and any other surface contaminants that could affect adhesion of the injection ports.
- Cracks must be clean. Horizontal cracks, which are filled by the 'gravity feed' technique, should be v-notched along the entire crack length with grinding equipment.

## MIXING

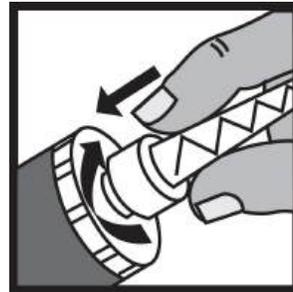
### Preparing the Sikadur® Capseal Cartridge



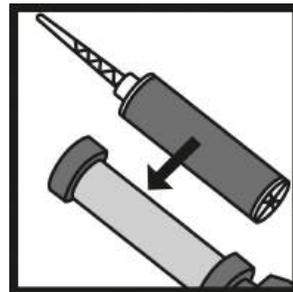
1. Unscrew and remove the cap



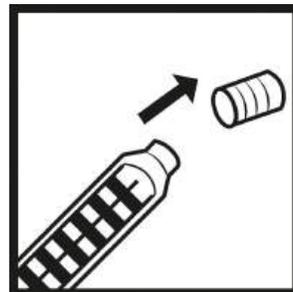
2. Cut the end off the protective film



3. Screw on the square mixing nozzle



4. Place the cartridge into the application gun ready for use. Pump gun until both resin parts are extruded as one mixed consistent colour. Do not use unmixed material.



5. After bonding on the injection ports, remove the tip from the static mixing nozzle

#### Product Data Sheet

Sikadur® Crack Repair Kit

October 2022, Version 01.04

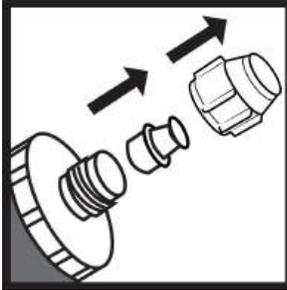
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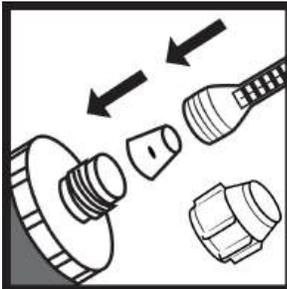
6. Fit the applicator fan onto the square mixing nozzle then start the crack sealing application.

Note: When the work is interrupted, the square mixing nozzle can remain on the cartridge after the gun pressure has been released. If the resin has hardened in the nozzle when work is resumed, a new square mixing nozzle must be attached.

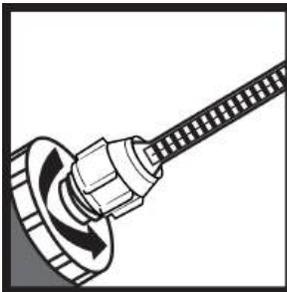
**Preparing the Sikadur® Injection Resin cartridge**



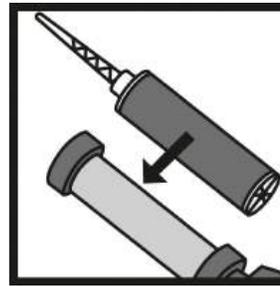
1. Unscrew the screwcap (do not throw away) and remove the plug from the cartridge outlet



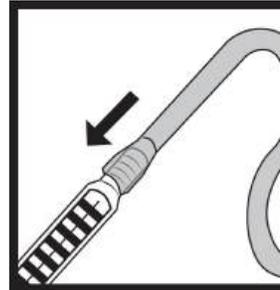
2. Fit the cartridge outlet plug into the cartridge then place injection resin mixer nozzle onto the cartridge



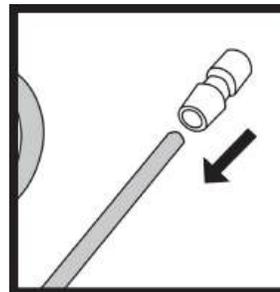
3. Slide the screwcap over the injection resin mixer nozzle and screw onto the cartridge



4. Place the Sikadur® Injection Resin cartridge into the application gun ready for use



5. Fit the flexible extension hose onto the injection resin mixer nozzle



6. Fit push fit connector onto the hose. Pump gun until both resin parts are extruded as one mixed consistent colour. Do not use unmixed material. Place connector over an injection port and start the injection application.

## APPLICATION METHOD / TOOLS

**Important:** The Sikadur® Injection Resin is specially designed to flow into all areas of a crack and small fissures. When using the product in very porous substrates, it is likely to be absorbed by the substrate. This may result in a loss of volume of the resin in the crack, leading to an under filled crack.

**Note:** The distance between the injection ports is generally greater than the estimated depth of the crack (typically 1,5 times).

### Vertical cracks (walls, columns, beams)

#### Crack sealing

1. Apply Sikadur® Capseal to the base of the injection ports. Perforations in the packaging box can be used to hold the injection ports.
2. Bond the injection ports onto the prepared substrate. Make sure the port positioning needle is inserted into the crack.
3. Apply the Sikadur® Capseal over the crack between the injection ports. Use wooden applicator to smooth surface and close any voids which could cause leaking of the resin during application.

#### Injection

1. Allow Sikadur® Capseal to cure. Refer to the curing table on the cartridge.
2. Inject resin into the first (lower) port. When resin begins to flow from the adjacent port, close off the first port and disconnect the injection cartridge hose.
3. Reconnect injection cartridge hose to the second port
4. Inject resin until resin starts to flow from the third port.
5. Repeat the process working along the length of the crack until the complete crack has been injected.
6. Allow Sikadur® Injection Resin to cure. Refer to the curing table.
7. If necessary, remove the injection ports and crack sealer with grinder or similar equipment.
8. Fill any holes or voids with Sikadur® or SikaQuick® repair products.

### Horizontal cracks (floors, slabs etc)

**Important:** If the crack extends through the substrate, if possible, seal the underside of the substrate with Sikadur® Capseal before filling the crack with Sikadur® Injection Resin.

**Note:** The crack seal and injection ports may not be required for this application as the resin could be introduced into the crack by the 'gravity feed' technique.

#### Option 1: Injection

1. Allow Sikadur® Capseal to cure. Refer to the curing table.

2. Inject resin into the first port. When resin begins to flow from the adjacent port, close off the first port and disconnect the injection cartridge hose.
3. Reconnect injection cartridge hose to the second port
4. Inject resin until resin starts to flow from the third port.
5. Repeat the process working along the length of the crack until the complete crack has been injected.
6. Allow Sikadur® Injection Resin to cure. Refer to the curing table on the cartridge.
7. If necessary, remove the injection ports and crack sealer with grinder or similar equipment.
8. Fill any holes or voids with Sikadur® or SikaQuick® repair products.

#### Option 2: Gravity feed

1. Pour the injection resin slowly into the vee-notched crack.
2. Continue filling until crack is completely filled.
3. Fill the vee-notch if not completely filled with resin using Sikadur® or SikaQuick® repair products

## OTHER RESTRICTIONS

See Legal Disclaimer.

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended

use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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**Product Data Sheet**

Sikadur® Crack Repair Kit  
October 2022, Version 01.04  
020205010020000014

SikadurCrackRepairKit-en-US-(10-2022)-1-4.pdf



# **SIKAQUICK 1000**



## PRODUCT DATA SHEET

# SikaQuick®-1000

Rapid hardening repair mortar with extended working time

### PRODUCT DESCRIPTION

SikaQuick®-1000 is a one-component, rapid hardening, early strength gain, cementitious, patching mortar for concrete. SikaQuick®-1000 LD is a low dust version of this formula.

### USES

- On grade, above grade and below grade concrete conditions
- Highway overlays and repairs
- Structural repair material for concrete roadways, parking structures, bridges, dams and ramps
- Full depth patching repairs (may require multiple lifts)
- Economical patching material for horizontal flatwork repairs of mortar lines and concrete surfaces

### CHARACTERISTICS / ADVANTAGES

- Specially suited for warmer weather applications when extended working time is required
- Epoxy coatings can be applied as early as 6 hours at 73° F (23° C).
- Freeze / thaw resistant
- Easy to use - labor-saving material
- Not gypsum-based
- High early strength
- Open to foot traffic in 4 hours / Open to vehicular traffic in 6 hours at 73° F (23° C)
- Easily applied to clean, sound substrates
- SikaQuick®-1000 LD is an available, low dust version of this product.

### APPROVALS / STANDARDS

- Rapid hardening as defined by ASTM C 928

### PRODUCT INFORMATION

<b>Chemical Base</b>	<ul style="list-style-type: none"> <li>▪ SikaQuick®-1000 is a blend of cement, select aggregates and specialty additives</li> <li>▪ SikaQuick®-1000 LD is a blend of cement, select aggregates, low dust and specialty additives</li> </ul>
<b>Packaging</b>	50 lb (22.7 kg) bag
<b>Appearance / Color</b>	Gray powder
<b>Shelf Life</b>	12 months from date of manufacture if stored properly in original, unopened and undamaged, sealed packaging
<b>Storage Conditions</b>	Store dry at 40° – 95° F (4° – 35° C) Protect from moisture. If damp, discard material

### TECHNICAL INFORMATION

Product Data Sheet  
SikaQuick®-1000  
November 2018, Version 01.05  
020302040040000011

<b>Compressive Strength</b>	3 hours	1,250 psi (8.6 MPa)	(ASTM C 109) 73° F (23° C), 50% R.H.
	1 day	4,000 psi (27.5 MPa)	
	7 days	5,000 psi (34.5 MPa)	
	28 days	7,000 psi (48.3 MPa)	
<b>Modulus of Elasticity in Compression</b>	28 days	4.6 x 10 <sup>6</sup> psi (32 GPa)	(ASTM C-469) 73° F (23° C), 50% R.H.
<b>Flexural Strength</b>	1 day	700 psi (4.8 MPa)	(ASTM C 293) 73° F (23° C), 50% R.H.
	7 days	900 psi (6.2 MPa)	
	28 days	1,000 psi (6.9 MPa)	
<b>Splitting Tensile Strength</b>	1 day	200 psi (1.4 MPa)	(ASTM C 496) 73° F (23° C), 50% R.H.
	7 days	300 psi (2.1 MPa)	
	28 days	400 psi (2.8 MPa)	
<b>Tensile Adhesion Strength</b>	28 days	Approximately 300 psi (2.1 MPa) Substrate failure	(ACI 503R) 73° F (23° C), 50% R.H.
<b>Shrinkage</b>	28 days	0.06%	(ASTM C 157 modified per ASTM C-928) 73° F (23° C), 50% R.H.
<b>Abrasion Resistance</b>	28 days	0.026 inch (0.66 mm) of wear at 1 hour	(ASTM C 779) 73° F (23° C), 50% R.H.
<b>Freeze-Thaw Stability</b>	28 days	98%	(ASTM C 666)
<b>Freeze Thaw De-icing Salt Resistance</b>	50 cycles	0.080 lb / ft <sup>2</sup> (391 grams / m <sup>2</sup> )	(ASTM C 672)
<b>Rapid Chloride Permeability</b>	28 days	< 1,000 Coulombs	(ASTM C 1202 / AASHTO T 277) 73° F (23° C), 50% R.H.

## APPLICATION INFORMATION

**Mixing Ratio** 4.5 – 5 pints (2.1 – 2.4 L)

**Coverage**

Neat	0.43 ft <sup>3</sup> (0.012 m <sup>3</sup> )
Extended with 25 lbs (11.4 kg) of 3/8 inch (10 mm) pea gravel	0.58 ft <sup>3</sup> (0.017 m <sup>3</sup> )

(Yield figures do not include allowance for surface profile, porosity or material waste)

**Consumption / Yield / Dosage (PRINT single line)**

<b>Layer Thickness</b>	<b>Min.</b>	<b>Max.</b>
Neat	1/4 inch (6 mm)	2 inches (50 mm)
Extended	1 inch (25 mm)	6 inches (152 mm)

- Do not feather edge
- Do not exceed 7 inches (178 mm) slump when extended

<b>Product Temperature</b>	65° – 75° F (18° – 24° C)	
<b>Ambient Air Temperature</b>	> 40° - 95° F (4° - 35° C)	
<b>Substrate Temperature</b>	> 40° - 95° F (4° - 35° C)	
<b>Set Time</b>	35 – 85 minutes	(ASTM C 266) 73° F (23° C), 50% R.H.
<b>Final Set Time</b>	> 120 minutes	(ASTM C 266) 73° F (23° C), 50% R.H.

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

- Concrete surface must be clean and sound.
- Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired.
- Be sure repair area is not less than 1/4" (6 mm) deep.
- Preparation work should be done by high pressure water blast, scabblor or other appropriate mechanical means to obtain an exposed aggregate surface profile of  $\pm 1/8"$  (3 mm) [minimum CSP-6].
- To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a Tensile Adhesion Strength (pull-off) test.
- Saw cutting perimeter edges of concrete repair area at a dovetail is preferred.
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.
- Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed from steel reinforcement.
- Surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water blasting to achieve a bright metal finish.

### PRIMING

- Concrete substrate:** Prime the prepared substrate with a scrub coat of SikaQuick®-1000 / SikaQuick®-1000 LD prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
- Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® corrosion protection products (consult current Product Data Sheets).

### MIXING

- Wet down all tools and mixer to be used.
- Pour the required amount of clean, potable water [approximately 70° F (21° C)] into a suitably sized and clean mixing container, using a calibrated measuring jug or similar, to ensure strict control of the water content. Do not over-water.
- Add 1 bag while continuing to mix with a low-speed drill (400 - 600 rpm) and mortar mixing paddle, or in an appropriate mortar mixer.
- Once all the powder has been added, mix to a uniform consistency, maximum 3 minutes, until a lump-free blend is achieved.
- Thorough mixing and proper proportioning of the powder and liquid is necessary.
- To help control setting times, colder water may be used in hot weather and warmer water may be used in cold weather.
- Inaccurate proportioning of the powder to liquid will result in a finished product that may not conform to the typical published performance property values.
- With water or undiluted SikaLatex® R:** Pour 4.5 pints (2.1 L) of liquid into the mixing container. Slowly add powder, mix and adjust as above. Add up to another 1/2 pint (0.24 L) maximum of liquid to achieve desired consistency. Do not over-water.
- With diluted SikaLatex® R:** SikaLatex® R admixture may be diluted up to 5:1 (water: SikaLatex® R) for projects requiring minimal polymer modification. Pour 4.5 pints (2.1 L) of the mixture into the mixing container. Slowly add powder, mix and adjust as above.

### EXTENSION WITH AGGREGATES

- For applications greater than 1" (25 mm) in depth, add 3/8" (10 mm) coarse aggregate.
- The typical addition rate is 25 lbs (11.4 kg) of aggregate per bag. It is approximately 2 gallons (7.6 L) by loose volume of aggregate.
- The aggregate must be non-reactive (reference ASTM C 1260, C 227 and C 289), clean, well graded, Saturated Surface Dry (SSD), have low absorption and high density, and comply with ASTM C 33 size number 8 per Table 2.
- Variances in aggregate may result in different

strengths.

- Do not use limestone aggregate.
- Do not exceed a slump of 7" (178 mm). This may cause excessive bleeding and retardation and may reduce the strength and performance of the material.

## APPLICATION

- A neat mix of SikaQuick®-1000 / SikaQuick®-1000 LD mortar must be scrubbed into the mechanically prepared, SSD substrate. Be sure to fill all pores and voids.
- Force material against edge of repair, working toward center. After filling repair, screed off excess.
- Allow material to set to desired stiffness, then finish with wood or sponge float for a smooth finish, or broom or burlap-drag for a rough finish.
- If a smoother finish is desired, a magnesium float should be used.
- To assist in the finishing process, use SikaFilm® finishing aid. Consult current Product Data Sheet.
- Mixing, placing, and finishing should not exceed 30 minutes maximum.
- Refer to ACI 305, the "Guide to Hot Weather Concreting" or ACI 306, the "Guide to Cold Weather Concreting" when there is a need to place this product while either hot or cold temperatures prevail. Thinner placements will be more sensitive to the temperature conditions.

## CURING TREATMENT

- As per ACI recommendations for portland cement concrete, moist curing is required.
- Moist cure with wet burlap and polyethylene, a fine mist of water or with a water based,\* compatible curing compound meeting ASTM C 309.
- Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings.
- Moist curing should commence immediately after finishing.
- Protect freshly applied mortar from direct sunlight, wind, rain and frost.
- To prevent from freezing, cover with insulating material (e.g. curing blanket).

\* Pretesting of curing compound is recommended.

## LIMITATIONS

- Avoid application in direct sunlight, during precipitation and/or when strong winds prevail.
- Use only clean, potable water
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur®-32 Hi-Mod.
- Bonding agents (e.g. Sika® Armatec® 110 EpoCem) should not be used. Use of the neat mortar as a scrub coat is recommended and preferred. If bonding agents are used, follow cure times for the bonding agents

used as a guide prior to putting SikaQuick®-1000 / SikaQuick®-1000 LD in service. Assure suitability with the manufacturer of the bonding agent.

- SikaQuick®-1000 / SikaQuick®-1000 LD does not form a vapor barrier when cured.

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR**

**PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/group/SikaCorp/termsandconditions.html> or by calling 1-800-933-7452.

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**Product Data Sheet**

SikaQuick®-1000  
November 2018, Version 01.05  
020302040040000011

SikaQuick-1000-en-US-(11-2018)-1-5.pdf



# **AMX 700 SBF**



# Preblended Scratch, Brown & Finish Stucco AMX 700 SBF

Product # AMX 700 SBF



## 1. PRODUCT NAME

Amerimix Scratch, Brown & Finish Stucco - AMX 700 SBF

## 2. PRODUCT DESCRIPTION

Amerimix Scratch, Brown & Finish Stucco - AMX 700 SBF is a portland based, factory blend of sand, cement and proprietary chemical additives. AMX 700 SBF may be used for a variety of wall assemblies. The aggregates and mix design for AMX 700 SBF are specifically formulated to meet the requirements of two and three coat applications over solid plaster bases (unit masonry, precast/cast-in-place concrete) per Table 4 of ASTM 926.

### Feature and Benefits

- Factory blended under controlled conditions for mix consistency
- Outstanding workability for smooth spreading and quality finish

### Uses

- Interior or exterior applications
- Stucco scratch, brown and finish coats
- Two or three coat system applications
- Application over lath

### Packaging

Available in 80 lb (36.3 kg) bags or bulk bags.

### Approximate Coverage

One 80 lb bag yields approximately 9 - 10 ft<sup>2</sup> (.84 - .92 m<sup>2</sup>) at 3/4" (19.1 mm) thick, 13 - 15 ft<sup>2</sup> (1.2 - 1.4 m<sup>2</sup>) at 1/2" (12.7 mm) thick.

### Limitations

1. The optimal temperature range for stucco application is between 40°F (4°C) and 90°F (32°C). Application outside of this range is possible when appropriate precautions for cold or hot weather construction are implemented in compliance with ACI, PCA, ASTM, IMIAC, or Masonry Institute standards.
2. Agitate material as necessary within its working time to maintain workability.
3. Do not add materials other than clean potable water.
4. Water with a high mineral salt content can cause efflorescence. Efflorescence occurs naturally and is beyond the control of Amerimix.
5. Avoid adding excessive amounts of water as this promotes segregation, loss of strength or loss of durability.
6. Shelf life is not to exceed one year from date of manufacture.

NOTE: Amerimix Scratch, Brown & Finish Stucco -AMX 700 SBF should be installed in accordance with the provisions of applicable ASTM standards and the local building code. Always follow traditional industry best practices appropriate for the application and weather conditions. Good workmanship in conjunction with proper design and detailing assures durable, efficient, watertight construction.

### Safety

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS Sheets are available on our website [Amerimix.com](http://Amerimix.com) or contact CHEMTREC (24 hours availability) 800-424-9300 for International inquiries +01-703527-3887, or contact Amerimix Technical Services at 888-313-0755.

## 3. TECHNICAL DATA

### Applicable Standards

#### ASTM International (ASTM)

- ASTM C91 Standard Specification for Masonry Cement
- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
- ASTM C150 Standard Specification for Portland Cement
- ASTM C897 Standard Specification for Aggregate for Job-Mixed Portland Cement Based Plaster
- ASTM C926 Standard Specification for Application of Portland Cement Based Plaster
- ASTM C1328 Standard Specification for Plastic Cement

#### International Masonry Industry All-Weather Council (IMIAC)

- Recommended Practices and Guide Specifications for Cold Weather Masonry Construction
- Recommended Practices and Guide Specifications for Hot Weather Masonry Construction

## Sustainability

Amerimix products generally qualify for LEED Materials and Resources credits for Recycled Materials and Regional Materials. Visit [www.amerimix.com](http://www.amerimix.com) or contact Technical Services for additional information regarding LEED qualifications for your specific product application and project location.

## 4. INSTALLATION

### Preparation

- Remove all loose particles, dirt, dust or any foreign materials that would inhibit proper bonding to substrate.
- Certain conditions may require the substrate to be SSD (saturated surface dry) conditioned such as dry windy climates, porous substrates or high temperatures.
- Lath must be installed per ASTM C1063.

### Job Mock Up

Amerimix requires that when Amerimix Scratch, Brown & Finish Stucco- AMX 700 SBF is used in any application or as part of any system that includes other manufacturers' products, the contractor and/or design professional shall test all the system components collectively for compatibility, performance and long-term intended use in accordance with pertinent and accepted industry standards prior to any construction. Written documentation of the test performed shall be satisfactory to the design professional and contractor. Test results must include the means and methods of application, products used, project-specific conditions being addressed, and standardized tests performed for each proposed system or variation. Approved mock ups or sample panels should be retained until completion of the project.

### Mixing

1. Use of a mechanical mixer will help ensure more uniform mix.
2. Use approximately 1.5 gal (5.7 L) of clean potable water per 80 lb (36.3 kg) bag. Pour approximately 3/4 of the water into the mixer. For mixing from a silo, use the same approximate water ratio and follow the same procedures.
3. With the mixer running, add bags of dry stucco and mix thoroughly.
4. A minimum of 5 minutes mixing time is recommended.
5. Add additional water in small amounts as necessary to achieve optimum consistency and workability. Mix for a minimum of 5 minutes adding enough of the remaining water to achieve a fluid workable consistency. Caution: Adding too much water will reduce strength.
6. Let mix stand for 2 minutes to enable absorption of water and re-mix.
7. Addition of cold water at high temperatures or warm water at low temperatures will aid in adjusting the set time.

### Performance Recommendations

Only water lost to evaporation should be replaced by re-tempering, not water lost to hydration.

### Curing

Loss of surface water may occur quickly due to higher ambient air temperatures and wind conditions. Moist cure walls for 48 hours after application. Protect from rain and freezing for 24 hours.

## Cleaning

Use water to clean all tools immediately after use. Dried material must be mechanically removed. Only clean potable water should be used in the cleaning process.

## 5. AVAILABILITY

Amerimix products are available throughout the U.S. and Canada.

For information please contact Amerimix at

Toll Free: 888-313-0755

Website: [Amerimix.com](http://Amerimix.com)

## 6. TECHNICAL SUPPORT

For technical assistance please contact us

Toll Free: 888-313-0755

## 7. WARRANTY

### LIMITED WARRANTY

**What Does This Warranty Cover?** Amerimix warrants that this product will (a) be free from defects in material and workmanship, and (b) conform to specifications set forth in Bonsal American's product literature at the time of manufacturer.

**How Long Does Coverage Last?** This warranty lasts for a period of one (1) year from the date of purchase. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THIS EXPRESS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

**What Will Amerimix Do to Address Problems?** Amerimix will replace the defective product or refund the purchase price, at its option.

**What Does This Warranty Not Cover?** Amerimix will not be liable for damage or loss resulting from a failure to store, use, install or maintain the product in strict accordance with Amerimix's specifications and instructions. In no event will Amerimix be liable for damages in excess of the purchase price for the product. CONSEQUENTIAL, SPECIAL AND INCIDENTAL DAMAGES ARE NOT RECOVERABLE UNDER THIS WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

**How Do I Get Warranty Service?** Within thirty (30) days after discovering a defect in the product, contact Amerimix in writing at the following address:

Amerimix  
Technical Support Group  
Charlotte, NC 28217

Include with your letter a brief description of the problem and any sales receipt, invoice or other proof of the date of purchase. To obtain Amerimix's technical or sales literature, please call (888)313-0755 or visit our web site at [amerimix.com](http://amerimix.com).

**How Does State Law Relate to This Warranty?** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### WARNING - INJURIOUS TO EYES. CAUSES SKIN IRRITATION.

This product contains portland cement and silica sand. Avoid contact with eyes and skin. Do not take internally. Crystalline silica sand may cause serious lung problems. Avoid breathing dust and wear a respirator in dusty areas. Contact with wet unhardened concrete, mortar, cement or cement mixtures can cause skin irritation, severe chemical burns or serious eye damage. Wear waterproof gloves, a fully buttoned long-sleeved shirt, full-length trousers and tight fitting safety goggles. If you have to stand in wet product, wear waterproof boots high enough to keep product from getting inside. If working on hands and knees, wear kneepads. Indirect contact through clothing can be as serious as direct contact. Promptly, rinse out wet product from clothing.

**California Proposition 65:** This product contains Crystalline Silica, Quartz and may also contain trace amounts of other chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

#### KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.

**FIRST AID:** Eye Contact: Flood eyes with water for at least 15 minutes and consult a physician immediately. DO NOT RUB EYES. Skin Contact: Wash exposed skin area with soap and water. Consult a physician if irritation persists. Inhalation: Remove to fresh air. Ingestion: Immediately consult a physician.

For additional information, call Amerimix at 888-313-0755 or CHEMTREC at 800-424-9300 or 703-527-3887 outside of the USA. Refer to Safety Data Sheet (SDS) for further information.

**ENVIRONMENTAL ADVISORY:** Uncured or crushed cured cement is an environmental hazard, which may adversely affect fish and wildlife. Dispose of construction debris containing cement, including empty bags, at a permitted municipal disposal firm. Do not use crushed concrete as a fill near an aquatic habitat.

# **PRO-CRYL UNIVERSAL PRIMER**



# PRO

## INDUSTRIAL™

# PRO-CRYL®

## UNIVERSAL PRIMER

As of 09/11/2015, Complies with:			
OTC	Yes	LEED® 09 CI	Yes
SCAQMD	Yes	LEED® 09 NC	Yes
CARB	Yes	LEED® 09 CS	Yes
CARB SCM 2007	Yes	LEED® 09 S	Yes
MPI	107,134	NGBS	Yes

B66W00310  
B66A00310  
B66N00310

OFF WHITE  
GRAY  
RED OXIDE

### CHARACTERISTICS

**Pro Industrial Pro-Cryl Universal Primer** is an advanced technology, self cross-linking acrylic primer. It is rust inhibitive and designed for commercial, new construction and maintenance applications. It can be used as a primer under water-based or solvent-based high performance topcoats.

- Rust inhibitive
- Single component
- Early moisture resistant
- Fast dry
- Low temperature application 40°F
- Interior and exterior use
- Suitable for use in USDA inspected facilities

**Color:** Off White, Gray, Red Oxide

**Recommended Spread Rate per coat:**

Wet mils: 5.0 - 10.0  
Dry mils: 1.8 - 3.6  
~Coverage: 160 - 320 sq ft/gal  
Approximate

**Theoretical coverage sq ft/gal**

(m<sup>2</sup>/L) @ 1 mil / 25 microns dft 577sq ft  
NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

**Drying Time @ 6.0 mils wet 50% RH:**

	40°F	77°F	120°F
To touch:	2 hrs	40 min	20 min
Tack free:	8 hrs	2 hrs	1 hr
To recoat:	16 hrs	4 hrs	2 hrs
To cure:	45 days	30 days	14 days

Drying time is temperature, humidity, and film thickness dependent.

**Finish:** Low sheen

**Flash Point:** N/A

**Shelf Life:** 36 months, unopened  
Store indoors at 40°F to 100°F.

**Tinting:** Do not tint

**B66W310** (may vary by color)

**VOC (less exempt solvents):**

96 g/L; 0.80 lb/gal

As per 40 CFR 59.406 and SOR/2009-264, s.12

**Volume Solids:** 36% ± 2%

**Weight Solids:** 49% ± 2%

**Weight per Gallon:** 10.23 lb

### RECOMMENDED SYSTEMS

**Waterborne topcoat:**

1-2 cts. Pro Industrial Acrylic  
or Pro Industrial DTM Acrylic  
or Pro Industrial Multi-Surface Acrylic  
or Pro Industrial Pre-Catalyzed Waterbased Epoxy  
or Pro Industrial Waterbased Acrolon 100  
or Pro Industrial Waterbased Catalyzed Epoxy

**Solventborne topcoat:**

1-2 cts. Pro Industrial High Performance Epoxy  
or Pro Industrial Urethane Alkyd

**Pro Industrial Pro-Cryl Universal Primer B66W310** Off White is GREENGUARD GOLD certified for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg).

**System Tested:** (unless otherwise indicated)

Substrate: Steel  
Surface Preparation: SSPC-SP10  
1 ct. Pro Industrial Pro-Cryl Universal Primer  
1 ct. Pro Industrial Acrylic

**Adhesion:**

Method: ASTM D4541  
Result: 500 psi

**Moisture Condensation Resistance:**

Method: ASTM D4585, 100°F, 1250 hours  
Result: Passes

**Corrosion Weathering:**

Method: ASTM D5894, 10 cycles, 3360 hours  
Result: Passes

**Pencil Hardness:**

Method: ASTM D3363  
Result: H

**Direct Impact Resistance:**

Method: ASTM D2794  
Result: >140 in. lbs.

**Salt Fog Resistance:**

Method: ASTM B117, 1250 hours  
Result: Passes

**Dry Heat Resistance\*:**

Method: ASTM D2485  
Result: 200°F

Provides performance comparable to products formulated In Lieu of Federal Specification: AA50557 and Paint Specification: SSPC-Paint 23.

**Flexibility:**

Method: ASTM D522, 180° bend, 1/4" mandrel  
Result: Passes

\*Suitable for intermittent dry heat resistance up to 300°F when used as a system with Sher-Cryl HPA

**SURFACE PREPARATION**

**WARNING!** Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (**NIOSH** approved) and proper containment and cleanup. For more information, call the National Lead Information Center at **1-800-424-LEAD** (in US) or contact your local health authority.

**Do not use hydrocarbon solvents for cleaning.**

**Iron & Steel** - Minimum surface preparation is Hand Tool Cleaning per SSPC-SP2. Remove all oil and grease from the surface per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6.

**Aluminum** - Remove all oil, grease, dirt, oxide and other foreign material per SSPC-SP1. Prime the area the same day as cleaned.

**Galvanizing** - Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned.

**Previously Painted Surfaces** - If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, additional abrasion of the surface and/or removal of the previous coating may be necessary. Retest surface for adhesion. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

**APPLICATION PROCEDURES**

Apply paint at the recommended film thickness and spreading rate as indicated on front page. Application of coating below minimum recommended spreading rate will adversely affect coating performance.

**SAFETY PRECAUTIONS**

Refer to the SDS sheets before use. **FOR PROFESSIONAL USE ONLY**  
 Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

**PERFORMANCE TIPS**

No painting should be done immediately after a rain or during foggy weather. When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. Apply coating evenly while maintaining a wet edge to prevent lapping.

**APPLICATION**

Refer to the SDS before using  
**Temperature:** 40°F minimum  
 120°F maximum  
 (air, surface, and material)  
 At least 5°F above dew point  
**Relative humidity:** 85% maximum

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compatible with the existing environmental and application conditions.

