



**CONTRACT DOCUMENTS AND  
SPECIFICATIONS  
FOR**

**INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

**BID NO. 2023049**

**PROJECT NO. IRC-2004 & 2205**

PREPARED FOR  
THE BOARD OF COUNTY COMMISSIONERS  
INDIAN RIVER COUNTY, FLORIDA

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RICHARD B. SZPYRKA, P.E., PUBLIC WORKS DIRECTOR

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## SECTION – 00100 Advertisement for Bids

**BOARD OF COUNTY COMMISSIONERS**

1801 27<sup>th</sup> Street  
Vero Beach, Florida 32960



**ADVERTISEMENT FOR BIDS  
INDIAN RIVER COUNTY**

Sealed bids will be received by Indian River County until **2:00 P.M. on Wednesday, July 26, 2023**. Each bid shall be submitted in a sealed envelope and shall bear the name and address of the bidder on the outside and the words **“INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL”** and **Bid No. 2023049**. Bids should be addressed to Purchasing Division, Room B1-301, 1800 27th Street, Vero Beach, Florida 32960. All bids will be opened publicly and read aloud at 2:00 P.M. All bids received after 2:00 P.M., on the day specified above, will not be accepted or considered.

**INDIAN RIVER COUNTY PROJECT NO. IRC-2004 & 2205  
INDIAN RIVER COUNTY BID NO. 2023049**

**PROJECT DESCRIPTION:** *The proposed project consists of interior modifications to the Indian River County Information Technology Department. These modifications include the removal of existing interior windows and the construction of new stud walls with drywall, paint, electrical, HVAC and flooring (approximate project area 230 sf). Also included with this project are interior modifications to the Indian River County Finance Department located on the 2<sup>nd</sup> floor of Building “A” of the IRC Administrative Building which includes stud walls, drywall, paint, electrical and HVAC modifications (approximate project area 630 sf).*

All material and equipment furnished and all work performed shall be in strict accordance with the plans, specifications, and contract documents pertaining thereto. Detailed specifications are available at: [www.demandstar.com](http://www.demandstar.com) or at [www.ircgov.com/departments/budget/purchasing](http://www.ircgov.com/departments/budget/purchasing) under “Current Solicitations”.

All bidders shall submit one (1) original and one (1) copy of the Bid Proposal forms provided within the specifications. Please note that the questionnaire must be filled out completely including the financial statement. BID SECURITY must accompany each Bid, and must be in the form of an AIA Document A310 Bid Bond, properly executed by the Bidder and by a qualified surety, or a certified check or a cashier’s check, drawn on any bank authorized to do business in the State of Florida. Bid Security must be in the sum of not less than **Five Percent (5%)** of the

Advertisement for Bids - 00100 - 1

total amount of the bid, made payable to Indian River County Board of County Commissioners. In the event the Contract is awarded to the Bidder, Bidder will enter in a Contract with the County and furnish the required 100% Public Construction Bond and certificates of insurance within the timeframe set by the County. If Bidder fails to do so, the Bid Security shall be retained by the County as liquidated damages and not as penalty.

The County reserves the right to delay awarding of the Contract for a period of **ninety (90)** days after the bid opening, to waive informalities in any bid, or reject any or all bids in whole or in part with or without cause/or to accept the bid that, in its judgement, will serve the best interest of Indian River County, Florida. The County will not reimburse any Bidder for bid preparation costs.

A Pre-Bid Conference will be held on **Wednesday, July 12, 2023 at 10:00AM.** in the first-floor Public Works conference room A1-303 of the Indian River County Administration Building located at 1801 27th Street, Vero Beach, Florida, 32960. After the meeting, Bidders will be able to visit the remodel areas. **ATTENDANCE AT THIS CONFERENCE BY ALL BIDDERS IS HIGHLY ENCOURAGED AS THIS WILL BE THE ONLY OPPORTUNITY FOR BIDDERS AND SUBCONTRACTORS TO VISIT THE AREAS TO BE RENOVATED, AS BOTH AREAS ARE SECURE FACILITIES.**

INDIAN RIVER COUNTY

By: Jennifer Hyde  
Purchasing Manager

For Publication in the Indian River Press Journal  
Date: 6/25/2023

For: Indian River Press Journal

Please furnish tear sheet and Affidavit of Publication to:

INDIAN RIVER COUNTY  
PURCHASING DIVISION  
1800 27th Street  
Building "B"  
Vero Beach, FL 32960

**\*\* END OF SECTION \*\***

**SECTION 00200 – Instructions to Bidders**

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**SECTION 00200 – Instructions to Bidders**

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**SECTION 00200 – Instructions to Bidders****ARTICLE 1 - DEFINED TERMS**

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1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- A. Bidder--The individual or entity who submits a Bid directly to OWNER.
- B. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- C. Successful Bidder--The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.
- D. ENGINEER – References County Engineer or their designee.

**ARTICLE 2 - COPIES OF BIDDING DOCUMENTS**

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- 2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement for Bids or Invitation to Bid may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

**ARTICLE 3 - QUALIFICATIONS OF BIDDERS**

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- 3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of OWNER's request Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.
  - A. Bidder must have at least five years' experience in the construction of similar projects of this size and larger.
  - B. Bidder must have successfully constructed, as prime CONTRACTOR, at least three projects similar in scope to this project.
  - C. Bidder must have good recommendations from at least three clients similar to the OWNER.
  - D. The Bidder's superintendent and assistants must be qualified and experienced in similar projects in all categories.
  - E. Bidder must be able to provide evidence of authority to conduct business in the jurisdiction in which the project is located.

- 3.02 Each bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.
- 3.03 The OWNER reserves the right to reject bids from Bidders that are unable to meet the listed required qualifications.
- 3.04 Bidder must be registered with and use, at their sole expense, the Department of Homeland Security's E-Verify system ([www.e-verify.gov](http://www.e-verify.gov)) to confirm the employment eligibility of all newly hired employees, as required by Section 448.095, F.S.. Owner, contractor, and subcontractors may not enter into a contract unless each party to the contract registers with and uses the E-Verify system. Contractor is responsible for obtaining proof of E-Verify registration for all subcontractors. This requirement applies to any provider of services or goods.
- 3.05 Bidder must hold a current registration as a General Contractor in the State of Florida.
- 3.06 **Conflict of Interest:** Any entity submitting a bid or proposal or entering into a contract with the County shall disclose any relationship that may exist between the contracting entity and a County Commissioner or a County Employee. The relationship with a County Commissioner or a County Employee that must be disclosed is as follows: *father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half-brother, half-sister, grandparent, or grandchild*. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity. The disclosure of relationships shall be a sworn statement made on a County approved form. Failure to submit the form may be cause for rejection of the bid or proposal.
- 3.07 **Public Entity Crimes:** Pursuant to Florida Statutes Section 287.133(2)(a), all Bidders are hereby notified that a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity (defined as the State of Florida, any of its departments or agencies, or any political subdivision); may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Florida Statutes Section 287.017 for CATEGORY TWO [currently \$35,000] for a period of 36 months from the date of being placed on the convicted vendor list. A "public entity crime" means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
- 3.08 **Records/Audit:** The Bidder shall maintain books, records and documents pertinent to performance under this Invitation and any resulting Agreement in accordance with generally accepted accounting principles consistently applied. The County and the Florida Office of the Inspector General shall have inspection and audit rights to such records for audit purposes during the term of the contract and for three years following the termination of obligations hereunder. Records which relate to any litigation, appeals or settlements of

claims arising from performance under this work or purchase shall be made available until a final disposition has been made of such litigation, appeals, or claims.

#### ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

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##### 4.01 Subsurface and Physical Conditions

###### A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.

2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

##### 4.02 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by OWNERS of such Underground Facilities, including OWNER, or others.

##### 4.03 Hazardous Environmental Condition

A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which



was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 **OWNER will provide Bidder access to the Site at the Pre-Bid Meeting** to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.06 "This paragraph has been deleted intentionally"

4.07 It is the responsibility of each Bidder before submitting a Bid to:

A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;

**B. VISIT THE SITE AND BECOME FAMILIAR WITH AND SATISFY BIDDER AS TO THE GENERAL, LOCAL, AND SITE CONDITIONS THAT MAY AFFECT COST, PROGRESS, AND PERFORMANCE OF THE WORK;**

C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;

D. carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;

E. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (overhead, surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and

J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

## ARTICLE 5 - PRE-BID CONFERENCE

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5.01 The date, time, and location for the Pre-Bid conference, if any, is specified in the Advertisement for Bids. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are **HIGHLY ENCOURAGED** to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

## ARTICLE 6 - SITE AND OTHER AREAS

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6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

## ARTICLE 7 - INTERPRETATIONS AND ADDENDA

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7.01 CONE OF SILENCE. Potential bidders and their agents shall not communicate in any way with the Board of County Commissioners, County Administrator or any County staff other than Purchasing personnel in reference or relation to this solicitation. This restriction shall be effective from the time of bid advertisement until the Board of County Commissioners meets to authorize award. Such communication may result in disqualification.

7.02 All questions about the meaning or intent of the Bidding Documents are to be submitted to PURCHASING ([purchasing@ircgov.com](mailto:purchasing@ircgov.com)) in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties through the Issuing Office as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered.

Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.03 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

## ARTICLE 8 - BID SECURITY

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8.01 Each Bid must be accompanied by Bid Security made payable to OWNER in the amount of five percent of the Bidder's maximum base bid price and in the form of a certified check; cashier's check; or an AIA Document A310 Bid Bond issued by a surety meeting the requirements of Paragraph 5.01 of the General Conditions. The Bid Bond shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. The Surety must be authorized to issue surety bonds in Florida. The Bidder shall require the attorney-in-fact who executes any Bond, to affix to each a current certified copy of their Power of Attorney, reflecting such person's authority as Power of Attorney in the State of Florida. Further, at the time of execution of the Contract, the Successful Bidder shall for all Bonds, provide a copy of the Surety's current valid Certificate of Authority issued by the United States Department of the Treasury under 31 United States Code sections 9304-9308. The Surety shall also meet the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be retained by the owner. The Bid Security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of seven days after the Effective Date of the Agreement or 91 days after the Bid opening, whereupon Bid Security furnished by such Bidders will be returned.

8.03 Bid Security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

## ARTICLE 9 - CONTRACT TIMES

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9.01 The number of calendar days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

## ARTICLE 10 - LIQUIDATED DAMAGES

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10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

## ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

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11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the General Requirements.

## ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

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12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

12.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

## ARTICLE 13 - PREPARATION OF BID

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13.01 The Bid form is included with the Bidding Documents. Only the bid form provided by OWNER is acceptable (Bidders are not to recreate or modify the bid form). ***Bids not submitted on the bid form(s) shall be rejected, as will bids submitted on rewritten, recreated or modified bid forms.***

13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each section, Bid item, alternative, adjustment unit price item, and unit price item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate

seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturor in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number or county registration number for the state or county of the Project, if any, shall also be shown on the Bid form.

13.12 All supporting information requested in the Bid Form must be furnished. Do not leave any questions or requests unanswered.

13.13 In accordance with Florida Statutes Section 218.80, the "Public Bid Disclosure Act", Indian River County as OWNER is obligated to disclose all license, permit, impact, or inspection fees that are payable to Indian River County in connection with the construction of the Work by the accepted bidder. All permit, impact, or inspection fees payable to Indian River County in connection with the work on this County project will be paid by Indian River County, with the exception of re-inspection fees. The Bidder shall not include ANY PERMIT, IMPACT, NOR INSPECTION FEES payable to **Indian River County** in the bid.

13.14 CONTRACTOR shall furnish all labor, materials, equipment and incidentals necessary to perform additional work not covered on the Contract Drawings. The **FORCE ACCOUNT** is intended as a contingency for unforeseen work. Lump sum amount for **FORCE ACCOUNT** work is included in the bid schedule. The value of force account work will be determined in accordance with Article 12 of the General Conditions.

## ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

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### 14.01 Unit Price

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule. Omission of unit prices where required will result in disqualification of the bid.

B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

14.03 The Bidder's attention is called to the fact that any estimate of quantities of work to be done and materials to be furnished under the Specifications as shown on the Bid Schedule, or elsewhere, is approximate only and not guaranteed. The OWNER does not assume any responsibility that the final quantities shall remain in strict accordance with the estimated quantities, nor shall the Bidder plead misunderstanding or deception because of such estimate of quantities or of the character, location of the work, or other conditions pertaining thereto.

## ARTICLE 15 - SUBMITTAL OF BID

---

15.01 The Bid form is to be completed and submitted with the Bid security and the following data:

- A. Sworn Statement under Section 105.08, Indian River County Code, on Disclosure of Relationships.
- B. Sworn Statement under the Florida Trench Safety Act.
- C. Qualifications Questionnaire.
- D. List of Subcontractors.
- E. Certification Regarding Prohibition Against Contracting with Scrutinized Companies

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project Title and Bid Number (and, if applicable, the designated portion of the Project for which the Bid is submitted), Bid Number, the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If mail or other delivery system sends a Bid, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Indian River County, Purchasing Division, 1800 27<sup>th</sup> Street, Vero Beach, Florida, 32960.

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## ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

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16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02 If within 48 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

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## ARTICLE 17 - OPENING OF BIDS

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17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

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## ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

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## ARTICLE 19 - AWARD OF CONTRACT

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19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsive. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all technicalities and informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder. The County will not reimburse any Bidder for bid preparation costs. Owner reserves the right to cancel the award of any Contract at any time before the execution of such Contract by all parties without any liability to the Owner. For and in consideration of the Owner considering Bids submitted, the Bidder, by submitting its Bid, expressly waives any claim to damages, of any kind whatsoever, in the event the Owner exercises its right to cancel the award in accordance herewith.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

19.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project.

19.07 OWNER has no local ordinance or preferences, as set forth in FS 255.0991 (2) in place, therefore no preference prohibited by that section will be considered in the acceptance, review or award of this bid.

19.08 Any actual or prospective bidder or proposer who is aggrieved in connection with the bidding and/or selection process may protest to the OWNER's Purchasing Manager. The protest shall be submitted in writing to the Purchasing Manager within five (5) calendar days after the bidder or proposer knows or should have known of the facts giving rise to the protest.

19.09 CONTRACTOR certifies that it and its related entities as defined by Florida law are not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725 of the Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, CONTRACTOR certifies that it and its related entities as defined above by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria.

OWNER may terminate this Contract if CONTRACTOR is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes.

OWNER may terminate this Contract if CONTRACTOR, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies, that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

Accordingly, firms responding to this solicitation shall return with their response an executed copy of the attached "Certification Regarding Prohibition Against Contracting With Scrutinized Companies." Failure to return this executed form with submitted bid/proposal/statement of qualifications will result in the response being deemed non-responsive and eliminated from consideration.

## ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

---

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to Public Construction Bond and insurance. When the



Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by the required insurance certificate(s) and Bond, unless the Bond has been waived due to the total contract being less than \$100,000.

## ARTICLE 21 - SIGNING OF AGREEMENT

---

21.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within fifteen (15) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER.

21.02 OWNER shall return one fully signed counterpart to Successful Bidder.

21.03 Should Bidder to whom the Contract has been awarded refuse or fail to complete the requirements of Article 21.01 above, the additional time in calendar days, required to correctly complete the documents will be deducted, in equal amount, from the Contract time. Or, the OWNER may elect to revoke the Award and the OWNER shall hold the Bid Bond for consequential damages incurred, and the Contract may be awarded as the OWNER desires.

**\*\* END OF SECTION \*\***

**SECTION 00300 – Bid Package Contents**

**THIS PACKAGE CONTAINS:**

<u>SECTION TITLE</u>	<u>SECTION NUMBER</u>
Bid Form	00310
Bid Bond	00430
Sworn Statement on Disclosure of Relationships	00452
Qualifications Questionnaire	00456
List of Subcontractors	00458
Certification Regarding Prohibition Against Contracting with Scrutinized Companies	00460

**SUBMIT ONE (1) ORIGINAL AND ONE (1) COPY OF THIS COMPLETE PACKAGE WITH YOUR BID**

**\*\* END OF SECTION \*\***

**SECTION 00310 – Bid Form**

PROJECT IDENTIFICATION:

Project Name: **INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

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County Project Number: **IRC-2004 & 2205**

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Bid Number: **2023049**

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Project Address: **1801 27<sup>th</sup> Street**

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**Vero Beach, FL 32960**

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Project Description: ***The proposed project consists of interior modifications to the Indian River County Information Technology Department. These modifications include the removal of existing interior windows and the construction of new stud walls with drywall, paint, electrical, HVAC and flooring (approximate project area 230 sf). Also included with this project are interior modifications to the Indian River County Finance Department located on the 2<sup>nd</sup> floor of Building "A" of the IRC Administrative Building which includes stud walls, drywall, paint, electrical and HVAC modifications (approximate project area 630 sf).***

---

THIS BID IS SUBMITTED TO: INDIAN RIVER COUNTY  
 1800 27<sup>th</sup> Street  
 VERO BEACH, FLORIDA 32960

**1.01** The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**2.01** Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

**3.01** In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

Addendum Date

Addendum Number

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

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

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local

and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

**4.01** Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

[The remainder of page intentionally left blank]

# ITEMIZED BID SCHEDULE

**PROJECT NAME: INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

**PROJECT NO. IRC-2004 & 2205      BID NO. 2023049**

**BIDDER'S Name:**

**Alternative 1**

Item No.	Description	Unit	Quantity	Unit Price	Amount
<b><u>PART A (INFORMATION TECHNOLOGY REMODEL)</u></b>					
DIVISION 1	GENERAL REQUIREMENTS/MOBILIZATION - FOR CONTRACTS OF 120 CONTRACT DAYS OR LESS, PARTIAL PAYMENT WILL BE MADE AT 50% OF THE BID PRICE FOR THE FIRST TWO MONTHS.	LS	1.0		
DIVISION 2	INTERIOR DEMOLITION AND TEMPORARY PROTECTION	LS	1.0		
DIVISION 5	METALS	LS	1.0		
DIVISION 8	DOORS, WINDOWS, AND GLASS	LS	1.0		
DIVISION 9	FINISHES	LS	1.0		
DIVISION 15	PLUMBING	LS	1.0		
DIVISION 23	HEATING, VENTILATING, AND AIR CONDITIONING	LS	1.0		
DIVISION 26	ELECTRICAL	LS	1.0		
<b><u>SUBTOTAL - PART A (INFORMATION TECHNOLOGY REMODEL)</u></b>					
<b><u>PART B (FINANCE REMODEL)</u></b>					
DIVISION 2	INTERIOR DEMOLITION AND TEMPORARY PROTECTION	LS	1.0		
DIVISION 5	METALS	LS	1.0		
DIVISION 8	DOORS, WINDOWS, AND GLASS	LS	1.0		
DIVISION 9	FINISHES	LS	1.0		
DIVISION 10	SPECIALTIES	LS	1.0		
DIVISION 12	FURNISHINGS	LS	1.0		
DIVISION 15	PLUMBING	LS	1.0		
DIVISION 23	HEATING, VENTILATING, AND AIR CONDITIONING	LS	1.0		
DIVISION 26	ELECTRICAL	LS	1.0		
<b><u>SUBTOTAL - PART B (FINANCE REMODEL)</u></b>					
<b>TOTAL (PART A + PART B) =</b>					
999-25A	<b>FORCE ACCOUNT =</b>				<b>\$20,000.00</b>
<b>TOTAL PROJECT BID AMOUNT (INCLUDING FORCE ACCOUNTS) =</b>					

**TOTAL PROJECT BID AMOUNT IN WORDS - ALTERNATE 1**

**Alternative 2 (Alternative 1 & EVENING OR WEEKEND WORK)**

ALTERNATIVE 1 - TOTAL (PART A + PART B)		SUM	1.0		
ITEM 1	PER DAY SURCHARGE FOR PERFORMING EVENING OR WEEKEND WORK OUTSIDE OF NORMAL COUNTY WORKING HOURS BY DIRECTION OF PROJECT MANAGER	DAY	30.0		
<b>TOTAL =</b>					
999-25A	<b>FORCE ACCOUNT =</b>				<b>\$20,000.00</b>
<b>TOTAL PROJECT BID AMOUNT (INCLUDING FORCE ACCOUNT) =</b>					

**TOTAL PROJECT BID AMOUNT IN WORDS - ALTERNATIVE 2**

**5.01** Bidder shall complete the Work in accordance with the Contract Documents for the price(s) contained in the Bid Schedule:

- A. The Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.
- B. The Owner reserves the right to omit or add to the construction of any portion or portions of the work heretofore enumerated or shown on the plans. Furthermore, the Owner reserves the right to omit in its entirety any one or more items of the Contract without forfeiture of Contract or claims for loss of anticipated profits or any claims by the Contractor on account of such omissions.
- C. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided. The quantities actually required to complete the contract and work may be less or more than so estimated, and, if so, no action for damages or for loss of profits shall accrue to the Contractor by reason thereof.
- D. Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

**6.01** Bidder agrees that the Work will be substantially completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

**6.02** Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified, which shall be stated in the Agreement.

**7.01** The following documents are attached to and made a condition of this Bid:

- A. Itemized Bid Schedule;
- B. Required Bid security in the form of \_\_\_\_\_;
- C. Sworn Statement under Section 105.08, Indian River Code, on Disclosure of Relationships;
- D. Sworn Statement Under the Florida Trench Safety Act;
- E. Qualifications Questionnaire;
- F. List of Subcontractors;
- G. Certification Regarding Prohibition Against Contracting with Scrutinized Companies

8.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on \_\_\_\_\_, 20\_\_.