**Reducer:** Water

**Airless Spray**

Pressure .....2000 psi  
 Hose ..... 1/4" ID  
 Tip ..... .015" - .019"  
 Filter ..... 60 mesh  
 Reduction .....Not recommended

**Conventional Spray**

Gun ..... Binks 95  
 Fluid Nozzle ..... 66  
 Air Nozzle ..... 63PB  
 Atomization Pressure .....60 psi  
 Fluid Pressure .....25 psi  
 ReductionAs needed up to 5% by volume

**Brush** ..... Nylon/Polyester  
 Reduction .....Not recommended

**Roller** .....3/8" woven  
 ReductionAs needed up to 5% by volume

If specific application equipment is listed above, equivalent equipment may be substituted.

**CLEANUP INFORMATION**

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.

HOTW 09/11/2015 B66W00310 32 96  
 KOR, FRC, SP

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative or visit [www.paintdocs.com](http://www.paintdocs.com) to obtain the most current version of the PDS and/or an SDS.

# **EMERALD ACRYLIC LATEX**



# Emerald®

## Interior Latex Satin

### K37 Series

#### CHARACTERISTICS

**Emerald® Interior Acrylic Latex** is our "Best-In-Class" interior architectural coating.

Premium performance in washability, stain resistance, block resistance, adhesion, burnishing and hiding.

Anti-Microbial properties\*.

**Color:** Most Colors  
To optimize hide and color development, always use the recommended P-Shade primer.

**Coverage:** 350-400 sq. ft. per gallon  
@ 4 mils wet, 1.6 mils dry

**Drying Time, @ 77°F, 50% RH:**  
Touch: 1 Hour  
Recoat: 4 Hours  
Drying and recoat times are temperature, humidity, and film thickness dependent.

**Finish:** 10-20 units @ 85°

**Tinting with CCE only:**

Base:	oz. per gallon:	Strength:
Ultrawhite	0-7	SherColor
Extra White	0-7	SherColor
Deep Base	4-14	SherColor
Ultradeep Base	10-14	SherColor
Accent Base	18-20	SherColor

**Extra White K37W00451**  
(may vary by color)

**V.O.C.(less exempt solvents):**  
less than 50 grams per litre; 0.42 lbs. per gallon  
As per 40 CFR 59.406

**Volume Solids:** 40 ±2%  
**Weight Solids:** 56 ±2%  
**Weight per Gallon:** 11.27 lbs  
**Flash Point:** N.A.  
**Vehicle Type:** Styrene Acrylic  
**Shelf Life:** 36 months, unopened  
**WVP Perms (US):** 17.74 grains/(hr ft<sup>2</sup> in Hg)

\*Anti-microbial  
This product contains agents which inhibit the growth of mold and mildew on the surface of this paint film.

#### COMPLIANCE

As of 11/08/2023, Complies with :

OTC	Yes
OTC Phase II	Yes
S.C.A.Q.M.D.	Yes
CARB	Yes
CARB SCM 2007	Yes
CARB SCM 2020	Yes
Canada	Yes
LEED® v4 & v4.1 Emissions	Yes
LEED® v4 & v4.1 V.O.C.	Yes
EPD-NSF® Certified	Yes
MIR-Manufacturer Inventory	Yes
MPI®	Yes

#### APPLICATION

Apply at temperatures above 50°F.  
No reduction needed.

**Brush:**  
Use a nylon-polyester brush.

**Roller:**  
For best final appearance when rolling, finish off in one direction, especially for dark colors.

Use a high-quality polyester roller cover. For specific brushes and rollers, please refer to our Brush and Roller Guide.

**Spray - Airless:**  
Pressure 2000 p.s.i.  
Tip .017-.021 inch

#### APPLICATION TIPS

Make sure product is completely agitated (mechanically or manually) before use.

Priming and application of two coats at the recommended film thickness can help where hiding of a previous coating or application to new drywall is a factor.

Using the same method of application and batch to touch up with as that originally used will help improve touch up.

When original application was by spray, reconditioning of touch up paint by running it through the spray tip will help touch up appearance.

#### SPECIFICATIONS

**Emerald Interior Latex can be used directly over existing coatings, bare drywall, or plaster (cured with a pH of less than 9).**

**Drywall:**  
Self-prime using 2 coats of Emerald Interior Latex  
or  
1 coat Premium Wall & Wood Primer  
2 coats Emerald Interior Latex

**Masonry - Block:** (can be filled to provide a smooth surface or primed if it a high pH substrate)  
1 coat Loxon Acrylic Block Surfer  
or  
1 coat Loxon Concrete & Masonry Primer  
2 coats Emerald Interior Latex

**Plaster:**  
Self-prime using 2 coats of Emerald Interior Latex  
or  
1 coat Loxon Concrete & Masonry Primer  
2 coats Emerald Interior Latex

**Wood:**  
1 coat Premium Wall & Wood Primer  
2 coats Emerald Interior Latex

If the wood has bleeding (such as tannin or knot-holes), prime with Multi-Purpose Primer.

Other primers may be appropriate.

When repainting involves a drastic color change, or coating over heavily stained areas, a coat of primer will improve the hiding performance of the topcoat color.

# **Emerald<sup>®</sup>**

## **Interior Latex Satin**

### **SURFACE PREPARATION**

**WARNING!** If you scrape, sand or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead).

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. should be sealed with the appropriate primer-sealer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

#### **Caulking:**

Gaps between walls, ceilings, crown moldings, and other interior trim can be filled with the appropriate caulk after priming the surface.

#### **Drywall:**

Fill cracks and holes with patching paste-spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.

#### **Masonry, Concrete, Cement, Block:**

All new surfaces must be cured according to the supplier's recommendations – usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Concrete & Masonry Primer.

### **SURFACE PREPARATION**

#### **Mildew:**

Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised.

Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts clean water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach-water solution.

#### **Plaster:**

Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of clean water. Repeat until the surface is hard, rinse with clean water and allow to dry.

#### **Wood:**

Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.

### **CAUTIONS**

For interior use only.  
Protect from freezing.  
Non-Photochemically reactive.

Before using, carefully read **CAUTIONS on label**.

Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. **FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, Call Poison Control Center, hospital emergency room, or physician immediately. **WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.**

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### **CLEANUP INFORMATION**

Clean spills, splatters, hands and tools immediately after use with soap and warm clean water. After cleaning, flush spray equipment with compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.

# **PRO INDUSTRIAL ACRYLIC COATING**



# PRO INDUSTRIAL™

113.03

ACRYLIC



B66-600 SERIES  
B66-650 SERIES  
B66-660 SERIES

GLOSS  
SEMI-GLOSS  
EG-SHEL

As of 04/15/2014, Complies with:			
OTC	Yes	LEED® 09 CI	Yes
SCAQMD	Yes	LEED® 09 NC	Yes
CARB	Yes	LEED® 09 CS	Yes
CARB SCM 2007	Yes	LEED® H	Yes
MPI	Yes	NGBS	Yes

## CHARACTERISTICS

**Pro Industrial Acrylic** is an ambient cured, single component 100% acrylic coating. It is designed for interior and exterior industrial and commercial applications

- Chemical resistant
- Excellent color and gloss retention
- Outstanding early moisture resistance
- Flash rust/early rust resistant
- Suitable for use in USDA inspected facilities
- Fast dry

**Color:** most colors

**Recommended Spread Rate per coat:**

Wet mils: 6.0 - 12.0  
Dry mils: 2.5 - 4.0  
Coverage: 140 - 225 sq ft/gal  
approximate

Note: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

**Drying Time @ 7.0 mils wet 50% RH:**  
@ 50°F @ 77°F @ 120°F

To touch: 1 hr 30 min 5 min  
Tack free: 8 hrs 5 hrs 15 min  
To recoat: 8 hrs 5 hrs 15 min  
To cure: 30 days 30 days 30 days

Drying time is temperature, humidity, and film thickness dependent.

**Finish:** Gloss, Semi-Gloss, Eg-Shel

**Flash Point:** N/A

**Shelf Life:** 36 months, unopened  
Store indoors at 40°F to 100°F.

**Tinting with CCE only:**

Base	oz/gal	Strength
Extra White	0-4	100%
Deep Base	8-12	100%
Ultra-deep Base	8-12	100%

**Extra White B66W00611**

(may vary by color)

**VOC Unreduced:** <50 g/L; <0.42 lb/gal  
as per 40 CFR 59.406 and SOR/2009-264, s. 12

**Volume Solids:** 35 ± 2%

**Weight Solids:** 44 ± 2%

**Weight per Gallon:** 9.5 lb/gal ±2%

## RECOMMENDED SYSTEMS

### Steel\*:

2 cts. Pro Industrial Acrylic

### Steel:

1 ct. Pro Industrial Pro-Cryl Primer  
DTM Acrylic Primer/Finish  
or  
Kem Bond HS  
or  
Zinc Clad Primer  
1-2 cts. Pro Industrial Acrylic

### Aluminum:

1-2 cts. Pro Industrial Acrylic

### Aluminum:

1 ct. Pro Industrial Pro-Cryl Primer  
1-2 cts. Pro Industrial Acrylic

### Concrete Block:

1 ct. Loxon Block Surfacers  
1-2 cts. Pro Industrial Acrylic

### Concrete/Masonry:

1 ct. Loxon Concrete & Masonry Primer

1-2 cts. Pro Industrial Acrylic  
**Drywall**

1 ct. ProMar 200 Primer  
1-2 cts. Pro Industrial Acrylic

### Galvanizing:

2 cts. Pro Industrial Acrylic

### Prefinished Siding: (Baked-on finishes)

1 ct. DTM Bonding Primer  
1-2 cts. Pro Industrial Acrylic

### Wood, exterior:

1 ct. Exterior Wood Primer  
1-2 cts. Pro Industrial Acrylic

### Wood, interior:

1 ct. Premium Wall & Wood Primer

\*Application of coating on unprimed steel may cause pinpoint rusting. Safety Colors, Deep Base, and Ultra-deep colors require a prime coat for maximum durability, adhesion, and corrosion protection.

### System Tested: (unless otherwise indicated)

Substrate: Steel  
Surface Preparation: SSPC-SP10  
Finish: 2 cts. Pro Industrial Acrylic

### Adhesion:

Method: ASTM D4541  
Result: 1386 psi

### Corrosion Weathering 8:

Method: ASTM D5894, 1500 hours, 5 cycles  
Result: Rating 10, per ASTM D714 for blistering  
Rating 9 per ASTM D1654 for corrosion

### Direct Impact Resistance:

Method: ASTM D2794  
Result: >160 in. lb

### Dry Heat Resistance:

Method: ASTM D2485  
Result: 250°F

### Flexibility:

Method: ASTM D522, 180° bend, 1/8" mandrel  
Result: Passes

### Humidity Resistance\*:

Method: ASTM D4585, 1500 hours  
Result: Rating 10 per ASTM D714 for blistering  
Rating 10 per ASTM D1654 for corrosion

### Pencil Hardness:

Method: ASTM D3363  
Result: 2B

### Salt Fog Resistance\*:

Method: ASTM B117, 1500 hours  
Result: Rating 10 per ASTM D714 for blistering  
Rating 9 per ASTM D1654 for corrosion

### Thermal Cycling:

Method: ASTM D2246, 5 cycles  
Result: Passes

\*over Pro Industrial Pro-Cryl Primer

**SURFACE PREPARATION**

**WARNING!** Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

**Do not use hydrocarbon solvents for cleaning.**

**Iron & Steel** - Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6. Primer recommended for best performance.

**Aluminum** - Remove all oil, grease, dirt, oxide and other foreign material per SSPC-SP1.

**Galvanizing** - Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned.

**Concrete and Masonry** - For surface preparation, refer to SSPC-SP13/NACE 6 or ICRI 03732, CSP 1-3. Surfaces should be thoroughly cleaned and dry. Surface temperatures must be at least 55°F before filling. If required for a smoother finish, use the recommended filler/surfacer. The filler/surfacer must be thoroughly dry before topcoating per manufacturer's recommendations.

Weathered masonry and soft or porous cement board must be brush blasted or power tool cleaned to remove loosely adhering contamination and to get to a hard, firm surface. Apply one coat Loxon Conditioner, following label recommendations.

**Wood** - Surface must be clean, dry and sound. Prime with recommended primer. No painting should be done immediately after a rain or during foggy weather. Knots and pitch streaks must be scraped, sanded and spot primed before full coat of primer is applied. All nail holes or small openings must be properly caulked.

**Previously Painted Surfaces** - If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, additional abrasion of the surface and/or removal of the previous coating may be necessary. Retest surface for adhesion. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.

**CAUTIONS**

Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. **FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. **WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. FOR PROFESSIONAL USE ONLY. SEE MATERIAL SAFETY DATA SHEET.**

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**APPLICATION**

Refer to the MSDS before use.

**Temperature:** 50°F minimum  
120°F maximum  
(Air, surface, and material)  
At least 5°F above dew point

**Relative humidity:** 85% maximum

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compatible with the existing environmental and application conditions.

**Reducer** Water

**Airless Spray**

Pressure ..... 1500 psi  
Hose ..... 1/4" ID  
Tip ..... .017" - .021"  
Filter ..... 60 mesh  
Reduction ..... Not recommended

**Conventional Spray**

Gun ..... Binks 95  
Fluid Nozzle ..... 66  
Air Nozzle ..... 63PB  
Atomization Pressure ..... 50 psi  
Fluid Pressure ..... 15-20 psi  
Reduction ..... As needed up to 12½% by volume

**Brush** ..... Nylon / polyester  
Reduction ..... Not recommended

**Roller** ..... 3/8" woven  
Reduction ..... Not recommended

If specific application equipment is listed above, equivalent equipment may be substituted.

**CLEANUP INFORMATION**

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with Mineral Spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using Mineral Spirits.

NOTE: If coating is allowed to "set-up", Reducer #54 may be required for cleaning. Follow manufacturer's safety recommendations when using Reducer #54.

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin. The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

# ELECTRICAL SPECIFICATIONS

**DIVISION 16  
ELECTRICAL  
SECTION 16000  
ELECTRICAL GENERAL PROVISIONS**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, tools, supplies, equipment, and temporary utilities to complete the work shown on the Plans and specified herein. All systems are to be completely installed and fully operational. Specifically, the work includes, but is not limited to:
1. Install new outdoor light on wall under existing canopy using existing lighting circuit 1A-31 as indicated in the drawings for a complete working system.
  2. Secure existing low-voltage conductors with appropriate as per NEC 800.24 as indicated in the drawings for a complete working system.
  3. Remove the existing low-voltage communication cable from inside the HVAC disconnect as indicated in the drawings for a complete working system.
  4. Install new communication cables in a dedicated conduit from the HVAC unit to the thermostat panel device inside the building as indicated in the drawings for a complete working system.
  5. Verify existing grounding system.

**1.02 RELATED DOCUMENTS**

- A. The general provisions of the Contract, including General Conditions and Special Conditions, apply to all the work specified herein.

**1.03 LAWS, PERMITS, FEES AND NOTICES**

- A. Secure and pay all permits, fees and licenses necessary for the proper execution and completion of the work. Submit all notices and comply with all laws, ordinances, rules and regulations of any public agency bearing on the work.

**1.04 DEPARTURES**

- A. If any departures from the Contract Plans of Specifications are deemed necessary, details of such departures and the reasons therefore shall be submitted as soon as practicable to the Owner Representative for advance written approval.

## **1.05 BASIS FOR WIRING DESIGNS**

- A. The Contract Plans and Specifications describe specific sizes of switches, breakers, fuses, conduits, conductors and other wiring equipment. These sizes are based on specific power consuming equipment (screening system, HVAC, heaters, lights, motors for fans, compressors, pumps, etc.). Wherever another trade provides power consuming equipment which differs from Plans and Specifications, the wiring for such equipment shall be changed to proper sizes to match at no additional expense to DSWM.

## **1.06 AS-BUILT INFORMATION**

- A. A set of "Red-Lined" electrical plans shall be carefully maintained at the job site. Actual conditions are to be put on the Plans in red on a daily basis so the Plans will continuously show locations and routings of cables, conduits, pull boxes, circuit numbers, and other information required by the Owner Representative. An up-to-date copy of the "Red-Lined" Drawing shall be submitted to DSWM by the Contractor once every two weeks. At the end of the Project, the contractor shall turn over as-built drawings in AutoCAD and PDF format to DSWM.

## **1.07 JOB SITE VISIT**

- A. Visit the project site before submitting a bid. Verify all dimensions shown on the Contract Plans and determine the characteristics of existing facilities which will affect performance of the work, but which are not shown on the Plans or described within these Specifications.

## **1.08 CODES AND STANDARDS**

- A. Applicable provisions of the following codes and standards and other codes and standards required by the State of Florida and local jurisdictions are hereby imposed on a general basis for electrical work (in addition to specific applications specified by individual work sections of these specifications).
  1. UL: Electrical materials shall be approved by the Underwriters' Laboratories, Inc. This applies to materials which are covered by UL standards.
  2. FBC: Florida Building Code (8th Edition – 2023).
  3. NEC: National Electrical Code (NFPA-70-2020).
  4. NFAC: National Fire Alarm Code (NFPA-72-2023).
  5. OSHA: Standards of the Occupational Safety and Health Administration.

6. NEMA: National Electrical Manufacturers Association Standards are to be met wherever standards have been established by that agency, and proof is specifically required with material submittals for switchboards, motor control centers, panelboards, cable trays, motors, switches, circuit breakers, lightning protection, and fuses.
7. ANSI: American National Standards Institute.

## **1.09 ELECTRICAL SUBMITTALS**

- A. The Contractor shall submit Shop Drawings, samples, and certificates in accordance with the Special Conditions for additional instructions on substitutions.
- B. Submittals will not be accepted for partial systems. Submit all materials for each specifications section at one time. Submittals must be arranged, indexed, and bound in orderly sets for ease of review.
- C. Shop Drawings and manufacturers data sheets are required for all electrical materials. Samples are to be supplied for any substitute as requested by the Owner Representative, Submit Shop Drawings, manufacturer's data, and certifications on all items of electrical work prior to the time such equipment and materials are to be ordered. Order no equipment or materials without approval from the Owner Representative.

## **1.10 OPERATION AND MAINTENANCE MANUALS**

- A. The Contractor shall submit Operation and Maintenance (O&M) Manuals in accordance with Division 1, General Requirements. O & M Manuals must contain, but are not limited to, the following:
  1. Brief description of system and basic features.
  2. Manufacturer's name and model numbers of all components of the system.
  3. List of local factory authorized service companies.
  4. Operating instructions, including preparation for starting up, seasonal changes, shut down and service.
  5. Maintenance instructions.
  6. Possible breakdowns and repairs.
  7. Manufacturer's literature describing each piece of equipment.
  8. Control diagrams by the control manufacturer.
  9. Description of sequence by the control manufacturer.
  10. Parts list.
  11. Recommended spare parts list.
  12. As-built wiring diagrams.

### **1.11 SPARE PARTS**

- A. Submit in accordance with Division 1 - General Requirements, a list of recommended and provided spare parts for all major items of equipment. Include descriptions of each part, part number, and cost. As a minimum, all recommended spare parts shall be provided by the Contractor. Additional spare parts shall be provided as noted elsewhere in the Specifications.

### **1.12 PROJECT DOCUMENTS**

- A. For "As Built" drawing requirements, see Division 1. Contractor shall provide all "As-Built" drawings to DSWM in AutoCAD and PDF format.
- B. In addition, each "As Built" single line diagram shall be framed under glass and mounted on wall near respective units of switchboards, panelboards, electrical panels, switchgear, etc.
- C. "As Built" drawings shall be framed under glass and mounted on the wall in the related main Electrical Room.

### **1.13 COORDINATED SHOP DRAWINGS**

- A. Submit coordinated Shop Drawings at 1/2-inch scale, not reduced, using actual sizes and weights of vendor's equipment. Plans shall consist of floor plan and elevations of each significant wall. Ducts or foreign pipes may not encroach over panels and switchboards. Show NEC required clearances. Upon completion of the project the Plans shall be updated with incidental items such as relays, time clocks, contactors, etc.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL**

- A. Electrical Temporary Facilities
  - 1. The Contractor shall include in his bid the cost of furnishing, installing and maintaining all materials and equipment required to provide temporary light and power to perform the work of all trades during construction and until work is completed. Adequate lighting and receptacle outlets for operation of hand tools shall be provided throughout the project, including shanties, trailers, field offices, temporary toilet enclosures, and shall be extended as construction progresses.

2. All reasonable safety requirements shall be observed to protect workers and the public from shock and fire hazards.
  - a. Ground fault interrupters shall be employed in accordance with Codes.
  - b. Ground wires are required in all circuits. Ground poles are required on all outlets. All metallic cases shall be grounded.
  - c. Raintight cabinets shall be used for all equipment employed in wet areas.

**2.02 ELECTRICAL PRODUCTS**

- A. Unless otherwise indicated in writing by the Owner Representative, the products to be furnished under this specification shall be the manufacturer's latest design. Where two (2) or more units of the same class of equipment are required, these units shall be products of the same design and rating shall be interchangeable throughout the project.
- B. All products shall be newly manufactured. Defective equipment or equipment damaged during the installation or test shall be replaced or repaired in a manner meeting with the approval of the Owner Representative at no additional expense to DSWM.

**2.03 SUBSTITUTIONS**

- A. Comply with instructions in the Contract General Conditions and Special Conditions regarding substitutions.

**2.04 ELECTRICAL IDENTIFICATION**

- A. Color Coding: Conductor colors shall be in accordance with the NEC and NEMA requirements. Refer also to applicable sections of these specifications. Three (3) phase feeder and branch circuits shall be identified as follows:

<u>120/208</u>	<u>480Y/277</u>
A: Black	A: Brown
B: Red	B: Orange
C: Blue	C: Yellow
N: White	N: Gray

## **2.05 NAMEPLATE**

- A. The following items shall be equipped with nameplates: All motors, motor starters, motor control centers, pushbutton stations, control panels, time switches, disconnect or relays in separate enclosures, transformers, receptacles, wall switches, high voltage boxes and cabinets. All light switches and outlets shall carry a phenolic plate with the supply circuit panel I.D. and circuit number. Electrical systems shall be identified at junction and pull boxes, terminal cabinets and equipment racks.
  
- B. Nameplates shall adequately describe the function of the particular equipment involved. Nameplates for panelboards and switchboards shall include the panel designation, voltage and phase of the supply. For example, Panel A, 277/480V, 3- phase, 4-wire. The name of the machine on the motor nameplates for a particular machine shall be the same as the one used on all motor starters, disconnect and P.B. station nameplates for that machine. Nameplates shall be laminated phenolic plastic, white front and back with black core, with lettering etched through the outer covering; black engraved letters on white background. Lettering shall be 3/16 inch high at pushbutton stations, thermal overload switches, receptacles, wall switches and similar devices, where the nameplate is attached to the device plate. At all other locations, lettering shall be ¼ inch high, unless otherwise detailed on the Plans. Nameplates shall be securely fastened to the equipment with No. 4 Phillips, rough- head, cadmium-plated, steel self-tapping screws or nickel-plated brass bolts. For applications on NEMA 3R enclosures, nameplates shall be attached using an epoxy-based adhesive that is resistant to oil and moisture. Motor nameplates may be non-ferrous metal not less than 0.03 inch thick, die stamped. In lieu of separate plastic nameplates, engraving directly on device plates is acceptable. Engraved lettering shall be filled with contrasting enamel. Equipment nameplate schedule for all equipment shall be submitted with Shop Drawing submittal for Owner Representative's approval.
  
- C. All junction and splice boxes shall be labeled using permanent shipping tags attached to boxes; not covers.

## **2.06 WIRE AND CABLE IDENTIFICATION**

- A. All wire and cable shall be identified at each termination point and at each pull box, splice box, junction box, or manhole. Provide permanent, waterproof, non-metallic (paper unacceptable) tags indicating the circuit number in 3/16-inch letters. Circuit numbers shall be protected with clear shrinkable tubing.

## **2.07 SIGNS**

- A. Warning signs shall comply with OSHA requirements and reasonable safety precautions. Provide "Warning-High Voltage-Keep Out" sign for each electrical room for each door.

## **2.08 UNDERGROUND IDENTIFICATION**

- A. During backfilling of each exterior underground electrical, signal or communication cable, conduit, or duct bank, install a continuous underground type of plastic line marker, located directly over the buried line at 6 inches to 8 inches below finished grade.

## **2.09 RUBBER MAT**

- A. Provide rubber mat running the full length of substations, switchgears, panelboards, and electrical panels in accordance with OSHA standards.

## **PART 3 - EXECUTION**

### **3.01 DELIVERY, STORAGE AND HANDLING**

- A. Deliver products to project properly identified with names, model numbers, types, grades, compliance labels and similar information needed for distinct identification; adequately packaged or protected to prevent deterioration during shipment, storage and handling. Store in a dry, well ventilated, indoor space, except where prepared and protected by the manufacturer specifically for exterior storage. Comply with DSWM's instructions for storage locations.

### **3.02 ELECTRICAL COORDINATION**

- A. The Contractor is responsible for coordination with DSWM, Owner Representatives, the Power Company, the Telephone Company, and Cable Company on all matters which have a bearing on the electrical work.
- B. The Plans indicate the extent, the general location and arrangement of equipment, conduit, and wiring. Study the Plans, including details, so the equipment shall be properly located and readily accessible. Locate all electrical equipment to avoid interference with mechanical and/or structural features. Make necessary changes in spacings and locations of lighting fixtures, panelboards, cabinets, receptacles and other items of equipment provided that the overall patterns of layouts are not disrupted and remain uniform.

### **3.03 COORDINATION**

- A. The electrical Contractor must check for existing utilities before commencing any excavation or drilling. Contract plans and other trades are to be consulted to avoid interference with other utilities on this project.
- B. In the event of damage to existing utilities, the Owner Representative shall be immediately notified, and damage shall be immediately repaired, with no cost to DSWM.

### **3.04 PRECAUTIONS**

- A. The electrical Contractor must take every reasonable precaution to avoid interferences. In the vicinity of a suspected interference, excavations shall be dug by hand.

### **3.05 EXCAVATING, DRILLING AND BACKFILLING**

- A. Excavation and Backfill for Utility Systems.
- B. Locate and protect existing utilities and other underground work in a manner which will ensure that no damage or service interruption will result from excavating and backfilling.
- C. Protect property from damage which might result from excavating and backfilling.
- D. Protect persons from injury at excavations, by shoring up, barricades, warnings and illumination.
- E. Coordinate excavations with weather conditions, to minimize the possibility of washouts, settlements and other damages and hazards.
- F. Dewater excavations as necessary. Protect excavations from inflow of surface water. Pump minor inflow of ground water from excavations; protect excavations from major inflow of ground water by installing temporary sheeting and waterproofing. Provide adequate barriers which will protect other excavations and below grade property from being damaged by water, sediment, or erosion from or through the electrical work excavations.
- G. No organic material is permitted in backfill. All vegetation, peat, sod or other organic matter shall be removed from the premises.
- H. Except under roadways, backfill material shall be clean sand or shell rock. No debris or trash may be used as backfill.

- I. Under roadways, backfill material shall be the same as comprising the roadbed.
- J. Backfill excavations to 8-inch-high courses of backfill material uniformly compacted to 95% density per ASTM Standard D1557 using power-driven hand-operated compaction equipment. Watering backfill is not an adequate method of compaction.
- K. Backfill to elevations matching adjacent grades, at the time of backfilling excavations for electrical work. Where subsidence is measurable or observable at electrical work excavations during the warranty period, remove the surface (pavement, lawn or other finish) add backfill material, compact, and replace the surface treatment. Restore the appearance, quality and condition of the surface or finish to match adjacent work and eliminate evidence of restoration to the greatest extent possible.
- L. Where excavation and backfill for electrical work passes through or occurs in a landscaped area, repair or replace the landscape work to match the original condition and quality of work.
- M. Where excavation and backfill for electrical work passes through or occurs in an area of paving or flooring, replace, and restore the construction and finish of the paving or flooring to match the original condition and quality of the work.

### **3.06 CUTTING AND PATCHING**

- A. Cut and prepare all openings, chases and trenches required for the installation of equipment and materials. Repair, remodel and finish in strict conformance with the quality of workmanship and materials in the surroundings. Obtain written permission from the Owner Representative for any alterations to structural members before proceeding. All penetrations through fire walls or floor/ceiling slabs shall be sealed to maintain the fire integrity of the wall or slab.

### **3.07 MAINTENANCE**

- A. Render all necessary measures to insure complete protection and maintenance of all systems, materials, and equipment prior to final acceptance. Any materials or equipment not properly maintained or protected to assure a factory new condition at the time of final acceptance shall be replaced immediately at no additional cost to DSWM.

### **3.08 WATERPROOFING**

- A. Whenever any work penetrates any waterproof, seal and render the work waterproof. All work shall be accomplished so as not to void or diminish any waterproofing bond or guarantee.

### **3.09 TESTS**

- A. Conduct an operating test of equipment prior to the Owner Representative's approval. The equipment shall be demonstrated to operate in accordance with the requirements of these Specifications. The tests shall be performed in the presence of the Owner Representative or an authorized representative. The Contractor shall furnish all instruments, electricity and personnel required for the tests.

### **3.10 CLEANUP**

- A. Maintain a continuous cleanup during the progress of the work and use appointed storage areas for supplied. The premises shall be kept free from accumulations of waste materials and rubbish.

**END OF SECTION**

**SECTION 16010**  
**BASIC ELECTRICAL REQUIREMENTS**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. The work includes also all supervision, labor, materials, equipment, facilities and installation required for the complete electrical systems as indicated on the Drawing and called for in these specifications, or as may be reasonably implied by either. When plans, notes and/or specifications are in conflict, the most stringent requirements shall apply.
- B. The provisions of this Section apply to all electrical items specified in the various Sections of Division 16 of these Specifications, except where otherwise specified or shown in Contract Documents.
- C. Provide complete and operating electrical systems consisting of the following:
- D. Electrical connections to equipment furnished by other trades.
- E. Conduits, sleeves, pull, junction and terminal boxes, manholes, etc. required for all exposed, concealed, and underground systems.
- F. Properly maintained temporary electrical power and lighting as required for all trades.
- G. Miscellaneous items obviously required for a complete and operating system (nuts and bolts, masonry anchors, conduit and equipment supports, drilling, welding, scaffolding, crane service, etc.) but not specifically called for on the Plans or specifications.
- H. Visit the project site before submitting a bid. Verify all dimensions shown on the contract plans and determine the characteristics of existing facilities which will affect performance of the work, but which are not shown on the Plans or described within these specifications.

**1.02 CODES AND STANDARDS**

- A. Reference within these Specifications to standards and codes implies that any item, product, or material so identified must comply with the minimum requirements as stated therein. Only the latest revised editions are applicable.

- B. The Specifications, codes and standards listed below form a part of these specifications.
  - 1. National Electrical Code (NEC)
  - 2. National Electrical Contractor's Association (NECA)
  - 3. National Fire Protection Association (NFPA)
  - 4. Underwriters' Laboratories (UL)
  - 5. National Electrical Manufacturers Association (NEMA)
  - 6. American National Standards Institute (ANSI)
  - 7. Federal Specifications (Fed. Spec.)
  - 8. Insulated Cable Owner Representatives Association (ICEA)
  - 9. Florida Building Code (FBC)
  - 10. American Concrete Institute (ACI)
  - 11. American Society for Testing and Materials (ASTM)
  - 12. American Society of Mechanical Owner Representatives (ASME)
  - 13. Lightning Protection Institute (LPI)
  
- C. Furnish equipment listed and bearing the label of Underwriters' Laboratories Inc. (UL) or of an independent testing laboratory acceptable to the Owner Representative and the local Code enforcement agency having jurisdiction.
  
- D. Install equipment and materials in compliance with applicable provisions of the OSHA Safety and Health Standards (29CFR1910 and 29CFR1926, as applicable), State Building Standards and applicable local codes and regulations.

### **1.03 PLANS**

- A. The Plans indicate the extent and general arrangements of equipment and wiring systems. If any deviations from the Plans are deemed necessary by the Contractor, details of such deviations and reasons therefore shall be submitted to DSWM for approval within thirty (30) days after award of the Contract. No such deviations shall be made without the prior written approval of DSWM. All items not specifically mentioned in the specifications or noted on the Plans but obviously necessary to make a complete working installation shall be included.
  
- B. Mechanical equipment shown on the electrical plans is included solely as a convenience to the Contractor and is not to be regarded as necessarily final or complete nor superseding in any way the work outlined in the mechanical specifications and plans. Where electrical plans differ from the mechanical plans in regard to horsepower, voltage, phases, load rating or equipment location, the information shown on the mechanical plans prevails and the required power shall be provided.

- C. Wiring as shown on Plans are for a typical installation and based on the requirement for similar jobs but might not show all conductors required for this particular Contract. Coordinate with the manufacturers of proposed equipments the power and control wiring requirements and bid the job accordingly.
- D. The intention of mounting details for equipment and devices shown on plans is to provide a general procedure. Contractor shall coordinate the installation with the actual conditions in the field avoiding potential conflicts with other trades installation and normal operation of the plant with no cost to DSWM. Modified details, showing actual field conditions shall be submitted to the Owner Representative for approval prior to proceed with its fabrication and installation.

#### **1.04 SHOP DRAWINGS**

- A. Within thirty (30) days after the date of the award of the Contract, and before any material or equipment is purchased, submit to the Owner Representative for approval, a complete list in quintuplicate of electrical materials, fixtures and equipment to be incorporated in the work. Include catalog number, diagrams, plans, material, finish, dimensions, fabrication details, installation and maintenance instructions books, interconnecting wiring diagrams, compliance with standards, UL approval and any other descriptive data as may be required by the Owner Representative. No material shall be delivered or installed prior to Shop Drawings approval.
- B. Provide detailed operational information of control systems, particularly those related to wiring, ladder and logical diagrams as well as a detailed sequence of operations of every component such as relays, lamps, timer, counter, etc. that makes up the proposed system.
- C. Prepare a detailed system interconnection diagram, including the coordination of plans and equipment from the various suppliers. This submittal shall be considered a Shop Drawing and shall include block and step by step process diagrams if needed for clarification or requested by the Owner Representative.
- D. When submitting alternated items, provide a complete price breakdown for both, the original item and the proposed alternate item. This breakdown shall be in identical form for both items in NECA form or similar. Specify the net change in Contract price for each item and for the total price. Provide also complete information on every proposed alternate item for comparison and technical evaluation. Alternate proposals will not be considered prior to Bid opening.
- E. Approval of material will be based on the manufacturer's compliance with the

specifications, published ratings, or on test results where specified.

- F. Any deviation from the specifications or plans shall be listed separately and submitted with Shop Drawings. Failure to list all deviations shall be grounds for requiring removal of such items and installation of items in accord with the specifications at no extra cost to DSWM.
- G. Where installation procedures or part of the installation procedures are required to be in accordance with manufacturer's instructions, submit printed copies of those instructions. Do not proceed with the installation until the instructions are processed and authorized. Failure to submit the installation instructions shall be cause for rejection of the equipment or material.
- H. Decision on acceptance or rejection of any and/or all proposed alternate items shall be made by the Owner Representative only and such decision is final and binding.

#### **1.05 QUALITY ASSURANCE**

- A. Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for two years prior to bid opening.
- B. Equipment, materials, installation and workmanship shall be in accordance with both the mandatory and advisory provisions of NFPA 70 and 72.
- C. Equipment shall have a nameplate bearing the manufacturer's name, address, model number and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

#### **1.06 COORDINATION WITH OTHER UTILITIES AND TRADES**

- A. The Plans are generally diagrammatic, coordinate the electrical work with the work of other trades and furnish all necessary offsets in raceways, fittings, etc. so that architectural and structural interferences or conflict with conduits, piping, equipment, etc. are prevented.
- B. Where failure to coordinate the work with other trades results that equipments have to be removed and relocated, the Owner Representative shall determine which one has to be moved regardless of which equipment was installed first. Cutting and patching required for relocation shall exactly match original finish. All relocation work has to be done at no cost to DSWM.
- C. Coordinated installation of underground ducts and conduits with other utilities

on the site. Details of routing, burial depth, size of bends and termination at each end of service shall be verified on the job site.

### **1.07 CUTTING AND PATCHING**

- A. Make openings through walls, ceilings, roadways, slabs, etc. as required for the installation of electrical equipment. The Contractor is responsible for any damage done when providing such openings and shall patch and refinish to match the existing surface after making such openings.
- B. Any work in new or existing structures that could affect its structural integrity is not permitted without the prior approval of the Owner Representative. Examples of those works are but not limited to: Conduits, pipes, sleeves or any other item embedded in concrete along or through any beam, column, footing, grade beam, slab, wall or any other structural member.
- C. Penetration of existing concrete walls and any other structural members with conduits or bus ducts.
- D. Installation of groups of conduits or pipes bundled together or spread affecting the structural integrity of the structural frames, foundations or equipment bases.
- E. On those cases, submit detailed installation Shop Drawings and do not proceed with the work until approval is granted. When approved, installation shall comply with ACI-318 Section 6.3, Conduits and Pipes Embedded in Concrete.

### **1.08 STORAGE**

- A. Store equipment and material furnished by the Contractor or DSWM in a safe and orderly manner. Materials shall not be stored directly on the ground or floor and shall be kept clean, dry and free from damage or deteriorating elements. Damaged or rusted materials shall not be installed until replaced or refinished by the manufacturer. Manufacturer's recommendations for storage of equipment shall be strictly adhered to, including energizing of motor and equipment space heaters.
- B. DSWM furnished equipment deteriorated while being in the Contractor custody shall be repaired or replaced at the satisfaction of DSWM.

### **1.09 OPERATIONAL MANUALS AND AS BUILT DRAWINGS**

- A. Upon completion of the work, prepare and deliver to the Owner

Representative the following:

1. Operation and maintenance manuals for each power, control and special system installed. Manuals shall consist of detailed plans or catalog sheets for each component, control diagrams and sequence of operation, replacement parts lists, maintenance instructions and possible breakdowns and repairs, description of system operation. Include also complete parts list and name, address and phone number of the supplier and nearest manufacturer's representative of the equipment.
2. As-built drawings with exact location of underground equipment like conduits, duct banks, grounding, etc.
3. Point to point wiring diagram indicating terminal and wire numbers, color coding and routing.
4. In addition, frame under glass single line "As Built" drawings and mount them on wall near respective switchgears, switchboard, panelboards, electrical panels, etc.

## **1.10 TRAINING**

- A. Provide equipment manufacturer instructors for a minimum of forty (40) hours to train designated DSWM personnel in the operation and maintenance of the different systems of the Contract.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Furnish equipment, materials and components new, standard current products and latest design of manufacturers regularly engaged in the production of such equipment.
- B. All materials shall bear the label of Underwriter's Laboratory (UL) for the intended use in all cases where this labeling is available or shall be materials reviewed by the code enforcing authorities and Owner Representative. All components shall be mechanically and electrically compatible with rating of apparatus in which installed.
- C. Equipment of a similar nature shall be identical. Example: All switchboards (i.e., switchgear, electrical panels) and panelboards shall be of the same manufacturer and of the same style.
- D. Coordinate shipping lengths of switchgears, panelboards, etc. Those equipments shall be able to be removed and replaced in the future, if necessary, with the access and openings provided in the structure.

- E. Furnish panelboards, terminal cabinets and other equipment requiring wire and cable terminations, with wiring gutter sized as required by NEC Tables 312-6(A) and 312-6(B).
- F. For the control system provide all required relays, timers, control switches, push buttons, indicating lights, wire, conduit, and fittings.
- G. When reference is made to one manufacturer's name and catalog number, it does not necessarily mean that the equipment is an "Off the Shelf" item. Variances may be required for finish, material, or other modifications. The Contractor shall assure that all such required modifications are made.
- H. Provide single phase protection devices for circuit breaker combination starters with current limiting fuses to ensure that the circuit breaker trips if any fuse blows.
- I. Provide disconnecting means capable of being locked out for machines and other equipment to prevent unexpected starting or release of stored energy in accordance with 29 CFR 1910.147.

## **2.02 ACCESSORIES**

- A. Use hardware and accessory fittings that are:
  - 1. Corrosion protected and suitable for the atmosphere in which they are installed.
  - 2. Designed, intended, and appropriated for the use, and at the same time, complement the items with which they are used.
  - 3. U.S. standard sizes.

## **2.03 SPARE PARTS**

- A. Submit a list of manufacturers recommended spare parts for all major equipment including descriptions of each part, part number and cost.
- B. Furnish lighting fixtures with lamps. Where size is not specified or shown on the Plans, furnish the largest lamp for which the fixture is rated. Supply at least ten (10) % percent, but not less than two (2) spare lamps for each type of lighting fixture specified.
- C. Furnish fusible equipment with fuses, and ten (10) % (three (3) minimum) of spare fuses of each type.

- D. Furnish control equipment with spare parts, ten (10) % (three (3) minimum) of relays, fuses, pilot lights, etc. and one spare of each different fully assembled electronic board.
- E. Turn over to an authorized person spare part provided with any equipment. Obtain signed and dated receipt for them.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. All materials shall be installed at the locations shown on the Plans and in accordance with the specific manufacturer's recommended installation methods.
- B. All equipment shall be set level, at the correct heights, properly aligned and bolted together were delivered in sections. Install surface mounted equipment, including panelboards, automatic transfer switches, safety switches, individually mounted enclosed circuit breakers, etc., on a metal framing support system (continuous slot metal channel system).
- C. Install conduit and equipment in such a manner as to avoid obstructions, preserve head room and keep openings and passageways clear.
- D. Secure all materials and equipment firmly in place. All screws, bolts, nuts, clamps, fittings or other fastening devices shall be made up tight. Do not weld electrical materials for attachment and/or support.
- E. Cutting, welding, or other weakening of building structure to facilitate equipment and materials installation are not to be permitted.
- F. Light fixtures are intended to be supported by the ceiling support system, however, where additional supports are required, they shall be provided by the contractor.
- G. Where dimensions are given, the equipment is to be placed accordingly. Where equipment is not located by dimension, it shall be located in the area shown, exercising coordination with other trades and providing appropriate maintenance space around the equipment and working clearance that meet or exceed code requirements as per NEC Tables 110-26(A)(1), 110.31 and 110-34(A).
- H. In areas designated as hazardous locations, all electrical equipment has to be certified for use in those areas and the installation must meet the related NEC for the class selected.

- I. Use PVC coated rigid steel conduits and fittings in areas with corrosive conditions such as those exposed to primary and secondary sewage.

### **3.02 IDENTIFICATION**

- A. Clearly and permanently label electrical equipment such as switchgears, disconnects switches, panelboards, transformers, control and alarm panels, etc., with securely fastened nameplates made of 1/16-inch-thick black laminated plastic with ¼ inch high white letters indicating electrical characteristics and identification.
- B. Include in the nameplate whatever information applies, such as: voltage, current rating, number of phases, the panel and circuit number from which the equipment is fed, and the item it controls.
- C. Use red nameplates for emergency equipment, including disconnects ahead of main panel, and all electrical equipment related to the fire alarm system.
- D. Identify panelboards circuits with a door mounted plastic protected, typewritten directory.
- E. Use color coding, flame, and abrasion resistant vinyl plastic tape equal to Scotch No. 35 to identify conductor phases. Colors as indicated in Section 16120 - Conductors, 600 volts and under.
- F. Identify control conductors with permanent, non-conductive tags at panels, terminal boxes, and control stations to indicate their control function and feeders at every accessible point.
- G. Feeder conduits shall be identified at wireways, panels, pull boxes, cabinets, and similar locations to assist in future circuit tracing. Use adhesive markers, Dymo Labels, or other approved methods.
- H. Identify every conduit stub up with stamped brass or stainless-steel tags attached with stainless steel wire.

### **3.03 TESTING**

- A. General
  - 1. Notify the Owner Representative thirty (30) days prior to commencement of all tests so they can be witnessed. Contractor shall submit the following:

- a. Schedule for performing inspections and tests.
  - b. List of the testing equipment to be used.
  - c. Sample copy of equipment and material test forms.
  - d. Name and qualifications of testing person or firm.
2. Test equipment accuracy and latest calibration date shall be in accordance with the International Electrical Testing Association.
  3. Correct at no cost to DSWM, any defects or variances from standard or specified conditions found during these tests.
  4. Tighten with calibrated torque wrench and to manufacturer's recommendations all accessible bolted connections, including the wiring connections.
  5. Prior to the final test, perform continuity, insulation, and resistance tests to assure there are no shorts or unintentional grounds in the entire electrical system.
  6. Energize, start-up and test operate all the systems and equipment in the presence of the Owner Representative.
  7. Energize the main service and all feeders and branch circuits from the normal power source. Take and record readings of phase to phase and phase to ground voltage, and each phase current at the service entrance, panelboards, transformers (primary and secondary) and at each 3-phase motors.
  8. Inspect panelboards prior to cover installation to verify correct conductor sizing and color coding.
  9. Test electrical equipment such as switchgears, transformers, panelboards, etc. following manufacturer's start-up test procedures and other requirements set up in this and other sections under Division 16.
  10. Conduct high potential tests before and after installation, on each medium voltage feeder conductor applying alternating or direct current voltage. Prior to making the after-installation tests, disconnect cables from the equipment. The method, voltage, length of time and other characteristics of the tests shall be in accordance with the standards of IPCEA and as recommended by the cable manufacturer for the type of wire or cable involved.
  11. Test all lighting fixtures, receptacles and switches and verify they are properly installed. Re-lamp lighting fixtures with new lamps.

12. Conduct a complete operating test of the fire alarm system.

B. Personnel and Equipment

1. Provide instruments and equipment required to test the different systems.
2. Use safety devices such as rubber gloves and blankets, protective screens and barriers, danger signs, etc., to adequately protect and warn all personnel in the vicinity of the tests.
3. Provide qualified personnel, temporary power, lighting, wiring and all materials required to conduct the testing.
4. When specified or required, provide equipment manufacturer's representative to assist in testing their equipment.
5. In the event that equipment fails to pass the tests, provide the services of the equipment manufacturer's representative to assist the Contractor in repairing or troubleshooting their equipment.

C. Quality Assurance

1. Corporately and financially independent organization functioning as an unbiased testing authority with no professional or business association with the manufacturers, suppliers and installers of the tested equipment.
2. Owner Representatives and technicians certified by the International Electrical Testing Association.
3. Registered Professional Owner Representative in the State of Florida to provide comprehensive project report outlining services performed, test results, recommendations, actions taken and comments.

D. Test Reports

1. Maintain a written record of all tests showing dates, personnel performing test, equipment or materials tested, tests performed, and results. Have reports signed by DSWM Owner Representative that witnessed the test.
2. Furnish tabulated and certified test reports.

### **3.04 TOOLS**

- A. Use only tools designed for the particular operation. Keep tools in good condition and do not use worn or broken tools.
- B. Turn over to an authorized person special tool provided with any equipment. Obtain signed and dated receipt for them.

### **3.05 FLOOR ISOLATING MATS**

- A. Provide vinyl isolating mats in the front and rear of all switchgears, switchboards and panelboards. The mats shall be gray in color, 36 inches wide, ¼ inch thick with the following electrical characteristics:
- B. Dielectric Test: 30,000 (RMS VOLT AC)
- C. Proof Test: 20,000
- D. Recommended Use (Minimum): 17,000
- E. The mat shall also comply with ANSI/ASTM Standard D-178-93 and be as manufactured by American Floor Products Co., Inc or approved equal.

### **3.06 CLEAN-UP AND PAINTING**

- A. After completion of the installation, clean inside and outside equipment enclosures removing foreign material, grease, dust, rust and chipped plaster and concrete until left in brand new condition.
- B. Clean lighting fixtures, lenses and reflectors.
- C. Remove corrosion found on metal surfaces and repair to prevent future corrosion.
- D. Touch-up painting where finished surfaces have received minor scratches during installation. When damage cannot be corrected with minor touch-up, equipment shall be refinished at the factory at no cost to DSWM.

### **3.07 FINAL INSPECTION**

- A. On completion of the final inspection, deliver to DSWM the Certificate of Final Inspection from the local authority having jurisdiction.

**END OF SECTION**

**SECTION 16050**  
**BASIC WIRING AND METHODS**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all material as required for a complete project as required by the Plans and in this Specification.

**1.02 SHOP DRAWING SUBMITTALS**

- A. Submit Shop Drawings for the following:
  - 1. All Raceways
  - 2. Control Cable
  - 3. Wiring Devices
  - 4. Switches
  - 5. Lighting and Power Distribution Panelboards
  - 6. Circuit Breakers
  - 7. Fuses
  - 8. Push buttons/Indicating Lights/Selector Switches
  - 9. Control Relays
  - 10. Lighting Contractors

**1.03 SPARE PARTS**

- A. Provide 2 each Magnetic Control Relay.
- B. Provide 2 each Elapsed Time Meter.
- C. Provide 2 each Magnetic Lighting Contactor.
- D. Provide 6 each Pushbutton, Indicating lights, and Selector Switches.

**PART 2 - PRODUCTS**

**2.01 RACEWAY**

- A. Rigid Metal Conduit (RMC). A threadable raceway of circular cross section designed for the physical protection and routing of conductors and cables and for use as an equipment grounding conductor when installed with its integral

or associated coupling fitting.

- B. PVC Conduit: Underground PVC conduit shall be Schedule 40 or Schedule 80 unless otherwise noted and shall be U.L. approved. PVC conduit shall be Schedule 80 when installed above ground.
- C. Flexible Conduit: All flexible conduits shall be liquid tight, made of corrosion resistant plated steel with extruded polyvinyl covering and watertight connectors. At least two (2) feet of liquid tight flexible conduit shall be used at connections of all motors, transformers, instrumentation, and other items of equipment where vibration is present.
- D. PVC Coated Conduits: PVC coated conduits shall have 40 Mil PVC exterior coating permanently fused to hot-dipped galvanized steel conduit. The interior shall be coated with PVC or Urethane. The threads shall be coated with Urethane to prevent corrosion. All fittings, including couplings, connections, boxes, nipples, conduit bodies, elbows, pipe straps, clamp back spacers and any other accessories pertinent to the installation of a complete conduit system shall be from the same manufacturer as the conduit. Conduit and accessories shall be Plastic-Bond Red by Rob Roy Industries, or equal.
- E. Aluminum Conduit: shall be rigid, seamless, UL-listed, and comply with ANSI C80.5. Use shall be limited to above-ground dry locations. Not permitted for direct burial, in contact with concrete, or in coastal/corrosive environments. Fittings and accessories shall be listed for aluminum conduit and from the same manufacturer.
- F. Locations: The locations and use of each type of conduit is specified in Section 16131 Part 2.

## **2.02 CABLE TYPE "A", (POWER) WIRE AND CONNECTORS**

- A. Cable shall be rated for 600 volts and shall meet the requirements below.
  - 1. All size conductors shall be stranded.
  - 2. All wire shall be brought to the job in unbroken packages and shall bear the date of manufacturing; not older than 12 months.
  - 3. Type of wire shall be XHHW rated 75°C suitable for wet locations except where required otherwise by the Plans. THHN/THWN shall only be used for above-ground dry locations at less than 480 volts.
  - 4. No wire smaller than No. 12 gauge shall be used unless specifically indicated.
  - 5. Conductor metal shall be copper.

6. All conductors shall be meagered after installation and insulation must be in compliance with the Insulated Power Cable Owner Representatives Association Minimum Values of Insulation Resistance.

**2.03 CABLE TYPE "B" (INSTRUMENTATION)**

A. General: The instrumentation cable shall consist of single or multiple shielded twisted pairs with 600-volt insulation and a 90°C rating. The individual twisted pair of a multi-pair cable shall consist of copper conductors with ethylene-propylene insulation, #16 AWG tinned stranded copper drain wire and an overall aluminum/Mylar sheath. For the multiple pair cable assembly, a #16 AWG overall tinned copper stranded drain wire shall be provided together with an overall aluminum Mylar shield and a chloro-sulfonated polyethylene compound jacket. The cable shall be flame retardant.

B. Insulation

1. Pair conductors shall be insulated with a heat, moisture, flame and chemically resistant mechanically rugged ethylene-propylene insulating compound. The insulation thickness shall be as follows:

AWG	Minimum Insulation Thickness
#16	45 mils

2. Conductors shall be tin coated stranded copper ASTM B-33 and B-8.

C. Jacket: Overall cable jacket shall be chloro-sulfonated polyethylene compound, exceeding the requirements of ICEA S-10-81. The cable shall be suitable for installation in cable tray, conduit in wet or dry location, and shall meet IPCEA Standards.

D. Shields

1. Aluminum Mylar tape shields with tinned copper drain wire shall be applied over the individually twisted pairs prior to placement of the cable jacket. Another aluminum/Mylar tape with tinned copper drain wire shall be applied over the assembled pairs prior to placement of the cable jacket. Grounding of shields shall be according to equipment manufacturer's recommendations.

2. The conductors shall be tested after installation and insulation must be in compliance with the manufacturer's equipment.

## **2.04 CONTROL WIRING**

- A. All control wiring of 10 or more No. 14 shall be preassembled as manufactured by Clifford of Vermont, Inc., Quick Pull, meeting the following requirements:
  - 1. No. 14 Standard Copper THHN, 600 Volt
  - 2. Each Conductor Numbered every 1½ Inches
  - 3. Sequential Footage Tape
  - 4. Round Compact Units, Spiral Configuration
  - 5. UL listed. Custom Wire Assembly
- B. Assemblies are identified as QP-10, 20 to 100 maxima. Example: Where QP-20 is shown it supersedes the count if 16 No. 14 are shown.

## **2.05 BOXES**

- A. Boxes for wiring devices (switches and receptacles) installed outdoors or wet locations shall be weatherproof fiberglass with polycarbonate cover plates. Junction boxes shall be NEMA 3R construction. All boxes shall be securely mounted plumb and level in readily accessible locations.

## **2.06 GROUNDING**

- A. Grounding and Bonding: In accordance with NFPA 70, Article 250. Ground all exposed non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in raceways, and neutral conductor of wiring systems. Supplement the metallic water service grounding system with additional made electrodes in compliance with NFPA 70. Where ground fault protection is employed, take care that the connection of ground and neutral does not interfere with the correct operation of the fault protection.
- B. Grounding Conductor: Provide an insulated, green-colored equipment grounding conductor in all feeder and branch circuits. This conductor shall be separate from the electrical system neutral conductor. Conduits will not be approved as grounding conductor. Grounding conductor shall be pulled in all electrical conduits, power and control whether or not indicated on plan.
- C. The Contractor shall install all ground rods, ground wires, connectors as

required for the complete grounding system.

- D. All metal parts and grounding conductors in each manhole shall be grounded to a local ground rod.
- E. Resistance: Readings shall not be taken within 48 hours of a rainfall. Grounding system shall not exceed a 48-hour dry resistance of 10 Ohms.
- F. DSWM and Owner Representative shall witness and approve all ground resistance tests. The Contractor shall provide a written report of all grounding test results to the Owner Representative. The test shall include all ground connections. The report shall be signed by DSWM of the contracting firm and shall include: Test date, time, weather conditions on test date and 3 days prior to the test date, location and results.
- G. All raceways require grounding conductors. Metallic raceways are not adequate grounding paths. Bonding conductors through the raceway systems shall be continuous from main switch ground buses to panel ground bars of panelboards, and from panel grounding bars of panelboards, and motor control centers to branch circuit outlets, motors, lights, etc. These ground conductors are required throughout the project regardless of whether conduit runs or the Cable and Conduit Schedule show ground conductors on the Plans.
- H. All connections made below grade shall be of the exothermic type.

## **2.07 LIGHTING AND POWER DISTRIBUTION PANELBOARD**

- A. NEMA PB I, NFPA 70, and UL 67, including panelboards installed in motor control equipment.
- B. Panelboards and Circuit Breakers: Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
- C. Short-Circuit Current Equipment Rating: Fully rated; series connected unacceptable.
- D. Rating: Applicable to a system with available short-circuit current of 25,000 amperes rms symmetrical at 208Y/120 or 120/240 volts and 65,000 amperes rms symmetrical at 480Y/277 volts.
- E. Where ground fault interrupter circuit breakers are indicated or required by code: 5mA trip, 10,000 amps interrupting capacity circuit breakers.
- F. Cabinet: As shown on Plans.

## G. Bus Bar

1. Material: copper, full-sized throughout length.
2. Provide for mounting of future circuit breakers along full length of bus regardless of number of units and spaces shown. Machine, drill, and tap as required for current and future positions.
3. Neutral: Insulated, rated 150% of phase bus bars with at least one terminal screw for each branch circuit.
4. Ground: Copper, installed on panelboard frame, bonded to box with at least one terminal screw for each circuit.
5. Lugs and Connection Points
  - a. Suitable for either copper or aluminum conductors.
  - b. Solderless Main Lugs for main, neutral, and ground bus bars.
  - c. Subfeed or through-feed lugs, as shown.
6. Bolt together and rigidly support bus bars and connection straps on molded insulators.

## H. Circuit Breakers

1. NEMA AB 1 and UL 489
2. Thermal-Magnetic, Quick-Make, Quick-Break, molded case, of the indicating type showing on/off and tripped positions of operating handle.
3. Non-interchangeable, in accordance with NFPA 70.
4. Locking: Provisions for handle padlocking, unless, otherwise shown.
5. Type: Bolt-on circuit breakers in all panelboards.
6. Multipole circuit breakers designed to automatically open all poles when an overload occurs on one pole.
7. Substituting of single-pole circuit breakers with handle ties for multipole breakers is not acceptable.
8. Use of tandem or dual circuit breakers in normal single-pole spaces is not acceptable.
9. Ground Fault Interrupting Circuit Breaker.
  - a. Equip with conventional thermal-magnetic trip and ground fault sensor rated to trip in 0.025 second for a 5-milliampere ground fault (ul 943, class a sensitivity).
  - b. Sensor with same rating as circuit breaker and a push-to-test

button.

- I. Manufacturers
  - 1. EATON (Cutler-Hammer),
  - 2. Siemens,
  - 3. Square D or Equal

## **2.08 CIRCUIT BREAKER, INDIVIDUAL, 0 TO 600 VOLTS**

- A. NEMA AB 1, UL 489 listed for use at location of installation.
- B. Minimum interrupt rating as shown or as required.
- C. Thermal-magnetic, quick-make, indicating type, showing on/off and tripped indicating positions of the operating handle.
- D. Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
- E. Locking: provisions for padlocking handle.
- F. Multipole breakers to automatically open all poles when an overload occurs on one-pole.
- G. Enclosure: NEMA 250, type 12, industrial use, 4x 316 stainless steel - outdoors, wet locations and corrosive areas, unless otherwise shown.
- H. Interlock: enclosure and switch shall interlock to prevent opening cover with switch in the on position.
- I. Provision of single-pole circuit breakers with handle ties where multipole circuit breakers are shown is not acceptable.

## **2.09 INSULATED CASE BREAKERS**

- A. Main/tie/transfer breakers shall be insulated case, 600-volt, 3-phase, 60-HZ, draw-out type, as described in this section. All breakers shall be supplied with, but not be limited to, a minimum of the following features:
  - 1. All breakers shall be UL listed for application in their intended enclosure.
  - 2. Breakers shall be two-step stored energy type and be fully capable of operation at 100% of the maximum continuous ampere rating.
  - 3. Breakers shall be equipped with anti-pump devices.
  - 4. Breakers shall have a minimum symmetrical interrupting capacity at rated voltage as shown on the Plans.

- B. All breakers shall be “Trip-Free” when removed from their housing and interlocked to prevent removal when in the closed position.
- C. Circuit breaker(s) shall have power terminals to accommodate either cable or bolted bus connections.
- D. Provide a fixed instantaneous (High Level Selective Override) circuit on breaker(s). The circuit shall have a defeatable instantaneous adjustment to allow the breaker to remain closed for up to 30 cycles during overcurrents below the rms symmetrical short time withstand ratings. The circuit shall instantaneously trip when current levels exceed applicable withstand ratings.
- E. Circuit breaker(s) shall utilize a glass reinforced insulating material providing high electric strength. Current carrying components shall be completely isolated from the handle and the accessory mounting area. Breaker(s) shall have common tripping of all poles and shall be trip free. The circuit breaker shall be UL listed for reverse connection without requiring special construction or labeling. The breaker(s) shall have quick-make, quick-break contacts with a maximum 5 cycle closing time.
- F. Circuit breaker(s) shall be factory sealed and shall have a date code on the face of the circuit breaker. Poles shall be labeled with respective phase designations.
- G. Breaker faceplate shall indicate rated ampacity. Breaker faceplate shall indicate UL and IEC certification standards with applicable voltage systems and corresponding AIC ratings.
- H. Each circuit breaker shall be equipped with a push-to-trip button to mechanically operate the circuit breaker tripping mechanism.
- I. All circuit breakers shall be equipped with electrical accessories. Electronic Trip System
  - 1. The entire trip system shall be microprocessor-based, rms sensing design with sensing accuracy through the 13th harmonic Micrologic full function by Square D, Micro Versa Trip full function by GE or equal is acceptable.
  - 2. Provide the following time/current curve shaping adjustment to maximize system selective coordination. Each adjustment shall have discrete settings and each function is independent from all other adjustments.

3. Long time short time instantaneous ground fault (LSIG)
  - a. Adjustable Long Time Ampere Rating and Delay
  - b. Adjustable Short Time Pickup and Delay (delay includes I2t In and I2T out)
  - c. Adjustable Defeatable Instantaneous Pickup (with “Off” position)
  - d. Adjustable Ground Fault Pickup and Delay (delay includes I2t In and I3t Out)
  - e. High Level Selective Override
  
- J. Each circuit breaker trip system is to include an externally accessible test port for use with a Universal Equipment Test Set. Provide one (1) Universal Equipment Test Set for this project job for final inspection. This test set shall be suitable for testing all electric circuit breakers specified for this project. No disassembly of the circuit breaker is required for testing.
  
- K. Equipment Ground Fault Protection
  1. Circuit breaker(s) shall be provided with integral equipment protection for grounded systems.
  2. The ground fault system shall be of the residual type.
  3. Circuit breaker(s) shall be provided with zone selective interlocking (ZSI) on the Ground Fault function in order to limit thermal stress caused by a fault yet permit optimum coordination with all other electronic trip circuit breakers.
  
- L. Terminations
  1. All lugs shall be UL listed to accept solid and/or stranded (copper and aluminum conductors) (copper conductors only). Lugs shall be suitable for (75 degrees C rated wire) 90 degrees C rated wire, sized according to the 75 degrees C temperature rating in the NEC.)
  2. All circuit breakers shall be UL listed to accept field installable/removable (mechanical type) (compression type) lugs.
  3. All circuit breakers shall be suitable for bus connection.
  
- M. Breakers shall be manually operated unless electrically operated is indicated on the Plans. The breaker control face plate shall include color coded visual indicators to indicate contact Open and Closed positions as well as mechanism

Charged and Discharged positions. Manual control pushbuttons on the breaker's face shall be provided for "Opening" and "Closing" the breaker.