State Contractor License No. \_\_\_\_\_

If Bidder is:

**An Individual**

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

Doing business as: \_\_\_\_\_

Business address: \_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

Email: \_\_\_\_\_

**A Partnership**

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of general partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Business address: \_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

Email: \_\_\_\_\_

**A Corporation**

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_

Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
*(Signature -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

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

(CORPORATE SEAL)

Attest \_\_\_\_\_  
*(Signature of Corporate Secretary)*

Business address: \_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

Email: \_\_\_\_\_

Date of Qualification to do business is \_\_\_\_\_.

**A Joint Venture**

Joint Venture Name: \_\_\_\_\_

(SEAL)

By: \_\_\_\_\_  
*(Signature of joint venture partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

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

Business address: \_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

Email: \_\_\_\_\_

Joint Venture Name: \_\_\_\_\_

(SEAL)

By: \_\_\_\_\_  
*(Signature -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

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

Business address: \_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

Email: \_\_\_\_\_

Phone and FAX Number, and Address for receipt of official communications:

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

(Each joint venturor must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

**\*\* END OF SECTION \*\***



**SECTION 00430 – Bid Bond**  
**AIA DOCUMENT A310 BID BOND**

The Contractor shall use the document form entitled “AIA Document A310 Bid Bond.”

END OF SECTION

**SECTION 00452 – Sworn Statement on Disclosure of Relationships**

**SWORN STATEMENT UNDER SECTION 105.08, INDIAN RIVER COUNTY CODE, ON DISCLOSURE OF RELATIONSHIPS**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement MUST be submitted with Bid, Proposal or Contract No. 2023049

for **INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

2. This sworn statement is submitted by: \_\_\_\_\_

\_\_\_\_\_

(Name of entity submitting Statement)

whose business address is:

\_\_\_\_\_

3. My name is \_\_\_\_\_

(Please print name of individual signing)

and my relationship to the entity named above is \_\_\_\_\_

4. I understand that an “affiliate” as defined in Section 105.08, Indian River County Code, means:

The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity.

5. I understand that the relationship with a County Commissioner or County employee that must be disclosed as follows:

Father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, or grandchild.

6. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. [Please indicate which statement applies.]

\_\_\_\_\_ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, have any relationships as defined in section 105.08, Indian River County Code, with any County Commissioner or County employee.

\_\_\_\_\_The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents, who are active in management of the entity have the following relationships with a County Commissioner or County employee:

Name of Affiliate or entity	Name of County Commissioner or employee	Relationship
_____	_____	_____
_____	_____	_____
_____	_____	_____

\_\_\_\_\_  
(Signature)

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

STATE OF \_\_\_\_\_

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

Sworn to (or affirmed) and subscribed before me by means of  physical presence or  online notarization, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_  
(name of person making statement).

\_\_\_\_\_  
(Signature of Notary Public - State of Florida)  
(Print, Type, or Stamp Commissioned Name of Notary Public)

who is personally known to me or  who has produced  
\_\_\_\_\_ as identification.

**\*\* END OF SECTION \*\***

**SECTION 00456 – Qualifications Questionnaire**

NOTICE: THE OWNER RETAINS THE DISCRETION TO REJECT THE BIDS OF NON-RESPONSIBLE BIDDERS.

**Documentation Submitted with Project No: IRC-2004 & 2205**

**Project Name: INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

1. Bidder's Name / Address: \_\_\_\_\_  
\_\_\_\_\_
  
2. Bidder's Telephone & FAX Numbers: \_\_\_\_\_  
\_\_\_\_\_
  
3. Licensing and Corporate Status:
  - a. Is Contractor License current? \_\_\_\_\_
  - b. Bidder's Contractor License No: \_\_\_\_\_  
[Attach a copy of Contractor's License to the bid]
  - c. Attach documentation from the State of Florida Division of Corporations that indicates the business entity's status is active and that lists the names and titles of all officers.
  
4. Number of years the firm has performed business as a Contractor in construction work of the type involved in this contract: \_\_\_\_\_
  
5. What is the last project OF THIS NATURE that the firm has completed?  
\_\_\_\_\_  
\_\_\_\_\_
  
6. Has the firm ever failed to complete work awarded to you? \_\_\_\_\_  
  
[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which the firm failed to complete the work.]
  
7. Has the firm ever been assessed liquidated damages? \_\_\_\_\_  
  
[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which liquidated damages have been assessed.]
  
8. Has the firm ever been charged by OSHA for violating any OSHA regulations? \_\_\_\_\_  
  
[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which OSHA violations were alleged.]
  
9. Has the firm implemented a drug-free workplace program in compliance with Florida Statute 287.087? \_\_\_\_\_

(In the case of a tie, preference will be given to businesses with drug-free workplace programs)

10. Has the firm ever been charged with noncompliance of any public policy or rules?  
\_\_\_\_\_

[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project.]

11. Attach to this questionnaire, a notarized financial statement and other information that documents the firm's financial strength and history.

12. Has the firm ever defaulted on any of its projects? \_\_\_\_\_

[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which a default occurred.]

13. Attach a separate page to this questionnaire that summarizes the firm's current workload and that demonstrates its ability to meet the project schedule.

14. Name of person who inspected the site of the proposed work for the firm:

Name: \_\_\_\_\_ Date of Inspections: \_\_\_\_\_

15. Name of on-site Project Foreman: \_\_\_\_\_

Number of years of experience with similar projects as a Project Foreman: \_\_\_\_\_

16. Name of Project Manager: \_\_\_\_\_

Number of years of experience with similar projects as a Project Manager: \_\_\_\_\_

17. State your total bonding capacity: \_\_\_\_\_

18. State your bonding capacity per job: \_\_\_\_\_

19. Please provide name, address, telephone number, and contact person of your bonding company:

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

[The remainder of this page was left blank intentionally]

19. Complete the following table for SIMILAR projects:

Name of Project	Date Completed	Owner	Contact Person: Name/ Email Address/Phone	Original Contract Amount	Final Contract Amount

**SECTION 00458 – List of Subcontractors**

The Bidder **MUST** list below the name and address of each Subcontractor who will perform work under this Contract in excess of one-half percent of the total bid price, and shall also list the portion of the work which will be done by such Subcontractor. After the opening of Bids, additions, changes or substitutions will not be allowed unless approved by Indian River County after a request for such a change has been submitted in writing by the Contractor, which shall include reasons for such request. Subcontractors must be properly licensed and hold a valid Certificate of Competency.

Documentation Submitted with Project No. IRC-2004 & 2205 for INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL

	<b>Work to be Performed</b>	<b>Subcontractor's Name/Address</b>	<b>Portion of Work (%)</b>
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			

Note: Attach additional sheets if required.

**\*\* END OF SECTION \*\***





**SECTION 00460 – CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES**

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the County may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent: \_\_\_\_\_

By: \_\_\_\_\_  
(Authorized Signature)

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

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

**Office of Management and Budget • Purchasing Division**  
**1800 27<sup>th</sup> Street, Vero Beach, Florida 32960•(772) 226-1416•Fax: (772) 770-5140**  
**E-mail: [purchasing@ircgov.com](mailto:purchasing@ircgov.com)**

**BOARD OF COUNTY COMMISSIONERS**



Month xx, 2022

via Email

Company

**Attn:**

Address

Address

Email address

**NOTICE OF AWARD**

**Reference:** *Indian River County Bid No. 2023049*  
**Project Name:** *INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL*

Dear Mr./Ms. :

It is my pleasure to inform you that on [DATE] the Board of County Commissioners awarded the above-referenced project to your company. The following documents are required before the applicable County department can issue a "Notice to Proceed" letter.

1. Public Construction Bond (unrecorded) in the amount of **100%** of the award amount (**\$.....**).
2. Two Signed Copies of Enclosed Agreement.
3. Certificate of Insurance indicating coverage required by Article 5 of the General Conditions (section 00700 of the bid documents) and Supplemental Conditions (Section 00800 of the bid documents). Certificate(s) **must name Indian River County as additional insured** and must provide for a 30-day Notice of Cancellation.
4. W-9.

The Public Construction Bond must be executed in accordance with section 255.05(1)(a), Florida Statutes. Please submit the Bond, W-9, the Certificate(s) of Insurance and two fully-executed copies of the enclosed agreement to this office at the address provided below no later than [Due **DATE (15 days from award)**]. Failure to comply with the established deadline for submittal of required documents may be grounds for cancellation of award.

Thank you for your prompt attention and if you have any questions, please do not hesitate to contact our office.

Sincerely,

Jennifer Hyde  
Purchasing Manager

cc: Engineering Division

**SECTION 00520 Agreement (Public Works)**

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[The Remainder of THIS Page WAS LEFT BLANK INTENTIONALLY]

## SECTION 00520 Agreement (Public Works)

**THIS AGREEMENT** is by and between INDIAN RIVER COUNTY, a Political Subdivision of the State of Florida organized and existing under the Laws of the State of Florida, (hereinafter called OWNER)

and \_\_\_\_\_  
(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

### **ARTICLE 1 - WORK**

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

*The proposed project consists of interior modifications to the Indian River County Information Technology Department. These modifications include the removal of existing interior windows and the construction of new stud walls with drywall, paint, electrical, HVAC and flooring (approximate project area 230 sf). Also included with this project are interior modifications to the Indian River County Finance Department located on the 2<sup>nd</sup> floor of Building "A" of the IRC Administrative Building which includes stud walls, drywall, paint, electrical and HVAC modifications (approximate project area 630 sf).*

### **ARTICLE 2 - THE PROJECT**

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Project Name: **INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE  
REMODEL**  
County Project Number: **IRC-2004 & 2205**  
Bid Number: **2023049**  
Project Address: **1801 27<sup>th</sup> Street, Vero Beach, FL 32960**

### **ARTICLE 3 - ENGINEER**

3.01 The Indian River County Public Works Department is hereinafter called the ENGINEER and will act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

### **ARTICLE 4 - CONTRACT TIMES**

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve Substantial Completion, Final Completion and Final Payment*

- A. The Work will be substantially completed on or before the **90th** calendar day after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before the **120th** calendar day after the date when the Contract Times commence to run.

\*\*\*\*\*

4.03 *Liquidated Damages*

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. Liquidated damages will commence for this portion of work. The parties also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER **\$980.00<sup>1</sup>** for each calendar day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER **\$980.00<sup>1</sup>** for each calendar day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

**ARTICLE 5 - CONTRACT PRICE**

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents, an amount in current funds equal to the sum of the amounts determined pursuant to paragraph 5.01.A and summarized in paragraph 5.01.B, below:

- A. For all Work, at the prices stated in CONTRACTOR's Bid, attached hereto as an exhibit.
- B. THE CONTRACT SUM subject to additions and deductions provided in the Contract:

Numerical Amount: \$ \_\_\_\_\_

Written Amount: \_\_\_\_\_

**ARTICLE 6 - PAYMENT PROCEDURES**

6.01 *Submittal and Processing of Payments*

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions and the Contract Documents.

<sup>1</sup>Reference for liquidated damages amount "Standard Specifications for Road & Bridge Construction, Florida Department of Transportation (FDOT) FY 2023-24, Section 8-10.2 for projects over \$50,000 but less than \$250,000. THE ACTUAL LIQUIDATED DAMAGES AMOUNT WILL BE BASED ON THE CONTRACT AMOUNT AWARD AMOUNT AND WILL BE DETERMINED USING THE REFERENCED FDOT CRITERIA.

## 6.02 *Progress Payments.*

- A. The OWNER shall make progress payments to the CONTRACTOR on the basis of the approved partial payment request as recommended by ENGINEER in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq. The OWNER shall retain five percent (5%) of the payment amounts due to the CONTRACTOR until final completion and acceptance of all work to be performed by CONTRACTOR under the Contract Documents.

## 6.03 *Pay Requests.*

- A. Each request for a progress payment shall be submitted on the application provided by OWNER and the application for payment shall contain the CONTRACTOR'S certification. All progress payments will be on the basis of progress of the work measured by the schedule of values established, or in the case of unit price work based on the number of units completed.

## 6.04 *Paragraphs 6.02 and 6.03*

do not apply to construction services work purchased by the County as OWNER which are paid for, in whole or in part, with federal funds and are subject to federal grantor laws and regulations or requirements that are contrary to any provision of the Local Government Prompt Payment Act. In such event, payment and retainage provisions shall be governed by the applicable grant requirements and guidelines.

## 6.05 *Acceptance of Final Payment as Release.*

- A. The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER from all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with the work under this Contract and for every act and neglect of the OWNER and others relating to or arising out of the work. Any payment, however, final or otherwise, shall not release the CONTRACTOR or its sureties from any obligations under the Contract Documents or the Public Construction Bond.

## **ARTICLE 7 - INDEMNIFICATION**

7.01 CONTRACTOR shall indemnify OWNER, ENGINEER, and others in accordance with paragraph 6.20 (*Indemnification*) of the General Conditions to the Construction Contract.

## **ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS**

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- K. Contractor is registered with and will use the Department of Homeland Security's E-Verify system ([www.e-verify.gov](http://www.e-verify.gov)) to confirm the employment eligibility of all newly hired employees for the duration of this agreement, as required by Section 448.095, F.S. Contractor is also responsible for obtaining proof of E-Verify registration for all subcontractors.

## **ARTICLE 9 - CONTRACT DOCUMENTS**

### 9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 00520-1 to 00520-9, inclusive);
2. Notice to Proceed (page 00550-1);
3. Public Construction Bond (pages 00610-1 to 00610-3, inclusive);
4. Sample Certificate of Liability Insurance (page 00620-1);
5. Contractor's Application for Payment (pages 00622-1 to 00622-6 inclusive);
6. Certificate of Substantial Completion (pages 00630-1 to 00630-2, inclusive);
7. Contractor's Final Certification of the Work (pages 00632-1 to 00632-2, inclusive);
8. Professional Surveyor & Mapper's Certification as to Elevations and Locations of the Work (page 00634-1);
9. General Conditions (pages 00700-1 to 00700-37, inclusive);
10. Supplementary Conditions (pages 00800-1 to 00800-12, inclusive);
11. Specifications as listed in Division 1 (General Requirements) and Division 2 (Technical Provisions);
12. Drawings consisting of a cover sheet and sheets lettered ABB through E2, inclusive, with each sheet bearing the following general title: I.T. REMODEL; and Drawings consisting of a cover sheet and sheets lettered ABB through E2, inclusive, with each sheet bearing the following general title: FINANCE DEPARTMENT INTERIOR REMODEL
13. Addenda (if applicable \_\_\_\_\_);
14. Appendices to this Agreement (enumerated as follows):  

Appendix A – Permits
15. CONTRACTOR'S BID (pages 00310-1 to 00310-6, inclusive);
16. Bid Bond (page 00430-1);
17. Sworn Statement Under Section 105.08, Indian River County Code, on Disclosure of Relationships (pages 00452-1 to 00452-2, inclusive);
18. Sworn Statement Under the Florida Trench Safety Act (pages 00454-1 to 00454-2, inclusive);
19. Qualifications Questionnaire (page 00456-1 to 00456-2, inclusive);
20. List of Subcontractors (page 00458-1);



21. Certification Regarding Prohibition Against Contracting with Scrutinized Companies (page 00460-1);

22. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

- a) Written Amendments;
- b) Work Change Directives;
- c) Change Order(s);

## **ARTICLE 10 - MISCELLANEOUS**

### 10.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

### 10.02 *Assignment of Contract*

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

### 10.03 *Successors and Assigns*

- A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

### 10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

### 10.05 *Venue*

- A. This Contract shall be governed by the laws of the State of Florida. Venue for any lawsuit brought by either party against the other party or otherwise arising out of this Contract shall be in Indian River County, Florida, or, in the event of a federal jurisdiction, in the United States District Court for the Southern District of Florida.

### 10.06 *Public Records Compliance*

A. Indian River County is a public agency subject to Chapter 119, Florida Statutes. The Contractor shall comply with Florida's Public Records Law. Specifically, the Contractor shall:

- (1) Keep and maintain public records required by the County to perform the service.
- (2) Upon request from the County's Custodian of Public Records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law.
- (3) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the County.
- (4) Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the Contractor or keep and maintain public records required by the County to perform the service. If the Contractor transfers all public records to the County upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the Custodian of Public Records, in a format that is compatible with the information technology systems of the County.

**B. 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:**

**(772) 226-1424**

**[publicrecords@ircgov.com](mailto:publicrecords@ircgov.com)**

**Indian River County Office of the County Attorney**

**1801 27<sup>th</sup> Street**

**Vero Beach, FL 32960**

C. Failure of the Contractor to comply with these requirements shall be a material breach of this Agreement.

[The remainder of this page was left blank intentionally]

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on \_\_\_\_ day \_\_\_\_\_ of 20\_\_\_\_ (the date the Contract is approved by the Indian River County Board of County Commissioners, which is the Effective Date of the Agreement).

**OWNER:**

INDIAN RIVER COUNTY \_\_\_\_\_

By: \_\_\_\_\_  
Joseph H. Earman, Chairman  
By: \_\_\_\_\_  
John A. Titkanich, Jr., County Administrator

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

By: \_\_\_\_\_  
Dylan Reingold, County Attorney

Jeffrey R. Smith, Clerk of Court and Comptroller

Attest: \_\_\_\_\_  
Deputy Clerk  
(SEAL)

Designated Representative:  
Name: Richard B. Szpyrka, P.E.  
Title: Public Works Director  
1801 27th Street  
Vero Beach, Florida 32960  
(772) 226-1379  
Facsimile: (772) 226-1371

**CONTRACTOR:**

\_\_\_\_\_

By: \_\_\_\_\_  
(Contractor)  
(CORPORATE SEAL)

Attest \_\_\_\_\_

Address for giving notices:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

License No. \_\_\_\_\_  
(Where applicable)

Agent for service of process: \_\_\_\_\_

Designated Representative:  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

**\*\* END OF SECTION \*\***

**SECTION 00550 – Notice to Proceed**

Dated

TO:

\_\_\_\_\_  
(BIDDER)

ADDRESS:

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

Contract For:

**INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

(Insert name of Contract as it appears in the Contract Documents)

Project No: **IRC-2004 & 2205**

IRC Bid No. **2023049**

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

You are notified that the Contract Times under the above contract will commence to run on \_\_\_\_\_. By that date, you are to start performing your obligations under the Contract Documents. The contract has allocated **90** calendar days for Substantial Completion of this project and **120** calendar days for Final Completion. In accordance with Article 4 of the Agreement the date of Substantial Completion is \_\_\_\_\_ and the date of readiness for final payment is \_\_\_\_\_.

CONTRACTOR shall not commence work under this Contract until he has obtained all insurance required under Article 5 and such insurance has been delivered to the OWNER and approved by the OWNER, nor shall the CONTRACTOR allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing *defective Work* in accordance with Article 13.

Also, before you may start any Work at the Site, you must:  
(add other requirements, if applicable)

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

\_\_\_\_\_  
**INDIAN RIVER COUNTY**  
(OWNER)

By: \_\_\_\_\_  
(AUTHORIZED SIGNATURE)

\_\_\_\_\_  
(TITLE)

## **SECTION 00610 - Public Construction Bond**

### **INSTRUCTION FOR PUBLIC CONSTRUCTION BOND**

The front or cover page to the required public construction payment and performance bond shall contain the information required by Fla. Stat. 255.05(1)(a), and be substantially in the format shown on the first page following this instruction.

The Public Construction Bond shall be in the form suggested by Fla. Stat. 255.05(3) as shown on the second page following this instruction.

A Power of Attorney from a surety insurer authorized to do business in Florida, authorizing the signature of the Attorney in Fact who executes the Public Construction Bond shall accompany that Bond.