- N. All breakers shall be provided with a two-step stored energy mechanism providing a maximum of 5-cycle closing and have multiple charge-close provisions, providing the following sequence: Charge-close-recharge-open-close-open. At all times the breakers shall be capable of opening after closure without a recharging operation. A Charge/Discharge indicator shall be visible at all times. All energy required for closing the breakers shall be completely stored and held in readiness pending a release to close action. Manually operated breakers shall be convertible to electrical operation by insertion of an internally mounted motor operator without voiding the UL label.
- O. Electrically operated breakers shall be complete with Open/Close pushbuttons on the breaker face plus red and green indicating lights to indicated breaker contact position.
- P. Each circuit breaker shall be electrically operated to permit remote Charge, Close, and Open capabilities. Electrically operated circuit breaker shall be equipped with charge contact switch for remote indication of mechanism charge status.
- Q. A selective override circuit shall be provided on breakers having short time adjustments but without instantaneous adjustments that will allow selectively up to its RMS symmetrical short-time rating.
- R. Lockout provisions shall be provided for opening and closing the breakers.
- S. The insulated case breakers shall have high-endurance characteristics being capable of no-load full-interruptions at rated current equal to or exceeding UL endurance ratings for molded case breakers without maintenance.
- T. Enclosure
  1. Single-Phase, 3 to 25 kVA: NEMA 250, Type 3R, non-ventilated.
  2. Single-Phase, 37-1/2 kVA and above: NEMA 250, Type 2, ventilated.
  3. Three-Phase, 3 to 15 kVA: NEMA 250, Type 3R, non-ventilated.
  4. Three-Phase, 30 kVA and above: NEMA 250, Type 2, ventilated.
- U. Wall Bracket: For single-phase units, 15 to 37 ½ kVA, and for three-phase units, 15 to 30 kVA.
- V. Voltage Taps

## 2.10 JUNCTION AND PULL BOXES

- A. Outlet Boxes Used as Junction or Pull Box: As specified under Article Outlet and Device Boxes.
- B. Large Sheet Steel Box: NEMA 250, Type 1.
  - 1. Box: Code-gauge, galvanized steel
  - 2. Cover: Full access, screw type
  - 3. Machine Screws: Corrosion-resistant
- C. Large Cast Metal Box: NEMA 250, Type 4
  - 1. Box: Cast malleable iron, hot-dip galvanic finished, with drilled and tapped conduit entrances
  - 2. Cover: Hinged with screws
  - 3. Hardware and Machine Screws: ASTM A167, Type 316 stainless steel
  - 4. Manufacturers, Surface Mounted Type
    - a. Crouse-Hinds: Series W
    - b. O.Z./Gedney: Series Y, or Equal
  - 5. Manufacturers, Recessed Type
    - a. Crouse-Hinds: Type WJBF
    - b. O.Z./Gedney: Series YR, or Equal
- D. Large Stainless-Steel Box: NEMA 250, Type 4X
  - 1. Box: 14-gauge, ASTM A240, Type 304 stainless steel
  - 2. Cover: Hinged with screws
  - 3. Hardware and Machine Screws: ASTM A167, Type 304 stainless steel
  - 4. Manufacturers
    - a. Hoffman Owner Representativeing Co.
    - b. Rob Roy Industries, or Equal
- E. Large Steel Box: NEMA 250, Type 4
  - 1. Box: 12-gauge steel, with white enamel painted interior and gray primed exterior, over phosphated surfaces, with final ANSI Z55.1, No. 61 gray

enamel or exterior surfaces.

2. Cover: Hinged with screws
3. Hardware and Machine Screws: ASTM A167, Type 316 stainless steel
4. Manufacturers
  - a. Hoffman Owner Representativeing Co.
  - b. Rob Roy Industries, or Equal

F. Large Nonmetallic Box

1. NEMA 250, Type 4X
2. Box: High-impact, fiberglass-reinforced polyester or Owner Representativeed thermoplastic, with stability to high heat.
3. Cover: Hinged with screws.
4. Hardware and Machine Screws: ASTM A167, Type 316 stainless steel.
5. Conduit hubs and mounting lugs.
6. Manufacturers
  - a. Crouse-Hinds: Type NJB
  - b. Carlon: Series N, C, or H
  - c. Rob Roy Industries, or Equal

G. Concrete Box

1. Box: Reinforced, cast concrete
2. Cover: Cast iron
3. Cover Marking: Electrical, Telephone, or as shown
4. Manufacturers
  - a. Brooks Products, Inc., No. 36/36T
  - b. Quikset; W 17, or Equal

## **PART 3 - EXECUTION**

### **3.01 CONDUIT INSTALLATION**

A. General

1. Nylon pull cords shall be installed in all empty conduits. Wire shall not be installed until all work of any nature that may cause damage is completed, including pouring of concrete. Mechanical means shall not be used in pulling in wires No. 1 or smaller.

2. The use of running threads is prohibited, and where some such device is necessary, split couplings, Erickson couplings, or equal shall be used. Where watertight conduit installations are required, watertight conduit unions shall be used.
3. All conduits shall be cleaned by pulling a brush swab through before installing cables.
4. All conduits shall be sealed at each end with electrical putty. Special care shall be taken at all equipment where entrance of moisture could be detrimental to equipment.
5. Minimum Conduit Size: Minimum conduit size shall be  $\frac{3}{4}$  inches.
6. Exposed runs of conduits shall be installed with runs parallel or perpendicular to walls. Structural members or intersections of vertical planes and ceilings, with right angle turns consisting of symmetrical bends or pull boxes. Bends and offsets shall be avoided, where possible.

B. Handling

1. Conduits subjected to rough handling or usage shall be removed from the premises.
2. Conduits must be kept dry and free of water or debris with approved pipe plugs or caps. Care shall be given that plugs or caps are installed before pouring of concrete. All spare conduits shall remain plugged or capped upon project completion.

C. Concrete and Masonry

1. Where conduits pass through exterior concrete walls or fittings below grade, the entrances shall be made watertight. This shall be done by providing pipe sleeves in the concrete with one half inch ( $\frac{1}{2}$ ) minimum clearance around the conduits and caulking with askum and sealant, or by means of conduit entrance seals. Where conduits penetrate rated fire walls or fire floors, conduits shall be installed with UL approved devices to maintain the fire rating of the wall or floor penetrated.
2. Where embedded conduits cross expansion joints, furnish and install offset expansion joints or sliding expansion joints. Sliding expansion joints shall be made with straps and clamps.
3. Conduits in structural slabs shall be placed between the upper and the lower layers of reinforcing steel, requiring careful bending of conduits. Conduits embedded in concrete slabs shall be spaced not less than eight inches on centers or as widely spaced as possible where they converge at panels or junction boxes. Conduits running parallel to slab supports, such as beams, columns and structural walls, shall be installed not less than 12 inches from such supporting elements. To prevent displacement

during concrete pour, saddle supports for conduit, outlet boxes, junction boxes, inserts, etc., shall be secured.

4. Concrete in duct banks shall be Class B, 3,000 psi mix.

D. Panelboards and Boxes

1. Conduits entering panelboards, pull boxes, or outlet boxes shall be secured in place with locknuts and bushings, one locknut outside and one locknut inside of box with bushing on conduit end. The locknuts shall be tightened against the box without deforming the box. Bushings shall be of the insulating type.
2. Use conduit hubs as required to maintain the NEMA rating of the enclosure.

E. Bending: Field conduit bends shall be made with standard tools and equipment manufactured especially for conduit bending.

F. Mounting and Concealing

1. Conduit runs shall always be concealed in finished spaces and may be exposed in industrial spaces.
2. Exposed runs of conduits shall be installed with runs parallel or perpendicular to walls, structural members or intersections of vertical planes and ceilings, with right angle turns consisting of symmetrical bends or pull boxes. Bends and offsets shall be avoided where possible.
3. Where conduits are run individually, they shall be supported by approved pipe straps, secured by means of toggle bolts or hollow masonry; expansion shields and machine screws or standard preset inserts on concrete or solid masonry; machine screws or bolts on metal surfaces, and wood screws on wood construction. The use of perforated straps or wires will not be permitted.
4. Concrete inserts and pipe straps installed shall be Type 316 stainless steel unless otherwise noted on the Plans. All conduit fasteners and installation hardware shall be Type 316 stainless steel. Conduit support clamps shall be the two-piece type.
5. Conduit support struts, clamps, bolts, nuts and washers installed outdoors and in corrosive atmosphere indoors or on floors shall be stainless steel.
6. In furred ceilings, conduit runs shall be supported from structure, not furring.
7. Provide conduit duct seal at all electrical and I/C conduits.

- G. Flexible Conduits: Flexible conduits shall be used to terminate all motors and other vibrating equipment and shall be between 18 inches and 3 feet in length.

### **3.02 TERMINATIONS AND SPLICES**

- A. Terminations of power cable shall be by means of U.L. approved connectors. All connectors shall meet UL 486B and shall be compatible with the conductor material.
- B. Terminate all control and instrumentation cable with ring type compression lugs.
- C. Splicing of power, control, or instrumentation wiring will not be allowed except by written approval of the Owner Representative and DSWM. Where splicing is allowed, splices shall be made waterproof and inserted inside waterproof boxes regardless of location.

### **3.03 GROUNDING**

- A. General: Grounding shall be as indicated, and as required by NFPA-70 and ANSI- C2.
- B. Grounding Connections: Grounding connections which are buried or otherwise normally inaccessible, and excepting specifically those connections for which access for periodic testing is required, shall be made by exothermic weld. Exothermic welds shall be made strictly in accordance with the weld manufacturer's written recommendations. Welds which have "Puffed Up" or which show convex surfaces, indicating improper cleaning, are not acceptable. No mechanical connector is required at exothermic weldments.
- C. Grounding Grid System: Conductors shall be buried a minimum of 30 inches in the ground. All cable crossings shall be securely bonded and the system connected to the ground system as well as to all equipment and structural steel work, and to all water piping.
- D. Grounding Conductors: Shall be insulated soft-drawn copper wire in size as required by National Electric Code.

### **3.04 FIELD TESTS**

- A. As an exception to requirements that may be stated elsewhere in the Contract, the Owner Representative shall be given five (5) working days, notice prior to each test. The Contractor shall demonstrate that all circuits and devices are in good operating conditions. Owner Representative and DSWM shall witness and approve all tests.

- B. Test on 600 Volt Wiring: Test all 600-volt wiring to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on all wiring using an instrument that applies a voltage of approximately 500 volts to provide a direct reading of resistance; minimum resistance shall be 100 megohm. The conductor loop resistance of each pair shall also be measured. The mutual capacitance between conductors of each pair shall also be measured. Provide written results for approval.

### **3.05 WIRE AND CABLE INSTALLATION**

- A. Conductors shall not be pulled into raceway until:
  - 1. Raceway system has been inspected and approved by the Owner Representative.
  - 2. Plastering and concrete have been completed in affected areas.
  - 3. Raceway system has been freed of moisture and debris.
- B. Conductors of No. 1 size and smaller shall be hand pulled. Larger conductors may be installed using power winches. Wire pulling lubricant, where needed, shall be U.L. approved. Wire in panels, cabinets, and gutter shall be neatly grouped, using nylon tie straps, and fanned out to terminals.
- C. Building wire conductors installed below grade or in concrete slabs on grade shall have type XHHW insulation, 600 volts. All wire shall be stranded.
- D. Each cable, wire in panels, pull boxes, manholes or troughs shall have a permanent identification.
- E. Lubricants: Lubricants for assisting in the pulling of cables shall be those specifically recommended by the cable manufacturer. The lubricant shall not be deleterious to the cable sheath, jacket, or outer coverings, and shall be UL approved. Use Polywater J or equal.
- F. Cable Pulling Tensions: Shall not exceed the maximum pulling tension recommended by the cable manufacturer.
- G. Installation of Cables in Manholes, Handholes and Vaults: Do not install cables utilizing the shortest route, but route along those walls providing the longest route and the maximum spare cable lengths. Form all cables to closely parallel walls, not to interfere with duct entrances, and support on brackets and cable insulators. In existing manholes, handholes and vaults where new ducts are to be terminated, or where new cables are to be installed, the existing installation of cables, cable supports and grounding shall be modified as required for a neat and workmanlike installation with all cables properly arranged and supported. Support cable splices in underground structures by

racks on each side of the splice. If splicing is approved, locate splices to prevent cyclic bending in the spliced sheath and out of the water. Install cables at middle and bottom of cable racks, leaving top space opening or future cables, except as otherwise indicated. Provide one spare three- insulator rack arm for each cable rack in each underground structure.

- H. Cable Markers (or tags) in Manholes and Handholes: Provide cable markers or tags for each cable or wire passing through or leaving manholes or handholes and at each terminal. Tags shall be stainless steel, bronze, lead strap, or copper strip approximately 1/16 inch thick or hard plastic 1/8 inch thick suitable for immersion in salt water, and of sufficient length for imprinting the legend on one line using raised letters not less than ¼-inch in size, and shall be permanently marked or stamped with the identification as indicated. Use of two-color laminated plastic is acceptable. Plastic markers shall be dark in color, and markings shall be light in color to provide contrast so that identification can be easily read. Fastening material shall be of a type that will not deteriorate when exposed to water with a high saline content.
- I. Control-Signal-Communication circuit separation:
  - 1. Control, signal, and communication conductors shall be routed and supported separately from power and lighting circuits to prevent inadvertent energization of the lower-voltage wiring.
  - 2. Maintain a minimum separation of 50 mm (2 in.) vertical or horizontal between conductors of different systems when run in parallel. Where this separation cannot be maintained, provide grounded metal barriers or separate raceways.
- J. Low-voltage control, signal and communication cables shall be installed in a neat and workmanlike manner.
- K. Cables exposed on ceiling or wall surfaces shall be supported by the building structure to prevent damage during normal use, and secured using straps, staples, cable ties listed for support, hangers or similar fittings in accordance with NEC 300.4 and 300.11.
- L. Plenum-rated cable ties and non-metallic accessories used in plenums shall be listed for low smoke and heat release.
- M. Circuit Integrity (CI) cable supports shall not exceed 610 mm (24 in) spacing and shall be secured to noncombustible surfaces using steel fasteners.
- N. Abandoned cables' accessible portions shall be removed; future-use cables shall be tagged with durable identification.
- O. Cable installations in hollow spaces, shafts or air-handling ducts shall include

firestopping around penetrations to maintain fire-resistance ratings and prevent spread of combustion products.

- P. Openings around cables or electrical conduit penetrations through fire-resistant walls, partitions, floors or ceilings shall be firestopped using approved materials and methods to maintain the fire-resistance rating.

### **3.06 MOUNTING AND SUPPORTING ELECTRIC EQUIPMENT**

- A. Furnish and install all supports, hangers, and inserts required to mount fixtures, conduits, cables, pull boxes, and other equipment furnished under this section or furnished for installation under this section.
- B. All items shall be supported from the structural portion of the building and studs, except standard ceiling-mounted lighting fixtures and small devices, may be supported from ceiling system were permitted by the Owner Representative. However, no sagging of the ceiling will be permitted. Supports and hangers shall be of types approved by Underwriter's Laboratories.
- C. Perforated straps and wire are not permitted for supporting electrical devices. Anchors shall be of approved types.
- D. All supports, hangers, hardware, etc. used outdoors, shall be stainless steel and in corrosive atmosphere. In hazardous areas, hangers shall be nonferrous, corrosion resistant, or Type 316 stainless steel. Supports shall be selected to avoid galvanic reactions. Support devices shall be submitted for approval.
- E. All floor mounted devices (switchboards, motor control centers, transformers, etc.) shall be securely anchored to the floors. Where recommendations are made by the manufacturer, these recommendations shall be adhered to.

**END OF SECTION**

**SECTION 16070**  
**SUPPORTING DEVICES**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The Drawings and Division 16, Section 16050 Basic Wiring and Methods apply to this Section.

**1.02 SUMMARY**

- A. Support all raceways, enclosures, cabinets, boxes, and related electrical equipment from the building structure as required by the NEC and as described in these Specifications.
- B. Support all lighting fixtures as required by the NEC and as described in these Specifications.

**1.03 SUBMITTALS**

- A. Provide product data for each type of manufactured supporting device.
- B. Provide shop drawings for each type of fabricated supporting device.

**1.04 QUALITY ASSURANCE**

- A. All components and the installation of all components shall comply with NFPA 70, "National Electrical Code," requirements.
- B. All supporting devices shall be listed and labeled by UL, ETL, CSA or a Nationally Recognized Testing Laboratory (NRTL).
- C. Comply with National Electrical Contractors Association's "Standard of Installation" pertaining to anchors, fasteners, hangers, supports and equipment mounting.

**PART 2 - PRODUCTS**

**2.01 PROHIBITED MATERIALS**

- A. Nails, wires, perforated tape or plumber's tape are unacceptable for supporting or securing conduits.

## **2.02 MANUFACTURED SUPPORTING DEVICES**

- A. Supporting devices shall comply with manufacturer's standard design and construction, fabricated from standard materials in accordance with published product information.
- B. Supporting devices shall be protected with a zinc coating or with a similar corrosion resistant coating or treatment. Devices for use outdoors shall be hot-dip galvanized.
- C. Raceways shall be supported using clevis hangers, riser clamps, conduit straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring steel clamps.
- D. Steel channels and associated support rods shall be selected to accommodate weight of associated raceway and wire.
- E. Anchors shall be provided of adequate size to support the load, and shall be compatible with the construction method encountered. Anchors shall be expansion or toggle bolt type.

## **2.03 FABRICATED SUPPORTING DEVICES**

- A. Pipe sleeves shall be fabricated from galvanized sheet steel or Schedule 40 galvanized steel pipe.
- B. Sheet steel sleeves shall be round tube closed with snaplock, joint, welded spiral seams, or welded longitudinal joint. Fabricate sleeves from the following gauge steel: 3" (75 mm) and smaller, 20 gauge (1.0 mm); 4" to 6" (100 mm to 150 mm), 16 gauge (1.6 mm); over 6" (150 mm), 14 gauge (2.0 mm).
- C. Steel brackets shall be fabricated from angles, channels and other standard shapes. Brackets shall be assembled using welds and/or machine bolts to form a rigid assembly.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Install hangers, anchors, sleeves and seals as indicated, in accordance with manufacturer's written instruction and following recognized industry practices to ensure supporting devices comply with requirements. Comply with requirements of NECA, NEC and ANSI/NEMA for installation of supporting devices.

- B. Coordinate with other electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work.
- C. Install hangers, supports, clamps and attachments to support piping properly from building structure. Install supports within maximum spacing indicated by NEC or on drawings.
- D. Individual conduits shall be secured with steel pipe straps or lay-in pipe hangers.
- E. Multiple runs of suspended conduit shall be supported from trapeze style hangers.
- F. Multiple runs of conduit on ceiling or wall surfaces shall be mounted on flush or surface steel channels.
- G. Ceiling support wires shall not be used for support of conduits.
- H. Lighting fixtures shall be supported as recommended by the manufacturer. Fixtures shall be secured to the building's structure.
- I. Raceway supports shall be adequate to carry present and future load multiplied by a safety factor of at least four. In no case shall a support strength of less than 200 pounds (1380 kPa) be used.
- J. Manufactured watertight and fire-rated seals shall be provided for sealing conduits and cables passing through sleeves in floors and fire-rated walls. Seals shall be fire-resistant rubber plugs or other materials specifically designed to provide a watertight seal and a UL listed fire-resistant rating which meets or exceeds the rating of the floor or wall.
- K. Provide vibration isolators between enclosures of all vibration producing equipment, transformers, etc., and their supports or floor. Isolators shall be Mason Industrial type NK neoprene and cork sandwich or equal.
- L. Supports are required within 3 feet (900 mm) of each outlet box, junction box, device box, cabinet, conduit body or other tubing terminations.
- M. All junction boxes shall be supported from structure.

**END OF SECTION**

**SECTION 16120**  
**CONDUCTORS 600 VOLTS AND UNDER**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Furnishing and installation of low voltage power and control wiring for all equipment shown on Plans and or specified in other sections of these Specifications.

**1.02 QUALITY ASSURANCE**

- A. Conductors shall be manufactured in strict accordance with applicable requirements of ICEA, NEMA, UL and ANSI standards.
- B. Insulation shall meet UL Standard 83.
- C. Furnish wires and cables manufactured by Okonite, Triangle, Rome, American, or approved equal.
- D. Deliver conductors in unopened packages stamped with the manufacturing date. Packages older than twelve months will not be accepted.

**1.03 SUBMITTALS**

- A. Submit for review and approval properly identified manufacturer's literature and Shop Drawings giving wire size, insulation type, rated voltage and temperature and NEC designation.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Conductors shall be composed of 98% annealed copper. Insulation shall be rated for 600 volts unless otherwise noted.
- B. Power cables shall be Class A, heat and moisture resistant, 90°C dry/75° C For wire details refer to specification 16050 – 2.02.
- C. Conductors shall be stranded; No. 8 through No. 2 shall be 7 strands; No. 1 through 4/0 shall be 19 strand; and 250 MCM through 500 MCM shall be 37 strand.
- D. Furnish conductors plainly marked on outer braid at least every two feet with name of manufacturer, type, voltage rating and conductor size.

- E. Color-code all service, feeder and branch circuit conductors as follows:
1. 120/208 Volt System:
    - a. White Neutral
    - b. Black Phase A
    - c. Blue Phase B
    - d. Red Phase C
  2. 480/277 Volt System:
    - a. Gray Neutral
    - b. Yellow Phase A
    - c. Brown Phase B
    - d. Orange Phase C
  3. Bonding conductor: Green
- F. Conductors #8 AWG and smaller shall have solid colored insulation, for #6 and larger, use colored coding tape or paint with two coats of correct color paint at all terminals and connection points.
- G. Electrical control wiring, when no other cable has been specified, use single conductor AWG #12.
- H. For Monitoring and Control cables (discrete signal) shall be single conductor #14 AWG minimum, stranded with THW or THWN insulation.
- I. Wiring for analog or pulse systems shall be shielded pair, (3 conductors for RTD signals), #16 AWG minimum gauge stranded copper conductors with individual thermoplastic color coded insulation. Overall shield shall be either copper or aluminum tape providing 100% shielding coverage and provided with a stranded copper ground drain wire and an overall vinyl jacket. Cable shall be Belden, Dekoron or approved equal.
- J. Cable terminations and connectors shall be as indicated below or approved equal.
1. Compression connectors type Hi Lug made by Burndy or Shure Stake by Thomas & Betts.
  2. Spring connectors (wire nuts) Scotch Lok by 3M.
  3. Pre-insulated fork tongue lugs to be Thomas & Betts RC Series or Burndy type YAV.

4. General purpose insulating tape, Scotch No. 33 or Plymouth Slip-knot. High temperature tape of polyvinyl made by 3M or Plymouth.
5. Fireproofing tape, Irvington 7700.
6. Epoxy resin splicing kits from 3M Scotch Coat 82, or Burndy Hy Seal

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Do not use conductors smaller than AWG #12 for power and electrical control and #14 for discrete signal, and #16 for analog signal unless specifically indicated on plans.
- B. Do not pull conductors into conduits until the mechanical work has been completed.
- C. Pull together all cables or conductors to be installed in a single conduit.
- D. Install wire and cable in conduits, ducts, wireways, cable trays etc. In continuous runs between terminal points without splicing.
- E. Make splices and taps only in junction boxes and other accessible enclosures.
- F. Do not splice or tap control, alarm, or instrumentation wiring in underground manholes and handholes.
- G. When pulling wires or cables in ducts and conduits, do not subject them to a tension greater than 50% of the yield strength of the conductor. Attach pulling lugs to the conductor with a sleeve or grip over the cable sheath to prevent slipping the insulation and use a cable manufacturer recommended lubricant to decrease friction. Damaged cables shall be replaced at no extra cost to DSWM.
- H. Do not subject cables to a bending radius less than 8 times the cable outside diameter (O.D.) during or after installation.
- I. Leave enough lengths of wire at pull boxes so equipment can be connected without straining. For outlets boxes, allow not less than six inches.
- J. Wires passing through pull boxes shall have enough slack so they might be pulled out of the box a distance of no less than six inches across the entire length of the box.

K. Conductors in switchgears, panelboards and junction and pull boxes shall be grouped, formed, and taped to present a neat and orderly appearance.

L. Identification

1. Identify each phase of all three phase feeder conductors with 3M Scotch 35, or equal, vinyl plastic marking tape. Use color groups, with three distinct colors in each group, for phase identification of feeders of different system voltage as indicated in another part of this section.
2. Identify feeders and branch circuit conductors, and all control, and instrumentation wires at all terminations, junction boxes, pull boxes, handholes and manholes as follows:
  - a. Feeders with stamped ¼-inch high ID number on one inch diameter stainless steel tags.
  - b. All other conductors shall be identified at all access points by means of a self-adhesive pressure sensitive numbered wire markers. A typed cable index shall be attached to inside cover or cabinets where more than six circuits pass through or terminate.

M. Connections, Splices and Terminations

1. Provide UL approved connectors, terminals, and splices designed and recommended for the type and size of conductors being connected. Solderless terminal lugs shall be used on all stranded conductors. Termination of stranded conductors on screw terminals is not permitted.
2. Pressure crimp type connectors, terminals and splices shall be applied with a mechanical or hydraulic tool with proper size crimping dies. The tool shall be of the type that will not release until the correct pressure has been applied.
3. Make splices and taps in wire No. 10 AWG, and smaller with spring type (wire nut) connectors.
4. For other sizes, use long barrel, type YA pressure crimp lugs and type YS tubular pressure crimp splices by Burndy or equal. Where space is inadequate, use short barrel lugs. Use 2 hole lugs on cable of 250 MCM and larger.
5. For tap off AWG #8 cable and larger, provide Burndy type KS Split bolt copper connectors (bugs), with Burndy type SC one piece plastic split bolt covers, or equal. Other types of connectors for tapping may be used subject to prior approval by the Owner Representative.
6. Use proper size bronze bolts, nuts, washers, and lock washers of Burndy Durum alloy, or equal, for bolting cable terminations to equipment

terminals and bus bars.

7. For termination of control wiring in terminal blocks use pre-insulated fork tongue terminations.
- N. Provide support for all conductors within vertical raceways at intervals as required by the NEC 300.19 using plug type insulating wedge supports of proper conduit size, and number of holes.
- O. Support wires and cables within enclosures and boxes with nylon tie wraps and Kellems grips so that any strain on the conductors is not transmitted to the connection.
- P. Tape all connections in 600 volts wire and cable as follows:
1. In dry locations, tape connections, splices, taps and exposed barrels of terminal lugs with half lapped layers of approved vinyl plastic tape applied to a thickness equal to the conductor insulation.
  2. In damp or wet locations, tape connections per Paragraph 1 above, and in addition, apply at least two half lapped layers of tape over the first layers and water proof the taped connection with a final overall application of an electrical varnish or sealer.
  3. Insulated splices and wire nut connections, in dry locations, and where not subject to vibration, need not be taped.
- Q. Separation of Control, Signal and Communication Conductors:
1. Control, signal, and communication wiring shall be installed in dedicated raceways or compartments, physically segregated from power and lighting conductors per Section 16050.

### **3.02 TESTING**

- A. Test all conductors for insulation resistance after wiring is completed and ready for connection.
- B. Compare ohmic values with conductors of same length and type and investigate values less than 50 megohms.

**END OF SECTION**

**SECTION 16130**  
**OUTLET, PULL AND JUNCTION BOXES**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Furnish and install outlet, pull and junction boxes as indicated on Plans or as required.

**1.02 RELATED WORK**

- A. Section 16010 - Basic Electrical Requirement.

**1.03 QUALITY ASSURANCE**

- A. Materials manufactured in conform to Federal Specifications WC-583, ANSI C33.65, UL Standards and having an applied UL listing mark.
- B. Sheet metal boxes complying with NEMA OS1 and cast metal boxes with NEMA FB 1.

**1.04 SUBMITTALS**

- A. Submit for review, properly identified manufacture's literature and Shop Drawings giving materials, finishes, dimensions, weights, and standards compliance.

**PART 2 - PRODUCTS**

**2.01 OUTLET BOXES**

- A. Outlet boxes to be galvanized steel, of the drip proof type with screwed covers. Minimum acceptable size: 4 x 4 x 1½ inch. Box extensions are not permitted.
- B. For switches and receptacles in finished walls, use one piece gang and separators when required.
- C. For lighting fixtures, use square or octagonal outlet boxes.
- D. Outlet boxes for all other devices must be of suitable type and sized in accordance with equipment manufacturer recommendations.
- E. Exterior outlet boxes, boxes and fittings embedded in concrete and boxes for

exposed conduit runs shall be cast, of rust resisting metal, rubber gasketed and with full threaded hubs and screw type covers.

- F. Outlet boxes to be manufactured by National, Steel City, Appleton, or approved equal.

## **2.02 PULL AND JUNCTION BOXES**

- A. Furnish pull and junction boxes of welded 12-gauge aluminum, drip proof, gasketed and with knockouts and screw type covers. Boxes shall have a turned-in lip, which must be drilled and tapped for symmetrically located 3/16-inch stainless steel round head screws. To provide adequate length of thread, nuts must be tack welded on inside of lip or lip must be made double thickness. For corrosive locations such as Hydrogen Peroxide Storage Room, Mechanical Bar Screen Room, and Screenings Room, provide 316 stainless steel NEMA 3R boxes.
- B. Minimum dimensions to be 12" x 12" x 6". Unless otherwise is indicated on plans.
- C. For outdoor installation, use stainless steel NEMA 3R gasketed junction boxes with screw cover mounting on outward turned flanges.
- D. Interconnect spliced control wires in boxes, thru terminal blocks. Use a spade type lug for terminations and tag all conductors.
- E. Junction and pull boxes to be manufactured by General Metals, Inc., Hoffman or approved equal.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Install boxes rated for conditions encountered at each outlet or device in the wiring or raceway system.
- B. Install boxes so that they are plumb, level and accessible.
- C. Surface or flush mounted as required.
- D. Ensure boxes are of adequate size to accommodate conductors without excessive bending.
- E. Locations as shown on Plans are approximate. Should other equipment cause

interference, relocate as directed by the Owner Representative.

- F. Support boxes independently of conduits by attachment to structural members. Fasten boxes and "U" channel supports as follows:
  - 1. To concrete or brick walls with bolts and expansion shields.
  - 2. To hollow masonry with toggle bolts.
  - 3. To steel work with machine screws or welded studs.
- G. Boxes embedded in concrete need not be additionally supported.
- H. Open no more knockouts in sheet steel device boxes than are required. Seal unused openings.

### **3.02 OUTLET AND DEVICE BOXES**

- A. Install boxes for light switches on the lock side of doors even where the symbols are indicated on the hinge sides.
- B. Unless otherwise indicated, provide boxes in plastered surfaces with plaster rings. Do not install plaster rings until the finished plaster line is determined and make them flush with the finished surface.
- C. Mounting height as measured from the finished grade to the centerline of boxes:
  - 1. Light Switch: 48 inches
  - 2. Convenience Receptacles: 24 inches
  - 3. Where specified heights do not suit building, mount as instructed by the Owner Representative.
- D. In wet locations, use gasketed cast-iron alloy, hub type outlet boxes and conduit bodies.
- E. Provide blank covers for outlet boxes when devices or wiring have been removed or not installed.

### **3.03 JUNCTION AND PULL BOXES**

- A. Install where showed or necessary to terminate tap-offs, facilitate conductors installation of redirect multiple conduit runs.
- B. In conduit runs, install at least every 150 feet after the equivalent of three right angle bends.
- C. Outlet boxes can be used as junction and pull boxes wherever possible and

permitted by the applicable codes.