**Public Work  
F.S. Chapter 255.05 (1)(a)  
Cover Page**

**THIS BOND IS GIVEN TO COMPLY WITH SECTION 255.05 OR SECTION 713.23 FLORIDA STATUTES, AND ANY ACTION INSTITUTED BY A CLAIMANT UNDER THIS BOND FOR PAYMENT MUST BE IN ACCORDANCE WITH THE NOTICE AND TIME LIMITATION PROVISIONS IN SECTION 255.05(2) OR SECTION 713.23 FLORIDA STATUTES.**

BOND NO: \_\_\_\_\_

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

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

CONTRACTOR PHONE NO: \_\_\_\_\_

SURETY COMPANY NAME: \_\_\_\_\_

SURETY PRINCIPAL  
BUSINESS ADDRESS: \_\_\_\_\_

SURETY PHONE NO: \_\_\_\_\_

OWNER NAME: \_\_\_\_\_

OWNER ADDRESS: \_\_\_\_\_

OWNER PHONE NO: \_\_\_\_\_

OBLIGEE NAME: \_\_\_\_\_  
**(If contracting entity is different from  
the owner, the contracting public entity)**

OBLIGEE ADDRESS: \_\_\_\_\_

OBLIGEE PHONE NO: \_\_\_\_\_

BOND AMOUNT: \_\_\_\_\_

CONTRACT NO: \_\_\_\_\_  
**(If applicable)**

DESCRIPTION OF WORK: \_\_\_\_\_

PROJECT LOCATION: \_\_\_\_\_

LEGAL DESCRIPTION: \_\_\_\_\_  
**(If applicable)**

**FRONT PAGE**

**All other bond page(s) are deemed subsequent to this page regardless of any page number(s) that may be printed thereon.**

PUBLIC CONSTRUCTION BOND

Bond No. \_\_\_\_\_  
(enter bond number)

BY THIS BOND, We \_\_\_\_\_, as Principal and \_\_\_\_\_, a corporation, as Surety, are bound to \_\_\_\_\_, herein called Owner, in the sum of \$\_\_\_\_\_, 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 the contract dated \_\_\_\_\_, \_\_\_\_\_, between Principal and Owner for construction of \_\_\_\_\_, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; 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 Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section [255.05\(2\)](#), 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.

DATED ON \_\_\_\_\_,

\_\_\_\_\_  
(Name of Principal)

By \_\_\_\_\_  
(As Attorney in Fact)

\_\_\_\_\_  
(Name of Surety)

**SECTION 620 – Sample Certificate of Liability Insurance**

<b>CERTIFICATE OF LIABILITY INSURANCE</b>	
<b>PRODUCER</b>	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
	COMPANIES AFFORDING COVERAGE
<b>INSURED</b>	COMPANY A -
	COMPANY B -
	COMPANY C -
	COMPANY D -
	COMPANY E -

**COVERAGES**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED NOTWITHSTANDING ANY REQUIREMENT TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN THE INSURANCE ACCORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/D/YY)	LIMITS		
A	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE - <input type="checkbox"/> OCCUR <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				EACH OCCURRENCE	\$ 1,000,000	
					FIRE DAMAGE (Any One Fire)	\$ 50,000	
					MED. EXP. (Any One Person)	\$ 5,000	
					PERSONAL & ADV INJURY	\$ 1,000,000	
					GENERAL AGGREGATE	\$ 1,000,000	
					PRODUCTS – COMP/OP AGG.	\$ 1,000,000	
						\$	
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> <input type="checkbox"/>				COMBINED SINGLE LIMIT (Ea. Occurrence)	\$ 1,000,000	
					BODILY INJURY (Per Person)	\$	
					BODILY INJURY (Per Accident)	\$	
					PROPERTY DAMAGE	\$	
	GARAGE LIABILITY <input type="checkbox"/> <input type="checkbox"/>				AUTO ONLY – EA ACCIDENT	\$	
					OTHER THAN	EA ACC	\$
						AUTO ONLY	AGG
A	EXCESS LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$				EACH OCCURRENCE		
					AGGREGATE	\$	
						\$	
						\$	
A	WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY  THE PROPRIETOR/PARTNERS/ EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL				<input type="checkbox"/> WC STATUTORY LIMITS		
					E.L. EACH ACCIDENT	\$ 100,000	
					E.L. DISEASE – EA	\$ 500,000	
					E.L. DISEASE-POLICY LIMIT	\$ 100,000	
	OTHER: BUILDER'S RISK				FULL REPLACEMENT COST OF THE WORK		

DESCRIPTION OF OPERATIONS/LOCATIONS VEHICLES/SPECIAL ITEMS

<b>CERTIFICATE HOLDER</b>	<b>ADDITIONAL INSURED; INSURER LETTER:</b>	<b>CANCELLATION</b>
ADDITIONAL INSURED: INDIAN RIVER COUNTY 1801 27 <sup>TH</sup> STREET, VERO BEACH, FL 32960-3388		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.
		AUTHORIZED REPRESENTATIVE



**SECTION 00622 – Contractor’s Application for Payment  
INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

Application for Payment No. \_\_\_\_\_  
For Work Accomplished through the period of \_\_\_\_\_ through \_\_\_\_\_

To: Indian River County (OWNER)  
From: \_\_\_\_\_ (CONTRACTOR)

Project No.: **IRC-2004 & 2205**

Bid No.: **2023049**

**1) Attach detailed schedule and copies of all paid invoices.**

1.	Original Contract Price:	\$	
2.	Net change by Change Orders and Written Amendments (+ or -):	\$	
3.	Current Contract Price (1 plus 2):	\$	
4.	Total completed and stored to date:	\$	
5.	Retainage (per Agreement):		
	5% of completed Work:		
	_____ % of retainage:	\$	
	Total Retainage:	\$	
6.	Total completed and stored to date less retainage (4 minus 5):	\$	
7.	Less previous Application for Payments:	\$	
<b>8.</b>	<b>DUE THIS APPLICATION (6 MINUS 7):</b>	<b>\$</b>	

**CONTRACTOR'S CERTIFICATION:**

**UNDER PENALTY OF PERJURY**, the undersigned CONTRACTOR certifies that (1) the labor and materials listed on this request for payment have been used in the construction of this Work; (2) payment received from the last pay request has been used to make payments to all subcontractors, laborers, materialmen and suppliers except as listed on Attachment A, below; (3) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); (4) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective; and (5) If this Periodic Estimate is for a Final Payment to project or improvement, I further certify that all persons doing work upon or furnishing materials or supplies for this project or improvement under this foregoing contract have been paid in full, and that all taxes imposed by Chapter 212 Florida Statutes, (Sales and Use Tax Act, as Amended) have been paid and discharged, and that I have no claims against the OWNER.

Attached to or submitted with this form are:

1. Signed release of lien forms (partial or final as applicable) from all subcontractors, laborers, materialmen and suppliers except as listed on Attachment A, together with an explanation as to why any release of lien form is not included;

2. Updated Construction Schedule per [Specification Section 01310](#).

Dated \_\_\_\_\_

By: \_\_\_\_\_  
(CONTRACTOR – must be signed by  
an Officer of the Corporation)

\_\_\_\_\_  
Print Name and Title

STATE OF \_\_\_\_\_

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

Sworn to (or affirmed) and subscribed before me by means of  physical presence or  online  
notarization, this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_, by \_\_\_\_\_  
(name of person making statement).

\_\_\_\_\_  
(Signature of Notary Public - State of Florida)  
(Print, Type, or Stamp Commissioned Name of Notary Public)

who is personally known to me or  who has produced  
\_\_\_\_\_ as identification.

**Please remit payment to:**

**Contractor's Name:** \_\_\_\_\_

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

\*\*\*\*\*  
[The remainder of this page was left blank intentionally]

**SURETY'S CONSENT OF PAYMENT TO CONTRACTOR:**

The Surety, \_\_\_\_\_

\_\_\_\_\_, a corporation, in accordance with Public Construction Bond Number \_\_\_\_\_, hereby consents to payment by the OWNER to the CONTRACTOR, for the amounts specified in this CONTRACTOR'S APPLICATION FOR PAYMENT.

**TO BE EXECUTED BY CORPORATE SURETY:**

Attest:

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
Corporate Surety

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

Business Address

BY: \_\_\_\_\_

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

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

(Affix Corporate SEAL)

STATE OF FLORIDA  
COUNTY OF INDIAN RIVER

Before me, a Notary Public, duly commissioned, qualified, and acting, personally appeared \_\_\_\_\_, to me well known or who produced \_\_\_\_\_ as identification, who being by me first duly sworn upon oath, says that he/she is the \_\_\_\_\_ for and that he/she has been authorized by \_\_\_\_\_ it to approve payment by the OWNER to the CONTRACTOR of the foregoing Contractor's Application for Payment. Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public, State of \_\_\_\_\_

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

\*\*\*\*\*

[The remainder of this page was left blank intentionally]

**CERTIFICATION OF PROJECT MANAGER:**

I certify that I have reviewed the above and foregoing Periodic Estimate for Partial Payment; that to the best of my knowledge and belief it appears to be a reasonably accurate statement of the work performed and/or material supplied by the Contractor. I am not certifying as to whether or not the Contractor has paid all subcontractors, laborers, materialmen and suppliers because I am not in a position to accurately determine that issue.

Dated \_\_\_\_\_

\_\_\_\_\_  
SIGNATURE

**CERTIFICATION OF INSPECTOR:**

I have checked the estimate against the Contractor's Schedule of Amounts for Contract Payments and the notes and reports of my inspections of the project. To the best of my knowledge, this statement of work performed and/or materials supplied appears to be reasonably accurate, that the Contractor appears to be observing the requirements of the Contract with respect to construction, and that the Contractor should be paid the amount requested above, unless otherwise noted by me. I am not certifying as to whether or not the Contractor has paid all subcontractors, laborers, materialmen and suppliers because I am not in a position to accurately determine that issue.

Dated \_\_\_\_\_

\_\_\_\_\_  
SIGNATURE

\*\*\*\*\*

[The Remainder of This Page Was Left Blank Intentionally]

**ATTACHMENT A**

- 1. List of all subcontractors, laborers, materialmen and suppliers who have not been paid from the payment received from the last Pay Request and the reason why they were not paid (attach additional pages as necessary):**

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- 2. List of all subcontractors, laborers, materialmen and suppliers for which a signed release of lien form (partial or final as applicable) is not included with this Pay Request, together with an explanation as to why the release of lien form is not included (attach additional pages as necessary):**

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**SECTION 00630 – Certificate of Substantial Completion**

Date of Issuance: \_\_\_\_\_, 20\_\_\_\_

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OWNER: Indian River County  
CONTRACTOR: \_\_\_\_\_  
CONTRACT FOR: INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE  
REMODEL  
Project No.: IRC-2004 & 2205

Project Description: ***The proposed project consists of interior modifications to the Indian River County Information Technology Department. These modifications include the removal of existing interior windows and the construction of new stud walls with drywall, paint, electrical, HVAC and flooring (approximate project area 230 sf). Also included with this project are interior modifications to the Indian River County Finance Department located on the 2nd floor of Building "A" of the IRC Administrative Building which includes stud walls, drywall, paint, electrical and HVAC modifications (approximate project area 630 sf).***

OWNER's Bid No. 2023049

---

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

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

To: \_\_\_\_\_  
OWNER

And To: \_\_\_\_\_  
CONTRACTOR

---

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

---

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within 30 calendar days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

OWNER:

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CONTRACTOR:

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The following documents are attached to and made a part of this Certificate:

*[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]*

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This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

---

---

Executed by ENGINEER on: \_\_\_\_\_ (Date).

ENGINEER: \_\_\_\_\_

By: \_\_\_\_\_  
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on \_\_\_\_\_ (date).

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

By: \_\_\_\_\_  
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on \_\_\_\_\_ (date).

OWNER: INDIAN RIVER COUNTY

By: \_\_\_\_\_  
(Authorized Signature)

**\* \* END OF SECTION \* \***



**SECTION 00632 - CONTRACTOR'S FINAL CERTIFICATION OF  
THE WORK**  
(TO ACCOMPANY CONTRACTOR'S FINAL APPLICATION FOR PAYMENT)

PROJECT NAME: **INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE  
REMODEL**  
PROJECT NO: **IRC-2004 & 2205**

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Personally before me the undersigned officer, authorized by the laws of said state to administer oaths, comes \_\_\_\_\_, who on oath says: That he is the CONTRACTOR with whom Indian River County, Florida, a political subdivision of said state, did on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, enter into a contract for the performance of certain work, more particularly described as follows:

***The proposed project consists of interior modifications to the Indian River County Information Technology Department. These modifications include the removal of existing interior windows and the construction of new stud walls with drywall, paint, electrical, HVAC and flooring (approximate project area 230 sf). Also included with this project are interior modifications to the Indian River County Finance Department located on the 2nd floor of Building "A" of the IRC Administrative Building which includes stud walls, drywall, paint, electrical and HVAC modifications (approximate project area 630 sf).***

UNDER PENALTY OF PERJURY, affiant further says that said construction has been completed and the Contract therefore fully performed and final payment is now due and that all liens of all firms and individuals contracting directly with or directly employed by such CONTRACTOR have been paid in full EXCEPT:

Name	Description/Amount
_____	_____
_____	_____

who have not been paid and who are due the amount set forth.

Affiant further says that:

1. CONTRACTOR has reviewed the Contract Documents.
2. CONTRACTOR has reviewed the Work for compliance with the Contract Documents.
3. CONTRACTOR has completed the Work in accordance with the Contract Documents.

4. All equipment and systems have been tested in the presence of the ENGINEER or his representative and are fully operational with no defects or deficiencies except as listed below.

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

5. The Work is complete and ready for final acceptance by the OWNER.  
6. CONTRACTOR hereby certifies that it has no claims against the OWNER.

(Corporate Seal)

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

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

STATE OF \_\_\_\_\_

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

Sworn to (or affirmed) and subscribed before me by means of  physical presence or  online notarization, this \_\_\_\_\_ day \_\_\_\_\_ of 20\_\_\_\_, by \_\_\_\_\_

\_\_\_\_\_  
(name of person making statement).

\_\_\_\_\_  
(Signature of Notary Public - State of Florida)  
(Print, Type, or Stamp Commissioned Name of Notary Public)

who is personally known to me or  who has produced \_\_\_\_\_ as identification.

+ + END OF SECTION + +

**SECTION 00634 - PROFESSIONAL SURVEYOR AND MAPPER'S CERTIFICATION AS TO ELEVATIONS AND LOCATIONS OF THE WORK**

(TO BE COMPLETED BY A FLORIDA PROFESSIONAL SURVEYOR AND MAPPER RETAINED BY THE CONTRACTOR AND TO ACCOMPANY CONTRACTOR'S FINAL APPLICATION FOR PAYMENT)

I CERTIFY that I am a Florida Professional Surveyor and Mapper retained by:

\_\_\_\_\_  
\_\_\_\_\_  
(Insert name of CONTRACTOR)

Who is the CONTRACTOR for the following Project:

**PROJECT NAME: INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

**PROJECT # IRC-2004 & 2205**

I FURTHER CERTIFY that I have personally performed the survey work for the preparation of Record Drawings for the CONTRACTOR for this project or that such work was performed under my direct control and supervision.

I FURTHER CERTIFY that all constructed elevations and locations of the Work are in conformance with the Contract Documents, except for discrepancies listed below.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
[Attach additional sheets as necessary]

(SURVEYOR'S SEAL)

**CERTIFIED BY:** \_\_\_\_\_

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

Florida Professional Surveyor and Mapper Registration Number: \_\_\_\_\_

Date Signed and Sealed by Professional Surveyor and Mapper: \_\_\_\_\_

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

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

Telephone Number: \_\_\_\_\_

STANDARD  
GENERAL CONDITIONS  
OF THE  
CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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AMERICAN CONSULTING ENGINEERS COUNCIL

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# GENERAL CONDITIONS

## ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

---

### 1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A

demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.



18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

~~21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.~~

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which

the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and

such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the

Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

## 1.02 Terminology

### A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

### B. Day

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

### C. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection,

reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

#### D. *Furnish, Install, Perform, Provide*

~~1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.~~

~~2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.~~

~~3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.~~

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 - PRELIMINARY MATTERS

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### 2.01 *Delivery of Bonds*

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

### 2.02 *Copies of Documents*

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

### 2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the ninetieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

### 2.04 *Starting the Work*

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

### 2.05 *Before Starting Construction*

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the

Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

~~C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.~~

#### 2.06 *Preconstruction Conference*

~~A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.~~

#### 2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

### ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

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#### 3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

#### 3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance

of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: ~~(i) a Field Order~~; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

### 3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

## ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

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### 4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

#### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

#### C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

#### B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

#### 4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument

is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.06 Hazardous Environmental Condition at Site

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area

affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any



individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 - BONDS AND INSURANCE

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### 5.01 *Performance, Payment, and Other Bonds*

~~A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.~~

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to

meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### 5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. ~~OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.~~

### 5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CON-

TRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

#### 5.05 *OWNER's Liability Insurance*

~~—A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.~~

#### 5.06 *Property Insurance*

~~A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:~~

~~1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;~~

~~2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse,~~

~~debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;~~

~~3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);~~

~~4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;~~

~~5. allow for partial utilization of the Work by OWNER;~~

~~6. include testing and startup; and~~

~~7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.~~

~~B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.~~

~~C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.~~

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be

borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

~~E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.~~

#### 5.07 Waiver of Rights

~~A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.~~

~~B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:~~

~~1.—loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and~~

~~2.—loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.~~

~~C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.~~

#### 5.08 *Receipt and Application of Insurance Proceeds*

~~A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.~~

~~B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.~~

#### 5.09 *Acceptance of Bonds and Insurance; Option to Replace*

~~A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.~~

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

### ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

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#### 6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of

construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

#### 6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

#### 6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier,

except as otherwise may be provided in the Contract Documents.

#### 6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

#### 6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it

is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

## 2. Substitute Items

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use

of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

**B. *Substitute Construction Methods or Procedures:*** If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

**C. *Engineer's Evaluation:*** ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

**D. *Special Guarantee:*** OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

**E. *ENGINEER's Cost Reimbursement:*** ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of

ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense*: CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

#### 6.06 Concerning Subcontractors, Suppliers, and Others

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

#### 6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations,

CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

#### 6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are

unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

#### 6.10 *Taxes*

- A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.
- B. OWNER qualifies for state and local sales tax exemption in the purchase of all material and equipment.

#### 6.11 *Use of Site and Other Areas*

##### A. *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.



B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

#### 6.13 Safety and Protection

A. 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:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. 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.

B. 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. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 Safety Representative

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 Hazard Communication Programs

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 6.16 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to

prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 Shop Drawings and Samples

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

#### D. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage,

assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

#### E. ENGINEER's Review

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

#### F. Resubmittal Procedures

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

#### 6.18 Continuing the Work

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

#### 6.19 CONTRACTOR's General Warranty and Guarantee

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release

of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

#### 6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemni-

fied party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

## ARTICLE 7 - OTHER WORK

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### 7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and
2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

### 7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

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### 8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

### 8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

### 8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

### 8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

### 8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

### 8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

### 8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

### 8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

### 8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

### 8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

### 8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

## ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

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### 9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

### 9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will

conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

### 9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

### 9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

### 9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ~~These may be accomplished by a Field~~

~~Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.~~

### 9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

### 9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

### 9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

### 9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred

initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

#### 9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

## ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

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### 10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

### 10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

### 10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of

any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

#### 10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

### ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

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#### 11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

~~1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full~~



~~time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.~~

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and tempo-

rary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a

Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work,

CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

#### 11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

#### 11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate

to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
2. there is no corresponding adjustment with respect any other item of Work; and
3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

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### 12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03 ); or
2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or
3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as

provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee*: The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
  - a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;
  - b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;
  - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
  - d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
  - e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and
  - f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

### 12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGI-

NEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

#### 12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

#### 12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

#### 12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

#### 12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or
2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors

performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

### ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

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#### 13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

#### 13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

#### 13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. ~~OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:~~

- ~~1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;~~
- ~~2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and~~

~~3. as otherwise specifically provided in the Contract Documents.~~

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

#### 13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited

to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

#### 13.05 *OWNER May Stop the Work*

~~A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.~~

#### 13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

#### 13.07 *Correction Period*

~~A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost~~

~~to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.~~

~~B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.~~

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

### 13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such

acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

### 13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction,

removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

## ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

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### 14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

### 14.02 *Progress Payments*

#### A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

#### B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. The conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle

CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

~~d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.~~

#### C. *Payment Becomes Due*

~~1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.~~

#### D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

#### 14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

#### 14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of



Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefore. ~~If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.~~

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Com-

pletion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance

with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

#### B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall

make the necessary corrections and resubmit the Application for Payment.

#### C. *Payment Becomes Due*

~~1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.~~

#### 14.08 Final Completion Delayed

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

#### 14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

## ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

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### 15.01 OWNER May Suspend Work

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. ~~CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.~~

### 15.02 OWNER May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);
2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;
3. CONTRACTOR's disregard of the authority of ENGINEER; or
4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages

(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

### 15.03 OWNER May Terminate For Convenience

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other eco-

conomic loss arising out of or resulting from such termination.

#### 15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, ~~or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due~~, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, ~~or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due~~, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

### ARTICLE 16 - DISPUTE RESOLUTION

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#### 16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

### ARTICLE 17 - MISCELLANEOUS

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#### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

#### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

#### 17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

#### 17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

#### 17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

**SECTION 00800 - SUPPLEMENTARY CONDITION TO THE  
GENERAL CONDITIONS**

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+++ END OF THIS SUPPLEMENTARY CONDITIONS INDEX +++

## SECTION 00800 - SUPPLEMENTARY CONDITIONS TO THE GENERAL CONDITIONS

### SC-1.00 Introduction

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions, which are not so amended or supplemented, remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions.

### SC-1.01 Defined Terms

SC-1.01.A.20 *Add the following language to the end of GC 1.01.A.20.*

ENGINEERS's Consultant:	Edlund Dritenbas Binkley Architects and Associates, P.A. 65 Royal Palm Pointe, Suite "D" Vero Beach, FL 32960
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SC-1.01.A.21. Delete paragraph GC 1.01.A.21 in its entirety.

### SC-1.02 Terminology

SC-1.02.D.1, 2, and 3 *Delete paragraphs GC-1.02.D.1, 2, and 3 in their entirety and insert the following paragraphs in their place:*

D. *Furnish, Install, Perform, Provide*

1. The word "furnish" shall mean to supply and deliver services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word "install" shall mean to put into use or place in final position services, materials, or equipment complete and ready for intended use.
3. The words "perform" or "provide" shall mean to furnish and install services, materials, or equipment complete and ready for intended use.

### SC-2.05 Before Starting Construction

SC-2.05.C. *Delete paragraph GC 2.05.C in its entirety and insert the following paragraph in its place:*

- C. Evidence of Insurance: CONTRACTOR shall not commence work under this Contract until he has obtained all insurance required under Article 5 and such insurance has been delivered to the OWNER and approved by the OWNER, nor shall the CONTRACTOR allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing *defective* Work in accordance with Article 13.

### SC-2.06 Preconstruction Conference

SC-2.06 *Delete paragraph GC-2.06.A in its entirety and insert the following paragraph in its place:*

- A. Immediately after awarding the contract, but before the CONTRACTOR begins work,

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the Project Manager will call a preconstruction conference at a place the ENGINEER designates to establish an understanding among the parties as to the work and to discuss schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, and maintaining required records. Utility companies and others as appropriate will be requested to attend to discuss and coordinate work.

- B. Per the FDOT Standard Specifications for Road and Bridge Construction, the Contractor will certify to the Engineer the following:
1. A listing of on-site clerical staff, supervisory personnel and their pro-rated time assigned to the contract,
  2. Actual Rate for items listed in Table 4-3.2.1 (see below),
  3. Existence of employee benefit plan for Holiday, Sick and Vacation benefits and a Retirement Plan, and,
  4. Payment of Per Diem is a company practice for instances when compensation for Per Diem is requested.

Such certification must be made by an officer or director of the Contractor with authority to bind the Contractor. Timely certification is a condition precedent to any right of the Contractor to recover compensations for such costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such costs. Any subsequent changes shall be certified to the Engineer as part of the cost proposal or seven calendar days in advance of performing such extra work.

FDOT Table 4-3.2.1	
Item	Rate
FICA	Rate established by Law
FUTA/SUTA	Rate established by Law
Medical Insurance	Actual
Holidays, Sick & Vacation Benefits	Actual
Retirement Benefits	Actual
Workers Compensation	Rates based on the National Council on Compensation Insurance basic rates tables adjusted by Contractor's actual experience modification factor in effect at the time of the additional work or unforeseen work
Per Diem	Actual but not to exceed State of Florida's rate
Insurance*	Actual
*Compensation for Insurance is limited solely to General Liability Coverage and does not include any other insurance coverage (such as, but not limited to, Umbrella Coverage, Automobile Insurance, etc.).	

**SC-3.06 Coordination of Plans, Specifications, and Special Provisions**

SC-3.06 Add the following new paragraphs immediately after paragraph GC-3.05:

*SC-3.06 Coordination of Plans, Specifications, and Special Provisions*

- A. In case of discrepancy, the governing order of the documents shall be as follows:
1. Written Interpretations
  2. Addenda
  3. Specifications
  4. Supplementary Conditions to the General Conditions
  5. General Conditions
  6. Approved Shop Drawings

- 7. Drawings
- 8. Referenced Standards.
- B. Written/computed dimensions shall govern over scaled dimensions.

#### **SC-4.02 Subsurface and Physical Conditions**

SC-4.02 *Add the following new paragraphs immediately after paragraph GC-4.02.B:*

- C. In the preparation of Drawings and Specifications, ENGINEER or ENGINEER's Consultants relied upon the following reports of explorations and tests of subsurface conditions at the Site:  
N/A
- D. Reports and drawings itemized in SC-4.02.C are included with the Bidding Documents in Appendix D.

#### **SC-5.01 Performance, Payment and Other Bonds**

SC-5.01.A. *Delete paragraph GC-5.01.A in its entirety and insert the following paragraphs in its place:*

Within fifteen (15) days of receipt of the Contract Documents for execution, the CONTRACTOR shall furnish a Public Construction Bond in an amount equal to 100% of the Contract Price.

- 1. In lieu of the Public Construction Bond, the CONTRACTOR may furnish an alternative form of security in the form of cash, money order, certified check, cashier's check, irrevocable letter of credit or a security as listed in Part II of F.S. Chapter 625. Any such alternative form of security shall be for the same purpose, and be for the same amount and subject to the same conditions as those applicable to the bond otherwise required. The determination of the value of an alternative form of security shall be made by the OWNER.
- 2. Such Bond shall continue in effect for one (1) year after acceptance of the Work by the OWNER.
- 3. The OWNER shall record the Public Construction Bond with the Public Record Section of the Indian River County Courthouse located at 2000 16th Avenue, Vero Beach, Florida 32960.

#### **SC-5.03 Certificates of Insurance**

SC-5.03 *Delete the second sentence of paragraph GC-5.03 in its entirety.*

#### **SC-5.04 CONTRACTOR's Liability Insurance**

SC-5.04 *Add the following new paragraphs immediately after paragraph GC-5.04.B:*

- C. The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
  - 1. Worker's Compensation: To meet statutory limits in compliance with the Worker's Compensation Law of Florida. This policy must include Employer Liability with a limit \$100,000 for each accident, \$500,000 disease (policy limit) and \$100,000 disease (each employee). Such policy shall include a waiver of subrogation as against OWNER and ENGINEER on account of injury sustained by an employee(s) of the CONTRACTOR.



2. Commercial General Liability: Coverage shall provide minimum limits of liability of \$1,000,000 per occurrence Combined Single Limit for Bodily Injury and Property Damage. This shall include coverage for:
  - a. Premises/Operations
  - b. Products/Completed Operations
  - c. Contractual Liability
  - d. Independent Contractors
  - e. Explosion
  - f. Collapse
  - g. Underground.
  
3. Business Auto Liability: Coverage shall provide minimum limits of liability of \$1,000,000 per occurrence Combined Single Limit for Bodily Injury and Property Damage. This shall include coverage for:
  - a. Owned Autos, and other vehicles
  - b. Hired Autos, and other vehicles
  - c. Non-Owned Autos, and other vehicles.
  
4. Special Requirements:
  - a. Ten (10) days prior to the commencement of any work under this Contract, certificates of insurance and endorsement forms in the exact wording and format as presented in these Contract Documents will be provided to the OWNER's Risk Manager for review and approval.
  - b. "Indian River County Florida" will be named as "Additional Insured" on both the General Liability and Auto Liability.
  - c. The OWNER will be given thirty (30) days notice prior to cancellation or modification of any stipulated insurance. Such notification will be in writing by registered mail, return receipt requested and addressed to the OWNER's Risk Manager.
  - d. An appropriate "Indemnification" clause shall be made a provision of the Contract (see paragraph 6.20 of the General Conditions).
  - e. It is the responsibility of the CONTRACTOR to insure that all subcontractors comply with all insurance requirements.
  - f. It should be remembered that these are minimum requirements, which are subject to modification in response to high hazard operation.
  - g. Insured must be authorized to do business and have an agent for service of process in Florida and have Best's Rating of A-VII or better.
  - h. All insurance requirements shall be at the Contractor's sole cost and expense, including any deductible or self-insured retention, without contribution from Indian River County or its insurance carriers.
  
- D. Additional Insureds:
  1. In addition to "Indian River County, Florida," the following individuals or entities shall be listed as "additional insureds" on the CONTRACTOR's liability insurance policies:
    - a. N/A
  
- E. Contractor shall be responsible for any deductible or self-insured retention.

### **SC-5.05 OWNER's Liability Insurance**

SC-5.05 Delete paragraph GC-5.05.A in its entirety.

**SC-5.06 Property Insurance**

SC-5.06 *Delete paragraphs GC-5.06.A, B, and C in their entirety and insert the following paragraphs in their place:*

- A. CONTRACTOR shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall:
1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
  2. be written on a Builder's Risk "All Risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and
  5. allow for partial utilization of the Work by OWNER;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.
- B. CONTRACTOR shall be responsible for any deductible or self-insured retention.
- C. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this paragraph SC-5.06 shall comply with the requirements of paragraph 5.06.C of the General Conditions.

SC-5.06.E *Delete paragraph GC-5.06.E in its entirety and insert the following in its place:*

- E. Additional Insureds:
1. The following individuals or entities shall be listed as "additional insureds" on the CONTRACTOR's property insurance policies:
    - a. Indian River County

**SC-5.07 Waiver of Rights**

SC-5.07 *Delete GC-5.07 (paragraphs A, B, and C) in its entirety.*

**SC-5.08 Receipt and Application of Insurance Proceeds**

SC-5.08 *Delete GC-5.08 (paragraphs A and B) in its entirety.*

**SC-5.09 Acceptance of Bonds and Insurance; Option to Replace**

SC-5.09 *Delete GC-5.09 (paragraph A) in its entirety.*

**SC-6.02 Labor; Working Hours**

SC-6.02.B. *Add the following paragraphs immediately after paragraph GC-6.02.B:*

1. Regular working hours are defined as Monday through Friday, excluding Indian River County Holidays, from 8 a.m. to 5 p.m. Consideration is given to some tasks that may disturb staff operations may be performed after normal hours and or weekends with County approval.
2. Indian River County Holidays are: New Year's Day, Martin Luther King, Jr. Day, Good Friday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, Christmas Eve and Christmas Day. Working on these days will not be permitted without prior written permission and approval from the Construction Coordination Manager.
3. The CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of eight hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing.
4. All costs of inspection and testing performed during overtime work by the CONTRACTOR, which is allowed solely for the convenience of the CONTRACTOR, shall be borne by the CONTRACTOR, and a credit given to the OWNER to deduct the costs of all such inspection and testing from any payments otherwise due the CONTRACTOR.
5. All costs of OWNER's employees and costs of ENGINEER's Consultant resulting from overtime work by the CONTRACTOR, which is allowed solely for the convenience of the CONTRACTOR, shall be borne by the CONTRACTOR, and a credit given to OWNER to deduct all such costs from any payments otherwise due the CONTRACTOR.
6. No work shall commence before 7 a.m. or continue after 5 p.m. except in case of emergency upon specific permission of the ENGINEER.

**SC-6.06 Concerning Subcontractors, Suppliers, and Others**

SC-6.06.C. *Add the following sentence at the end of paragraph GC-6.06.C:*

OWNER or ENGINEER may furnish to any such Subcontractor, Supplier, or other individual or entity, to the extent practicable, information about amounts paid to CONTRACTOR on account of Work performed for CONTRACTOR by a particular Subcontractor, Supplier, or other individual or entity.

**SC-6.08 Permits**

SC-6.08 *Add the following paragraphs immediately after paragraph GC-6.08.A:*

1. The OWNER has obtained the following permits (copies of these permits are contained in Appendix A):
2. The CONTRACTOR shall obtain and pay for all other required permits and licenses. The CONTRACTOR shall provide copies of the permits to the OWNER and ENGINEER and shall comply with all conditions contained in the permits at no extra cost to the OWNER.
3. The CONTRACTOR shall be familiar with all permit requirements during construction and shall be responsible for complying with these requirements. The cost of this effort shall be included in the pay item in which the work is most closely associated with.

**SC-9.05 Authorized Variations in Work**

SC-9.05.A. *Delete the second sentence in paragraph GC-9.05.A in its entirety.*

**SC-11.01 Cost of the Work**

SC-11.01.A.1. *Delete paragraph GC-11.01.A.1 in its entirety, and insert the following sentences in its place:*

1. CONTRACTOR will receive payment for actual costs of direct labor and burden (see SC-2.06.B) for the additional or unforeseen work. Labor includes foremen actually engaged in the work; and will not include project supervisory personnel nor necessary on-site clerical staff, except when the additional or unforeseen work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. Compensation for project supervisory personnel, but in no case higher than a Project Manager's position, shall only be for the pro-rata time such supervisory personnel spent on the contract. In no case shall an officer or director of the Company, nor those persons who own more than 1% of the Company, be considered as project supervisory personnel, direct labor or foremen hereunder. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

**SC-13.03 Test and Inspections**

SC-13.03.B. *Delete paragraph GC-13.03.B in its entirety, and insert the following sentences in its place:*

- B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all initial inspections, tests, or approvals required by the Contract Documents except those inspections, tests, or approvals listed immediately below. Subsequent inspections, tests, or approvals required after initial failing inspections, tests, or approvals shall be paid for by the CONTRACTOR by back charge to subsequent applications for payment. The CONTRACTOR shall arrange, obtain, and pay for the following inspections, tests, or approvals:
1. inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
  2. costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B;
  3. tests otherwise specifically provided in the Contract Documents.

**SC-13.05 OWNER May Stop the Work**

SC-13.05.A. *Delete paragraph GC-13.05.A in its entirety and insert the following paragraph in its place:*

- A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to comply with permit requirements, or fails to comply with the technical specifications, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

**SC-13.07 Correction Period**

SC-13.07 A. *Delete the first sentence of paragraph GC-13.07.A in its entirety and insert the following sentence in its place*

- A. If within one year after the date of Final Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

SC-13.07 B. *Delete paragraph GC-13.07.B in its entirety and insert the following sentence in its place*

- B. In special circumstances where a particular item of equipment is placed in continuous service before Final Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

**SC-14.02 Progress Payments**

SC-14.02.B.5. *Delete paragraph GC-14.02.B.5.d in its entirety and insert the following paragraph in its place:*

- d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A; or

SC-14.02.B.5. *Add the following sentences at the end of paragraph GC-14.02.B.5:*

- e. OWNER has been required to pay ENGINEER additional compensation because of CONTRACTOR delays or rejection of defective Work; or
- f. OWNER has been required to pay an independent testing laboratory for subsequent inspections, tests, or approvals taken after initial failing inspections, tests, or approvals.

SC-14.02.C.1. *Delete paragraph GC-14.02.C.1 in its entirety and insert the following paragraph in its place:*

C. Payment Becomes Due

1. Payment shall be made by OWNER to CONTRACTOR according to the Local Government Prompt Payment Act. F.S. 218.70 et. seq.

**SC-14.04 Substantial Completion**

SC-14.04A. *After the third sentence in paragraph GC-14.04A of the General Conditions, delete the remainder of paragraph 14.04A in its entirety and replace with the following:*

“If Engineer considers the Work substantially complete, Engineer will prepare and deliver to Owner a tentative certificate of Substantial Completion that shall fix the date of Substantial Completion. In accordance with the provisions of Florida Statutes section 208.735(7)(a)(2005), upon receipt of the tentative certificate of Substantial Completion from Engineer, the Owner, the Engineer, and the Contractor shall conduct a walk-through inspection of the Project to document a list of any items required to render the Work on the Project complete, satisfactory, and acceptable under this Agreement (herein the “Statutory List”). The Statutory List shall be reduced to writing and circulated among the Owner, the Engineer, and the Contractor by the Owner or the Engineer within 30 calendar days after substantial completion. The Owner and Contractor acknowledge and agree that: 1) the failure to include any corrective work, or pending items that are not yet completed, on the Statutory List does not alter the responsibility of the Contractor to complete all of the Work under this Agreement; 2) upon completion of all items on the Statutory List, the Contractor may submit a pay request for all remaining retainage except as otherwise set forth in this Agreement; and 3) any and all items that require correction under this Agreement and that are identified after the preparation of the Statutory List remain the obligation of the Contractor to complete to the Owner’s satisfaction under this Agreement. After receipt of the Statutory List by the Contractor, the Contractor acknowledges and agrees that it will diligently proceed to complete all items on the Statutory List and schedule a final walk-through in anticipation of final completion on the Project.”

SC-14.04B *Add the following new paragraph immediately after paragraph GC 14.04B:*

C. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees

**SC-14.07 Final Payment**

SC-14.07.C.1. *Delete paragraph GC-14.07.C.1 in its entirety and insert the following paragraph in its place:*

C. Payment Becomes Due

1. Payment shall be made by OWNER to CONTRACTOR according to the “Local Government Prompt Payment Act” , Florida Statutes section 218.70, et. seq.

**SC-15.01 OWNER May Suspend Work**

SC-15.01.A *Delete the last sentence in paragraph GC-15.01.A and insert the following in its place:*  
 CONTRACTOR shall be allowed an extension of the Contract Times, directly attributable to any such suspension if CONTRACTOR makes a Claim for an extension as provided in paragraph 10.05. CONTRACTOR shall not be allowed an adjustment of the Contract Price and CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such Work suspension.

**SC-15.02 OWNER May Terminate For Cause**

SC-15.02.A.5 and SC-15.02.A.6 *Add the following new paragraphs immediately after paragraph GC-15.02.A.4:*

5. CONTRACTOR’s violation of Section 02225 – “Erosion Control and Treatment of Dewatering Water From the Construction Site.”
6. CONTRACTOR’s failure to make payment to Subcontractors or Suppliers for materials or labor in accordance with the respective agreements between the CONTRACTOR and the Subcontractors or Suppliers.
7. CONTRACTOR certifies that it and its related entities as defined by Florida law are not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725 of the Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, CONTRACTOR certifies that it and its related entities as defined above by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria.

OWNER may terminate this Contract if CONTRACTOR is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes.

OWNER may terminate this Contract if CONTRACTOR, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies, that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

**SC-15.04 CONTRACTOR May Stop Work or Terminate**

SC-15.04 *Delete the following text from the first sentence of paragraph GC-15.04.A:*

~~or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due,~~

SC-15.04 *Delete the following text from the second sentence of paragraph GC-15.04.A:*

~~or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due,~~

## **SC-16 Dispute Resolution**

### **SC-16.02 Mediation**

SC-16 *Add the following new paragraph immediately after paragraph GC-16.01.*

#### SC-16.02 Mediation

- A. OWNER and CONTRACTOR agree that they shall submit any and all unsettled Claims or counterclaims, disputes, or other matters in question between them arising out of or relating to the Contract Documents or the breach thereof, to mediation by a certified mediator of the 19<sup>th</sup> Judicial Circuit in Indian River County unless delay in initiating mediation would irrevocably prejudice one of the parties. The mediator of any dispute submitted to mediation under this agreement shall not serve as arbitrator of such dispute unless otherwise agreed.

## **SC-17 Miscellaneous**

### **SC-17.06 Liens**

*Add the following new paragraphs immediately after paragraph GC17.05:*

#### SC-17.06 Liens

- A. This project is a "Public Works" under Chapter 255, Florida Statutes. No merchant's liens may be filed against the OWNER. Any claimant may apply to the OWNER for a copy of this Contract. The claimant shall have a right of action against the CONTRACTOR for the amount due him. Such action shall not involve the OWNER in any expense. Claims against the CONTRACTOR are subject to timely prior notice to the CONTRACTOR as specified in Florida Statutes Section 255.05. The CONTRACTOR shall insert the following paragraph in all subcontracts hereunder:

"Notice: Claims for labor, materials and supplies are not assessable against Indian River County and are subject to proper prior notice to (CONTRACTOR'S Name) and to (CONTRACTOR Surety Company Name), pursuant to Chapter 255 of the Florida Statutes. This paragraph shall be inserted in every sub-subcontract hereunder." The payment due under the Contract shall be paid by the OWNER to the CONTRACTOR only after the CONTRACTOR has furnished the OWNER with an affidavit stating that all persons, firms or corporations who are defined in Section 713.01, Florida Statutes, who have furnished labor or materials, employed directly or indirectly in the Work, have been paid in full. The OWNER may rely on said affidavit at face value. The CONTRACTOR does hereby release, remiss and quit-claim any and all rights he may enjoy perfecting any lien or any other type of statutory common law or equitable lien against the job.

++END OF SUPPLEMENTARY CONDITIONS++



**SECTION 00942 – Change Order Form**

No. \_\_\_\_

DATE OF ISSUANCE: \_\_\_\_\_

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

OWNER: Indian River County

CONTRACTOR \_\_\_\_\_

Project: **INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

OWNER's Project No. **IRC-2004 & 2005**

OWNER'S Bid No. **2023049**

You are directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:	
Description	Amount
Original Contract Price	\$ _____
Net Increase (Decrease) from previous Change Orders No. _____ to _____:	\$ _____
Contract Price prior to this Change Order:	\$ _____
Net increase (decrease) of this Change Order:	\$ _____
Contract Price with all approved Change Orders:	\$ _____

CHANGE IN CONTRACT TIMES	
Description	Time
Original Contract Time:	(days or dates) _____
Substantial Completion:	_____
Final Completion:	_____
Net change from previous Change Orders No. _____ to _____:	(days) _____
Substantial Completion:	_____
Final Completion:	_____
Contract Time prior to this Change Order:	(days or dates) _____
Substantial Completion:	_____
Final Completion:	_____
Net increase (decrease) this Change Order:	(days or dates) _____
Substantial Completion:	_____
Final Completion:	_____
Contract Time with all approved Change Orders:	(days or dates) _____
Substantial Completion:	_____
Final Completion:	_____

<b>ACCEPTED:</b>
By:
CONTRACTOR (Signature)
Date:

<b>RECOMMENDED:</b>
By:
ENGINEER (Signature)
Date:

<b>APPROVED:</b>
By:
OWNER (Signature)
Date:

**SECTION 00948 – Work Change Directive**

No. \_\_\_\_

DATE OF ISSUANCE: \_\_\_\_\_

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

OWNER: Indian River County

CONTRACTOR \_\_\_\_\_

Project: **INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL**

OWNER's Project No. **IRC-2004 & 2005**

OWNER'S Bid No. **2023049**

You are directed to proceed promptly with the following changes:

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in Contract Prices

- Unit Prices
- Lump Sum
- Other: \_\_\_\_\_
- By Change Order:

Estimated increase (decrease) of this Work Change Directive  
\$ \_\_\_\_\_

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Method of determining change in Contract Times

- Contractor's Records
- Engineer's Records
- Other: \_\_\_\_\_
- By Change Order:

Estimated increase (decrease) in Contract Times:

Substantial Completion: \_\_\_\_\_ days;  
Ready for Final Completion: \_\_\_\_\_ days.