- D. Do not install on finished surfaces.
- E. Installation at or below grade.
  - 1. In locations outside of paved areas, roadways, or walkways, install flush with the finished grade.
  - 2. If adjacent structures are available, boxes may be surface mounted just above the finished grade in accessible but unobtrusive location.
  - 3. In paved areas, roadways, or walkways, only after written authorization has been granted by the Owner Representative and using covers suitable to support anticipated weights.

**END OF SECTION**

**SECTION 16131**  
**RACEWAYS**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Furnish and install complete raceway system as indicated on Plans or required.

**1.02 RELATED WORK**

- A. Section 16010 - Basic Electrical Requirement
- B. Section 16070 – Supporting Devices
- C. Section 16130 - Outlet, Pull and Junction Boxes
- D. Section 16452 - Grounding

**1.03 QUALITY ASSURANCE**

- A. Materials manufactured within scope of Underwriters Laboratories (UL) shall conform to UL Standard and have an applied UL listing mark.

**1.04 SUBMITTALS**

- A. Submit for review, properly identified manufacture's literature and shop drawings giving materials, finishes, dimensions, weights and standards compliance.

**PART 2 - PRODUCTS**

**2.01 CONDUITS AND FITTINGS**

- A. Rigid Metal Conduit (RMC).
- B. Aluminum:
  - 1. Containing less than 0.1 percent copper.
  - 2. Conform to federal specification WW-C-540C.
  - 3. Fittings and conduits manufactured by Kaiser Aluminum and Chemical Corp.
  - 4. Use Alcoa thread lubricant on all aluminum threads.
- C. PVC Coated Rigid Galvanized Steel. It is not acceptable.

- D. Electrical Metallic Tubing (EMT). It is not acceptable.
- E. Plastic Rigid
  - 1. PVC schedule 40 and rated for 90 degrees C insulated conductors.
  - 2. Conforming to UL 651, Fed. Spec. W-C-1094 and NEMA TC-2.
  - 3. UL listed for concrete encasement, direct burial and direct sunlight exposure.
  - 4. Furnished without factory-formed bell.
  - 5. Slip-on fittings to conform to UL 514 and NEMA TC-3.
  - 6. Manufactured by Carlon, Mansville or Rob Roy.
- F. Plastic Type EB
  - 1. UL listed for concrete encased duct applications
  - 2. Conforming to UL 651, NEMA TC-6 and TC-8 and ASTM f-512.
  - 3. Manufactured by Carlon or Mansville.
- G. Flexible Non Metallic
  - 1. Liquid-tight conforming to UL 1660.
  - 2. Flexible Metallic is not acceptable.
- H. Device boxes, conduits, clamps and other fittings in aluminum conduit runs shall be copper-free cast aluminum FD Series with die cast aluminum covers, by Crouse-Hinds.
- I. Use conduit straps and fasteners of materials compatible with conduits being supported. Dissimilar metal will not be permitted. Provide cast aluminum EFCOR 233AL straps and clamp backs to attach conduit to concrete surfaces where channels and clamp are not used.
- J. Wireways
  - 1. 12-gauge aluminum, with hinged cover, flangeless, of the size indicated, type HW as manufactured by General Metals, Inc.
  - 2. For exterior use furnish wireways with gasketed covers and UL listed for the application.
  - 3. Conform to UL 870.
- K. Wall Sleeves and Entrance Seals
  - 1. Wall sleeves for conduit to be watertight series FSK by O.Z. Gedney.
  - 2. Entrance seals as type CSBG by O.Z. Gedney.

L. Conduit Expansion and Deflection Fittings

1. Shall be provided with internal grounding.
2. Shall have consistent inside diameter in any position.
3. Shall have a neoprene outer jacket secured by stainless steel straps.
4. Shall accommodate the following movements without any damage.
  - a. Axial expansion or contraction of 3/4-inch.
  - b. Angular misalignment of the axis of coupled conduit runs of 30 degrees.
  - c. Parallel misalignment of the axis of coupled conduit runs of 3/4-inch.

M. Pull wires: 16 gauge galvanized steel wire or 200 pounds tensile strength plastic rope.

N. Fire Stopping Material/Sealing compound.

1. Material shall prevent the passage of flame, smoke, water and gases under installation conditions when exposed to the ASTM E119 time-temperature curve for a time period equivalent to the rating of the assembly penetrated.
2. Noncombustible as defined by ASTM E136.
3. Melting point 1850°F for 2-hour protection.
4. Seal for floor, exterior wall, and roof shall also be watertight.

O. Duct Bank Spacers

1. Non-metallic, interlocking.
2. Suitable for all types of conduits.
3. Manufactured by Carlon or Underground Device, Inc.

## **PART 3 - EXECUTION**

### **3.01 LOCATION AND USE OF EACH TYPE OF CONDUIT**

- A. Galvanized Rigid Steel Conduit. It is not acceptable.
- B. PVC-coated rigid galvanized steel conduit. It is not acceptable.
- C. Aluminum conduit for above ground exposed installations.
- D. Plastic Conduit
  1. Where poured in slabs or concrete walls or underground below slab.
  2. Where specifically called for on Plans for underground work beyond

- buildings.
3. Trenches for direct-buried PVC conduit shall be free of rocks and other material that may damage the conduit.
- E. Electrical metallic tubing (EMT). It is not acceptable.
- F. Flexible Non Metallic Conduit (Liquid-Tight).
1. For last section of runs to rotating or vibrating equipment such as motors, transformers, control devices, recessed fixtures and electrical equipment installed on pipes and ductwork.
  2. Provide not less than 24 inches except for recessed lighting fixtures.
  3. Use liquid-tight type outside, in wet or damp locations and in process equipment areas and install so that liquids run off surface and drain away from fittings.

### **3.02 INSTALLATION**

- A. Provide metal conduits, tubing, wireways, and electrical ducts where indicated on Plans and in compliance with NECA 5055 and NEC.
- B. The Plans show the work to be performed, but do not indicate all bends, fittings, boxes, and specialties which may be required or the exact location of conduits.
- C. Carefully investigate the structural and finish conditions of the building and arrange the work accordingly, furnishing everything required to meet such conditions.
- D. Arrange conduit runs to clear beams, pipes, and other obstructions. Any changes from locations shown on the plans must be approved by the Owner Representative.
- E. Raceways to be concealed in finished areas and exposed in mechanical areas and electrical rooms.
- F. Run exposed conduit and wireways parallel or perpendicular to structural members or vertical planes intersections of the building structure and horizontal raceway close to ceiling and above piping. When running parallel to heated piping, keep a minimum 12 inches of clearance.
- G. Run concealed conduits to minimize the number of bends.
- H. Install conduits in such a manner that wires may be removed and replaced at a later date.

- I. Avoid moisture traps where possible. When unavoidable in exposed conduit runs, provide junction box and drain fitting at conduit low point.
- J. Aluminum field-made threads with anti-seize compound. Make conduit joints wrench tight using strap wrenches and waterproof them in such a manner as to not interrupt the electrical bonds.
- K. Metal conduits to be reamed, to have burrs removed and to be cleaned before installation of conductors.
- L. Make changes in direction of raceway runs with symmetrical bends or cast metal fittings. For field made bends and offsets, use a hickey or conduit bending machine specifically for the size and type of conduit. Minimum bend radius 6 times diameter for rigid metal conduit.
- M. Size conduits as shown on Plans or by NEC standards. Where sizes differ use the larger one. Do not use conduits smaller than  $\frac{3}{4}$  inches except where otherwise shown on the Plans or for lighting fixtures installation with flexible conduit not exceeding six feet that can be  $\frac{3}{8}$  inch.
- N. Maintain raceway entirely free of obstructions and moisture. Clogged raceway must be entirely freed of obstructions or replaced. Crushed or deformed raceway not permitted.
- O. Immediately after installation, plug or cap raceway ends to keep them free of moisture and dirt and install a pull wire on spare conduits.
- P. Horizontal raceways installed under floor slabs shall lie completely under the slab, with no part embedded within slab.
- Q. Install concealed, embedded and buried raceways so that they emerge at right angles to surface and have no curved portion exposed.
- R. Conduits passing through concrete walls, walls, ceiling, etc must be installed in sleeves as follows:
  - 1. Extending through full thickness of concrete.
  - 2. Secure sleeves to concrete forms to prevent displacement during concrete pouring.
  - 3. Provide a minimum of  $\frac{1}{2}$  inch clearance around conduit and seal opening to prevent fire spread, or the passage of water or combustion products with approved sealing compound following manufacturer's instructions.
  - 4. When exposed in finished rooms, use filling material that matches and

that is flush with the adjoining finished surface.

5. Watertight wall sleeves to be FSK Series by O.Z. Gedney.
- S. Except where boxes, panels and other equipment have threaded openings, make conduit connections as follows:
1. Conduit hubs.
  2. Place bushing on end of conduit in addition to locknuts.
- T. Conduct a leak test for conduit ducts entering an underground structure. Seal and test with a head of water equal to five feet above grade. Leakage in excess of 1-inch fall of water level in five minutes is not acceptable, and the conduit or duct shall be repaired and/or replaced.
- U. When conduits must pass through waterproof membranes and before the wall or slab concrete is poured, proceed as follows:
1. Install conduits before membrane.
  2. Seal conduit to membrane using manufacturer recommended sealant.
  3. Use sleeves as recommended in another part of these specifications for concrete penetration.
  4. Seal joint between conduits and sleeves.
- V. Conduits crossing expansion joints in building structures must be provided with expansion fittings.
- W. Raceways Fastenings and Supports: See Section 16070 - Supporting Devices.
- X. Sleeves
1. Install where conduit passes through concrete floors, walls, ceilings or as indicated.
  2. Provide ½-inch minimum clearance around conduit. Extend sleeve through full thickness of concrete.
  3. Secure sleeves to concrete forms to prevent displacement during placing of concrete.
  4. Filling of Openings: Wherever slots, sleeves, or other openings are provided in floors or walls for the passage of raceways, fill those openings, to prevent fire spread, passage of water or spread of products of combustion, as follows:
    - a. Install the specified sealing compound.
    - b. Where conduits passing through openings are exposed in finished rooms, use filling material that matches, and is flush with the adjoining finished floor, ceiling or wall.

5. Wall sleeves for conduit shall be 0.Z. positive water-tight through wall entrance fittings, FSK Series.

Y. Raceway Seals

1. Seal with the specified sealing compound raceways through which moisture may contact energized live parts.
2. Underground Raceways Entering a Building: Seal the end entering the building with the specified sealing compound to prevent the entrance of moisture or gasses.
3. Seal every conduit leaving a hazardous area.
4. Install sealing compound in accordance with the manufacturer's written instructions.

**END OF SECTION**

**SECTION 16140  
WIRING DEVICES**

**PART 1 - GENERAL**

**1.01 CODES AND STANDARDS**

- A. NEMA WD-1 - Wiring Devices - Non-Locking Type
- B. NEMA WD-5 - Wiring Devices - Locking Type

**1.02 SUBMITTALS**

- A. The Contractor shall submit Shop Drawings for the materials used in the construction and installation of wiring devices to the Owner Representative for its review.

**PART 2 - PRODUCTS**

**2.01 RECEPTACLES**

- A. All receptacles shall be specification grade of the grounding type, unless otherwise noted, and shall conform to applicable portions of NEMA Standards WD-1 and WD-5.

- 1. NEMA Duplex Receptacle wire  
Arrow Hart #5762-I  
Leviton #5342-I  
Hubbell #5342-I  
General Electric #4108-2  
Bryant #5342-I  
P & S#5342-I  
Single Receptacle Similar #5351 Series or G.E. 4102-2
- 2. NEMA Single wire  
Bryant #9530-FR Receptacle and 9530 ANP Plug  
General Electric #4138-3 and 4337-9  
Leviton #5371

## 2.02 GROUND FAULT INTERRUPTER RECEPTACLES (NEMA 5-20)

- A. Leviton #6398-I
- B. P & S #2091-SI

## 2.03 SWITCHES

- A. Toggle switches shall be AC only type switch.
  - 1. 20 Ampere, 120/277 Volt, Ivory, Single, Double and 3-Way, Respectively
    - Leviton 1121-I, 1122-I, 1123-I
    - Hubbell 1121-I, 1122-I, 1123-I
    - G.E. 5951-2, 5952-2, 5953-2
    - P & S. 521-I, 522, 523
  - 2. Lighted handle Pilot Switch, 20A, 120/277 V
    - Bryant 4901-PLR-R277
    - Hubbell 1221-PL7-277
    - P & S 20AC1RPL
  - 3. On/Off Selector Switch, Two Position, Maintained Operation Type, Size 22, Leveler Standard, NEMA 3R

## 2.04 PLATES AND COVERS

- A. General: Device plates shall be 0.040 inch minimum, with struck-up beveled edges, void of sharp corners and multi-gang as applicable. Finish of screws shall match plates. Provide permanent ID on all plates/devices.
- B. Wall Plates: Wall plates for indoor recessed devices shall be of Ivory color with matching screws unless indicated otherwise, and of the configuration required for the devices installed. Units shall be smooth high impact type. Manufactured by Leviton, Hubbell, Pass & Seymour RP or equal.
- C. Cover Plates: Surface (raised) covers for 4" square boxes indoors shall be ½" deep. Surface covers shall be as manufactured by Steel City, Appleton or Raco of the configuration required. Others shall be similar.

## 2.05 ATTACHMENT CAPS AND CONNECTORS

- A. Caps shall be NEMA Standard mates to the receptacles and connectors used and shall be as manufactured by Hubbell.

## **PART 3 - EXECUTION**

### **3.01 OUTLETS AND SWITCHES**

- A. Install plates and covers on all outlets.
- B. Install all devices uniformly in each area.
- C. Provide separate boxes so that 120 volt and 277 volt circuits do not occur in same box.
- D. Use 20 ampere switches and receptacles unless otherwise noted.

### **3.02 GROUNDING**

- A. Grounding contacts of receptacles shall be connected to a system grounding conductor (not system neutral) by a copper wire not smaller than #12 AWG. Where symbol "G" is shown, the green grounding wire must be pulled and used throughout the branch circuit.

### **3.03 CAPS**

- A. Install a suitable cord and cap (male plug) on all equipment.

### **3.04 MOUNTING**

- A. Mounting Heights (to Center of Box)
  - 1. Generally, mount outlets 24" up unless noted.
  - 2. Mount switches and dimmers at 48" up.
  - 3. Gang switches and dimmers where feasible.
- B. Outlets may be horizontal to meet space conditions.
- C. Test each socket of each outlet with a device intended for the purpose. Gang switches and dimmers, where feasible.

### **3.05 SWITCH AND PILOT LIGHTS**

- A. Use on all 120-volt exhaust fans except where timers are used.
- B. Exhaust fans interlocked with air handling units or supply fans do not require a pilot light.

**3.06 GFCI RECEPTACLES (GROUND-FAULT CIRCUIT INTERRUPTER)**

A. Provide GFCI duplex receptacles as shown and at all the following locations:

1. Outdoors
2. Toilet rooms

**END OF SECTION**

## **SECTION 16452 GROUNDING**

### **PART 1 - GENERAL**

#### **1.01 DESCRIPTION OF WORK**

- A. The work of this section consists of providing labor, materials, tools, appliances and miscellaneous accessories associated with grounding of the electrical system as required by and as is indicated herein and/or on the Drawings.
- B. Main electric service equipment, raceways, motors, panelboards and other electrical equipment shall be effectively and permanently grounded to a grounding electrode. This electrode shall be the nearest available effectively grounded structural metal member of the structure or the nearest available effectively grounded metal water pipe and also a driven rod. Grounding connections and conductor sizes shall be in accordance with requirements of the National Electrical Code, Article 250, and local ordinances, and as described herein.
- C. The building system shall be grounded through the piling rebar. An anchor bolt shall be electrically connected to the vertical rebar in the piling.
- D. A separate grounding conductor, sized in accordance with NEC Table 250-95 shall be provided in the conduit with the circuit conductors for all feeder and receptacle circuits. Branch circuits supplying lighting loads may use the conduit system for ground conductor. The grounding conductor may be bare or insulated copper; however, if this conductor is insulated, the insulating covering shall be a green color. Conduit runs shall be increased in size where necessary to accommodate the grounding conductor in addition to circuit conductors. The electrical continuity of all conduit runs shall be verified and corrected where necessary.
- E. Additional grounding conductors and conduit shall be provided as specified herein or shown on the drawings. All conduit for grounding system conductors, not run in conduit with circuit conductors, shall be rigid steel conduit.
- F. All electrical equipment enclosures and conductor enclosures shall be grounded. This includes but is not limited to metal raceways, outlet boxes, cabinets, switch boxes, motor frames, transformer cases and metallic enclosure for all electrical equipment.
- G. Under no circumstances shall neutral conductors again be grounded after they have been grounded once at the transformer secondary.

- H. Panelboards shall be equipped with a neutral bar which is insulated from the enclosure, and a grounding bar which is bonded to the enclosure. The grounding bar shall provide for terminating the green equipment grounding conductors in the panelboard or motor control center cabinets. The grounding bar shall be bonded to the cabinet. Neutral busses shall be isolated from ground except at the transformer ground connection.
- I. Types of grounding in this section includes the following:
  - 1. Underground metal piping.
  - 2. Underground metal water piping.
  - 3. Underground metal structure.
  - 4. Metal building frames.
  - 5. Grounding electrodes.
  - 6. Separately derived systems.
  - 7. Service equipment.
  - 8. Enclosures.
  - 9. Systems.
  - 10. Equipment.
- J. Requirements of this section apply to electrical grounding work specified elsewhere in these specifications.

## **PART 2 - PRODUCTS**

### **2.01 GROUNDING GENERAL**

- A. Materials and Components:
  - 1. General: Except as otherwise indicated, provide electrical grounding and bonding systems indicated, with assembly of materials including, but not necessarily limited to, cables/wires, connectors, terminals (solderless lugs), grounding rods/electrodes and plate electrodes, bonding jumper braid, surge arrestors and other items and accessories needed for complete installation. Where more than one type meets indicated requirements, selection is Installer's option. Where materials or components are not otherwise indicated, comply with NEC, UL and IEEE requirements and with established industry standards for applications indicated.
  - 2. Provide conduit, tube, duct and fittings complying with other Division 16 sections.
  - 3. Bonding Jumper Braid: Copper braided tape, constructed of 30-gage bare copper wires and properly sized for indicated applications.
  - 4. Flexible Jumper Strap: Flexible flat conductor, 480 strands of 30-gage bare copper wire, 3/4" wide, 9-1/2" long, 48, 250 CM. Protect braid with copper bolthole ends with holes sized for 3/8" dia. bolts.

5. Grounding Conductors: Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials and sized according to NEC.
6. Bonding Plates, Connectors, Terminals and Clamps: Provide electrical bonding plates, connectors terminals and clamps as recommended by bonding plate, connector, terminal and clamp manufacturers for indicated applications.
7. Ground Electrodes: Steel with copper welded exterior, 5/8" dia. X 10'.
8. Electrical Grounding Connection Accessories: Provide electrical insulating tape, heat- shrinkable insulating tubing, solder, soldering flux, bonding straps, as recommended by accessories manufacturers for type services indicated.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION OF GROUNDING SYSTEMS**

- A. Install electrical grounding and bonding systems as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to ensure grounding and ground-fault protection devices comply with requirements. Comply with requirements of NEC, and NECA's "standard of installation".
- B. Coordinate with other electrical work as necessary to interface installation of grounding system and ground fault protection devices with other work.
- C. Weld grounding conductors to underground grounding electrodes. The building equipment grounding system shall consist of the ground wire, and electrically continuous metallic conduit system. Every item of equipment served by the electrical system shall be bonded to the building equipment ground. Portions of metallic piping and duct systems which are electrically isolated shall be bonded to the equipment grounding system with a flexible bonding jumper.
- D. The neutral shall be grounded to the grounding electrode system at the service entrance only, and shall be kept isolated from the building grounding system throughout the building. The neutral of separately derived systems shall be grounded at one point as specified here-in-below.
- E. Provide bonding and grounding wires run in conduit and sized per the NEC in accordance with the local electrical inspection department and the NEC. Metallic piping and duct systems which enter the building shall be grounded at the point of entry to the building, in accordance with the NEC.
- F. Continuity of the building equipment grounding system shall be maintained throughout the project. Grounding jumpers shall be installed across conduit

expansion fittings, all liquid-tight flexible metal and flexible metal conduits, light fixture pigtails in excess of 6', and all other non-electrically continuous raceway fittings.

- G. All main grounding conductors shall be stranded copper conductors, sized as shown and/or required, and run in a suitable raceway. All main grounding conductors shall be continuous without joints or splices over their entire length.
- H. Bond the case and neutral of each transformer directly to the nearest available effectively grounded structural metal member of the structure, the nearest available effectively grounded metal water pipe, or in accordance with the local electrical inspection department. Flexible conduit shall not be used as a ground path to a transformer.
- I. Provide a ground conductor from the telephone service equipment to the building grounding system as required by the local Telephone Company.
- J. Carefully and securely ground all fluorescent fixture bodies to the conduit grounding system. Flexible conduit longer than 6' shall not be considered a ground path.
- K. Ground all grounding-type receptacles with a separate ground wire.
- L. Grounding of all motors or equipment connected to terminal box with flexible conduit shall be made with separate grounding conductor between motor frame or equipment cabinet and rigid conduit system. Grounding conductor shall be sized in accordance with table 250-95 of the NEC.
- M. All grounding conductors shall be amply protected from mechanical injury and shall be supported in an approved manner. Where conductors are located in concrete, they shall be installed in conduit. Where ground conductors enter or emerge from slabs bearing directly on fill or soil, the voids between the conductor and surrounding conduit shall be filled with compound to provide an effective water seal.
- N. Grounding conductors shall be not smaller than #12 AWG. Conductors shall be high conductivity copper, and sizes larger than #10 shall be stranded.
- O. A ground grid for Entergy's pad mounted transformer shall be provided as work of this system. Coordinate exact requirements with Entergy.
- P. Grounding type-insulated bushings shall be installed on all raceways at transformers, switchboards, dry-type transformers, as well as switches used as service equipment. Bonding jumpers shall be provided in accordance with Table 250-95 of the National Electrical Code (NEC).
- Q. Install braided type-bonding jumpers with clamps on water meter piping to

electrically bypass water meter.

- R. Install clamp-on connectors only on thoroughly cleaned metal contact surfaces, to ensure electrical conductivity and circuit integrity.
- S. Ground each steel structural column to a 2/0 ground loop. Connect the loop to the main service switchboard. "Cadweld" grounding conductor to steel column.
- T. Interconnect ground system with Lightning Protection System.

### **3.02 FIELD QUALITY CONTROL**

- A. General. Upon completion of installation of electrical grounding system, test ground resistance with ground resistance tester. Where tests show resistance-to-ground is over 3 ohms, take appropriate action to reduce resistance to 3 ohms or less by driving additional ground rods and/or by chemically treating soil encircling ground rods with sodium chloride, calcium chloride, copper sulphate, or magnesium. Then retest to demonstrate compliance.

**END OF SECTION**

**SECTION 16500**  
**LIGHTING CONTROL SYSTEMS**

**PART 1 - GENERAL**

**1.01 REQUIREMENTS**

- A. The general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

**1.02 SCOPE**

- A. The work covered in this section shall include furnishing and installing complete lighting control systems for the control of selected interior and exterior lighting and other equipment as indicated on the Drawings, detailed in the manufacturer submittal and as further defined herein. Contractor is solely responsible to verify quantity, installation locations and wiring requirements for this project. Specific manufacturers' catalog numbers, when listed in this section are for reference only. It is the responsibility of this Contractor to verify with the lighting control manufacturer all catalog information and specific product acceptability.
- B. The systems shall include but not be limited by the following: pre-wired, microprocessor-controlled relay panels with electrically held, electronically latched relay panels controlled via communication based equipment including digital switches, digital photocells, Digital Time Clock (DTC), other various digital devices, interface cards, occupancy sensors and other devices as shown on the Drawings. The type of lighting control equipment and wiring specified in this section is covered by the description: Microprocessor Controlled Digital Relay Lighting Control system with RS485 Bus communications.
- C. Requirements are indicated elsewhere in these specifications for work including, but not limited to, raceways and electrical boxes and fittings required for installation of control equipment and wiring.
- D. It is the intent of this specification that the entire lighting control system, as specified herein, be available to all bidders and not "Packaged or Bundled" with any other lighting systems or equipment. Therefore, the lighting control system shall be provided as a separate price, to all bidders, at bid time.

**1.03 QUALITY ASSURANCE**

- A. The lighting control systems shall meet the requirements of the National Electrical Code (NEC), state and local codes, and these Specifications.
- B. The network lighting control systems shall be UL/CUL listed.

- C. The Contractor is responsible for verifying compliance.
- D. All Components and the manufacturing facility where product was manufactured must be RoHS Compliant.
- E. All components shall be subjected to 100% end of line testing prior to shipment to the project site to ensure proper device operation.

#### **1.04 SUBMITTALS**

- A. This Contractor shall furnish submittals for all components of the lighting control systems in accordance with SECTION 16010 of these Specifications. Submittals shall include the following for review. Submittals not containing all of the information listed below will be rejected.
  - 1. Shop Drawings: Submit dimensioned drawings of complete lighting control systems and accessories including, but not necessarily limited to, relay panels, switches, DTC, photocells and other interfaces. Shop drawings shall indicate exact location of each device. Plans shall be diagrammatical. "Cut Sheet" submittals not acceptable. This contractor shall furnish to the lighting control system manufacturer a copy of the project construction phasing plan for design of the bus system.
  - 2. Product Data: Submit for approval manufacturer's data on the specific lighting control systems and components. Submittal shall be in both electronic and hard copy formats. To prevent departures from approved system operation, electronic file submitted shall be able to be directly downloaded to the specified system at the manufacturer's facility. Submit a complete bill of materials with part numbers, description and voltage specifications.
  - 3. One Line Diagram: Submit a one-line diagram of the system configuration indicating the type, size and number of conductors between each component, and each communication buss provided for the project. Submittals that show typical riser diagrams are not acceptable.
  - 4. Programming Forms: Submit programming forms with complete information describing the operation of the lighting control system and all other information necessary to show proper operation of the system.

#### **1.05 SPARE PARTS**

- A. Provide 10% spare relays per Lighting Control Panel, up to the maximum capacity of the LCP. If the LCP is fully populated with active relays provide a minimum of two spare relays, per relay panel.
- B. Provide ten (10) spare classroom lighting control switches plus one (1) spare digital switch for each additional type of digital switch shown.

- C. Provide ten (10) spare classroom lighting control power packs.
- D. Manufacturer's software shall be available online for download at no charge. If software is not available online, it shall be provided in CD form with the most up to date software.
- E. Provide two (2) extra sets of as built and operating manuals.
- F. Provide ten (10) spare keys for each key operated switch.

## **1.06 SYSTEM DESCRIPTION**

### **A. System Architecture**

- 1. System shall have an architecture that is based up on networkable intelligent lighting control devices, standalone lighting control zones using distributed intelligence, and optional system backbone for remote, time based and global operation between control zones.
- 2. The system shall be capable of providing individually addressable switching and dimming control of the following: control zones to include multiple switch legs or circuits, relays and dimming outputs from centralized panels and networked luminaires. System shall be capable of integrating indoor and outdoor lighting controls.
- 3. Lighting control zones shall be capable of being networked with a higher-level system backbone to provide time based control, remote control from inputs and/or systems external to the control zone, and remote configuration and monitoring through software.
- 4. System shall be capable of 'out of box' sequence of operation for each control zone. Standard Sequence is:
  - a. All switches control all power packs in a zone.
  - b. All occupancy sensors automatically control all power packs in the control zone with a default time out.

### **B. Wired Network Control Zone Characteristics**

- 1. Following proper installation and provisions of power, all networked devices connected with low voltage network cable shall automatically form a functional lighting control zone without requiring any type of programming. The 'out of box' default sequence of operation is intended to provide typical sequence of operation so as to minimize the system start up and programming requirements and to also have functional lighting control operation prior to system startup and programming.
- 2. System shall be able to automatically discover all connected devices without requiring any provisioning of system or zone addresses.

C. System Integration Capabilities

1. The system shall be capable of interface with third party building management systems to support two-way communication using the industry standard BACnet/IP or BACnet/MSTP protocols.

**1.07 SYSTEM TEST AND ACCEPTANCE**

- A. Prior to the Architect/Engineer's final site visitation, and acceptance of each construction phase, this Contractor shall conduct a complete operating test of each system including each device. The systems shall test free from grounds, shorts, and other faults. All connections shall be thoroughly checked for mechanical and electrical connection. All equipment shall be demonstrated to operate in accordance with the requirements set forth in these Specifications and as shown on the Drawings.
- B. This Contractor shall perform all tests in the presence of the Owner. This Contractor shall furnish all personnel for use in the tests.
- C. When the work on the system has been completed and is ready for final review, a visit shall be made by the Owner at which time the Contractor shall demonstrate that the requirements of the Contract as it applies to this system have been carried out and that the system has been adjusted and operated in accordance herewith.

**1.08 DOCUMENTATION**

- A. This Contractor shall furnish to the Owner point-to-point "As Built" wiring diagrams for the lighting control systems. Diagrams must indicate exact mounting location of each system and their devices. This accurate "as built" shall indicate the loads controlled by each relay and the identification number for that relay, placement of switches and location of photocell. Original shall be given to Owner, copies placed inside the door of each LCP.
- B. This Contractor shall furnish to the Owner, four (4) sets of factory operation and maintenance manuals. These manuals shall include factory service manuals with complete parts lists, wiring and component schematics including circuit diagrams, programming forms with complete information and all other information necessary for the proper operation, service, and maintenance of the Lighting Control Systems.

**1.09 TRAINING**

- A. This Contractor shall furnish four (4) hours of technical service training to the Owner's technical staff using the factory operation manuals previously specified.

- B. This Contractor shall furnish four (4) hours of operating and programming training to the Owner's operating staff to be scheduled at the Owner's convenience during the warranty period.
- C. All training specified herein shall be performed by a factory certified technician.

## **1.10 WARRANTY**

- A. This Contractor shall deliver the work in first-class operating condition in every respect. This Contractor shall also warrant that the material, equipment, and workmanship furnished shall be entirely free from defects. Any materials, equipment, or workmanship in which defects may develop before or during the warranty period shall be repaired or replaced at the Contractors own expense. The warranty period shall commence upon Substantial Completion as defined in the Contract Documents. This contractor shall further warrant that all material, equipment, and workmanship used in the installation, but not specifically mentioned in the Drawings and Specifications, is the best of their respective kinds and that the construction and installation was performed in accordance with the best accepted standard practices in all details.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURER**

- A. Lighting Control Systems products shall be manufactured by Acuity Brands Controls (night), or as listed herein. Such firms shall be regularly engaged in the manufacture of lighting control equipment and ancillary equipment, of types and capacities required, whose products have been in satisfactory use in similar service for not less than 5 years. Any product or manufacturer other than those listed in this specification must be pre-approved in accordance with these specifications as hereinbefore described in SECTION 16010.

### **2.02 SYSTEM ARCHITECTURE**

- A. System Architecture
  - 1. System shall have an architecture that is based upon three main concepts: (a) networkable intelligent lighting control devices, (b) standalone lighting control zones using distributed intelligence, (c) optional system backbone for remote, time based and global operation between control zones.
  - 2. Lighting control zones consisting of one or more networked luminaires and intelligent lighting control devices and shall be capable of providing

automatic control from sensors (occupancy and/or photocell) and manual control from local wall stations without requiring connection to a higher-level system backbone; this capability is referred to as “distributed intelligence.”