If the change involves an increase, the estimated time is not to be exceeded without further authorization.

ACCEPTED:
By:
CONTRACTOR (Signature)
Date:

RECOMMENDED:
By:
ENGINEER (Signature)
Date:

APPROVED:
By:
OWNER (Signature)
Date:

**\*\* END OF SECTION \*\***

**DIVISION 1 - GENERAL REQUIREMENTS**

**DIVISION 1 - GENERAL REQUIREMENTS**

SECTION 01009 - SPECIAL PROVISIONS

SECTION 01024 - FORCE ACCOUNT

SECTION 01091 - REFERENCE STANDARDS

SECTION 01215 - GENERAL QUALITY CONTROL

SECTION 01220 - PROGRESS MEETINGS

SECTION 01310 - CONSTRUCTION SCHEDULES

SECTION 01340 - SUBMITTAL OF SHOP DRAWINGS

SECTION 01520 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

SECTION 01541 - PROTECTION OF THE WORK AND PROPERTY

SECTION 01550 - ACCESS ROADS, PARKING AREAS AND USE OF PUBLIC STREETS

SECTION 01610 - TRANSPORTATION AND HANDLING OF MATERIALS AND EQUIPMENT

SECTION 01611 - STORAGE OF MATERIAL AND EQUIPMENT

SECTION 01630 - SUBSTITUTIONS

SECTION 01710 - SITE CLEANUP AND RESTORATION

SECTION 01820 - POST FINAL INSPECTION

## SECTION 01009 - SPECIAL PROVISIONS

### 1.1 GENERAL

- A. Visits to the construction site may be made by representatives of permitting or governing bodies. Submit details of all instructions from the above to the ENGINEER immediately. The Work will not be accepted by the OWNER until final acceptance has been received from the various Regulatory Agencies having jurisdiction.
- B. Furnish sufficient labor, construction equipment and materials, and work such hours, including night shifts and overtime operations, as may be necessary to insure the prosecution of the work in accordance with the approved progress schedule. If, in the opinion of the ENGINEER, the CONTRACTOR falls behind the progress schedule, take such steps as may be necessary to improve progress, all without additional cost to the OWNER. The ENGINEER shall be compensated for his overtime services in accordance with the Supplementary Conditions, SC-6.02.
- C. All salvageable material and equipment for which specific use, relocation or other disposal is not specifically noted, shall remain the property of the OWNER and shall be delivered to the OWNER at the following location: 4550 41<sup>st</sup> Street, at the CONTRACTOR's expense. All material and equipment not in salvageable condition, as determined by the ENGINEER and the OWNER, shall be disposed of by the CONTRACTOR, at the CONTRACTOR's expense.
- ~~D. In addition to these Specifications all work must comply with the requirements of the local governing agency, St. Johns River Water Management District, Department of Environmental Protection, Army Corps of Engineers, Indian River Farms Water Control District, and all other applicable State or Federal agencies' specifications and permits. In the event of a conflict, the more stringent specification or requirement shall govern.~~
- E. Before performing any work outside the designated limits of the work site, secure any necessary permits and authorization from the applicable owner, or verify in writing that such has been previously obtained. Follow all requirements of any said permits or authorization. Give the ENGINEER and appropriate owner ten (10) days minimum notice before commencing construction operations outside the designated limits of the work site.

+ + END OF SECTION + +

**SECTION 01024 - FORCE ACCOUNT**

**1.1 GENERAL**

- A. CONTRACTOR shall furnish all labor, materials, equipment and incidentals necessary to perform additional work not covered on the Contract Drawings. The force Account is intended as a contingency for unforeseen work.

**1.2 PAYMENT**

- A. Lump sum amount for force account work is included in the bid schedule. The value of force account work will be determined in accordance with Article 12 of the General Conditions.

+ + END OF SECTION + +

**SECTION 01091 - REFERENCE STANDARDS****1.1 GENERAL**

- A. Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the date of advertisement for bids, unless noted otherwise in the Technical Specifications or on the Drawings. When a reference standard is specified, comply with requirements and recommendations stated in that standard, except when they are modified by the Contract Documents, or when applicable laws, ordinances, rules, regulations or codes establish stricter standards. The list of specifications presented in Paragraph B is hereby made a part of the Contract, the same as if repeated herein in full.
- B. Reference to a technical society, organization, or body may be made in the Specifications by abbreviations, in accordance with the following list:

AASHTO	The American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWWA	American Water Works Association
AWS	American Welding Society
FED.SPEC.	Federal Specifications
CRSI	Concrete Reinforcing Steel Institute
FDEP/DEP	Florida Department of Environmental Protection
DNR	Department of Natural Resources
NCPI	National Clay Pipe Institute
NEMA	National Electrical Manufacturers Association
NEC	National Electric Code
NSPE	National Society of Professional Engineers
OSHA	Occupational Safety and Health Administration

PCI	Prestressed Concrete Institute
FDOT/DOT	Florida Department of Transportation
U. L., Inc.	Underwriter's Laboratories, Inc.
SSPC	Steel Structures Painting Council
SJRWMD	St. Johns River Water Management District

- C. When no reference is made to a code, standard or specification, the standard specifications of ASTM, FDOT, or ANSI shall govern.
- D. In the event of a conflict between the specifications prepared by the ENGINEER and the above referenced specifications and standards, or any other regulatory specification or standard, the more stringent requirement prevails.

+ + END OF SECTION + +

## **SECTION 01215 - GENERAL QUALITY CONTROL**

### **1.1 DESCRIPTION OF REQUIREMENTS**

- A. Definitions: Specific quality control requirements for the work are indicated throughout the Contract Documents. The requirements of this section are primarily related to the performance of the work beyond the furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This section does not specify or modify the OWNER and ENGINEER duties relating to quality review and Contract surveillance.

### **1.2 RESPONSIBILITY FOR INSPECTIONS AND TESTS**

- A. Residual OWNER Responsibility: The OWNER will employ and pay for the services of independent testing laboratories to perform those required inspections and tests.
- B. CONTRACTORS General Responsibility: No failure of test agencies, whether engaged by the OWNER or CONTRACTOR, to perform adequate inspections of tests or to properly analyze or report results, shall relieve the CONTRACTOR of responsibility for the fulfillment of the requirements of the Contract Documents. It is recognized that the required inspection and testing program is intended to assist the CONTRACTOR, OWNER, ENGINEER, and governing authorities in the nominal determination of probable compliance with requirements for certain crucial elements of work. The program is not intended to limit the CONTRACTOR in his regular quality control program, as needed for general assurance of compliance.

### **1.3 QUALITY ASSURANCE**

- A. General Workmanship Standards: It is a requirement that each category of tradesman or installer performing the work be pre-qualified, to the extent of being familiar with the applicable and recognized quality standards for his category of work, and being capable of workmanship complying with those standards.

### **1.4 PRODUCT DELIVERY-STORAGE-HANDLING**

Handle, store and protect materials and products, including fabricated components, by methods and means which will prevent damage, deterioration and losses (and resulting delays), thereby ensuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at the project site prior to installation.



## 1.5 PROJECT PHOTOGRAPHS/VIDEOS

- A. The CONTRACTOR shall make provisions, at his expense, for photographs and video tapes of all work areas just prior to construction, and for unusual conditions during construction. The photographs and videos shall show pertinent physical features along the line of construction. The purpose of the videos is to determine any damage to private or public property during construction. The video must be performed by a professional videographer.
- B. Pre-Construction Photographs and Video:
1. Contractor shall provide the Owner with photographs and video record and one copy of the existing conditions prior to construction. These photographs and videos shall be a standard DVD format and shall be narrated.
  2. The photographs and video shall include, but not be limited to, the following items shown in a clear manner:
    - 1) All existing features within the right-of-way.
    - 2) All existing features within the temporary construction easement.
    - 3) All existing features within permanent easements.
    - 4) All existing features adjacent to any construction.
  3. Detail of the photographs and video shall be such that the following examples shall be clear and visible:
    - 1) Cracks in walls.
    - 2) Condition of fencing.
    - 3) Condition of planted areas and types of vegetation.
    - 4) Condition of sodded areas.
    - 5) Conditions of sprinkler systems and associated controls and wiring.
    - 6) Condition of signs.
    - 7) Conditions of lighting and associated wiring.
    - 8) Significant detail of any pre-existing damages physical features shall be shown. The coverage of the photographs and video should include the limits of effects of the use of vibratory rollers.
    - 9) These photographs and video record shall be presented and approved by the Owner prior to the Notice to Proceed. A copy shall be kept in the Contractor's field office.
    - 10) Payment – No additional payment will be made for this work.

+ + END OF SECTION + +

## **SECTION 01220 - PROGRESS MEETINGS**

### **1.1 SCOPE**

- A. Date and Time:
  - 1. Regular Meetings: As mutually agreed upon by ENGINEER and CONTRACTOR.
  - 2. Other Meetings: On call.
- B. Place: CONTRACTOR'S office at Project site or other mutually agreed upon location.
- C. ENGINEER shall prepare agenda, preside at meetings, and prepare and distribute a transcript of proceedings to all parties.
- D. CONTRACTOR shall provide data required and be prepared to discuss all items on agenda.

### **1.2 MINIMUM ATTENDANCE**

- A. CONTRACTOR
- B. SUBCONTRACTOR:  
When needed for the discussion of a particular agenda item, CONTRACTOR shall require representatives of Subcontractors or suppliers to attend a meeting.
- C. PROJECT MANAGER
- D. OWNER'S representative, if required.
- E. Utility Representatives
- F. Others as appropriate.
- G. Representatives present for each party shall be authorized to act on their behalf.

### **1.3 AGENDA**

Agenda will include, but will not necessarily be limited to, the following:

- 1. Transcript of previous meeting.
- 2. Progress since last meeting.
- 3. Planned progress for next period.
- 4. Problems, conflicts and observations.
- 5. Change Orders.
- 6. Status of Shop Drawings.
- 7. Quality standards and control.
- 8. Schedules, including off-site fabrication and delivery schedules. Corrective measures, if required.
- 9. Coordination between parties.
- 10. Safety concerns.
- 11. Other business.

++ END OF SECTION ++

## **SECTION 01310 - CONSTRUCTION SCHEDULES**

### **1.1 GENERAL REQUIREMENTS**

- A. No partial payments shall be approved by the ENGINEER until there is an approved construction progress schedule on hand.
- B. Designate an authorized representative who shall be responsible for development and maintenance of the schedule and of all progress and payment reports. This representative shall have direct project control and complete authority to act on behalf of the CONTRACTOR in fulfilling the commitments of the CONTRACTOR's schedules.

### **1.2 REVISIONS TO THE CONSTRUCTION SCHEDULES**

When the ENGINEER requires the CONTRACTOR to submit revised (updated) progress schedules on a monthly basis the CONTRACTOR shall:

- A. Indicate the progress of each activity to the date of submission.
- B. Show changes occurring since the previous submission listing:
  - 1. Major changes in scope.
  - 2. Activities modified since the previous submission.
  - 3. Revised projections of progress and completion.
  - 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
  - 1. Problem areas, anticipated delays, and the impact on the schedule.
  - 2. Corrective action recommended and its effect.
  - 3. The effect of changes on schedules of other prime contractors.

### **1.3 SUBMISSION OF THE CONSTRUCTION SCHEDULES**

On or before the tenth day after the effective date of the Agreement, submit the initial schedules to the ENGINEER. The ENGINEER will review the schedules and return a review copy to the CONTRACTOR within 21 days after receipt. If required by the ENGINEER, resubmit revised schedules on or before the seventh day after receipt of the review copy. If required by the ENGINEER, submit revised monthly progress schedules with that month's application for payment.

1.4 DISTRIBUTION OF THE CONSTRUCTION SCHEDULES

- A. After receiving approval by the ENGINEER, distribute copies of the approved initial schedule and all reviewed revisions (updated) to:
  - 1. Job site file.
  - 2. Subcontractors.
  - 3. Other concerned parties.
  - 4. OWNER (two copies).
  - 5. ENGINEER
  
- B. In the cover letter, instruct recipients to report promptly to the CONTRACTOR, in writing, any problems anticipated by the projections shown in the schedules.

+ + END OF SECTION + +

## **SECTION 01340 - SUBMITTAL OF SHOP DRAWINGS**

### **1.1 SCOPE**

- A. Submit shop drawings, product data and samples as required by or inferred by the Drawings and Specifications. Submittals shall conform to the requirements of Article 6.17 of the General Conditions, Section 00700, and as described in this Section.

### **1.2 SHOP DRAWINGS**

- A. Shop drawings are original drawings, prepared by the CONTRACTOR, a subcontractor, supplier, or distributor, which illustrate some portion of the work; showing fabrication, layout, setting, or erection details. Shop drawings are further defined in Article 6.17, Section 00700.
- B. Shop drawings shall be prepared by a qualified detailer and shall be identified by reference to sheet and detail numbers on the Contract Drawings.

### **1.3 PRODUCT DATA**

- A. Product data are manufacturer's standard schematic drawings and manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Product data are further defined in Article 6.17, Section 00700.
- B. Modify standard drawings to delete information which is not applicable to the project and supplement them to provide additional information applicable to the project.
- C. Clearly mark catalog sheets, brochures, etc., to identify pertinent materials, products, or models.

### **1.4 SAMPLES**

- A. Samples are physical examples to illustrate materials, equipment, or workmanship and to establish standards by which work is to be evaluated. Samples are further defined in Article 6.17, Section 00700.

1.5 CONTRACTOR'S RESPONSIBILITIES FOR SUBMITTAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. The CONTRACTOR's responsibilities for submittal of shop drawings, product data, and samples are set forth in paragraph 6.17 of the General Conditions and as further explained herein.
- B. Prior to submission, thoroughly check shop drawings, product data, and samples for completeness and for compliance with the Contract Documents, verify all dimensions and field conditions, and coordinate the shop drawings with the requirements for other related work. Also review each shop drawing before submitting it to the ENGINEER to determine that it is acceptable in terms of the means, methods, techniques, sequences and operations of construction, safety precautions and programs incidental thereto, all of which are the CONTRACTOR's responsibility.
  - 1. It is CONTRACTOR'S responsibility to review submittals made by his suppliers and Subcontractors before transmitting them to ENGINEER to assure proper coordination of the Work and to determine that each submittal is in accordance with its desires and that there is sufficient information about materials and equipment for ENGINEER to determine compliance with the Contract Documents.
  - 2. Incomplete or inadequate submittals will be returned for revision without review.
- C. The CONTRACTOR's responsibility for errors and omissions in submittals is not relieved by the ENGINEER's review of submittals. The CONTRACTOR shall approve the shop drawings based on his in-the-field measurements, prior to submittal to the ENGINEER for his review.
- D. Notify the ENGINEER, in writing at the time of submission, of deviations in submittals from the requirements of the Contract Documents. The CONTRACTOR's responsibility for deviations in submittals from the requirements of the Contract Documents is not relieved by the ENGINEER's review of submittals, unless the ENGINEER gives written acceptance of specific deviations.
- E. Begin no work, which requires submittals until return of submittals with the ENGINEER's stamp and initials or signature indicating the submittal has been reviewed.

1.6 SUBMITTAL REQUIREMENTS AND ENGINEER'S REVIEW FOR SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A.           Submit to:  
              Indian River County  
              Engineering Division  
              1801 27th Street  
              Vero Beach, FL 32960
  
- B.           A letter of transmittal shall accompany each submittal. If data for more than one Section of the Specifications is submitted, a separate transmittal letter shall accompany the data submitted for each Section.
  
- C.           At the beginning of each letter of transmittal, provide a reference heading indicating the following:
  - 1.       OWNER'S Name
  - 2.       Project Name
  - 3.       Project Number
  - 4.       Transmittal Number
  - 5.       Section Number
  
- D.           All submittals shall have a title block with complete identifying information satisfactory to the ENGINEER. The following is a sample Submittal Form that the CONTRACTOR may use:

[The remainder of this page has been left blank intentionally]

### CONTRACTOR SUBMITTALS

#### SUBMITTAL NO.

Contractor:

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

Date Sent to County \_\_\_\_\_

No. Copies Sent to County \_\_\_\_\_

Original Submittal     Re-Submittal

**Project Name:** INFORMATION TECHNOLOGY OFFICE & FINANCE OFFICE REMODEL

**Project No.:** IRC-2004 & 2205

Shop Drawing                       Cut Sheet                       Other \_\_\_\_\_

Description: \_\_\_\_\_

Sub-Contractor: \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

**Reviewing Agency:** (As checked below)

Date Received Date Returned No. Copies Ret'd

I R C Engineering Div. \_\_\_\_\_

I R C Utilities Services \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

**IRC Engineering Division**

Date Rec'd from Contractor \_\_\_\_\_

Date Ret'd to Contractor \_\_\_\_\_

1801 27<sup>th</sup> Street

No. Copies Ret'd \_\_\_\_\_

Vero Beach, Fl. 32960

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Distribution of Copies:

IRC Engineering Division

Office File

Field Office File



- E. All submittals shall bear the stamp of approval and signature of CONTRACTOR as evidence that they have been reviewed by CONTRACTOR. Submittals without this stamp of approval will not be reviewed by the ENGINEER and will be returned to CONTRACTOR.
- F. Assign a number to each submittal starting with No. 1 and thence numbered consecutively. Identify resubmittals by the original submittal number followed by the suffix "A" for the first resubmittal, the suffix "B" for the second resubmittal, etc.
- G. Initially submit to ENGINEER a minimum of two (2) copies of all submittals that are on 11-inch by 17-inch or smaller sheets (no less than 8 1/2-inch x 11-inch).
- H. After ENGINEER completes his review, Shop Drawings will be marked with one of the following notations:
  - 1. Approved
  - 2. Approved as Noted
  - 3. NOT Approved - Resubmit
- I. If a submittal is acceptable, it will be marked "Approved" or "Approved as Noted". One (1) electronic copy of the submittal will be returned to CONTRACTOR.
- J. Upon return of a submittal marked "Approved" or "Approved as Noted", CONTRACTOR may order, ship or fabricate the materials included on the submittal, provided it is in accordance with the corrections indicated.
- K. If a submittal is unacceptable, one (1) copy will be returned to CONTRACTOR with following notation, "NOT Approved - Resubmit".
- L. Upon return of a submittal marked "NOT Approved - Resubmit", make the corrections indicated and repeat the initial approval procedure. Upon return of a submittal so marked, repeat the initial approval procedure utilizing acceptable material or equipment.
- M. Work shall not be performed nor equipment installed without an ENGINEER "Approved" or "Approved as Noted" Shop Drawing.
- N. Submit Shop Drawings well in advance of the need for the material or equipment for construction and with ample allowance for the time required to make delivery of material or equipment after data covering such is approved. CONTRACTOR shall assume the risk for all materials or equipment which is fabricated or delivered prior to the approval of Shop Drawings. Materials or equipment requiring Shop Drawings which have not yet received approval by the ENGINEER shall not be installed on the project. Materials or equipment will not be included in periodic progress payments until approval thereof has been obtained in the specified manner.

- P. ENGINEER will review and process all submittals promptly, but a reasonable time should be allowed for this, for the Shop Drawings being revised and resubmitted, and for time required to return the approved Shop Drawings to CONTRACTOR.
  
- Q. Furnish required submittals with complete information and accuracy in order to achieve required approval of an item within three submittals. All costs to ENGINEER involved with subsequent submittals of Shop Drawings, Samples or other items requiring approval, will be back-charged to CONTRACTOR in accordance with the General Conditions and the Supplementary Conditions. If the CONTRACTOR requests a substitution for a previously approved item, all of ENGINEER'S costs in the reviewing and approval of the substitution will be back-charged to CONTRACTOR unless the need for such substitution is beyond the control of CONTRACTOR.

++ END OF SECTION ++

## **SECTION 01520 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

### **1.1 SCOPE**

- A. Provide all construction equipment and facilities and temporary controls required to satisfactorily complete the work represented on the Drawings and described in the Specifications.

### **1.2 RESPONSIBILITY**

- A. All construction facilities and temporary controls remain the property of the Contractor establishing them and shall be maintained in a safe and useful condition until removed from the construction site.
- B. All false work, scaffolding, ladders, hoistways, braces, pumps, roadways, sheeting, forms, barricades, drains, flumes, and the like, any of which may be needed in construction of any part of the work and which are not herein described or specified in detail, must be furnished, maintained and removed by the CONTRACTOR, who is responsible for the safety and efficiency of such work and for any damage that may result from their failure or from their improper construction, maintenance or operation.
- C. In accepting the Contract, the CONTRACTOR assumes full responsibility for the sufficiency and safety of all hoists, cranes, temporary structures or work and for any damage which may result from their failure or their improper construction, maintenance or operation and will indemnify and save harmless the OWNER and ENGINEER from all claims, suits or actions and damages or costs of every description arising by reason of failure to comply with the above provision.

### **1.3 TEMPORARY UTILITIES AND SERVICES**

- A. **TEMPORARY WATER**
  - 1. Provide a temporary water service as required for all construction purposes and pay for all water used.
  - 2. Furnish potable drinking water in suitable dispensers and with cups for use of all employees at the job.
  - 3. Provide all temporary piping, hoses, etc., required to transport water to the point of usage by all trades.
  - 4. When temporary water service is no longer required, remove all temporary water lines.

B. TEMPORARY SANITARY FACILITIES

1. Provide temporary toilet facilities separate from the job office. Maintain these during the entire period of construction under this Contract for the use of all construction personnel on the job. Provide enough chemical toilets to conveniently serve the needs of all personnel. Properly seclude toilet facilities from public observation.
2. Chemical toilets and their maintenance shall meet the requirements of State and local health regulations and ordinances. Immediately correct any facilities or maintenance methods failing to meet these requirements. Upon completion of work, remove the facilities from the premises.

1.4 SECURITY

Full time watchmen will not be specifically required as a part of the Contract, but the CONTRACTOR shall provide inspection of work area daily and shall take whatever measures are necessary to protect the safety of the public, workmen, and materials, and provide for the security of the site, both day and night.

1.5 TEMPORARY CONTROLS

Take all necessary precautions to control dust and mud associated with the work of this Contract. In dry weather, spray dusty areas daily with water in order to control dust. Take necessary steps to prevent the tracking of mud onto adjacent streets and highways.

1.6 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES

Remove the various temporary facilities, services, and controls and legally dispose of them as soon as the work is complete. The areas of the site used for temporary facilities shall be properly reconditioned and restored to a condition acceptable to the OWNER.

++ END OF SECTION ++

## **SECTION 01541 - PROTECTION OF THE WORK AND PROPERTY**

### **1.1 GENERAL**

- A. CONTRACTOR shall be responsible for taking all precautions, providing all programs, and taking all actions necessary to protect the Work and all public and private property and facilities from damage as specified in the General Conditions and herein.
- B. In order to prevent damage, injury or loss, CONTRACTOR'S actions shall include, but not be limited to, the following:
  - 1. Store apparatus, materials, supplies, and equipment in an orderly, safe manner that will not unduly interfere with the progress of the Work or the Work of any other Contractor or utility service company.
  - 2. Provide suitable storage facilities for all materials, which are subject to injury by exposure to weather, theft, breakage, or otherwise.
  - 3. Place upon the Work or any part thereof, only such loads as are consistent with the safety of that portion of the Work.
  - 4. Clean up frequently all refuse, rubbish, scrap materials, and debris caused by construction operations, so that at all times, the site of the Work presents a safe, orderly, and workmanlike appearance.
  - 5. Provide barricades and guard rails around openings, for scaffolding, for temporary stairs and ramps, around excavations, elevated walkways and other hazardous areas.
- C. Except after written consent from proper parties, do not enter or occupy privately-owned land with men, tools, materials or equipment, except on easements provided herein.
- D. Assume full responsibility for the preservation of all public and private property or facility on or adjacent to the site. If any direct or indirect damage is done by or on account of any act, omission, neglect or misconduct in the execution of the Work by the CONTRACTOR, it shall be restored by the CONTRACTOR, at its expense, to a condition equal to or better than that existing before the damage was done.

### **1.2 BARRICADES AND WARNING SIGNALS**

CONTRACTOR's responsibility for the maintenance of barricades, signs, lights, and for providing watchmen shall continue until OWNER accepts the Project.

### **1.3 TREE AND PLANT PROTECTION**

- A. Protect existing trees, shrubs and plants on or adjacent to the site that are shown or designated to remain in place against unnecessary cutting, breaking or skinning of trunk, branches, bark or roots.
- B. Do not store or park materials or equipment within the drip line of trees that are to remain.

- C. Install temporary fences or barricades to protect trees and plants in areas subject to traffic.
- D. Fires shall not be permitted under or adjacent to trees and plants.
- E. Within the limits of the Work, water trees and plants that are to remain, in order to maintain their health during construction operations.
- F. Cover all exposed roots with burlap and keep it continuously wet. Cover all exposed roots with earth as soon as possible. Protect root systems from mechanical damage and damage by erosion, flooding, run-off or noxious materials in solution.
- G. If branches or trunks are damaged, prune branches immediately and protect the cut or damaged areas with emulsified asphalt compounded specifically for horticultural use.
- H. Remove all damaged trees and plants that die or suffer permanent injury and replace them with a specimen of equal or better quality.
- I. Coordinate Work in this Section with requirements of other sections herein.

#### 1.4 PROTECTION OF IRRIGATION

The CONTRACTOR shall be responsible for maintaining in good condition all irrigation systems within the easements, which could be damaged by construction activities. The CONTRACTOR shall repair any irrigation systems damaged by construction activities within two (2) days. Irrigation systems partially within the right-of-way and all intersecting side streets within project limits may be cut off and capped or connected to same system to maintain functionality. The CONTRACTOR shall be responsible for maintaining the functionality of the remaining portion of the system if it should fall outside of the right-of-way.

#### 1.5 PROTECTION OF EXISTING STRUCTURES

- A. Underground Structures:
  - 1. Underground structures are defined to include, but not be limited to, all sewer, water, gas, and other piping, and manholes, chambers, electrical conduits, tunnels and other existing subsurface work located within or adjacent to the limits of the Work.
  - 2. All underground structures known to ENGINEER except service connections for water, sewer, electric, and telephone are shown. This information is shown for the assistance of CONTRACTOR in accordance with the best information available, but is not guaranteed to be correct or complete. The existing utilities shown on the Contract Drawings are located according to the information available to the ENGINEER at the time the Drawings were prepared and have not been independently verified by the OWNER or the ENGINEER. Guarantee is not made that all existing underground utilities are shown or that the locations of those shown are

accurate. The locations shown are for bidding purposes only. Finding the actual location of any existing utilities is the CONTRACTOR's responsibility and shall be done before it commences any work in the vicinity. Furthermore, the CONTRACTOR shall be fully responsible for any and all damages, which might be occasioned by the CONTRACTOR's failure to exactly locate and preserve any and all underground utilities. The OWNER or ENGINEER will assume no liability for any damages sustained or costs incurred because of the CONTRACTOR's operations in the vicinity of existing utilities or structures, nor for temporary bracing and shoring of same. If it is necessary to shore, brace, or swing a utility, contact the utility company or department affected and obtain their permission regarding the method to use for such work.

3. Contact the various utility companies which may have buried or aerial utilities within or near the construction area before commencing work. Provide 48 hours minimum notice to all utility companies prior to beginning construction.
4. Schedule and execute all work involving existing utilities in order to minimize necessary interruption of services. Whenever such interruption is necessary for completion of the work, notify the ENGINEER and the appropriate utility at least 48 hours in advance. Perform all work to repair/restore utility service to the satisfaction of the appropriate utility. Include all costs related to service maintenance, interruption, and restoration in the appropriate line item in the Contract.
5. Where it is necessary to temporarily interrupt house or business services, the CONTRACTOR shall notify the owner or occupant, both before the interruption (24-hour minimum), and again immediately before service is resumed. Before disconnecting and pipes or cables, the CONTRACTOR shall obtain permission from their owner, or shall make suitable arrangement for their disconnection by their owner.
6. Explore ahead of trenching and excavation work and uncover all obstructing underground structures sufficiently to determine their location, to prevent damage to them and to prevent interruption of the services which such structures provide. If CONTRACTOR damages an underground structure, restore it to original condition at CONTRACTOR's expense.
7. Necessary changes in the location of the Work may be made by ENGINEER, to avoid unanticipated underground structures.
8. If permanent relocation of an underground structure or other subsurface facility is required and is not otherwise provided for in the Contract Documents, ENGINEER will direct CONTRACTOR in writing to perform the Work, which shall be paid for under the provisions of Article 11 of the General Conditions.

B. Surface Structures:

1. Surface structures are defined as structures or facilities above the ground surface. Included with such structures are their foundations and any extension below the surface. Surface structures include, but are not limited to, buildings, tanks, walls, bridges, roads, dams, channels, open drainage, piping, poles, wires, posts, signs, markers, curbs, walks and all other facilities that are visible above the ground surface.

C. Protection of Underground and Surface Structures:

1. Sustain in their places and protect from direct or indirect injury, all underground and surface structures located within or adjacent to the limits of the Work. Such sustaining and supporting shall be done carefully, and as required by the party owning or controlling such structure. Before proceeding with the work of sustaining and supporting such structure, satisfy the ENGINEER that the methods and procedures to be used have been approved by the party owning same.
2. Assume all risks attending the presence or proximity of all underground and surface structures within or adjacent to the limits of the Work. CONTRACTOR shall be responsible for all damage and expense for direct or indirect injury caused by its Work to any structure. CONTRACTOR shall repair immediately all damage caused by his work, to the satisfaction of the OWNER of the damaged structure.

- D. All other existing surface facilities, including but not limited to, guard rails, posts, guard cables, signs, poles, markers, and curbs which are temporarily removed to facilitate installation of the Work shall be replaced and restored to their original condition at CONTRACTOR'S expense.

1.6 DAMAGE TO EXISTING STRUCTURES AND UTILITIES

- A. The CONTRACTOR shall be responsible for and make good all damage to pavement beyond the limits of this Contract, buildings, telephone or other cables, water pipes, sanitary pipes, or other structures which may be encountered, whether or not shown on the Drawings.
- B. Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. This information is not guaranteed, however, and it shall be this CONTRACTOR's responsibility to determine the location, character and depth of any existing utilities. He shall assist the utility companies, by every means possible to determine said locations. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities.



1.7 ADJUSTMENTS OF UTILITY CASTINGS, COVERS AND BOXES

- A. All existing utility castings, including valve boxes, junction boxes, manholes, pull boxes, inlets and similar structures in the areas of construction that are to remain in service shall be adjusted by the CONTRACTOR to bring them flush with the surface of the finished work.
  
- B. The CONTRACTOR shall coordinate the utilities to ensure proper construction sequencing. CONTRACTOR shall make available survey reference markers to the various utility companies.

+ + END OF SECTION + +

## **SECTION 01550 - ACCESS ROADS, PARKING AREAS AND USE OF PUBLIC STREETS**

### **1.1 GENERAL**

- A. Provide all temporary construction roads, walks and parking areas required during construction and for use of emergency vehicles. Design and maintain temporary roads and parking areas so they are fully usable in all weather conditions.
- B. Prevent interference with traffic and the OWNER's operations on existing roads. Indemnify and save harmless the OWNER from any expenses caused by CONTRACTOR's operations over these roads.
- C. Roadways damaged by CONTRACTOR shall be restored to their original condition by the CONTRACTOR subject to approval of the OWNER or ENGINEER.
- D. Remove temporary roads, walks and parking areas prior to final acceptance and return the ground to its original condition, unless otherwise required by the Contract Documents.

### **1.2 USE OF PUBLIC STREETS**

The use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other traffic. Any earth or other excavated material spilled from trucks shall be removed immediately by the CONTRACTOR and the streets cleaned to the satisfaction of the Owner.

### **1.3 USE OF PUBLIC STREETS FOR HAUL ROADS**

- A. Prior to construction, the CONTRACTOR shall designate all proposed haul roads to be used during the life of the project. Any earth or other materials spilled from trucks shall be removed by the CONTRACTOR and streets cleaned to the satisfaction of the Owner. He further shall be responsible for repairs to any damages caused by his operations, prior to final payment.
- B. All trucks carrying earth shall be covered while moving with an appropriate tarpaulin. Should trucks hauling earth fail to cover their loads, the CONTRACTOR will be given two (2) written warnings, after which the CONTRACTOR shall pay a fine of \$50 per uncovered truck to the Owner when invoked by the Owner to Owner's Engineer. All cleanup shall be the responsibility of the CONTRACTOR.
- C. All trucks/moving equipment shall have backup warning horns in proper working order while on the job site.

++ END OF SECTION ++

## **SECTION 01610 - TRANSPORTATION AND HANDLING OF MATERIALS AND EQUIPMENT**

### **1.1 GENERAL**

- A. Make all arrangements for transportation, delivery and handling of equipment and materials required for prosecution and completion of the Work.
- B. Shipments of materials to CONTRACTOR or Subcontractors shall be delivered to the site only during regular working hours. Shipments shall be addressed and consigned to the proper party giving name of Project, street number and city. Shipments shall not be delivered to OWNER except where otherwise directed.
- C. If necessary, to move stored materials and equipment during construction, CONTRACTOR shall move or cause to be moved materials and equipment without any additional compensation.

### **1.2 DELIVERY**

- A. Arrange deliveries of products in accord with construction schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with Work and conditions at site and to accommodate the following:
  - 1. Work of other contractors, or OWNER.
  - 2. Limitations of storage space.
  - 3. Availability of equipment and personnel for handling products.
  - 4. OWNER'S use of premises.
- C. Do not have products delivered to project site until related Shop Drawings have been approved by the ENGINEER.
- D. Do not have products delivered to site until required storage facilities have been provided.
- E. Have products delivered to site in manufacturer's original, unopened, labeled containers. Keep ENGINEER informed of delivery of all equipment to be incorporated in the Work.
- F. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts, and to facilitate assembly.
- G. Immediately on delivery, Contractor shall inspect shipment to assure:
  - 1. Product complies with requirements of Contract Documents and reviewed submittals.
  - 2. Quantities are correct.
  - 3. Containers and packages are intact, labels are legible.
  - 4. Products are properly protected and undamaged.

1.3 PRODUCT HANDLING

- A. Provide equipment and personnel necessary to handle products, including those provided by OWNER, by methods to prevent soiling or damage to products or packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.
- C. Handle products by methods to prevent bending or overstressing.
- D. Lift heavy components only at designated lifting points.
- E. Materials and equipment shall at all times be handled in a safe manner and as recommended by manufacturer or supplier so that no damage will occur to them. Do not drop, roll or skid products off delivery vehicles. Hand carry or use suitable materials handling equipment.

+ + END OF SECTION + +

## **SECTION 01611 - STORAGE OF MATERIAL AND EQUIPMENT**

### **1.1 GENERAL**

- A. Store and protect materials and equipment in accordance with manufacturer's recommendations and requirements of Specifications.
- B. Make all arrangements and provisions necessary for the storage of materials and equipment. Place all excavated materials, construction equipment, and materials and equipment to be incorporated into the Work, so as not to injure any part of the Work or existing facilities, and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Keep materials and equipment neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining owners, tenants and occupants. Arrange storage in a manner to provide easy access for inspection.
- C. Areas available on the construction site for storage of material and equipment shall be as shown or approved by the ENGINEER.
- D. Store materials and equipment which are to become the property of the OWNER to facilitate their inspection and insure preservation of the quality and fitness of the Work, including proper protection against damage by extreme temperatures and moisture.
- E. Do not use lawns, grass plots or other private property for storage purposes without written permission of the OWNER or other person in possession or control of such premises.
- F. CONTRACTOR shall be fully responsible for loss or damage to stored materials and equipment.
- G. Do not open manufacturers containers until time of installation unless recommended by the manufacturer or otherwise specified.
- H. When appropriate store materials on wood blocking so there is no contact with the ground.

+ + END OF SECTION + +

## **SECTION 01630 - SUBSTITUTIONS**

### **1.1 GENERAL**

- A. Requests for review of a substitution shall conform to the requirements of Article 6.05, "Substitutes and Or-Equals," of the General Conditions, and shall contain complete data substantiating compliance of the proposed substitution with the Contract Documents.

### **1.2 CONTRACTOR'S OPTIONS**

- A. For materials or equipment (hereinafter products) specified only by reference standard, select product meeting that standard by any manufacturer, fabricator, supplier or distributor (hereinafter manufacturer). To the maximum extent possible, provide products of the same generic kind from a single source.
- B. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named which complies with Specifications.
- C. For products specified by naming one or more products or manufacturers and stating "or equivalent," submit a request for a substitution for any product or manufacturer which is not specifically named.
- D. For products specified by naming only one product or manufacturer and followed by words indicating that no substitution is permitted, there is no option and no substitution will be allowed.
- E. Where more than one choice is available as a CONTRACTOR's option, select product which is compatible with other products already selected or specified.

### **1.3 SUBSTITUTIONS**

- A. During a period of 15 days after date of commencement of Contract Time, ENGINEER will consider written requests from CONTRACTOR for substitution of products or manufacturers, and construction methods (if specified).
  - 1. After end of specified period, requests will be considered only in case of unavailability of product or other conditions beyond control of CONTRACTOR.
- B. Submit 5 copies of Request for Substitution. Submit a separate request for each substitution. In addition to requirements set forth in Article 6.05 of General Conditions, include in the request the following:
  - 1. For products or manufacturers:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature with product description, performance and test data, and reference standards.
    - c. Samples, if appropriate.

- d. Name and address of similar projects on which product was used, and date of installation.
  2. For construction methods (if specified):
    - a. Detailed description of proposed method.
    - b. Drawings illustrating method.
  3. Such other data as the ENGINEER may require to establish that the proposed substitution is equal to the product, manufacturer or method specified.
- C. In making Request for Substitution, CONTRACTOR represents that:
1. CONTRACTOR has investigated proposed substitution, and determined that it is equal to or superior in all respects to the product, manufacturer or method specified.
  2. CONTRACTOR will provide the same or better guarantees or warranties for proposed substitution as for product, manufacturer, or method specified.
  3. CONTRACTOR waives all claims for additional costs or extension of time related to a proposed substitution that subsequently may become apparent.
- D. A proposed substitution will not be accepted if:
1. Acceptance will require changes in the design concept or a substantial revision of the Contract Documents.
  2. It will delay completion of the Work, or the work of other contractors.
  3. It is indicated or implied on a Shop Drawing and is not accompanied by a formal Request for Substitution from CONTRACTOR.
- E. If the ENGINEER determines that a proposed substitute is not equal to that specified, furnish the product, manufacturer, or method specified at no additional cost to OWNER.
- F. Approval of a substitution will not relieve CONTRACTOR from the requirement for submission of Shop Drawings as set forth in the Contract Documents.
- G. The procedure for review by Engineer will include the following:
1. Requests for review of substitute items of material and equipment will not be accepted by Engineer from anyone other than CONTRACTOR.
  2. Upon receipt of an application for review of a substitution, Engineer will determine whether the review will be more extensive than a normal shop drawing review for the specified item.
  3. If the substitution will not require a more extensive review, Engineer will proceed with the review without additional cost to CONTRACTOR.
  4. If the substitution requires a more extensive review, Engineer will proceed with the review only after CONTRACTOR has agreed to reimburse Owner for the review cost.
  5. Engineer may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute.

- H. Any redesign of structural members shall be performed by, and the plans signed and sealed by, a Professional Engineer registered in the State of Florida. The redesign shall be at the CONTRACTOR's expense. Any redesign will require an extensive review by the Engineer. The CONTRACTOR must agree to reimburse the Owner for the review cost prior to the Owner's Engineer proceeding with the design review. The ENGINEER's estimated cost of review shall be provided to the CONTRACTOR prior to proceeding with the review to allow the CONTRACTOR the opportunity to rescind the request.
- I. Engineer will be allowed a reasonable time within which to evaluate each proposed substitution. Engineer will be the sole judge of acceptability and shall have the right to deny use of any proposed substitution. The CONTRACTOR shall not order, install, or utilize any substitution without either an executed Change Order or Engineer's notation on the reviewed shop drawing. Owner may require CONTRACTOR to furnish at CONTRACTOR's expense a special manufacturer's performance guarantee(s) or other surety with respect to any substitute and an indemnification by the CONTRACTOR. ENGINEER will record time required by Engineer and Engineer's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not a proposed substitute is used, CONTRACTOR shall reimburse Owner for the charges of Engineer and Engineer's consultants for evaluating each proposed substitute.
- J. Substitute materials or equipment may be proposed for acceptance in accordance with this Section. In the event that substitute materials or equipment are used and are less costly than the originally specified material or equipment, than the net difference in cost shall benefit the Owner and CONTRACTOR in equal proportions. This cost difference shall not be reduced by any failure of the CONTRACTOR to base his bid on the named materials or equipment.

+ + END OF SECTION + +



## SECTION 01710 - SITE CLEANUP AND RESTORATION

### 1.1 SCOPE

Furnish all labor, equipment, appliances, and materials required or necessary to clean up and restore the site after the construction is completed.