3. Lighting control zones shall be capable of being networked with a higher-level system backbone to provide time-based control, remote control from inputs and/or systems external to the control zone, and remote configuration and monitoring through a software.
4. All system devices shall support remote firmware update, such that physical access to each device is not necessary, for purposes of upgrading functionality later.

B. Distributed System Power, Switching and Dimming Controls.

1. Devices shall incorporate one optional Class 1 relay, optional 0-10 VDC dimming output, and contribute low voltage class 2 power to the rest of the system.
2. Device programming parameters shall be available and configurable remotely from the software and locally via the device push-button.
3. Power packs shall accept 120- or 277-volt VAC and shall be plenum rated.
4. Devices shall be UL listed for load and load types as specified on the plans.

C. Wired Network Relay and Dimming Panel

1. Relays and dimming panels shall be capable of providing the required amount of relay capacity indicated as 4-relay, 8-relay, or 16-relay, as required per panel schedules shown on drawings, with an equal number of individually 0-10v dimming outputs.
2. Standard relays used shall have the following required properties:
  - a. Configurable in the field to operate with normally closed or normally open behavior.
  - b. Provides visual status of current state and manual override control of each relay.
  - c. Be individually programmable.
3. 0-10 VDC dimming outputs shall support a minimum of 100 mA sink current per output.
4. Panel shall be UL924 listed for control of emergency lighting circuits.

5. Panel shall provide a contact closure input that acts as a panel override to activate the normally configured state of all relays in the panel.

D. Wired Networked Wall Switches, Dimmers, Scene Controllers.

1. Wall switches & dimmers shall support the following device options:
  - a. Number of control zones: 1, 2 or 4
  - b. Control Types Supported: On/Off or On/Off/Dimming.
2. Scene controllers shall support the following device options:
  - a. Number of Scenes: 1, 2 or 4
  - b. Control Types Supported:
    - i. On/Off or On/Off/Dimming
    - ii. Preset Level Scene Type
    - iii. Reprogrammed or other devices within daisy-chained zone so as to implement user selected lighting scene.
    - iv. Selecting a lighting profile to be run by the system's upstream controller so as to implement a selected lighting profile across multiple zones.

E. Wired Networked Occupancy and Photosensors

1. Sensors shall utilize passive infrared (PIR) or massive dual technology (PDT) to detect both the major and minor motion as defined by NEMA WD-7 standards.
2. Sensing technologies that are acoustically passive, meaning they do not transmit sound waves to any frequency do not require additional commissioning. Ultrasonic or Microwave based sensing technologies may require commissioning due to the active nature of their technology, if factory require.
3. Sensor coverage shall be coordinated with the floor plans. Sensors shall be available in standard and extended range, as well as being available with option for High Bay mounting. All occupancy sensors installed in ceilings above 10 ft in height shall be the High Bay type.
4. Sensor programming parameter shall be available and configurable remotely from the software and locally via the device.
5. Sensor mounting type shall match project design requirements as shown on the plans.
  - a. Sensors shall have optional features for photosensor/daylight override, dimming control and low temperature/high humidity operations.
6. The system shall support the following types of photocell-based control:
  - a. On/Off: The control zone is automatically turned off if the

photocell reading exceeds the defined setpoint and automatically turned on if the photocell reading is below the defined setpoint. A time delay or adaptive setpoint adjustable behavior may be used to prevent the system from exhibiting nuisance on/off switching.

- b. Continuous Dimming: The control zone automatically adjusts its dimming output in response to photocell readings, such that a minimum light level consisting of both electric light and daylight sources is maintained at the task. The photocell response shall be configurable to adjust the photocell setpoint and dimming rates.

#### F. Wired Networked Auxiliary Input / Output (I/O) Devices

1. Auxiliary Input/Output Devices shall be specified as an input or output device with the following options:
  - a. Contact closure input
    - i. Input shall be programmable to support maintained or momentary inputs that can activate local or global scenes and profiles, ramp light level up or down, or toggle lights on/off.
  - b. 0-10v analog input
    - i. Input shall be programmable to function as a daylight sensor.
  - c. RS-232/RS-485 digital input
    - i. Input supports activation of up to 4 local or global scenes and profiles, and on/off/dimming control of up to 16 local control zones.
  - d. 0-10v dimming control output, capable of sinking a minimum of 20 mA of current
    - i. Output shall be programmable to support all standard sequence of operations supported by system.

#### G. Wired Networked Wall Switch Sensors

1. Wall switches sensors shall support the following device options:
  - a. User input control types supported: On/Off or On/Off/Dimming
  - b. Occupancy Sensing Technology: PIR or Dual Technology
  - c. Daylight Sensing Option: Inhibit Photosensor.

#### H. System Controller

1. System Controller shall be a a multi-tasking, real-time digital control processor consisting of modular hardware with plug-in enclosed processors, communication controllers, and power supplies.
2. System Controller shall perform the following functions:
  - a. Facilitation of global network communication between different areas and control zones

- b. Time-Based control of downstream wired and wireless network device.
  - c. Linking to an Ethernet network.
  - d. Integration with Building Management System (BMS) and Heating, Ventilation and Air Conditioning (HVAC) equipment.
  - e. Connection to various software interfaces, including management interface, historical database and analytics interface, visualization interface, and personal control applications.
3. System Controller shall not require a dedicated PC or a dedicated cloud connection.
  4. Device shall automatically detect all networked devices connected to it, including those connected to wired and wireless communication bridges.
  5. Devices shall have a standard and astronomical internal time clock.
  6. Shall be capable of connecting to the customers Local Area Network (LAN) via IEEE 802.11.x Wireless and IEEE 802.3 wired connection.
  7. System Controllers shall support BACnet/IP and BACnet/MSTP protocols to directly interface with BMS and HVAC equipment without the need for additional protocol translation gateways.
    - a. BACnet/MSTP shall support a minimum of 50 additional BACnet MS/TP controllers in addition to the expansion I/O modules.
    - b. BACnet/MSTOP shall support 9600 to 115200 baud.
    - c. System Controllers shall be BACnet Testing Laboratory (BTL listed) using Device Profile BACnet Building (B-BC) with outlined enhanced features.
    - d. System controllers must support BACnet/IP Broadcast Management Device (BBMS) and Foreign Device Registration (FDR).

## I. System Software Interfaces

### 1. Management Interface

- a. System shall provide a web-based management interface that provides remote system control, live status monitoring, and configuration capabilities of lighting control settings and schedules.
- b. Management interface must be compatible with industry-standard web browser clients.
- c. All system software updates must be available for automatic download and installation via the internet.

### 2. Historical Database and Analytics Interface

- a. System shall be capable of providing a browser-based trending and monitoring interface that stores historical data for all occupancy/daylight sensors and lighting loads. Additionally, the system shall optionally upload that data to a cloud based server.

### 3. Visualization Interfaces

- a. System shall be capable of providing an optional web-based visualization interface that displays a graphical floorplan. System data, to include status of occupancy sensors, daylight sensors and light output shall be overlaid to the floorplan to provide a graphical status page.

### 4. Portable Programming Interface for Standalone Control Zones

- a. System shall have option for a portable handheld application interface for standalone control zones.
- b. Programming capabilities through the application shall include, but not be limited to, the following:
  - i. Switch/occupancy/photosensor group configuration
  - ii. Manual/automatic on modes
  - iii. Turn-on dim level
  - iv. Occupancy sensor time delays
  - v. Dual technology occupancy sensors sensitivity
  - vi. Photosensor calibration adjustment and auto-setpoint
  - vii. Trim level settings.

### J. Low Voltage Cable:

1. This Contractor shall furnish and install the required low voltage cable with RJ45 connectors between all switches and panels. The cable shall be UL listed, plenum rated, unshielded, four (4) twisted pairs, No. 24 AWG, Category 6, extended distance, high speed data type with a flame retardant polyvinyl chloride jacket and a temperature range for dry locations of minus ten (10) degrees C to sixty (60) degrees C. A Category 6 cable, which meets this specification, is BERK-TEK Cat. No. 10177147 (Pink) or equal as manufactured by AMP, AT&T, BELDEN, THE CABLE COMPANY, GENISIS, HITACHI, MOHAWK, NORTHERN TELECOM, OPTICAL CABLE CORP., or PAIGE, or SUPERIOR.
2. Low voltage wiring for connections to photocells and contact closure switches to Micro relay panels shall be three (3) conductors, No. 18 AWG, plenum rated with a temperature range for dry locations of minus ten (-10) degrees C to sixty (60) degrees C. A cable that will meet this specification is WEST PENN Cat. No. 25234B or equal by

## **PART 3 - EXECUTION**

### **3.01 EQUIPMENT INSTALLATION**

#### **A. Control Module(s) – Gateway and Communication Bridges**

1. Control Module and associated communications bridges shall be securely mounted within the Network Lighting Control Enclosure at locations shown on drawings.
2. The enclosure shall be mounted and grounded in accordance with the NEC. The contractor shall furnish all materials necessary for mounting the enclosures.
3. During the construction process, protect all interior components of each network lighting control enclosure and each digital switch from dust and debris. Any damage done to electronic components due to non protection shall be the sole responsibility of the contractor.

#### **B. Relay Panels**

1. Before installing the lighting control panels relay control cabinets check all of the Drawings for possible conflict of space and adjust the location of the relay control cabinet to prevent such conflict with other items. Relay control cabinet locations in electrical rooms and other spaces shall closely follow the layouts shown on the Drawings, leaving sufficient space on walls for future installations of panelboards and/or other electrical equipment.
2. Relay control cabinet shall be securely mounted to steel framing channels, by at least four (4) points, at locations shown on the Drawings. Construction shall be such that additional conduits can be added for future requirements.
3. The cabinets and enclosures shall be mounted and grounded in accordance with the NEC. This Contractor shall furnish all materials necessary for mounting the cabinets.
4. Relay control cabinets will generally be located adjacent to respective lighting panelboards unless otherwise shown on the Drawings. During the construction process, protect all interior components of each relay panel and each digital switch from dust and debris. Any damage done to electronic components due to non-protection shall be the sole responsibility of this Contractor.

C. Digital Switches:

1. Provide outlet boxes, single or multi-gang as shown on the Drawings for the low voltage digital switches. Provide type 302 stainless steel cover plate for all switches. Provide labeling as indicated on the Drawings.

D. Digital Daylight Sensor:

1. Photocell shall maintain an even light level of 50fc average across the task plane, unless otherwise noted in the sequence of operation. Photocell shall dim (2) zones of lights, the primary zone and secondary zone, if shown in classrooms. All other photocells shall be single zone. The primary zone shall be the closest to the window, and the secondary zone shall be the zone in the center of the room.

E. Digital Occupancy Sensor:

1. It shall be the Contractor's responsibility to provide the quantity of occupancy sensors required for complete and proper volumetric coverage to completely cover the controlled areas. Rooms shall have ninety (90) to one hundred (100) percent volumetric coverage to completely cover the controlled areas to accommodate tall occupancy habits of single or multiple occupants at any location within the rooms. Proper judgement must be exercised in executing the work so as to ensure the best possible installation in the available space and to overcome local difficulties due to space limitations, interference of structural components, of furnishing in the room or spaces. The locations and quantities of sensors shown on the Drawings are based on coverage patterns of night (Acuity) sensors. Sensors of other approved manufacturers may require different quantities of sensors for full coverage of spaces being controlled. The sensors shown on the drawings are diagrammatic and do not necessarily show the exact locations of the sensors. This contractor shall confirm with the occupancy sensors manufacturer the exact quantities of sensors and power packs at time of bid. This Contractor shall provide additional sensors if required to cover the respective rooms properly and completely at no additional cost to the Owner.
2. Digital wall switch type occupancy sensors shall be installed in a suitable wall outlet box in a method recommended by the equipment manufacturer similar to a standard line voltage light switch.
3. Low voltage occupancy sensors shall be securely mounted to a ceiling or wall mounted junction box in a method recommended by the sensor manufacturer. Ceiling mounted junction boxes shall be supported from the building structure with no less than one (1) 1/4" threaded rod. Sensors shall be wired as detailed on the Drawings and as recommended by the equipment manufacturer.

4. Power packs shall be in accessible ceiling spaces and securely mounted to a standard electrical enclosure (junction box) through a standard ½” chase nipple. Each power pack shall be mounted to individual junction box. Power pack/junction box shall be labelled for easy identification. Plastic clips into the junction box shall not be acceptable. Junction box shall be supported from the building structure with no less than one (1) ¼” threaded rod. All Class 1 wiring shall pass through the chase nipple into the junction box without any exposure of wire leads. Low Voltage Class 2 wiring to the sensors shall not be exposed in finishing spaces. Power packs shall be wired as detailed on the Drawings and as recommended by the equipment manufacturer.
5. Location of power packs shall be identified on the ceiling grid.
6. Supports shall not terminate or be fastened directly to the roof decking except where specifically approved by the Owner.

#### F. Wiring

1. All vertical wiring for the network lighting control systems shall be installed by this contractor in conduit and/or surface metal raceway as shown on the drawings.
2. All horizontal wiring for the network lighting control systems to be installed in areas without a ceiling or in areas without an accessible ceiling shall be installed by the contractor in conduit sized for maximum 40% fill, but not less than ½” trade size.
3. All horizontal wiring for the network lighting control systems to be installed in areas with accessible ceilings shall be installed by this contractor and run exposed above the ceiling. Cables shall be supported by ‘J’ hooks to be dedicated to the wiring specified in this specification section.
4. All horizontal wiring for the network lighting control systems shall be run at right angles to the building structure.
5. All horizontal wiring for the network lighting control systems shall be installed below the roof/floor structural supports (joist, beams, briders, etc). Wiring installed between the structural supports mentioned above and the roof or floor deck will not be acceptable.
6. All horizontal wiring penetrations for the network lighting control systems through new and/or existing walls shall be sleeved. Minimum sleeve size shall be ¾ inch. All sleeves shall be bushed both sides.
7. All wiring for the network lighting control systems in millwork or casework only shall be installed in flexible metal conduit, complete with an additional 200-pound pull string.
8. All wiring for the network lighting control systems shall be furnished and installed by this contractor as hereinbefore specified as shown on the

drawings. All junction box covers shall be stenciled for distinct identification.

9. All low voltage RJ45 wiring connections shall be made by this contractor as detailed on the drawings using the 568A data only configuration. Cables shall be run free of splices from the equipment enclosures to the outlets.
10. All wiring shall be checked and tested by this contractor to ensure the system is free from grounds, opens and shorts.
11. Do not mix low voltage and high voltage conductors in the same conduits.
12. Ensure low voltage conductors, conduits or control wires do not run within four (4) inches parallel to current carrying conduits or cables.
13. Place manufacturer supplied 'terminators' at each end of the system bus per manufacturer's instructions.
14. Neatly lace and rack wiring in cabinets.
15. Plug in Category 5e cable all the indicated RJ45 port provided at each network lighting control device, per manufacturer's instructions.
16. Do not exceed 300 ft-wire length for the system bus.
17. All items on the bus shall be connected in sequence (daisy chained). Star and spur topologies are not acceptable.

### **3.02 INSTALLATION AND SET-UP**

- A. Contractor shall test all low voltage cable for integrity and proper operation.
- B. Unused openings in the cabinets shall be effectively closed.
- C. Lugs shall be suitable and listed for installation with the conductor being connected.
- D. Neatly lace and rack wiring in cabinets. Conductor lengths shall be maintained to a minimum within the wiring gutter space. Conductors shall be long enough to reach the terminal location in a manner that avoids strain on the connecting lugs and maintain the required bending radius of conductors inside cabinets.
- E. Follow the manufacturer's torque values to tighten lugs.
- F. Before energizing the panel, the following steps shall be taken:
  1. Retighten connections to the manufacturer's torque specifications. Verify that required connections have been furnished.
  2. Remove shipping blocks from component devices and the panel interior.
  3. Remove debris from panel interior.

- G. Follow manufacturer's instructions for installation and for all low voltage wiring.
- H. This contractor shall tag the cable at either end at the connection point. Label with the lighting control panel designation and room number designation. Labeling shall be done with a BROTHER® Model No. PT-1400 (P-touch) professional label maker, or approved equal, using a laminated type of extra strength adhesive tape, Letters/numerals shall be black with a white background.
- I. Power (relay packs shall be securely mounted to a junction box through a threaded ½" chase nipple. Plastic clips into the junction box shall not be accepted. All Class 1 wiring shall pass through the chase nipple into the adjacent junction box without exposing of wire leads.

### **3.03 SERVICE, SUPPORT AND COMMISSIONING**

- A. Preconstruction: Factory technician or Factory trained rep shall meet with FCPS representative and Electrical Contractor to review project submittals, system requirements, and wiring best practices. Contractor shall coordinate meeting between all parties prior to start of construction.
- B. Start Up: This Contractor shall contact the system manufacturer at least seven (7) days before activation of the system. System Gateway shall be connected to the school's Intranet network switch for connection to building LAN. This Contractor shall contact FCPS IT fourteen (14) days prior to startup for a dedicated IP address for each system Gateway that will be assigned to the device during start up. Dedicated IP address shall be provided to factory technician, by this Contractor, upon request.
- C. Upon completion of the installation of the entire lighting control system, and prior to the substantial completion of the project, this contractor shall have the system commissioned by an authorized system manufacturer's representative. This contractor shall be responsible for participation and coordination within the Commissioning process including but not limited to:
  - 1. Verify proper installation and performance of the lighting control system.
  - 2. Provide a factory trained lighting control system technician/programmer for use during system verification and functional performance testing.
  - 3. Manipulate the lighting control systems to facilitate verification and performance testing.
  - 4. Perform and clearly document all completed startup and system operational checkout procedures, providing a copy to the Owner.
  - 5. Address current A/E punch list items before functional testing.

6. Correct deficiencies (differences between specified and observed performance) as interpreted by the CA, Owner and A/E and retest the equipment.
  7. On multi-phased projects, each phase shall have a separate startup by a factory trained lighting control system technician. Contractor to contact factory a minimum of seven (7) business days prior to technician being required to be onsite.
- D. Final Walkthrough: Factory technician or factory trained representative will be present for final systems walkthrough with Contractor and FCPS representative. Factory technician will be responsible for demonstrating that all spaces have been programmed according to the sequence of operation in the design documents. Contractor shall coordinate walkthrough at a time when the space can be unoccupied and both FCPS and factory technician can be present.
- E. System Database: At completion of system walkthrough, factory technician shall make available the programming database to FCPS.

### **3.04 CLEANING**

- A. Remove debris from the Lighting Control Panels, wipe dust and dirt from all components, and repaint marred surfaces with touch-up paint to match the original finish.
- B. Clean photocell lens as recommended by manufacturer.
- C. Clean all switch faceplates.

### **3.05 ON-SITE AS-BUILT DRAWINGS**

- A. The Contractor shall provide one (1) set of the as-built lighting floor plans (including site lighting plans associated with this lighting control system) and one.
- B. One (1) set of the lighting control system supplier's point-to-point as-built wiring diagrams and supporting drawings as hereinbefore described for permanent use on-site. The Contractor shall: laminate each page of these drawings; provide a rigid means for mounting such as 1/4-inch-thick x two (2) inch wide x width of the drawings through-bolted wood along the left edge of the drawings; furnish and install hanging hooks on the back of the Main Electric Room door; and hang the bound set of drawings.

**END OF SECTION**

**SECTION 16521  
EXTERIOR LIGHTING**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. This Section includes the following:
  - 1. Exterior luminaires with lamps and ballasts.
  - 2. Luminaire-mounted photoelectric relays.
  - 3. Poles and accessories.
- B. Extent of exterior lighting fixture work is indicated by the Drawings and Schedules.
- C. Types of exterior lighting fixtures in this section include the following:
  - 1. High intensity discharge (HID).
  - 2. Metal halide.
  - 3. High pressure sodium.
  - 4. Fluorescent
- D. Related Sections include the following:
  - 1. Division 16 Section "Exterior Lighting" for exterior luminaires normally mounted on exterior surfaces of the building.

**1.02 DEFINITIONS**

- A. CRI: Color-rendering index.
- B. HID: High-intensity discharge
- C. Luminaire: Complete lighting fixture, including ballast housing if provided.
- D. Pole: Luminaire support structure, including tower used for large area illumination.
- E. Standard: Same definition as "Pole" above.
- F. EPA (Effective Projected Area): The projected frontal area of a luminaire (including mounting brackets and hardware) used in wind-load calculations per AASHTO LTS-4.

### **1.03 STRUCTURAL ANALYSIS FOR POLE SELECTION**

- A. Dead Load: Weight of luminaire and its horizontal and vertical supports, lowering devices and supporting structure, applied as stated in AASHTO LTS-4.
- B. Wind Load: Pressure of wind on pole and luminaire, calculated and applied as stated in AASHTO LTS-4.
  - 1. Wind speed for calculating wind load for poles 50 feet (15 meters) or less in height is 110 mph (177 kph).

### **1.04 SUBMITTALS**

- A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
  - 1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
  - 2. Details of attaching luminaires and accessories.
  - 3. Details of installation and construction.
  - 4. Luminaire materials.
  - 5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.
    - a. For indicated luminaires, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining luminaries shall be certified by manufacturer.
  - 6. Photoelectric relays.
  - 7. Ballasts, including energy-efficiency data.
  - 8. Lamps, including life, output, and energy-efficiency data.
  - 9. Materials, dimensions, and finishes of poles.
  - 10. Means of attaching luminaries to supports, and indication that attachment is suitable for components. involved.
  - 11. Anchor bolts for poles.
- B. Shop drawings
  - 1. Anchor-bolt templates keyed to specific poles and certified by manufacturer.
  - 2. Wiring Diagrams: Power wiring.
  - 3. Pole and Support Component Certificates: Signed by manufacturers of poles, certifying that products are designed for indicated load requirements in AASHTO LTS-4 and that load imposed by

luminaire has been included in design.

- C. Operation and Maintenance Data: For luminaries and poles to include in emergency operation and maintenance manuals.
- D. Warranty: Special warranty specified in this Section.

#### **1.05 QUALITY ASSURANCE**

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited for evaluating energy efficient lighting products.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with IEEE C2, "National Electrical Safety Code."
- D. Comply with NFPA 70.
- E. Manufacturers: Firms regularly engaged in manufacture of exterior building lighting fixtures of types and ratings required.
- F. Codes and Standards:
  - 1. NEC Compliance: Comply with NEC as applicable to installation and construction of exterior building lighting fixtures.
  - 2. NEMA Compliance: Comply with applicable requirements of NEMA Stds Pub/No.'s FA 1, LE 1 and LE 2 pertaining to lighting equipment.
  - 3. Third Party Agency Compliance: Provide products which have been listed and/or labeled by a third party agency accredited by the NCBCC to label electrical and mechanical equipment as of August 1, 1991.
  - 4. ANSI Labels: Provide fluorescent lamp ballasts, which comply with ANSI C82.11.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Package aluminum poles for shipping according to ASTM B 660.
- B. Store poles on decay-resistant-treated skids at least 12 inches above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.

- C. Handle wood poles so they will not be damaged. Do not use pointed tools that can indent pole surface more than 1/4 inch deep. Do not apply tools to section of pole to be installed below ground line.
- D. Retain factory-applied pole wrappings on metal poles until right before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.
- E. Handle lighting fixtures carefully to prevent damage, breaking, and scoring. Do not install damaged fixtures or components; replace with new.
- F. Store lighting fixtures in clean dry place. Protect from weather, dirt, fumes, water, construction debris, and physical damage.

### **1.07 WARRANTY**

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.
  - 1. Warranty Period for Luminaires: One (1) year from date of final acceptance of the work.
  - 2. Warranty Period for Metal Corrosion: One (1) year from date of final acceptance of the work.
  - 3. Warranty Period for Color Retention: One (1) year from date of final acceptance of the work.
  - 4. Warranty Period for Poles: Repair or replace lighting poles and standards that fail in finish, materials, and workmanship within manufacturer's standard warranty period, but not less than one (1) year from date of final acceptance of the work.

### **1.08 EXTRA MATERIALS**

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least two of each type.
  - 2. Glass and Plastic Lenses, Covers, and Other Optical Parts: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
  - 3. Ballasts: 10 for every 100 of each type and rating installed. Furnish

- at least one of each type.
4. Globes and Guards: 10 for every 100 of each type and rating installed. Furnish at least one of each type.

## **1.09 ENERGY EFFICIENCY REQUIREMENTS**

- A. All exterior luminaires specified in this Section shall be ENERGY STAR®-qualified or meet FEMP-designated efficiency levels per U.S. Department of Energy, Federal Energy Management Program (FEMP), “Purchasing Energy-Efficient Exterior Lighting,” June 2023.
- B. B. Minimum luminaire efficacy ratings (LER) shall comply with FEMP Table 1 (lumens per watt):
  1. Outdoor wall-mounted luminaires:  $\geq 126$  lm/W
  2. Decorative pole/arm-mounted luminaires:  $\geq 112$  lm/W
  3. Area and roadway pole/arm-mounted luminaires:  $\geq 136$  lm/W
  4. Fuel pump canopy luminaires:  $\geq 128$  lm/W
  5. Parking garage luminaires:  $\geq 123$  lm/W
  6. Bollards:  $\geq 100$  lm/W
  7. Floodlight luminaires:  $\geq 118$  lm/W
- C. Products shall conform to IES LM-79-08 and LM-80-08 for photometric and lumen-maintenance testing.
- D. Incorporate FAR clause 52.223-15 in all solicitations and purchase orders for exterior lighting fixtures.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. In Exterior Lighting Device Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:
  1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
- B. Subject to compliance with requirements, manufacturers offering products which may be incorporated into the work include, but are not limited to, the following:
  1. Exterior Lighting Fixtures:
    - a. As scheduled on drawings.

2. Fluorescent Ballasts:
  - a. Advance Transformer Co.
  - b. Jefferson Electric Co.
  - c. Universal Mfg. Co.
  - d. Valmont Industries, Inc.
  
3. High Intensity Discharge Ballasts:
  - a. Advance Transformer Co.
  - b. General Electric Co. (Hendersonville)
  - c. Holophane Div.; Johns-Manville Corp.
  - d. Jefferson Electric Co.
  - e. Universal Transformer Co.
  
4. Lamps:
  - a. General Electric
  - b. Osram/Sylvania
  - c. Philips

C. Exterior Lighting Fixtures:

1. General: Provide lighting fixtures, of sizes, types and ratings indicated; complete with, but not limited to, housings, energy efficient ballasts, starters and wiring.
2. Wiring: Provide electrical wiring within fixture suitable for connection to branch circuit wiring as follows:
3. NEC Type AF for 120 volts, minimum No. 18 AWG.
4. NEC Type SF-2 for 277 volts, minimum No. 18 AWG.

D. Fluorescent-Lamp Ballasts: Provide low-temperature, high power-factor, low energy fluorescent lamp ballasts, capable of operating lamp types indicated.

E. High-Intensity-Discharge Lamp Ballasts: Provide HID lamp ballasts, capable of operating lamp types with ratings indicated; reactor type, high power-factor, core and coil assembly encapsulated in non-melt resin; install capacitor outside ballast encapsulation for easy field replacement.

F. Provide HID lamp ballasts, which properly mates and matches lamps to electrical supply by providing appropriate voltages and impedances for which lamps are designed. Design ballasts to operate lamp within the lamp manufacturer's specifications.

G. Lamps:

1. All lamps of a particular type used on this Project shall be by one manufacturer.
2. All lamps of a particular type shall be from one production run.
3. Provide fluorescent lamps of energy saving types and wattages as indicated on the Drawings.
4. Provide HID lamps in types and wattages indicated on the Drawings.
5. Provide incandescent lamps in types and wattages as indicated on the Drawings.

H. Exterior Lighting Fixture Types:

1. General: Refer to the Fixture Schedule for types and requirements of exterior lighting fixtures.

I. Execution:

1. Inspection:
  - a. Examine areas and conditions under which lighting fixtures are to be installed, and substrate which will support lighting fixtures.
  - b. Do not proceed with work until unsatisfactory conditions have been corrected.

## **2.02 LUMINAIRES, GENERAL REQUIREMENTS**

- A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
- B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.
- D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.
- E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers,

and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

- G. Exposed Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.
- J. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
  - 1. White Surfaces: 85 percent.
  - 2. Specular Surfaces: 83 percent.
  - 3. Diffusing Specular Surfaces: 75 percent.
- K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and - tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- M. Factory-Applied Finish for Steel luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  - 1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
  - 2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
    - a. Color: As selected from manufacturer's standard catalog of colors.
- N. Factory-Applied Finish for Aluminum luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products"

for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
4. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
  - a. Color: Medium bronze.

### **2.03 LUMINAIRE-MOUNTED PHOTOELECTRIC RELAYS**

- A. Comply with UL 773 or UL 773A.
- B. Contact Relays: Factory mounted, single throw, designed to fail in the on position, and factory set to turn light unit on at 1.5 to 3 fc and off at 4.5 to 10 fc with 15- second minimum time delay.
  1. Relay with locking-type receptacle shall comply with NEMA C136.10.
  2. Adjustable window slide for adjusting on-off set points.

### **2.04 FLUORESCENT BALLASTS AND LAMPS**

- A. Low-Temperature Ballast Capability: Rated by its manufacturer for reliable starting and operation of indicated lamp(s) at temperatures 0 deg F and higher.
- B. Ballast Characteristics:
  1. Power Factor: ninety (90) percent, minimum.
  2. Total Harmonic Distortion Rating: Less than ten (10) percent.
  3. Electromagnetic Ballasts: Comply with ANSI Class P, automatic-reset thermal protection.
  4. Case Temperature for Compact Lamp Ballasts: sixty-five (65) deg C, maximum.

- 5. Transient-Voltage Protection: Comply with IEEE C62.41 Category A or better.
- C. Low-Temperature Lamp Capability: Rated for reliable starting and operation with ballast provided at temperatures 0 deg F and higher.
- D. Fluorescent Lamps: Low-mercury type. Comply with the EPA's toxicity characteristic leaching procedure test; shall yield less than 0.2 mg of mercury per liter when tested according to NEMA LL 1.
- E. EPA value shall be used for wind-load verification of pole or wall-mounted supports in accordance with AASHTO LTS-4.

## **2.05 BALLASTS FOR HID LAMPS**

- A. Comply with ANSI C82.4 and UL 1029 and capable of open-circuit operation without reduction of average lamp life. Include the following features unless otherwise indicated:
  - 1. Ballast Circuit: Constant-wattage autotransformer or
  - 2. Minimum Starting Temperature: Minus twenty-two (22) deg F.
  - 3. Normal Ambient Operating Temperature: one hundred and four (104) deg F.
- B. Auxiliary, Instant-On, Quartz System: Factory-installed feature automatically switches quartz lamp on when fixture is initially energized and when momentary power outages occur. System automatically turns quartz lamp off when HII lamp reaches approximately sixty (60) percent of light output.
- C. High-Pressure Sodium Ballasts: Electromagnetic type with solid-state igniter/starter and capable of open-circuit operation without reduction of average lamp life. Igniter/starter shall have an average life in using mode of 10,000 hours at an igniter/starter –case temperature of ninety (90) deg C.
  - 1. Instant- Restrike Device: Integral with ballast, or solid-state potted module, factory installed within fixture and compatible with lamps, ballasts, and mogul sockets up to 150 W.
    - a. Restrike range: 105- to 130- V ac.
    - b. Maximum Voltage: 250-V peak or 150-V ac RMS.

## **2.06 HID LAMPS**

- A. High-Pressure Sodium Lamps: ANSI C78.42, CRI 21 (minimum), color

temperature 1900 K, and average rated life of 24,000 hours, minimum.