### 1.2 REQUIREMENTS

- A. During the progress of the project, keep the work and the adjacent areas affected thereby in a neat and orderly condition. Remove all rubbish, surplus materials, and unused construction equipment. Repair all damage so that the public and property owners will be inconvenienced as little as possible.
- B. Provide onsite containers for the collection of waste materials, debris, and rubbish and empty such containers in a legal manner when they become full.
- C. Where material or debris has been deposited in watercourses, ditches, gutters, drains, or catch-basins as a result of the CONTRACTOR's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, etc., shall be kept clean and open at all times.
- D. Before the completion of the project, unless otherwise especially directed or permitted in writing:
  - 1. Tear down and remove all temporary buildings and structures;
  - 2. Remove all temporary works, tools, and machinery, or other construction equipment furnished;
  - 3. Remove all rubbish from any grounds occupied; and
  - 4. Leave the roads, all parts of the premises, and adjacent property affected by construction operations, in a neat and satisfactory condition.
- E. Restore or replace any public or private property damaged by construction work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of the operations. To this end, the CONTRACTOR shall restore all highway, roadside, and landscaping work within any right-of-way, platted or prescriptive. Acceptable materials, equipment, and methods shall be used for such restoration.
- F. Thoroughly clean all materials and equipment installed and on completion of the work, deliver the facilities undamaged and in fresh and new-appearing condition.
- G. It is the intent of the Specifications to place the responsibility on the CONTRACTOR to restore to their original condition all items disturbed, destroyed, or damaged during construction. Particular attention will be placed on restoration of canals to equal or better condition than prior to construction.

- H. When finished surfaces require cleaning with cleaning materials, use only those cleaning materials which will not create hazards to health or property and which will not damage the surfaces. Use cleaning materials only on those surfaces recommended by the manufacturer. Follow the manufacturer's directions and recommendations at all times.
- I. Keep the amount of dust produced during construction activities to a minimum. At CONTRACTOR's expense, spray water or other dust control agents over the areas, which are producing the dust. Schedule construction operations so that dust and other contaminants will not fall on wet or newly coated surfaces.

### 1.3 SITE CLEANUP AND RESTORATION

Prior to final completion, the OWNER, ENGINEER, and CONTRACTOR shall review the site with regards to site cleanup and restoration. Clean and/or restore all items determined to be unsatisfactory by the OWNER or ENGINEER, at no additional expense.

+ + END OF SECTION + +

**SECTION 01820 - POST FINAL INSPECTION**

**1.1 GENERAL**

- A. Approximately one year after Final Completion, the OWNER will make arrangements with the Project Manager and the CONTRACTOR for a post final inspection and will send a written notice to said parties to inform them of the date and time of the inspection.
- B. Corrections of defective work noted by OWNER and Project Manager shall comply with the applicable sections of Article 13, General Conditions.
- C. After the inspection, the OWNER will inform the CONTRACTOR of any corrections required to release the performance and payment bonds.

++ END OF SECTION ++

Projects:

**Indian River County**  
**County Administration Building 1 “A”**  
**Finance and I.T. Department Remodels**

Located at:

1801 27<sup>th</sup> Street  
Vero Beach, FL 32960

**PROJECT MANUAL / TECHNICAL SPECIFICATIONS**

Prepared By:

**Edlund, Dritenbas, Binkley Architects & Associates, P.A.**  
**65 Royal Palm Pointe, Suite-D**  
**Vero Beach, Florida 32960**  
**AR #AAC000886**

**Architect’s Commission Number**  
**#030522VB**

**OWNER:**

**Indian River County**  
**1801 27<sup>th</sup> Street**  
**Vero Beach, FL 32960**

**DATE: 6 September 2022**

**IRC-Finance and I.T. Department Remodels**  
**SPECIFICATIONS:**

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## **SECTION 05400 - LIGHT GAGE METAL FRAMING**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS IN OTHER SECTIONS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work specified in this section.

#### **1.02 DESCRIPTION OF WORK**

Extent of lightgauge metal framing (LtGMFrm) is shown on drawings.  
Types of lightgauge metal framing units include the following: "C" shaped steel studs.

#### **1.03 QUALITY ASSURANCE**

- A. Components Design: Compute structural properties of studs and joists in accordance with AICS "Specification for design of Cold-Formed Steel Structural Members".
- B. Fire-Rated Assemblies: Where framing units are components of assemblies indicated for a fire-resistance rating, including those required for compliance with governing regulations, provide units which have been approved by governing authorities having jurisdiction.
- C. Manufacturers offering products complying with requirements for lightgauge metal framing components include the following:
  - Shaped load bearing studs, 1-5/8" flange:
  - Alabama Metal Industries
  - Marino Ware
  - Dietrick
  - Roll Form Products, Inc.
  - U.S. Steel Corp.
  - Wheeling Corrugating Co.

#### **1.04 SUBMITTALS**

- A. Products data: Submit manufacturer's product information and installation instructions for each items of lightgauge framing and accessories.
- B. Shop Drawing: Submit shop drawings for special components and installations not fully dimensioned or detailed in manufacturer's product data. Signed and sealed Shop Drawings required by a Florida Registered Structural Engineer. Include placing drawings for framing members showing size and gage designations, number, type, locations and spacing. Indicate supplemental strapping, bracing, splices, accessories, and details required for proper installation.

1.05 DELIVERY AND STORAGE

- A. Protect metal framing units from rusting and damage. Deliver to protect site in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade. Store off ground in a dry ventilated space or protect with suitable waterproof coverings.

**PART 2 - PRODUCTS**

2.01 METAL FRAMING

- A. System Components: With each type of metal framing required, provide manufacturer's standard steel runners, tracks, blocking, lintels, clip angles, shoes, reinforcements, fasteners and accessories recommended by manufacturer for applications indicated as needed to provide a complete metal framing system.

- B. Materials and Finishes

For 16 gage and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield point of 40,000 psi; ASTM A 446, A 570, or A 611.

For 18 gage and lighter units, fabricate metal framing components of commercial quality steel sheet with a minimum yield point of 33,000 psi; ASTM A 466, A 570, Or A 611. Provide galvanized finish to metal framing components complying with ASTM A 525 for minimum G 60 coating at exterior wall panel studs. Provide prime coated finish with one coat of shop-applied red oxide, zinc-chromate, or other similar rust-inhibitive primer for interior studs. "C"-Shape Studs: Manufacturer's standard load-bearing steel studs of size shape, and as located on the drawings with 1-5/8" (1.625") flange and flange return to lip.

**GAGES AS DETERMINED BY THE FOLLOWING CHART:**

(Interior Framing: Limiting Heights - ST Style Studs. Stud gages apply for single and double layers of gypsum application on walls using L/360 allowable deflection) with no midspan wall blocking, cats, lateral bracing, or cold rolled channel bracing run through stud perforations. Allowable heights can be exceeded by 20% when continuous wall bracing or blocking is provided.

<u>STUD WIDTH</u>	<u>STUD SPACING</u>	<u>MAX. HGT. 25 GA</u>	<u>MAX. HGT. 22 GA</u>	<u>MAX. HGT. 20 GA</u>
3-5/8"	16" o/c	10'-0"	12'-0"	14'-0"
3-5/8"	24" o/c	8'-0"	10'-0"	12'-0"
6"	16" o/c	15'-0"	17'-0"	19'-0"
6"	24" o/c	13'-0"	15'-0"	17'-0"

2.02 FABRICATION

- A. General: Framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels in a manner to prevent damage or



distortion. Stud panels to be rechecked for plumbness after installation.

- B. Fastenings: Attach similar components by welding. Attach dissimilar components by welding, bolting, or screw fasteners, as standard with manufacturer.

## **PART 3 - EXECUTION**

### **3.01 INSPECTION AND PREPARATION**

Pre-Installation Conference: Prior to start of installation of metal framing systems, meet at project site with installers of other work including metal panels, door and window frames and mechanical and electrical work. Review areas of potential interference and conflict, and coordinate layout and support provisions for interfacing work.

### **3.02 INSTALLATION**

- A. Manufacturer's Instructions: Install metal framing systems in accordance with manufacturer's printed or written instructions and recommendation, and Engineered Shop Drawings, unless otherwise indicated.
- B. Runner Tracks: Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks as recommended by stud manufacturer for type of construction involved, except do not exceed 24" o.c. spacing for nail or power-driven fasteners, nor 16" o.c. for other types of attachment. Spacing of studs at metal wall panels to be as per panel manufacturers request. Provide fasteners at corners and ends of tracks.
- C. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.
- D. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners to supporting structure.
- E. Install supplementary framing, wood blocking and bracing at metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishing, wall mounted door stops, bathroom grab bars and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported.
- F. Installation of Wall Stud System: Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.
- G. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are either shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings.

Anchor tracks to jamb studs with stud shoes or by welding, and space jack studs same as full height studs of wall. Secure stud system wall opening frame in manner indicated.

**\*\*\*END OF SECTION\*\*\***

## SECTION 08665 - PASS AND OBSERVATION WINDOWS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

#### 1.02 DESCRIPTION OF WORK

- A. Definition: Interior, bullet resistant exchange windows, with clamp-on frame system and 1-1/4" Acrylic glazing, with shelf, deal tray and electronic speak-thru device.
- B. Extent: As shown on the drawings and interior elevations.
- C. Accessories: All inclusive for a complete frame, glazing, deal and communication system.

#### 1.03 QUALITY ASSURANCE

Uniformity: Provide complete assembly with accessories as produced by a single manufacturer.

#### 1.04 SUBMITTALS

Shop Drawings: Submit shop drawings for pass and observation window system and accessories. Show head, jamb and sill details and how they coordinate with the Architectural Detail Sections provided on the drawings.

#### 1.05 JOB CONDITIONS

Do not deliver windows until the building is enclosed and ready for window installation. Protect from damage during delivery, handling, storage and installation.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS:

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

C.R. Laurence of North America  
Creative Industries, Inc. Shure Manufacturing

#### 2.02 MATERIALS:

- A. Frames - .125" thick Extruded Aluminum, color: satin anodized.

**08665-1**

- B. Glazing - 1-1/4" Level #1 Acrylic.
- C. Counter - Stainless steel, brushed finish.
- D. Speak-thru - Electronic, thru glass with interior microphone, and remote headset with cord and microphone.
- E. Deal Tray - Stainless steel, brushed finish with Level #1 Protection.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Install pass and observation windows at locations shown on the drawings, in strict accordance with manufacturer's instructions and plans, for plumb, level, rigid and flush installation.
- B. Electrical connection of 110 Volts is required for the electronic voice communicator.

#### 3.02 ADJUST AND CLEAN

- A. Adjust, calibrate, clean and protect entire assembly from painting overspray or solvent contact until project is delivered to Owner.

**\*\*\*END OF SECTION\*\*\***

## **SECTION 08700 - FINISH HARDWARE**

### **PART 1 - GENERAL**

#### 1.01 **WORK NOT INCLUDED**

- A. Rough Hardware
- B. Casework Hardware
- C. Installation of Hardware

#### 1.02 **GENERAL**

- A. All exterior doors shall open outward or in direction of travel to an exit.
- B. Copies of the Hardware Schedule, templates and keying schedules shall be submitted to the Architect and approved before ordering.
- C. Exchange schedules and template lists, with related trades, for coordination with their Shop Drawings.

#### 1.03 **GUARANTEE**

- A. The hardware supplier shall provide a written guarantee that all materials furnished under this Section will be free from defects in the materials and the workmanship for a period of one (1) year from the date of a final **“Certificate of Occupancy”**.
- B. The hardware supplier, after a complete and thorough inspection by the Architect, shall further certify that all items furnished under this Section have been properly located, in accordance with the Hardware Schedule and the manufacturer’s instructions.

#### 1.04 **SUBMITTALS**

- A. Three (3) copies of the Hardware Schedule, complete with catalog cuts, shall be submitted for approval. Door numbers and hardware groups are not to be changed.
- B. Approval of the Hardware Schedule shall be for type, operation and finish only.

#### 1.05 **DELIVERY**

- A. Each item of hardware shall be delivered to job site, packaged separately, complete with the necessary fasteners, screws and anchors. Provide templates and/or instructions as required.
- B. Mark each item so as to correspond with the Hardware Schedule, identifying contents and defining location.

## PART 2 - PRODUCTS

### 2.01 HINGES

- A. All Hinges shall be STANLEY, HAGER, McKINNEY.
- B. Use three hinges per door leaf on all doors up to a door height of 7'-6" and width up to 3'-0". Add an extra hinge for each additional twenty-four (24) inches of door height and widths over 36" to a maximum of 48".
- C. Provide the following size and type hinges unless otherwise noted in the hardware groups which takes priority. Provide non-removable pins for exterior doors.
  - 1. **Exterior Doors:**  
4-1/2" x 4-1/2", Stainless Steel
  - 2. **Interior Doors with Closers:**  
4-1/2" x 4-1/2", US26D finish
  - 3. **Interior Doors without Closers:**  
4-1/2" x 4-1/2", US26D finish
- D. Finish
  - 1. Exterior Doors: Stainless Steel
  - 2. Interior Doors: Satin Chromium Plated Finish

### 2.02 LOCKS & EXIT DEVICES

- A. All locksets shall be AS SPECIFIED ON THE HARDWARE SCHEDULE. All locks shall have a minimum throw of 1/2". Finish to be per the Finish Hardware Schedule. Functioning of the locks shall be as designated in the hardware groups.
- B. Locksets shall comply with the following additional requirements:
  - 1. The hardware manufacturer will meet with the **COUNTY** to finalize keying requirements and to obtain keying instructions in writing.
  - 2. All cylinders will be 6-pin interchangeable core type. All cylinders will be keyed to the existing **Schlage** key system.
  - 3. All cylinders will be supplied with Temporary construction cores. Construction Cores and keys will be a different keyway (key section) than the final cores.
  - 4. The following will be provided by the Contractor:
    - a. 3 change keys each cylinder
    - b. 4 Construction keys

- c. 2 Construction core removal keys
- d. 2 Each of all GGMK, GMK and MK's used in the system
- e. Catalog cuts and parts manuals

5. All keys shall be stamped "DO NOT DUPLICATE".

### 2.03 CLOSING DEVICES

- A. All hydraulic door closers shall be provided by one manufacturer and guaranteed for five (5) years.
- B. Door Closers shall be LCN, HAGER at all doors per schedule, fully hydraulic, full rack and pinion action. Closers shall have a separate adjustment for latch speed, general speed and back check. All closers and accessories, except special purpose types, whether applied to hinge side, stop face, over door or on bracket, shall be non-handed. All closers are to be installed on the room side of the door except where noted in the Hardware Schedule. All closers are to be installed with thru-bolts and five screws in the foot.

### 2.04 STOPS

- A. Wall Stops shall be AS SPECIFIED ON THE HARDWARE SCHEDULE, NOTE: Utilize Rockwood Model 409, US26D/626 at all doors that have push button locks. This model has a larger diameter recessed receiving hole. Wall stops to be utilized on interior/exterior frame walls to have solid wood backing to prevent drywall failure. Wall Stops WB11 should be mounted to the wood base. Areas with Vinyl or Ceramic Tile Base should utilize the wall stops 50C/60C.

### 2.05 THRESHOLD, WEATHERSTRIP

- A. Thresholds and Weather stripping shall be PEMKO, HAGER to match the types and sizes indicated on the Hardware Schedule or detailed on the drawings.
- B. Provide screws and anchors as required.
- C. Finish to be per Schedule.

### 2.06 PLACEMENT OF HARDWARE

Various items shall have the following heights and locations, unless otherwise indicated. (Heights are shown from finish floor to center line of item):

- A. Hinges: Standard Placement
- B. Cylindrical Lockset 38"

C. Closer per manufacturer template to give maximum degree of opening. All closers to be mounted on room side of door.

D. Stops:

1. Wall: On wall where knob or pull hits.
2. Floor: As per standard practice.
3. Chain Door: As per standard practice.
4. Over-Head: Per manufacturer template to give maximum degree of opening. All Over-Head stops to be mounted on room side of door.

### **PART 3 - EXECUTION**

#### **3.01 KEYING**

A. All installed locksets shall be keyed to the Owner's satisfaction. Coordinate with Owner as to manufacturer, function and type prior to ordering specified locksets.

B. Submit keying schedule, based on the instructions and prior approval of the Owner's representative, for final approval before ordering locksets.

C. Delivery

1. All locks are to be delivered to the job site without the permanent key. All locks are to be keyed to the existing Owner's master key, if required.
2. A representative of the Hardware Supplier, upon the completion of the project, shall check all locks for proper location, operation and keying as well as deactivate the construction-key operation and transfer all locks to a permanent key operation.
3. All permanent keys shall be properly identified and tagged with a code number and location and shall be turned over directly to the Owner's representative.
4. Furnish six (6) master keys of each set to the Owner.

#### **3.02 DESCRIPTION OF HARDWARE GROUP NUMBERS**

The following Hardware Schedule is to be used as a general guide. Special or unusual conditions not covered in the schedule will have hardware of a similar type and quality to meet the job conditions, and it shall be the hardware consultant's responsibility to insure that all hardware is supplied to meet job requirements and produce a complete job.

**\*\*\*END OF SECTION\*\*\***



**SECTION 08710 - DOOR FINISH HARDWARE SCHEDULE**

**Projects:**

1. Finance and I.T. Department Remodels

1.01 **List of Materials and Approved Manufacturers**

<b><u>HARDWARE TYPE:</u></b>	<b><u>LISTED MANUFACTURER:</u></b>	<b><u>APPROVED EQUALS:</u></b>
Hinges	Hager	Stanley, Mckinney
Locks	Best Corp.	Corbin/Ruswin, Yale, Schlage
Exits	Von Duprin	Precision
Door Closers	LCN	Norton, Corbin/Ruswin
Push/Pulls/Kick & Mop Plates	Rockwood	Brookline, Baldwin
Stops	Rockwood	Ives, Baldwin
Thresholds	Pemko	Reese, Zero
Weatherstrip	Pemko	Reese, Zero

**DOOR HARDWARE SCHEDULES**

**The Door Hardware Schedules are being prepared by a Hardware Consultant at Allegion. The Contractor's Final Schedule for construction, must be submitted to the Architect for review and approval.**

**Finance and I.T. Department Remodels:**

**HARDWARE SCHEDULE:**

- A. The following schedule is furnished for whatever assistance it may afford the contractor; do not consider it as entirely inclusive. Should any particular door or item be omitted in any scheduled hardware group, provide door or item with hardware same as required for similar purposes. Quantities listed are for each pair of doors; or for each single door.
- B. This hardware schedule prepared by.

Allegion, PLC  
3451 Technological Ave, Suite 7  
Orlando FL 32817  
Ph: 407-571-2000  
Fax 407-571-2006

**HARDWARE GROUP NO. 01 - CARD ACCESS**

Door 1                  Finance Dept  
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC	630	VON
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	CARD READER - BY SECURITY VENDOR		UNK

CARD READER. POWER SUPPLY AND ALL ACCESS CONTROL ACCESSORIES BY SECURITY VENDOR

**HARDWARE GROUP NO. 02 - OFFICES**

Doors 2 & 3              Finance Dept  
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

**\*\*\*END OF SECTION\*\*\***

## **SECTION 09250 - GYPSUM DRYWALL**

### 1.01 GENERAL

- A. Gypsum Board Standard: ASTM C 840
- B. As manufactured in the United States by one of the following approved companies:
  - 1. United States Gypsum Co.
  - 2. National Gypsum Co.
  - 3. Georgia-Pacific Gypsum Co.

### 1.02 MATERIALS

- A. Drywall Materials: Exposed Gypsum Board ASTM C 36
  - 1. Long Edges: Standard taper
    - a. ½" Gypsum Drywall (Regular).
    - b. ½" Moisture-Resistant Gypsum Drywall.
    - c. 5/8" Gypsum Drywall (Regular).
    - d. 5/8" Moisture-Resistant Gypsum Drywall.
    - e. 5/8" Type-X Fire Resistant Gypsum Drywall.
    - f. 5/8" Vandal Resistant (High Impact) Gypsum Drywall.
- B. Trim Accessories: Provide manufacturer's standard metal trim accessories, of the beaded type with face flanges for concealment in joint compound except where semi-finishing or exposed type is indicated. See plans and details for specific locations and conditions.
- C. Provide corner beads at external corners. Install with nails or screws at minimum of 16" on center. No crimp bead will be accepted unless in combination with nails or screws. As an alternate use Ultratrim-Outside 90 as manufactured by No-Coat. [www.no-coat.com](http://www.no-coat.com) 1-888-662-6281
- D. Provide edge trim of the shape indicated where edge of gypsum board would otherwise be exposed or semi-exposed; L-type for abutment at edges, other U-type except special kerfed-type where kerf is provided in adjoining work. See plans and details for specific locations and conditions.
- E. Gypsum Board Fasteners: Self drilling, self-tapping, bugle head, screws.
- F. Joint tape: ASTM C 475, perforated, Type II.
- G. Joint Compound: ASTM 475, Type I.
- H. Provide water-resistant type MR manufactured by United States Gypsum

Company for use with water-resistant backing board and cementitious substrate backing board.