- B. Metal-Halide Lamps: ANSI C78.1372, with a minimum CRI 65, and color temperature 4000K.
- C. Pulse Start, Metal-Halide Lamps: Minimum CRI 65, and color temperature 4000K

## **2.07 POLES AND SUPPORT COMPONENTS, GENERAL REQUIREMENTS**

- A. Structural Characteristics: Comply with AASHTO LTS-4.
  - 1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure permanent deflection, or whipping in steady winds of speed indicated in Part 1 "Structural Analysis Criteria for Pole Selection" Article, with a gust factor of 1.3.
  - 2. Strength Analysis: For each pole, multiply the actual projects area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.
- B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts, unless otherwise indicated.
- C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.
  - 1. Materials: Shall not cause galvanic action at contact points.
  - 2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication, unless stainless steel items are indicated.
  - 3. Anchor-Bolt Template: Plywood or steel.
- D. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange.
- E. Breakaway Supports: Frangible breakaway supports, tested by an independent agency acceptable to the owner and construction manager, according to AASHTO LTS-4.
- F. All metal poles shall be provided with a gasketed handhole in the pole to access branch circuit wiring. Access fasteners shall be vandal-resistant.

## **2.08 STEEL POLES**

- A. Poles: Comply with ASTM A 500, Grade B, carbon steel with a minimum

yield of 46,000 p1-piece construction up to 40 feet in height with access handhole in pole wall.

1. Shape: Square, straight.
  2. Mounting Provisions: Butt flange for bolted mounting on foundation or breakaway support.
- B. Steel Mast Arms: Single-arm type, continuously welded to pole attachment plate. Material and finish same as pole.
- C. Brackets for Luminaires: detachable, cantilever, without underbrace.
1. Adapter fitting welded to pole and bracket, then bolted together with stainless- steel bolts.
  2. Cross Section: Tapered oval, with straight tubular end section to accommodate luminaire.
  3. Match pole material and finish.
- D. Pole-Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fasten to pole top.
- E. Steps: Fixed steel, with nonslip treads, positioned for 380 mm (15-inch) vertical spacing, alternating opposite sides of pole; first step at elevation 3meters (10 feet) above finished grade.
- F. Grounding and Bonding Lugs: Welded 1/2-inch threaded lug, complying with requirements in Division 16 Section "Grounding and Bonding," listed for attaching grounding and bonding conductors of type and size listed in that Section, accessible through handhole.
- G. Cable Support Grip: Wire-mesh type with rotating attachment eye, sized for diameter of cable and rated for a minimum load equal to weight of supported cable time a 5.0 safety factor.
- H. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning", to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to smooth even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
  2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.
  3. Exterior Surfaces. Manufacturer's standard finish consisting of one

or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

- a. Color: Match Arc

## **2.09 POLE ACCESSORIES**

- A. Base Covers: Manufacturer's standard metal units, arranged to cover pole's mounting bolts and nuts. Finish same as pole/

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION OF EXTERIOR LIGHTING FIXTURES**

- A. Install exterior lighting fixture at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standards of Installation," NEMA standards, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.
- B. Coordinate with other electrical work as appropriate to properly interface installation of exterior lighting fixtures with other work.
  - 1. Tighten connectors and terminals, including screws and bolts, to comply with tightening torques specified in UL Stds 486A and B.
  - 2. Fasten fixtures securely to poles, and ensure that poles and fixtures are plumb.
- C. Adjusting and Cleaning:
  - 1. Clean exterior lighting fixtures of dirt and debris upon completion of installation.
  - 2. Protect installed fixtures from damage during construction period.
- D. Secure all wiring, conduit, and fittings in accordance with NEC and manufacturer's instructions.
- E. Verify wind-load anchorage or fasteners using the luminaire's EPA and design wind speed per AASHTO LTS-4.

### **3.02 LUMINAIRE INSTALLATION**

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports.

1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by the manufacturer.
- C. Adjust luminaires that require field adjusting or aiming.

### **3.03 POLE INSTALLATION**

- A. Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.
- B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features, unless otherwise indicated on Drawings:
1. Fire hydrants and storm drainage piping: 1524 mm (60 inches)
  2. Water, electric, communication, gas and sewer lines: 3000 mm (10 feet)
  3. Trees: 4600 mm (15 feet)
- C. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer.
- D. Foundation-Mounted Poles: Mount pole with leveling nuts, and tighten top nuts to torque level recommended by pole manufacturer.
1. Use anchor bolts and nuts selected to resist seismic forces defined for the application and approved by manufacturer.
  2. Grout void between pole base and foundation. Use nonshrink or expanding concrete grout firmly packed to fill space.
  3. Install base covers, unless otherwise indicated.
  4. Use a short piece of ½ inch diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.
- E. Poles and Pole Foundations Set in Concrete Paved Areas: Install poles with minimum of 150 mm (6 inch) wide, unpaved gap between the pole or pole foundation and the edge of adjacent concrete slab. Fill unpaved ring with pea gravel to a level 25 mm (1 inch) below top of concrete slab.
- F. Raise and set poles using web fabric slings (not chain or cable).

### **3.04 BOLLARD LUMINAIRE INSTALLATION**

- A. Align units for optimum directional alignment of light distribution.
- B. Install on concrete base with top flush with finished grade or surface at bollard location. Cast conduit into base, and shape base to match shape of

bollard base. Finish by troweling and rubbing smooth.

### **3.05 INSTALLATION OF INDIVIDUAL GROUND-MOUNTING LUMINAIRES**

- A. Install on concrete base with top flush with finished grade or surface at luminaire location. Cast conduit into base, and finish by troweling and rubbing smooth.

### **3.06 CORROSION PREVENTION**

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Division 16 Section "Raceways" In concrete foundations, wrap conduit with 0.010 inch thick, pipe-wrapping plastic tape applied with a fifty (50) percent overlap.

### **3.07 GROUNDING**

- A. Ground metal poles and support structures according to Division 16 Section "Grounding"
  - 1. Install grounding electrode for each pole, unless otherwise indicated.
  - 2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.
- B. Ground nonmetallic poles and support structures according to Division 16 Section "Grounding."
  - 1. Install grounding electrode for each pole.
  - 2. Install grounding conductor and conductor protector.
  - 3. Ground metallic components of pole accessories and foundations.
- C. Tighten connections to comply with tightening torques specified in UL Std 486A to assure permanent and effective grounds.
- D. Provide equipment grounding connections for exterior lighting fixtures as indicated and as specified in Section 16452 Grounding.

### **3.08 FIELD QUALITY CONTROL**

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
  - 1. Verify operation of photoelectric controls.
- C. Illumination Tests:
  - 1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):
    - a. IESNA LM-5, "Photometric Measurements of Area and Sports Lighting."
    - b. IESNA LM-50, "Photometric Measurements of Roadway Lighting Installations."
    - c. IESNA LM-52, "Photometric Measurements of Roadway Sign Installations."
    - d. IESNA LM-64, "Photometric Measurements of Parking Areas."
    - e. IESNA LM-72, "Directional Positioning of Photometric Data."
- D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.
- E. Upon completion of installation of exterior lighting fixtures, and after building circuitry has been energized, apply electrical energy to demonstrate capability and compliance with requirements.
- F. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.
- G. Replace defective and burned-out lamps for a period of one year following the Date of Substantial Completion.
- H. At the Date of Substantial Completion, replace lamps in exterior lighting fixtures which are observed to be noticeably dimmed after Contractor's use and testing as judged by the Owner Representative.

**END OF SECTION**

# 60 YEAR RECERTIFICATION OF MOSQUITO CONTROL BUILDING ADMINISTRATION (BUILDING NO. 5) AT 58TH STREET FACILITY. - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS

AT

8795 NW 58TH STREET, MEDLEY, FL 33178

MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT.  
PROJECT NO. **EDP-SW-18572-24**

MIAMI-DADE COUNTY  
DANIELLA LEVINE CAVA, MAYOR

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COUNTY ATTORNEY  
SOLID WASTE DEPARTMENT DIRECTOR

PREPARED BY:  
**CONEMCO ENGINEERING INC.**  
dba CONEMCO CONSULTANTS

782 NW 42ND AVENUE UNIT 635  
NORTH TOWER, MIAMI, FL 33126  
PHONE 888-536-1536

SCOPE OF WORK
1. REPAIR OF CRACKS ON STUCCO AND WALLS.
2. REPAIR OF CONCRETE SPALLING ON EXTERIOR AND INTERIOR WALLS.
3. CLEAN AND PAINT RUSTED STEEL BEAMS, PURLINS, JOISTS, COLUMNS AND CONNECTIONS.
4. REPLACEMENT OF DAMAGED EXPANSION JOINT.
5. REPLACEMENT OF SEALANT AROUND AC DUCTS OPENINGS.
6. INSTALLATION OF NEW OUTDOOR LIGHT, ATTACHMENT OF LOW VOLTAGE CONDUCTOR AND RELOCATION OF COMMUNICATION CABLES.

DRAWINGS LIST	
SHEET NO.	SHEET TITLE
<b>1. STRUCTURAL</b>	
CS-100	COVER SHEET
S-100	GENERAL NOTES AND PICTURES
S-200	PLAN VIEW
S-300	ELEVATIONS
S-400	DETAILS
<b>2. ELECTRICAL</b>	
E-1.0	LEGEND AND NOTES
E-2.0	POWER AND LIGHTS FLOOR PLANS AND PICTURES



BLANK SPACE - CITY STAMP

782 NW 42ND AVENUE  
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888-536-1536  
D.A. # 29347

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Digitally signed by  
Jose Compres  
Date: 2025.07.31  
15:30:18 -0400

JOSE A. COMPRES, P.E.  
FLORIDA P.E. LIC. # 62027

CONEMCO ENGINEERING INC.

<p><b>PROJECT NAME:</b> 60 YEAR RECERTIFICATION OF MOSQUITO CONTROL BUILDING ADMINISTRATION AT 58TH STREET FACILITY - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS 8795 NW 58TH STREET, MEDLEY, FL 33178</p>	<p><b>CLIENT/OWNER:</b> MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT</p>
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REVISIONS	DATE

DATE:	7/31/2025
SCALE:	AS SHOWN
DRAWN:	SM
CHECKED:	PS
APPVD:	JC
PROJECT ID:	FPB-S251000
CONTRACT NO.:	-

SHEET NAME:  
**COVER SHEET**

DRAWING NO.  
**CS-100**

Sheet No.  
1 OF 7

**GENERAL STRUCTURAL NOTES**

THIS SET OF DRAWINGS SHOULD NOT BE SCALED; USE DIMENSIONS AND INFORMATION SHOWN.

PRIOR TO PROCEEDING WITH ANY WORK AND FABRICATION, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS FOR EXISTING STRUCTURES SHOWN OR NOT SHOWN ON THE DRAWINGS. ALL DIMENSIONAL DISCREPANCY FOUND ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

VERIFY ALL EXISTING CONDITIONS AT THE JOB SITE. PROTECT AND MAINTAIN ALL EXISTING STRUCTURES, UTILITIES, FACILITIES AND CONTENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE BRACING OF ALL STRUCTURAL MEMBERS, WALLS AND NON STRUCTURAL ITEMS DURING CONSTRUCTION.

BUILDER SHALL ACCEPT FULL RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS NOT REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER.

REFER TO AND COORDINATE WITH THE STRUCTURAL DRAWINGS.

THE GENERAL CONTRACTOR SHALL AT ALL TIMES MAINTAIN AT THE JOBSITE A CURRENT APPROVED SET OF DRAWINGS.

ALL PROPOSED SUBSTITUTIONS OF STRUCTURAL MATERIALS, PRODUCTS, OR SYSTEMS SPECIFIED IN THESE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD (EOR) FOR REVIEW AND WRITTEN APPROVAL PRIOR TO INCORPORATION INTO THE WORK.

**STUCCO SPECIFICATIONS**

**GENERAL REQUIREMENTS**

CONTRACTOR TO MATCH ANY STUCCO REPAIR AREAS TO EXISTING ARCHITECTURAL FEATURES. SPECIFICATION PROVIDES REQUIREMENTS FOR THE APPLICATIONS OF A STUCCO SYSTEM AND STUCCO REPAIR. FOR EACH FINISH PRODUCT SPECIFIED, TWO SAMPLES, MINIMUM SIZE 6 INCHES (150 MM) LONG REPRESENTING ACTUAL PRODUCT, IN COLOR SELECTED, FIRM SPECIALIZING IN MANUFACTURE OF PORTLAND CEMENT PLASTER MATERIALS WITH MINIMUM 10 YEARS' EXPERIENCE, MINIMUM FIVE-YEAR EXPERIENCE INSTALLING SIMILAR PRODUCTS ON A SIMILAR SIZE PROJECT WITH SIMILAR SCOPE OF WORK.

**EXAMINATION**

- A. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED.
- B. IF SUBSTRATE PREPARATION IS THE RESPONSIBILITY OF ANOTHER INSTALLER, NOTIFY OWNERS REPRESENTATIVE OF UNSATISFACTORY PREPARATION BEFORE PROCEEDING.

**PREPARATION**

- A. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.
- B. REMOVE ALL LOOSE PARTICLES, DIRT, DUST, OR ANY FOREIGN OBJECTS WHICH WOULD INHIBIT PROPER BONDING TO SUBSTRATE.
- C. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS.

**INSTALLATION**

- A. STUCCO CRACK REPAIR
  - 1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. LIMITED QUANTITIES OF REBONDED STUCCO REPAIRS ARE EXPECTED. ALL AREAS WILL BE INSPECTED BY THE ENGINEER TO IDENTIFY AREAS IN NEED OF REPAIR. STUCCO REPAIRS ARE TO BE CONDUCTED IN ACCORDANCE WITH ASTM C 926-11 STANDARD SPECIFICATION FOR APPLICATION OF PORTLAND CEMENT-BASED PLASTER.
  - 2. ALL CRACKS IN MASONRY LARGER THAN HAIRLINE (OVER 1/16") ARE TO BE GROUTED CUT MECHANICALLY TO FORM A "V" OR "U" SHAPE MEASURING 1/2" DOWN OR BRUSHED OUT TO REMOVE ALL DUST, DEBRIS, AND DRIED OF ALL MOISTURE.
  - 3. FILL THE VOID WITH POLYURETHANE CAULK SEALANT.
  - 4. ONCE CURED, THE FILLED CRACK SHALL BE OVERCOATED WITH PAINT MANUFACTURER'S RECOMMENDATION.
  - 5. SIDE OF THE CRACK TO MATCH THE SURROUNDING SURFACE AS CLOSELY AS POSSIBLE.
  - 6. ALL HAIRLINE CRACKS (LESS THAN 1/16") WILL BE FILLED USING PAINT MANUFACTURER'S RECOMMENDATION.
- B. STUCCO PATCHES REPAIR
  - 1. STRAIGHT LINE OR SAW CUTS MUST BE MADE IRREGULAR BY CHIPPING AWAY THE EDGE. REMOVE ANY LOOSE MATERIAL AND EXPOSE APPROXIMATELY 2" OF THE EXISTING LATH AT ALL EDGES OF THE REPAIR AREA.
  - 2. CUT NEW LATH TO FIT AND LAP THE EXISTING.
  - 3. STUCCO SHALL BE 3-COAT APPLICATION, THICKNESS TO MATCH EXISTING.

**MIXING**

- A. USE OF A STANDARD STUCCO-MIXING MACHINE IS RECOMMENDED. USE ONLY CLEAN, POTABLE WATER WHEN MIXING. MATERIAL AND WATER MUST BE MIXED FOR 15 MINUTES TO YIELD GOOD PLASTICITY. ALL STUCCO TOOLS AND EQUIPMENT MUST BE MAINTAINED IN A USABLE, CLEAN CONDITION.

**CURING**

- A. CURE AND PROVIDE TIME BETWEEN COATS IN ACCORDANCE WITH ASTM C 926 AND MANUFACTURER'S INSTRUCTIONS.
- B. PROVIDE SUFFICIENT MOISTURE IN THE PLASTER MIX BY CURING TO PERMIT CONTINUOUS HYDRATION OF THE CEMENTITIOUS MATERIALS.
- C. ALLOW SUFFICIENT TIME BETWEEN COATS TO PERMIT EACH COAT TO CURE AND DEVELOP SUFFICIENT STRENGTH TO RESIST CRACKING OR OTHER PHYSICAL DAMAGE BEFORE THE NEXT COAT IS APPLIED.

**STUCCO PRODUCTS MANUFACTURERS**

- A. ACCEPTABLE MANUFACTURER: AMERIMIX.
- B. TITAN STUCCO CEMENT.

**PORTLAND CEMENT STUCCO:**

- A. PRODUCT: AMX 700 SB BY AMERIMIX COMPANIES.
- B. TITAN AMERICA STUCCO CEMENT BY TITAN STUCCO CEMENT.

**ACCESSORY MATERIALS:**

- A. WATER: CLEAN AND FREE FROM DELETERIOUS ACIDS, ALKALIES, AND ORGANIC MATTER.
- B. S AND: MASON'S SAND, ASTM C 144 STANDARD SPECIFICATION FOR AGGREGATE FOR MASONRY MORTAR.
- C. HYDRATED LIME, ASTM C 207 STANDARD SPECIFICATION FOR HYDRATED LIME FOR MASONRY PURPOSES.

**CONCRETE REPAIR**

- 1. CONCRETE SIKADURK VOH APPLIED IN MULTIPLE LIFTS, MINIMUM THICKNESS 1/2" IN AND NO MORE THAN 3"
- 2. REPAIR MORTAR HORIZONTAL SURFACE - SIKACRETE 211 VERTICAL AND OVERHEAD SURFACES - SIKADURK VOH CONCRETE STRUCTURAL MEMBERS SURFACES WITH REPAIR DEPTH OF 1 INCH OR MORE - NON-SHRINK GROUT - SIKAGROUT 211 BONDING AGENT - ARMAFLEX 110 BY SIKACORP.
- 3. MORTAR TOPPING PORTLAND CEMENT MORTAR - SIKATOP 1000.

CONCRETE CHIPPING IS ALLOWED ONLY IF APPROVED BY THE ENGINEER OF RECORD. DO NOT CHIP OR DEMOLISH CONCRETE WITHOUT THE ENGINEER'S APPROVAL.

CONTRACTOR TO MATCH ANY CONCRETE REPAIR AREAS TO EXISTING ARCHITECTURAL FEATURES. CONCRETE REPAIR PRODUCTS SHALL BE APPLIED ON A SATURATED SURFACE DRY TO AVOID RAPID DRYING AND WEAKENING OF THE PRODUCT AND ITS BOND TO THE SURFACE.

**SHEATHING**

PLYWOOD SHEATHING SHALL BE CDX OF 3/4" MIN. THICKNESS NAILED TO MASONRY WITH 3/16" TAPCON SCREWS (OR SIMILAR) SPACED @ 16" O.C. AT PANEL EDGES AND CENTER IF APPLICABLE.

**PAINTING NOTES**

PRIOR ANY WORK, THE CONTRACTOR SHALL ASSURE ALL THE PAINTING PRODUCTS FOR THE PROJECT COMPLY WITH LATEST MIAMI-DADE COUNTY ORDINANCES, POLICIES AND RESOLUTIONS INCLUDING ENVIRONMENTALLY FRIENDLY PROGRAMS. ACCORDING TO COUNTY REQUIREMENTS, ALL PAINT MUST BE LOW VOC (AS CLOSE TO 5 G/L VOC AS POSSIBLE) OR ZERO-VOC AND LEAD-FREE.

ALL RUST, LOOSE MILL SCALE, DIRT, OIL, GREASE, AND OTHER CONTAMINANTS SHALL BE REMOVED FROM STEEL SURFACES PRIOR TO PAINTING.

SURFACE PREPARATION SHALL BE PERFORMED BY HAND TOOL CLEANING (SSPC-SP2) OR POWER TOOL CLEANING (SSPC-SP1) AS A MINIMUM WHERE SEVERE RUST IS PRESENT. USE COMMERCIAL BLAST CLEANING (SSPC-SP6) OR EQUIVALENT, TO EXPOSE SOUND METAL.

AFTER CLEANING, SURFACES SHALL BE FREE OF LOOSE MATERIAL AND SHALL BE PAINTED PROMPTLY TO PREVENT RE-RUSTING.

AFTER THE RUST HAS BEEN ELIMINATED THE CONTRACTOR MUST CONTACT THE ENGINEER OF RECORD TO INSPECT THE STEEL MEMBERS TO VERIFY THAT REINFORCEMENT IS NOT REQUIRED.

FOR PREVIOUSLY PAINTED SURFACES, CONTRACTOR MUST WASH OFF DIRT, GREASE, SOAP AND OIL BUILDUP WITH APPROPRIATE CLEANERS AND RINSE THOROUGHLY. FOR ALL SURFACES TO BE PAINTED, CONTRACTOR MUST REMOVE ANY LOOSE PAINT AND POWDERY SUBSTANCES. ALSO IT IS IMPORTANT TO PATCH HOLES AND CRACKS WITH APPROPRIATE SPACKLING OR PATCHING COMPOUND LEAVING A SMOOTH FINISH PRIOR PAINTING PROCEDURE.

FOR GLOSSY OR NONPOROUS SURFACES, LIGHTLY SAND TO A DULL FINISH OR USE AN ABRASIVE CLEANER, REMOVE SANDING DUST OR CLEANER RESIDUE.

CONTRACTOR MUST CONTROL EXPOSURE TO LEAD OR OTHER HAZARDOUS SUBSTANCES BY THE USE OF PROPER PROTECTIVE EQUIPMENT, ADEQUATE VENTILATION, SAFETY MASKS, EXPLOSION PROOF EQUIPMENT, AND ALL OTHER ITEMS NECESSARY FOR THIS PURPOSE.

CONTRACTOR MUST AVOID TO PAINT EXTERIOR SURFACES DURING FOGGY WEATHER OR WHEN THE TEMPERATURE IS BELOW 50 DEGREES FAHRENHEIT. DO NOT PAINT IN AREAS WHERE DUST IS BEING GENERATED.

**PAINT LIST**

- 1. ALL CONCRETE AND MASONRY ELEMENTS (SUCH AS EXTERIOR WALLS, STAIRCASES, COLUMNS) TO BE PAINTED WITH SHERWIN WILLIAMS PRO-CRYL UNIVERSAL PRIMER AS PRIME COAT AND TWO FINISH COATS OF SHERWIN WILLIAMS EMERALD ACRYLIC LATEX.
- 2. ALL STEEL ELEMENTS (SUCH AS JOISTS, BEAMS, COLUMNS) TO BE PAINTED WITH SHERWIN WILLIAMS PRO-CRYL UNIVERSAL PRIMER AS PRIME COAT AND TWO FINISH COATS OF SHERWIN WILLIAMS PRO INDUSTRIAL ACRYLIC COATING.



BUILDING UNDER SCOPE OF WORK

AERIAL VIEW SCALE: NTS



Jose Compres  
 Digitally signed by Jose Compres  
 Date: 2025.10.17 15:42:11 -0400  
 JOSE A. COMPRES, P.E.  
 FLORIDA, P.E. LIC. # 92007

CONEMCO ENGINEERING INC.

PROJECT NAME:  
 60 YEAR RECERTIFICATION OF MOSQUITO CONTROL FACILITY - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS  
 8795 NW 68TH STREET, MEDLEY, FL 33178

CLIENT/OWNER:  
 MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT

REVISIONS	DATE
1	10-10-2025

DATE:	10/15/2025
SCALE:	AS SHOWN
DRAWN:	SM
CHECKED:	PS
APPROV:	JC
PROJECT ID:	FPB-S251000
CONTRACT NO.:	-

SHEET NAME:  
**GENERAL NOTES AND PICTURES**

DRAWING NO.  
**S-100**

Sheet No.  
 2 OF 5



PLYWOOD TO BE REMOVED, HARD PANEL TO BE REPLACED. PICTURE 4. P4



DAMAGED HARD PANEL SKIRT TO BE REPLACED. PICTURE 5. P5



MISSING SEALANT AROUND AC. PICTURE 6. P6



DAMAGED EXPANSION JOINTS ON STEPS. PICTURE 7. P7



STUCCO SPALLING. PICTURE 8. P8



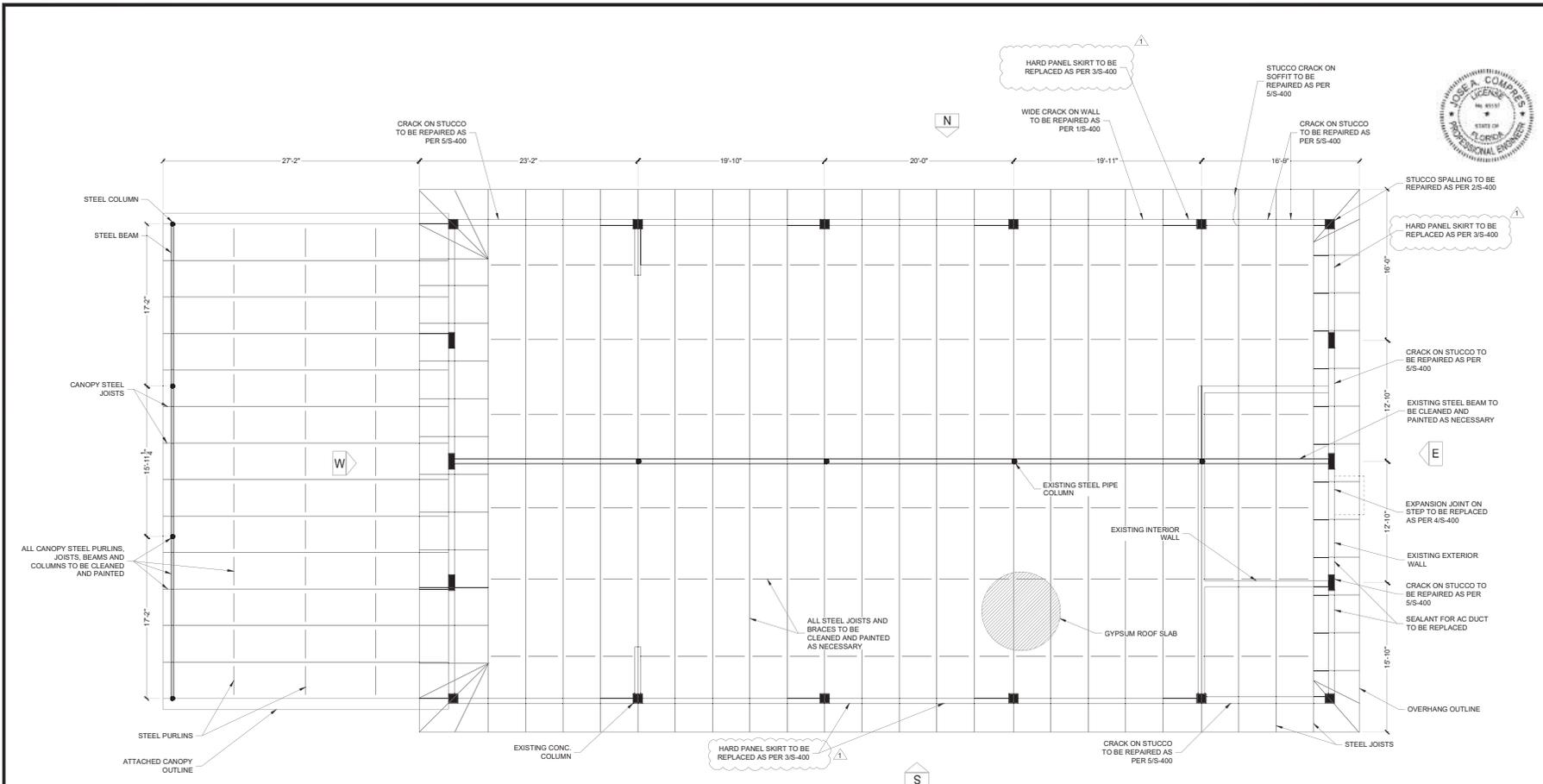
HAIRLINE CRACK IN STUCCO. PICTURE 1. P1



CMU WALL CRACK. PICTURE 2. P2



CORRODED STEEL JOISTS. PICTURE 3. P3



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**CONEMCO ENGINEERING, INC.**  
 782 NW 42ND AVENUE  
 UNIT 635, MIAMI, FL 33155  
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 Date: 2025.10.17 15:42:51 -0400  
 JOSE A. COMPRES, P.E.  
 FLORIDA P.E. LIC. # 94197  
 CONEMCO ENGINEERING INC.

**PROJECT NAME:**  
 60 YEAR RECERTIFICATION OF MOSQUITO CONTROL FACILITY - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS

**CLIENT/OWNER:**  
 MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT  
 8795 NW 68TH STREET, MEDLEY, FL 33178

REVISIONS	DATE
1	10-10-2025

DATE:	10/15/2025
SCALE:	AS SHOWN
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CHECKED:	PS
APPVD:	JC
PROJECT ID:	FPB-S251000
CONTRACT NO.:	-

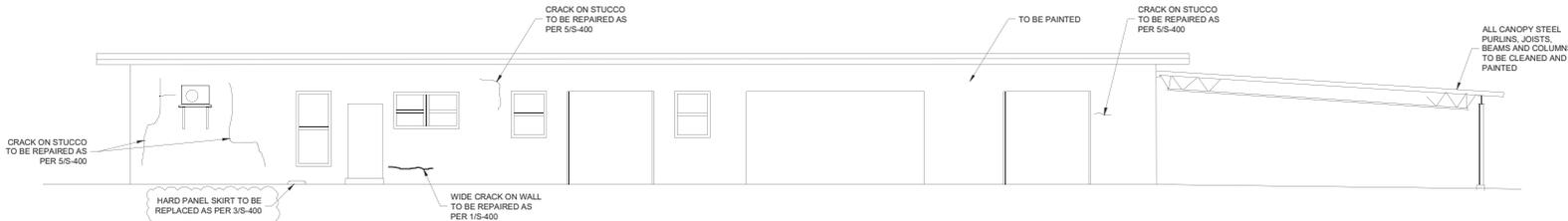
SHEET NAME:  
**PLAN VIEW**

DRAWING NO.  
**S-200**  
 Sheet No.  
 3 OF 5

**PLAN NOTES:**  
 CORRODED STEEL PIPE COLUMN ON BUILDING INTERIOR TO BE CLEANED AND PAINTED AS NECESSARY. SEE PAINT NOTES.  
 BUILDING IS SAFE TO BE OCCUPIED WHILE PERMIT IS BEING OBTAINED AND REPAIR WORKS ARE DONE.

**PLAN VIEW**  
 SCALE: 3/16" = 1'-0"

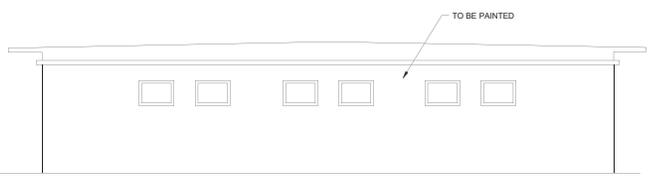
DESCRIPTION	QTY.	UNIT	IMAGE REF.
STUCCO CRACK REPAIR	103	LF	P1
CMU WALL CRACK REPAIR	21	LF	P2
STEEL PURLIN, BEAM, COLUMN AND CONNECTIONS TO BE CLEANED AND PAINTED	1	LS	P3
EXTERIOR STEP EXPANSION JOINT REPLACEMENT	5	LF	P7
SEALANT FOR AC DUCT REPLACEMENT	36	LF	P6
STUCCO REPAIR	22	SF	P8
DAMAGED PLYWOOD TO BE REPLACED	16	SF	P4
NEW PLYWOOD ON EXPOSED CRAWL SPACE	32	SF	P5
EXTERIOR PAINTING	5640	SF	P2



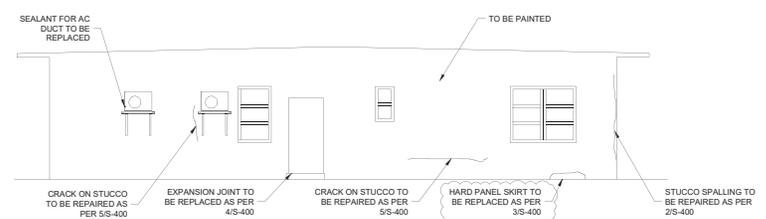
**A** NORTH ELEVATION  
S-300 SCALE: 3/16" = 1'-0"



**B** SOUTH ELEVATION  
S-300 SCALE: 3/16" = 1'-0"



**C** WEST ELEVATION  
S-300 SCALE: 3/16" = 1'-0"



**D** EAST ELEVATION  
S-300 SCALE: 3/16" = 1'-0"



CONEMCO ENGINEERS, INC.  
782 NW 42ND AVENUE  
UNIT 635, MIAMI, FL 33122  
MARSHALL BERBER  
855-536-1536  
D.O.B. # 29447

JOSE A. COMPRES, P.E.  
15-4321-04107  
FLORIDA P.E. LIC. # 6007

PROJECT NAME:  
60 YEAR RECERTIFICATION OF MOSQUITO CONTROL FACILITY - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS  
8795 NW 88TH STREET, MEDLEY, FL 33178

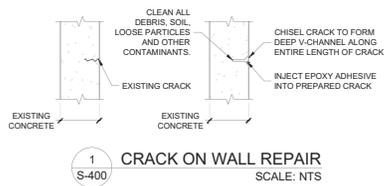
CLIENT/OWNER:  
MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT

REVISIONS	DATE
1	10-10-2025

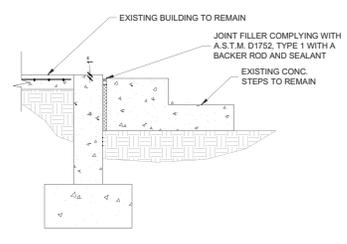
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SHEET NAME:  
ELEVATIONS

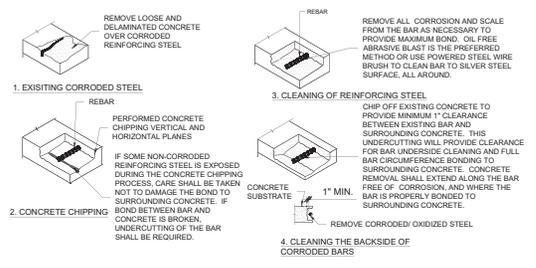
DRAWING NO.  
**S-300**  
Sheet No.  
4 OF 5



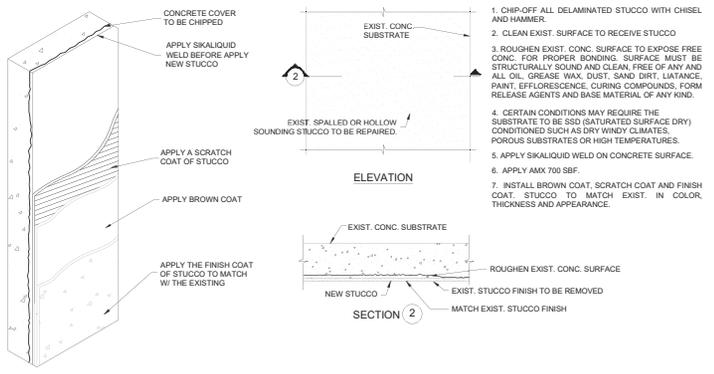
**1** CRACK ON WALL REPAIR  
S-400 SCALE: NTS



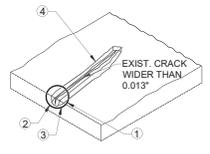
**4** EXPANSION JOINT ON STEP  
S-400 SCALE: NTS



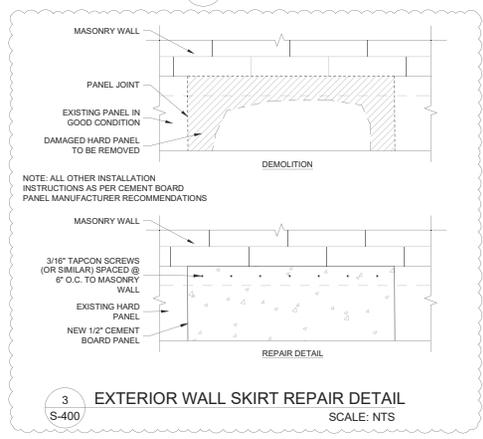
**6** CLEANING OF CORRODED REBAR DETAIL  
S-400 SCALE: NTS



**2** STUCCO REPAIR  
S-400 SCALE: NTS



**5** STUCCO CRACK  
S-400 SCALE: NTS



**3** EXTERIOR WALL SKIRT REPAIR DETAIL  
S-400 SCALE: NTS

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**CONEMCO**  
ENGINEERING, INC.  
REGISTERED PROFESSIONAL ENGINEER  
782 NW 42ND AVENUE  
UNIT 635, MIAMI, FL 33155  
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855-536-1536  
D.A. # 29447



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Digitally signed by Jose Compre  
Date: 2025.10.17 15:44:28 -04'00'  
JOSE A. COMPRE, P.E.  
FLORIDA P.E. LIC. # 9151

CONEMCO ENGINEERING, INC.

PROJECT NAME:  
REPERIFICATION OF MOSQUITO CONTROL FACILITY - 10000 SW 11TH STREET FACILITY - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS  
8795 NW 88TH STREET, MEDLEY, FL 33178

CLIENT/OWNER:  
MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT

REVISIONS	DATE
1	10-10-2025

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SHEET NAME:  
**DETAILS**

DRAWING NO.  
**S-400**  
Sheet No.  
5 OF 5

**ELECTRICAL SYMBOL LEGEND (NOT ALL SYMBOLS ARE USED)**

	QUADRUPLE (DOUBLE DUPLEX)		DOOR BELL
	DUPLEX OUTLET		DOOR BELL PUSH BUTTON
	ISOLATED GROUND DUPLEX OUTLET		120V SMOKE ALARM (EQUAL TO KEDDE MODEL P2000) CONNECTED TO LINE SIDE OF LOCAL CIRCUIT
	ISOLATED GROUND QUADRUPLE OUTLET		120V COMBINATION CARBON MONOXIDE / SMOKE ALARM (EQUAL TO KEDDE MODEL KN-C03M-8) CONNECTED TO LINE SIDE OF LOCAL CIRCUIT
	HALF SWITCHABLE DUPLEX OUTLET		ELECTRICAL PANEL
	SINGLE OUTLET (GROUNDING)		FLEXIBLE CONDUIT
	SPECIAL PURPOSE (120/240 V, L-L, & GND)		CONDUIT RUN EXPOSED
	FLOOR BOX AS MANUFACTURED BY STEEL CITY OR EQUAL, UNLESS NOTED		CONDUIT CONCEALED IN WALLS OR OVERHEAD (SHOWN WITH TWO HOT & NEUTRAL)
	DUPLEX OUTLET (FLOOR MOUNTED, PROTECTED) RECESSED WITH ADJUSTABLE STEEL BOX AND COVER TO MATCH FINISHED FLOOR (FINISH 1/8" BY CONTRACTOR ON SITE)		CONDUIT IN OR UNDER THE SLAB (SHOWN WITH GND NEUTRAL GROUND)
	JUNCTION BOX		1x4 FLUORESCENT LIGHT FIXTURE
	G.F.C.I. DUPLEX OUTLET		2x4 FLUORESCENT LIGHT FIXTURE
	ABOVE-CONCEALED DUPLEX RECEPTACLE		2x2 FLUORESCENT LIGHT FIXTURE
	ABOVE-COUNTER G.F.I. DUPLEX RECEPTACLE		4' FLUORESCENT LIGHT STRIP
	TV OUTLET		SURFACE MTD. FLUORESCENT LIGHT FIXTURE
	TELEPHONE OUTLET		SURFACE FLUORESCENT, UNLESS NOTED
	COMMUNICATION & DATA STRUCTURAL OUTLET COMBINATION		PENDANT LIGHT FIXTURE
	SINGLE POLE SWITCH		RECESS IN-HAT LIGHT FIXTURE
	THREE WAY SWITCH		WALL WASH LIGHT FIXTURE
	FOUR WAY SWITCH		WALL MOUNTED LIGHT FIXTURE
	SERVICE BREAKER (FACTORY INSTALLED)		STEP LIGHT FIXTURE
	Ceiling Fan Control Switch Combination		NEW
	DIMMER SWITCH		EXISTING
	DOOR SWITCH		2-LIGHT, FLUORESCENT, LITHONIA OR SIMILAR
	NEW OCCUPANCY SENSOR ONE WAY SWITCH BY LEVITON, 0-55/1-0W OR EQUAL, LOW VOLTAGE TRANSFORMER		
	EXHAUST FAN		
	MOTOR		
	STARTER OR CONTROL PANEL		
	COMBINATION STARTER		
	DISCONNECT SWITCH (3 DENOTES WEATHERPROOF (W.P.))		
	DISCONNECT SIZE (3 DENOTES NO POLES, 60 DENOTES DISCONNECT RATED AMPERAGE, 40 DENOTES FUSE SIZE (NF DENOTES NON-FUSED))		

ABBREVIATIONS	
GFCI	GROUND-FAULT CIRCUIT-INTERRUPTER
AFCI	ARC-FAULT CIRCUIT INTERRUPTER
AFD	ARF ABOVE FINISH FLOOR
VP	WEATHER PROOF   VP---VAPOR PROOF   WR---WATER RESISTANCE
I/C	INSTALLED UNDER COUNTER
W/C	MINIMUM AIC OF BREAKER IN PANEL AND
SCR	PANEL BRACING
INSTALLATION NOTES (REACH RANGE SHALL CONFORM WITH FBC-2023-8th EDITION ACCESSIBILITY-CHAPTER 3-308)	
A)	MOUNT WRING DEVICES CENTER LINE @ HEIGHT ABOVE FINISHED FLOOR INDICATED BELOW, IN ALL UNITS: a) RECEPTABLES: 18"; KITCHEN COUNTER @ 42" b) LIGHT SWITCHES: @ 48" c) TELEPHONE JACKS: KITCHEN @ 42", ALL OTHERS @ 18" d) THERMOSTATS: @ 48"
B)	BATHROOM WALL MOUNTED FIXTURES: 4" OVER THE CENTER LINE OF THE MIRROR OR AS SHOWN IN THE ARCHITECTURAL DRAWINGS.
C)	LIGHT SOCKETS TO BE MOUNTED @ 4"-4 1/2" A.T.F. OR AS SHOWN IN THE ARCHITECTURAL DRAWINGS, SOCKETS MOUNTED BELOW 4"-6" SHALL NOT PROTRUDE MORE THAN 4" INTO WALKWAYS, HALLS, CORRIDORS, OR ASSESS COORDINATE WITH ARCHITECTURAL ELEVATIONS.
COMPLETION REQUIREMENTS NOTES:	
1.	AS-BUILT DRAWINGS IN AUTOCAD FORMAT FILES SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR TO THE ARCHITECT/ENGINEER UPON COMPLETION OF WORK PRIOR TO THE FINAL CO.
2.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE TO THE BUILDING OWNER, WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, A REPRODUCIBLE RECORD DRAWINGS OF THE ACTUAL INSTALLATION, INCLUDING A SINGLE-LINE DIAGRAM OF THE SUBSTANTIAL ELECTRICAL DISTRIBUTION SYSTEM AND FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION. FBC EC 405.5.4.1
3.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE TO THE BUILDING OWNER, INCLUDING SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE WITH CLEARLY DEFINED REQUIRED ROUTING MAINTENANCE ACTIONS, AND NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY. FBC EC 405.5.4.2
GENERAL CONTRACTOR MUST STOP WORKING IF A POTENTIAL ERROR IS FOUND, BEFORE OR DURING CONSTRUCTION, AND MUST NOTIFY ENGINEER IN WRITING TO FIND A RESOLUTION BEFORE CONSTRUCTION PROCEEDS.	

**F.B.C. ENERGY CODE (2023-8TH EDITION):**  
ELECTRICAL DESIGN AND INSTALLATION SHALL COMPLY WITH SECTION C405 OR R404, AS APPLICABLE TO THIS PROJECT, TO INCLUDE LIGHTING CONTROLS, LIGHTING POWER ALLOWANCES AND ANY OTHER REQUIREMENTS.

R404.1 NOT LESS THAN 90 PERCENT OF THE LAMPS IN PERMANENTLY INSTALLED LUMINAIRE SHALL HAVE AN EFFICACY OF AT LEAST 45 LUMENS-PER-WATT OR SHALL UTILIZE LAMPS WITH AN EFFECT OF NOT LESS THAN 65 LUMENS-PER-WATT.

**GENERAL NOTES**

1- GENERAL CONDITIONS: THE GENERAL CONDITIONS FORM A PART OF THE SPECIFICATIONS FOR THIS TRADE. EACH SUB-CONTRACTOR MUST READ GENERAL CONDITIONS, AS WELL AS THE SPECIFICATIONS FOR WORK OF OTHER TRADES AND TO ASCERTAIN WHAT WORK AND MATERIALS HE MUST SUPPLY TO THE OTHER CONTRACTORS.

2- SITE INVESTIGATION: IT SHALL BE THE RESPONSIBILITY OF BIDDER'S TO VISIT THE SITE AND TO ACQUAINT THEMSELVES WITH ALL INFORMATION REGARDING THE NEW BUILDING.

3- DESIGN: THE INSTALLATION OF THE WIRING SYSTEM SHOWN ON THESE DWGS. SHALL CONFORM TO THE REGULATIONS OF THE FBC 2023 (8TH EDITION) AND ORDINANCES, N.E.C. AND LOCAL UTILITY COMPANIES.

4- MINIMUM STANDARDS: THE MATERIAL, INSTALLATIONS AND WORKSMANSHIP FURNISHED UNDER THIS SECTION SHALL CONFORM TO THE REQUIREMENTS OF LOCAL CODES AND N.E.C.(2020), FBC-2023(8th EDITION), FBC Energy Code 2023-8th Edition-Section C405 AND LOCAL UTILITY COMPANY. ALL MATERIALS USED SHALL BE LISTED OR BEAR U.L. APPROVAL.

5- GUARANTEE: THIS SUB-CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE THAT ALL WORK EXECUTED UNDER THIS CONTRACT, SHALL BE FREE FROM DEFECTS OR WORKSMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR, AT CONTRACTOR'S EXPENSE REPAIR AND REPLACE ALL WORK WHICH BECOMES DEFECTIVE DURING THE TIME OF THE GUARANTEE.

6- RACEWAYS AND FITTINGS:  
a) RIGID GALVANIZED STEEL: 1 1/2" OR LARGER , AND IN SLAB ABOVE GRADE.  
b) PVC : IN OR UNDER GND FLOOR SLAB  
c) EMT : ALL OTHER LOCATION.  
d) ARMORED CABLE, MC: ABOVE SLAB, BRANCH CIRCUITS ONLY.  
e) FITTINGS: TO MATCH APPROVED RACEWAY .

7- CONDUCTORS: THE MINIMUM CONDUCTOR NO.12 SOLID CU TYPE "THW" INSULATION ALUMINUM CONDUCTOR ALLOWED ONLY WHERE INDICATED ON DRAWINGS.

8- ALL EQUIPMENT LISTED ON DWGS. BY CATALOG NO. SHALL BE LIMITED TO THE KIND AND MANUFACTURER LISTED, NO SUBSTITUTION SHALL BE ALLOWED UNLESS APPROVED BY THE ENGINEER. A WRITTEN GUARANTEE OF THREE YEARS AND CREDIT FROM BASIC BID SHALL BE SUBMITTED WITH SHOP DRAWINGS.

9- CONTRACTOR TO INSTALL AND/OR CONNECT ALL EQUIPMENTS AND CONTROLS SUPPLIED BY OWNER, OR ANY OTHER TRADE. SEE OTHER TRADES DRAWINGS AND SPECIFICATIONS.  
10- ALL FEEDERS AND BREAKERS SHALL BE COORDINATED WITH EQUIPMENT'S PLATE AT SITE.

**SCOPE OF WORK**

CONSTRUCTION REPAIRS AFTER 60 YEAR ELECTRICAL INSPECTION DEFICIENCIES:

- REMOVE EXISTING LOW-VOLTAGE COMMUNICATION CABLE FROM INSIDE THE HVAC DISCONNECT. PROVIDE AND INSTALL NEW COMMUNICATION CABLES IN A DEDICATED CONDUIT

- PROVIDE AND INSTALL WALLPACK LIGHT UNDER CANOPY ON CIRCUIT 1-31.

- SUPPORT LOW-VOLTAGE CONDUCTORS PER NEC 800.2.4 WITH PROPER WALL-MOUNTED FITTINGS.

**DRAWING INDEX**

- ELECTRICAL
- E-1.0 LEGEND AND NOTES
- E-2.0 POWER AND LIGHTS FLOOR PLAN AND PICTURES

**GENERAL NOTES**

- GENERAL:
  - The installation of the electrical system shown on these drawings, shall conform to the regulations of Local Codes and Ordinances, the N.E.C.(2020), FBC-2023(8th Edition), FBC Energy Code 2023-8th Edition-Section C405 or R404 and Local Utility Company.
  - Drawings: Refer to all Architectural, Civil, Structural, Plumbing, Mechanical and other disciplines drawings for the coordination of the electrical work.
  - Arrange and pay for all permits, licenses, inspections, and tests. Obtain the required certificates and present to the owner.
  - Guarantee: The completed installation is fully warranted against defective materials and/or improper workmanship for a minimum of one year for material and labor.
- CONTRACTOR needs to establish a field liaison with project supervisor, prior to commencing work.
- CONTRACTOR SHALL visit site prior to submission of bid to familiarize himself with existing site conditions. No extras will be allowed for revisions.
- ALL MATERIALS SHALL BE U.L. APPROVED.
- ELECTRICAL CONTRACTOR SHALL provide all electrical permits.
- ELECTRICAL CONTRACTOR SHALL provide temporary service for use of all trades as required for construction.
- ELECTRICAL CONTRACTOR SHALL verify requirements, exact location and type of outlet for all electrical fixtures, appliances, and equipment.
- ALL CONDUCTORS SHALL BE COPPER. THE MINIMUM SIZE SHALL BE #12 THW. Conductors #6 and larger shall be THWN. THE CONTRACTOR SHALL verify the voltage drop, as per the actual routing of the service and the branch circuits, for the sizing of the wiring prior to rough-in to comply with the requirements of the F.B.C. ENERGY CODE 2023-8th EDITION (ART.5.3 Voltage Drop).
- ELECTRICAL CONTRACTOR to coordinate telephone and cable/TV services, and provide all the necessary conduits and devices for the installation not been provided by the telephone and cable/TV companies as per their approved shop drawings.
- ELECTRICAL CONTRACTOR to run control wires for HVAC system.
- ELECTRICAL CONTRACTOR SHALL ensure that all isolators of service comply with power company requirements and shall have all necessary arrangements with power company for service. All equipment not furnished or installed by the power company is to be furnished and installed by the electrical contractor.
- LUSH PANELS SHALL NOT PROTRUDE. THE DEPTH OF THE WALL SHALL BE CHECKED PRIOR TO ORDERING.
- ALL CONDUIT SHALL BE GALVANIZED RIGID EXCEPT AS FOLLOWS:
  - EMT may be used indoors. Out of soil and where not subject to physical abuse.
  - Flexible conduit shall be used for equipment connections not to exceed 6 ft.
  - PVC may be used outdoors as allowed by code.
- ALL wires for HVAC control, except when integral with HVAC equipment, shall be run in ductwork.
- ALL TEMPORARY WIRING will be removed by contractor when room service is available.
- WIRE rated at 150 centigrade if required for all inductance lighting fixtures.
- ALL CONDUIT THROUGH ROOF SHALL PENETRATE ROOF USING PROPER APPROVED ROOF FLASHING.
- ALL ELECTRICAL WIRING must be in conduit (No Runes, BX, etc. is permitted)
- ELECTRICAL EQUIPMENT exposed to weather must be weatherproof.
- CONDUIT EXPOSED TO WEATHER must be heavy wall galvanized steel.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION AND ALL necessary electrical equipment connections.
- COORDINATE A.I.C. rating with the POWER CO.
- PROVIDE pull line in all empty conduit.
- THE CONTRACTOR SHALL satisfactorily repair/replace equipment or part of structure damage as a result of his work, surfaces and damaged areas shall be restored to match adjacent areas.
- APPROVAL SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO CUTTING OR DRILLING ANY STRUCTURAL SUPPORT MEMBER.
- ALL DEVICE BOXES SHALL BE INSTALLED flush and conduits run concealed in finished areas except as specifically shown/indicated otherwise.
- INSTALL POWER AND CONTROL WIRING and required control components for air conditioning systems as shown/indicated on these drawings and per other applicable drawings/instructions see A/C drawings.
- ALL MATERIALS REMOVED SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER.
- ALL CONDUCTORS SHALL BE RUN IN CONDUIT.
- TYPEWRITTEN PANEL TALLEY shall be furnished after job is completed reflecting all changes and additions.
- ALL BRANCH CIRCUITS SHALL BE PROPERLY PHASE-BALANCED.
- CONTRACTOR SHALL seal all floor openings with a fire seal similar to those technology, etc.
- ALL NON-POWER RELATED EXPOSED WIRING in ceiling air conditioning plenum shall be teflon coated classified for use in plenums without conduit.
- WHERE MORE THAN ONE DEVICE is indicated at any location, these shall be ganged under one common cover limiting gage only.
- PROVIDE fuse recommended by equipment manufacturer.
- ALL RECESSED FIXTURES SHALL BE INSTALLED, to provide a non-combustible assembly.
- EXACT LOCATIONS AND LENGTHS OF feeders and house loads should be verified in the field.
- AS-BUILT DRAWINGS IN AUTOCAD FILES shall be furnished to the owner and the architect/engineer upon completion of work and prior to final CO.
- GROUNDING: THE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDING, PROVIDE ELECTRICAL GROUNDING AS PER THE N.E.C.
- GENERAL: THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH ALL LABOR, MATERIAL, ITEMS AND EQUIPMENT SHOWN OR INDICATED FOR A COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS. THIS CONTRACTOR SHALL PROVIDE ALL THE REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. CODES IN EFFECT ARE NEC-2020 & FBC-2023, 8TH EDITION.
- ELECTRICAL CONNECTIONS: TERMINATION PROVISIONS FOR ALL EQUIPMENT IN THIS PROJECT MUST BE 75 DEGREE CELSIUS.

- PLANS AND SPECIFICATIONS: THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF CONSTRUCTION DOCUMENTS SO THAT THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND PLUMBING REQUIREMENTS EFFECTING THIS WORK CAN BE FULLY REVIEWED AND INCLUDED. ANY DISCREPANCY IN DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER OR RECORD IMMEDIATELY BEFORE CONTINING CONSTRUCTION.
- BIDDING: THE ELECTRICAL CONTRACTOR BIDDING SHALL INCLUDE: A COPY OF THE CONTRACTOR'S CERTIFICATION AND/OR LICENSE, PROOF OF INSURANCE, A LIST OF ALL ELECTRICAL COMPONENTS AND FIXTURES INCLUDED OR EXCLUDED, AND TOTAL COST OF THIS WORK.
- INSURANCE: THE CONTRACTOR SHALL PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK. PROOF OF INSURANCE SHALL BE SUBMITTED TO THE OWNER PRIOR TO COMMENCEMENT OF WORK.
- FEES: THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, TESTING AND INSPECTIONS.
- COORDINATION: THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL TRADES IN ORDER TO AVOID INTERFERENCE WITH THE PROGRESS OF THE CONSTRUCTION OR CONFLICTS. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH CORRESPONDING UTILITY COMPANIES IN ORDER TO VERIFY THE POINTS OF CONNECTION, METER LOCATION, ETC.
- GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKSMANSHIP FREE OF DEFECTS FOR A PERIOD OF NO LESS THAN ONE YEAR FROM THE DATE OF ACCEPTANCE. CORRECTION OF DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENTS OR REPAIR OF ANY OTHER PHASE OF INSTALLATION THAT MAY HAVE BEEN DAMAGED.
- EQUIPMENT: CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EQUIPMENT PRIOR TO ROUGH-IN. NO NOT SCALE ELECTRICAL DRAWINGS. SEE MANUFACTURER'S REPRESENTATIVE FOR ALL EQUIPMENT SPECIFICATIONS, REQUIREMENTS, TEMPLATES AND SYMBOLS NOT USED OR SCHEDULED ON THE PLANS.
- COMMENTS AND LOADS: THE CREDIT NUMBERS SHOWN ON THE PLANS ARE TO BE CALCULATED CIRCUIT LOADING, BREAKERS AND PANEL SIZE. THE CONTRACTOR MAY MODIFY CIRCUIT NUMBERING AND PROVIDE CIRCUIT ROUTINGS TO SUIT THE JOB CONDITIONS. LOAD DATA IS BASED UPON INFORMATION SUPPLIED BY THE OWNER AT THE TIME OF DESIGN. ALL EQUIPMENT AND PANEL SIZES SHALL BE VERIFIED BEFORE ORDERING. LOADS ON ALL PANELS SHALL BE BALANCED BETWEEN PHASES, WHEN REQUIRED THE CONTRACTOR SHALL ADJUST PANEL SCHEDULE TO OBTAIN PROPER BALANCING OF ALL PHASES.
- DRIVEN GROUNDS: GROUNDING ELECTRODES SHALL BE 5/8" GALVANIZED STEEL, 10'-0" LONG DRIVEN A MINIMUM OF 6'-0" INTO EARTH. THE GROUNDING ELECTRODES SHALL BE SPACED A MINIMUM OF 6'-0" APART.
- GROUND IDENTIFICATION: BRANCH CIRCUIT IDENTIFICATION SHALL BE PROVIDED ON A TYPEWRITTEN DIRECTORY PERMANENTLY AFFIXED TO THE INSIDE SURFACE OF THE ELECTRIC PANEL(S), (DOORS).
- CODES AND STANDARDS: ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "NATIONAL ELECTRIC CODE", COMPLY WITH ALL LOCAL CODES, RULES AND ORDINANCES, MEET ALL STANDARD REQUIREMENTS OF THE ELECTRIC UTILITY AND TELEPHONE COMPANIES, BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR AND IN FIRST CLASS WORKMAN-LIKE MANNER. MATERIAL SHALL BE NEW AND SHALL BEAR UNDERWRITERS LABELS WHERE APPLICABLE. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE.

- RACEWAYS: RACEWAYS PLACED IN OR THROUGH CONCRETE SLABS OR UNDERGROUND SHALL BE SCHEDULE 40 PVC OR BITUMEN COATED GALVANIZED RIGID STEEL (GRS).
- EMPTY CONDUITS: INSTALL A NYLON PULL CORD OF ADEQUATE STRENGTH IN ALL EMPTY CONDUITS OR CONDUITS TO BE USED IN THE FUTURE.
- OUTLET BOXES: OUTLET BOXES SHALL BE METALLIC OR PVC AND SHALL CONFORM TO N.E.M.A. STANDARDS.
- DISCONNECTS: DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED, HEAVY DUTY, QUICK-MAKE, QUICK-BREAK AND N.E.M.A. I OR 3R ENCLOSURE.
- RECEPTABLES AND SWITCHES: LIGHT SWITCHES AND RECEPTABLES SHALL BE COMMERCIAL GRADE WITH A MINIMUM 15 AMPERE SERVICE RATING. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF SPECIALTY RECEPTABLES WITH THE CORRESPONDING EQUIPMENT MANUFACTURER'S REPRESENTATIVE. 15A Circuit rating must have a receptacle rating not over 15A.
- RECEPTABLES MOUNTING: ELECTRICAL RECEPTABLES SHALL BE MOUNTED AT 18" TO CENTERLINE ABOVE FINISHED FLOOR UNLESS SPECIFIED OTHERWISE. SEE FLOOR PLAN OR ELECTRICAL PLAN FOR ALTERNATE MOUNTING HEIGHTS. SEE OWNER OR EQUIPMENT SUPPLIER FOR ALL EQUIPMENT MH AND LOCATIONS WHEN UNDETERMINED ON ELECTRICAL PLANS.
- SWITCH MOUNTING: SWITCHES SHALL BE INSTALLED WITH CENTERLINE OF PLATE AT 48" ABOVE FINISHED FLOOR AND 6" FROM EDGE OF ADJACENT DOOR CASING OR END OF WALL.
- FIXTURES: THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FIXTURES AND LAMPS AS CALLED FOR ON THE PLANS OR AS SELECTED BY OTHERS.
- EQUIPMENT IDENTIFICATION: EACH PANEL, DISCONNECT, GUTTER, OR AN ELECTRICALLY OPERATED EQUIPMENT SHALL BE IDENTIFIED BY A PERMANENTLY ATTACHED LABEL WITH A MINIMUM LETTERING HEIGHT OF 1/2".
- COLD WATER GROUND: THE ELECTRICAL SYSTEM SHALL HAVE A MINIMUM 3/4" COLD WATER GROUND PIPE BONDED TO THE DRIVEN GROUNDING ELECTRODES.
- H.V.A.C. SYSTEMS: POWER AND CONTROL WIRING FOR THE H.V.A.C. WORK SHALL BE INSTALLED UNDER THE SUPERVISION OF THE H.V.A.C. CONTRACTOR. WIRING DIAGRAMS, MOTOR STARTERS, THERMOSTATS SHALL BE PROVIDED BY THE H.V.A.C. CONTRACTOR.
- CONTROLLED RECEPTACLE BY AUTOMATIC CONTROL DEVICES: CONTRACTOR FIELD VERIFY AND SELECT AT LEAST 50% OF ALL 120V 15 AND 20 Amps CIRCUITS TO COMPLY WITH ASHRAE 90.1. CONTRACTOR MAY CHOOSE TO EITHER ADD A PERMANENT MARKING DURING CONSTRUCTION OR INSTALL PRE-MARKED RECEPTABLES AVAILABLE. THE MARK SHOULD BE THE ONE SPECIFIED ON NEC 406.3(C)
- SWITCH CONNECTIONS TO COMPLY WITH ALL SECTIONS OF NEC 404.2
- GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING EQUIPMENT, BREAKERS, CONDUITS AND CONDUCTORS BEFORE COMMENCING WORK. ANY VIOLATIONS FOUND SHOULD BE ADDRESSED IN WRITING TO THE OWNER AND ENGINEER FOR PROPER RE-DESIGN AND/OR REPAIRS.

This item has been digitally signed and sealed by Jorge A. Vargas, P.E. on the date adjacent to this seal. Printed copies of this document are not considered signed and sealed and the signature will be verified on any electronic copies.

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PROJECT NAME:  
60 YEAR REGISTRATION OF MOSQUITO CONTROL BUILDING ADMINISTRATION (BUILDING NO. 5) AT 8781 STREET FACILITY - STRUCTURAL AND ELECTRICAL REPAIR DRAWINGS.  
8795 NW 58TH STREET, MEDLEY, FL 33178

CLIENT/OWNER:  
MIAMI-DADE COUNTY DEPARTMENT OF SOLID WASTE MANAGEMENT

REVISIONS	DATE

SHEET NAME:  
**LEGEND AND NOTES**

DRAWING NO:  
**E-1.0**

Sheet No.  
6 of 7