### 1.03 DRYWALL INSTALLATION AND FINISHING

- A. Install gypsum boards in lengths and directions which will minimize number of end joints, and avoid end joints in central area of ceilings. Install walls and partitions with exposed gypsum boards vertical, with joints offset on opposite sides of partitions. Otherwise, install boards with edges perpendicular to supports, with end joints staggered over supports, except where recommended in a different arrangement by manufacturer. Install as per UL#U305 for 1-hour rating when utilizing rated panels or as specified on the Life Safety Plans.
- B. Form "Floating": Construction for gypsum boards at internal corners, except where special isolation or edge trim is indicated.
- C. Screw gypsum boards to supports.
- D. Drywall Finishing: Except as otherwise indicated, apply joint tape and joint compound at joints (both directions) between gypsum boards. Apply compound at accessory flanges, penetrations, fasteners heads and surface defects.
- E. Apply compound in three (3) coats (plus prefill of cracks where recommended by manufacturer); sand after last two (2) coats to achieve a **Level 4 or Level 5 finish** per U.S. Gypsum Corporation guidelines. Refer to the **Room Finish Schedule** for level of finish required for this project.
- F. Ceiling Finish as per **Finish Schedule** on the Construction Plans. Where a textured ceiling is called for on the drawings the drywall finisher shall provide a 24" X 24" sample board for approval by the Owner prior to applying any finished ceiling textures.
- G. The drywall installer shall notify the General Contractor of walls out of plumb in the vertical or horizontal direction, as well as the absence of proper wall, soffit, overhead deadwood blocking, pipe and wire plate protectors prior to installing drywall. Finished walls shall be no more than 3/16" out of dead straight within any (six) 6-foot direction. Walls not conforming to this standard shall be removed and replaced at the General Contractors expense.
- H. The drywall contractor shall remove all debris associated with his portion of the work and remove all dried finishing compound from the floors. All scrap drywall sections must be taken to a scrap yard by the subcontractor for recycling of the gypsum product.

\*\*\*END OF THIS SECTION\*\*\*

**SECTION 09510 - LAY IN PANEL CEILINGS** (See schedule next page)

A. GENERAL

1. Acceptable Manufacturers:

a. Grid System: Chicago Metallic Corporation  
Donn Corporation  
U.S. Gypsum Corp.  
W.J. Haertel Division; Leslie-Locke  
National Rolling Mills Company  
Armstrong Ceilings

b. Lay-in-Panels: Celotex  
Armstrong  
Conwed  
U.S. Gypsum

2. Product delivery storage and handling: Store materials in protective packaging to prevent soiling or physical damage.

B. PRODUCTS

1. Lay-in Panels: **As per the attached schedule included in this specification section**, or an approved equal.

2. Grid Systems: With all components conforming to the requirements of ASTM C-635 in a low-sheen, baked-on white enamel finish or in a color and material to be selected by the Architect. See the plans for a complete description.

3. Perimeter Molding: Channel formed, of not less than 22-gauge steel, 1" horizontal exposed face with exposed edge hemmed; low sheen, baked-on white enamel finish or in a color to be selected by Architect.

4. Suspension System:

a. Hangers: Annealed zinc-coated wire #12 gauge or heavier.

b. Carrying Channels: 1-1/2" x 3/4" x #16 gauge for greater spans.

C. EXECUTION

1. Condition of Surfaces: Examine surfaces scheduled to receive suspended or directly attached lay in panels for unevenness, irregularities that would affect quality or execution of work. Install ceiling system in strict accordance with the manufacturers printed specifications.

2. Cleaning: Clean soiled units after installation.

3. Remove and replace damaged or improperly installed units.

**SCHEDULE OF SELECTED CEILINGS:**

<b><u>Location</u></b>	<b><u>Type</u></b>	<b><u>Lay In Panel &amp; Grid</u></b>
Typical Throughout	I	ARMSTRONG 24" X 24" X 7/8" Cirrus Open Plan 583 Beveled Tegular, Class - A, w/ 9/16" silhouette bolt slot grid

**\*\*\*END OF SECTION\*\*\***

## **SECTION 09650 - RESILIENT FLOORING AND BASE**

### **PART I - General**

#### **1.01 RELATED DOCUMENTS:**

The Bidding and Contract Documents, General Requirements and Addenda as may be issued prior to bidding, shall govern the work under this section.

#### **1.02 DESCRIPTION:**

- A. Provide resilient flooring, vinyl or rubber base, and related items and their installation. Refer to Finish Schedule for description of base being utilized.
- B. Related Work Specified Elsewhere:
  - 1. Section 09680 & 09681- Carpeting.

#### **1.03 QUALITY ASSURANCE:**

Acceptable Manufacturer - Select product of the following manufacturers or equal:

- B. Tarkett Floor Products
- C. Congoleum
- D. Mannington
- E. Armstrong: Azrock
- F. VPI Premium Wall Base
- G. Roppe Rubber Corporation: Wall Base
- H. Burke Mercer: Rubber or Vinyl Wall Base
- I. Johnsonite Wall base
- J. Marley: Flexco
- K. Armstrong: Vinyl or Rubber Base
- L. Allstate: Rubber Base and Flooring

#### **1.04 SUBMITTALS:**

- A. Literature: Submit manufacturers specifications and installation instructions for each type of material specified.
- B. Samples: Submit 12" X 12" samples of all materials specified in this Section for approval and color section.
- C. Maintenance Data: Furnish list of recommended maintenance products and recommended maintenance methods and procedures.

#### **1.05 PRODUCT HANDLING:**

Deliver and store on the site in original containers with seals unbroken and labels intact until time of use.

## **1.06 ENVIRONMENTAL REQUIREMENTS:**

Temperature of the rooms shall be 70 F. (21 C.) Minimum for 24 hours prior to installation, during installation, and for 48 hours after installation.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS:**

- A. Vinyl Composition Tile (VCT): Provide tile complying with FS-SS-T-312B, Type IV, Composition 1 (asbestos free). Colors as selected by Architect, 15% of which shall be feature tile and strips. Size of tile: 12" x 12" x 1/8".
- B. Inlaid Commercial Sheet Vinyl Flooring: Inlaid composite with compression-resistant vinyl chips on flexible backing, with an approved mildew protection throughout all layers. Static load limit of 125 p.s.i., Nominal thickness of 0.085 inch; Wear layer thickness 0.050 inch, roll width 6, 8, 9, or 10 feet, Pattern to be omnidirectional, color as selected by the Architect and approved by Owner. Meet Federal Specification SS-T-312B, Type III, Vinyl.
- C. Vinyl or Rubber Base: 4" high x 1/8" thick **roll stock only**, (see finish schedule for different locations and types of base).
- D. Low-Emitting Adhesive: Provide waterproof stabilized type as recommended by the flooring manufacturer and as outlined in its Technical Manual complying with Specifications Section 07900 Sealants and Adhesives.
- E. Concrete Slab Primer: Non-staining type as recommended by the flooring manufacturer.
- F. Wax: As recommended by the flooring manufacturer.
- G. Reducer Strips: Beveled edge, 1" wide, 1/8" thick tapered.
- H. Feature Strip: Provide where no threshold or saddle is scheduled between rooms, with flooring of same type and manufacturer, in a different color and width to match door jamb.

## **PART 3 - INSTALLATION**

### **3.01 PREPARATION OF SURFACE:**

- A. The contractor is to carefully examine substrate and conditions to which the VCT tile is to be applied. Any conditions detrimental to work under this Contract shall be reported to the General Contractor in writing. Failure in this respect shall constitute an acceptance of the base to which his work is to be applied and any further corrections to be made in his work will be done at this contractor's expense, insofar as his work is concerned. This Contractor will only be required to patch



minor holes or cracks, with suitable materials, before applying the resilient flooring.

- B. Do not commence work until other trades have completed their work.
- C. Fill all cracks, holes, etc. in concrete sub-floor with fillers as recommended by manufacturer of resilient flooring.

### 3.02 **INSTALLATION:**

- A. Apply primer, if recommended by the resilient material manufacturer, prior to application to adhesive.
- B. Resilient Flooring shall be installed in accordance with the manufacturer, prior to application of adhesive. Wood floor faces shall be fully sanded to receive adhesive.
- C. Install reducer strips where VCT abuts concrete floor.
- D. Centering:
  - 1. Establish center lines for tile patterns both ways with respect to principal walls in areas or rooms. Start laying tile from center lines; keep joints parallel to principal walls.
  - 2. Where field pattern is not a whole number of units, lay out the pattern so that the edge units are not smaller than half units (except corner pieces).
- E. Uniformity: If vinyl composition tile, use tile from contents of at least two different containers so that pattern will be uniform and not spotty due to the variance that may be found in different containers. Use tile from one mill run.
- F. Application of Adhesive
  - 1. Evenly spread approved adhesive on prepared surfaces as recommended by manufacturer; within the time recommended by manufacturer; embed each tile firmly in place to assure proper bond. In wet areas, such as toilet rooms, or rooms with floor drains, utilize a waterproof adhesive complying with the Low-Emitting requirements per Specification Section 07900- Sealants and Adhesives.
  - 2. Cover only that amount of area which can be covered by resilient flooring within recommended working time of the adhesive.
- G. Laying Vinyl Composition Tile
  - 1. Lay tile with grain in all tile running in the same direction (generally parallel with the short wall of the room).

2. Where necessary, cut tiles neatly and snugly around pipes and at other vertical projections.
3. Provide hairline joints, cut straight and true. Seal tile joints at pipes with waterproof cement.
4. Provide tiles level and flush with the surface of adjoining tiles.
5. Immediately remove stains, spots and smears of adhesive.

H. Installing Base

1. Do not install base until plaster, painting or other backing materials has thoroughly dried. Install bases on walls, including walls behind movable equipment.
2. Extend bases into closets offsets and adjoining areas scheduled to receive base.
3. Firmly cement bases to previously prepared surfaces, using an approved recommended adhesive.
4. Fit base joints tight and align top and bottom edged in firm contact with walls and floors throughout its entire length.
5. Install base in carpet areas after carpet has been installed.
6. Provide factory exterior and interior corners where clearance is available.

I. Installing Edge Strips:

1. Install edge strips with adhesive wherever exposed tile edges occur.
2. Where tile stops at doorways, set edge strips directly under doors.

**3.03 CLEANING AND FINISHING:**

- A. After flooring has been laid and adhesive is thoroughly cured, clean and finish resilient floors as recommended by tile manufacturer. Install two coats of wax and machine buff.
- B. Keep traffic off finished floors. Protect all floors as necessary with reinforced Kraft building paper and tape joints. Maintain this paper cover and otherwise protect floor until acceptance.
- C. Provide 20 square feet of extra stock of each color used. Provide 8 linear feet of extra stock of each color and size of base used. Each product to be left with General Contractor for delivery to Owner at completion of the job.

**\*\*\*END OF SECTION\*\*\***

## **SECTION 09680 - CARPETING: COMMERCIAL APPLICATION**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS:**

The bidding and Contract Documents, General Requirements and Addenda as may be issued prior to bidding, shall go over the work under this section.

#### **1.02 DESCRIPTION:**

A. Provide commercial grade carpeting, edge trim and related items and their installation. Refer to Section 09655 for edge trim description.

#### **1.03 QUALITY ASSURANCE:**

Acceptable Manufacturer: Select product of the following manufacturer or approved equal.

- A. LEES COMMERCIAL CARPETS
- B. PATCRAFT
- C. DUPONT ANTRON
- D. ATLAS CARPET MILLS
- E. LOTUS CARPETS
- F. J & J INDUSTRIES
- G. SHAW INDUSTRIES
- H. COLLINS AND AIKMAN

#### **1.04 SUBMITTALS:**

- A. Literature: Submit manufacturers specifications and installation instructions for each type of material specified.
- B. Samples: Submit samples of all materials specified in this Section for approval and color selection.
- C. Maintenance Data: furnish list of recommended maintenance products and recommended maintenance methods and procedures.

#### **1.05 PRODUCT HANDLING:**

Deliver and store on site in original containers with seals unbroken and labels intact until time of use.

#### **1.06 ENVIRONMENTAL REQUIREMENTS:**

Temperature of the rooms shall be 70 F. (21 C.) minimum for 24 hours prior to installation, during installation, and for 48 hours after installation.

A. Products:

1. Carpet & Pad: Color and style per drawings.

B. **Low-Emitting Materials:**

1. All carpet installed in the building interior must meet the testing and product requirements of the Carpet and Rug Institute Green Label Plus program.
2. All carpet cushion installed in the building interior must meet the requirements of the Carpet and Rug Institute Green Label program.
3. All carpet adhesive must meet the requirements of Specifications Section 07900-Sealants and Adhesives, which includes a volatile organic compound (VOC) limit of 50 g/L.
4. Provide a commercial-grade nylon carpet with bonded cushion meeting the following minimum requirement:
  - a. TOLERANCES: Specifications are subject to the standard industry manufacturing tolerances of plus or minus 5%.
  - b. FLAMMABILITY RATINGS: Shall meet all local, state and federal requirements for carpet installed in public facilities. Shall meet the requirements of DDD-C-95, DOC-FF1-70, and ASTM-D2859-70T (Pill and Tablet Tests) on the face and on the back. The carpet and pad, as an assembly, in corridors, stair-ways and other means of egress, shall have a minimum critical radiant flux of 0.45 watts/sq. cm. as determined by NBS-IR-75-950 Flooring Radiant Panel Test (NFPA 253, ASTM-E-648).
  - c. ENVIRONMENTAL SAFETY: Carpet construction shall contain no formaldehyde or 4-PC and no significant levels of other volatile organic chemicals which are known to contribute to the "Sick-Building Syndrome." Carpet shall have GRI (Green Label Registration) for a low VOC emitter.
  - d. PILE YARN: 1235/2 - 100% continuous-filament Type 6.6 soil-hiding solution-dyed nylon with permanent static-control system.
  - e. STATIC CONTROL: Carpet shall be furnished with a permanent static-control system within the face yarn to reduce the level of electrostatic voltage built up in the floor covering below the normal threshold of human sensitivity, measured at 2500-3500 static volts at 70 degrees F and 20% relative humidity.
  - f. ANTIMICROBIAL: A permanent, nonleaching antimicrobial shall be built into the carpet construction.

- g. DYE METHOD: Solution-dyed yarn system.
  - h. CONSTRUCTION: Manufactured through the back with fusion coat applied and secondary closed-cell vinyl cushion permanently fused to primary.
  - I. PITCH (gauge): 351 (1/13 ga.) min.
  - j. ROWS PER INCH: 20 min.
  - k. DENSITY: 130 pile tufts/SI min., 6000 density units per formula:  

$$D = \frac{36W}{T}$$

D = Density  
W = Pile Weight  
T = Pile Thickness
  - l. PILE HEIGHT: .125 (1/8") average
  - m. PILE WEIGHT: 20 oz./SY min.
  - n. PRIMARY BACKING: 100% synthetic materials, bacteriostatic and fungistatic, nonallergenic. Shall not mildew, decompose, shrink or support odor.
  - o. FUSION COAT: Vinyl sealant and fusion coat to provide an effective soil and moisture barrier and sufficient tuft bind to prevent "zippering" or edge ravel of surface pile.
  - p. SECONDARY BACKING: Carpet shall be permanently fused to premium-quality, closed-cell vinyl cushion, 5/32" thick, cushion weight 35.5 oz./SY, density 18.5 lbs./CF, compression deflection min. 7 lbs./SI, compression set max. 10% (ASTMD-1667-70).
  - q. TOTAL WEIGHT: 75 oz./SY min.
2. MANUFACTURER WARRANTY: 10 year nonprorated warranty against surface-pile wear, zippering, edge ravel or delamination of secondary backing. Cushion resiliency warranted for the life of the carpet.

C. INSTALLATION:

1. Clean surfaces to be carpeted; scrape up cementitious and resinous deposits; vacuum, apply sealer on concrete surfaces, adequate to prevent dusting.
2. Pre-plan installation for uniform direction of pattern and lay of pile, and proper sequencing with other work. Locate seams properly centered under doors and without seams in direction of traffic as doorways and similar traffic patterns. Extend carpet under removable obstructions and into closets and alcoves.
3. Provide stretch-in-tackless installation, using glued and/or nailed tackless stripping

with edges of carpet concealed. Tape and/or sew seams, after buttering trimmed edges with seaming cement.

4. Cement cushion to substrate, with taped seams running at 90 degree angle with carpet seams.
5. Stretch carpet both directions in accordance with mill's instructions; use power stretchers except where space is too small.
6. Provide glue-down installation by trimming and fitting carpet widths into each space prior to application of adhesive. Apply adhesive, butter cut edges with seaming cement, butting edges tightly together, and roll lightly.
7. Install edge guards at exposed edges. Bind edges with cloth tape and thread where not concealable.
8. Clean adhesive and cement from face of carpet promptly; replace carpet which cannot be cleaned.
9. Save carpet scraps, defined as mill ends less than 9' long, and pieces larger than 3 sq. ft. in area and wider than 8", and deliver to Owner's storage space as directed. Dispose of smaller pieces.
10. Vacuum completed carpet installation with beater-in-nozzle type commercial vacuum cleaner.
11. Contractor is responsible for providing commercial carpet samples in Owner's preferred color for final approval.
12. Provide vinyl transition strips at any carpet-to-tile intersections and as shown on drawings as manufactured by Tarkett or an approved, comparable product. Color to be as selected by the Owner and the Architect.

**\*\*\*END OF SECTION\*\*\***

## SECTION 09900 - PAINTING

### 1.01 GENERAL

#### 1. Submittals:

- a. In addition to manufacturer's data, application instructions, and label analysis for each coating material, submit samples for Architect's review of color and texture only. Resubmit samples if requested until required sheen, color and texture is achieved. Submittals must also include material requirements data per Article 1.08.
- b. On 8" x 8" hardboard, provide two (2) samples of each color and material, with texture to simulate finish conditions.
- c. On wood surfaces provide two (2) 4" x 8" samples for natural and stained wood finish.
- d. On actual wall surfaces and other building components, duplicate painted finishes of acceptable samples, for approval by the Architect.

### 1.02 DESCRIPTION OF WORK

1. Painting and finishing of interior and exterior items and surfaces, unless otherwise indicated.
2. Paint exposed surfaces, except as otherwise indicated, whether or not colors are designated. If not designated, colors will be selected by Architect from standard colors available for the coatings required.
3. Work Not Included: Unless otherwise indicated, shop priming of ferrous metal items and fabricated components are included under their respective trades. Unless otherwise indicated, painting not required on surfaces of concealed areas. Finished metals such as anodized aluminum, stainless steel, bronze, and specialty metals will not be painted. Do not paint any moving parts of operating units, or over any equipment identification, performance rating, name or nomenclature plates or code-required labels.

### 1.03 DELIVERY AND STORAGE

1. Deliver materials to job site in new, original, and unopened containers bearing manufacturer's name, trade name, and label analysis. Store where indicated in accordance with manufacturer's instructions.

**1.04 PROTECTION:**

1. Protect work of other trades. Correct any painting related damage, by cleaning, repairing or replacing, and refinishing, as directed by Architect.

**1.05 PROJECT CONDITIONS:**

1. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 98 degrees. Do not apply paints in rain, fog or mist; when relative humidity exceeds 95 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
2. Provide finish coats which are compatible with prime paints used. Provide barrier coats over incompatible primers where required. Notify Architect in writing of anticipated problems using specified coatings with substrates primed by others.
3. Surface Conditions: Apply paint and coatings when the following surface conditions have been met:
  - a. Interior Drywall - 12% maximum moisture content.
  - b. Exterior Stucco and Cementitious Wall Panels- 12% maximum moisture content.
  - c. Exposed Wood, Wood Doors, Wood Trim- 15% maximum moisture content.

**1.06 EXTRA MATERIALS:**

1. Provide a minimum of 1 gallon of each material and color of paint as materials applied that are packaged and stored with identification labels describing contents.

**1.07 SURFACE PREPARATION:**

1. Perform preparation and cleaning procedures in strict accordance with coating manufacturer's instructions of each substrate condition.
2. Remove hardware and accessories, machined surfaces, plates, lighting fixtures and similar items in place that are not to be finish-painted or provide surface-applied protection. Re-install removed items and remove protective coverings at completion of work.
3. Seal all wood required to be job-painted. Prime edges, ends, face, undersides and backsides of counters, cases, fascias, soffits, cabinets, counters, etc.



4. Back-prime with one coat on interior paneling only where masonry, plaster, or other wall construction occurs on backside.
5. Seal tops, bottoms, and cut-outs of wood doors with heavy coat of quick drying sealer immediately upon delivery to job. Do not paint door UL Labels.

**1.08 MATERIAL REQUIREMENTS:**

1. Paints and coatings used on the interior of the building (i.e., inside of the weatherproofing system and applied on site) must comply with the following criteria as applicable to the project scope:
  - a. Architectural paints and coatings applied to interior walls and ceilings must not exceed the volatile organic compound (VOC) content limits established in Green Seal Standard GS-11, Paints, 1<sup>st</sup> Edition, May 20, 1993.
  - b. Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, 2<sup>nd</sup> Edition, January 7, 1997.
  - c. Clear wood finishes, floor coatings, stains, primers, sealers and shellacs applied to interior elements must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

**1.09 MATERIAL PREPARATION:**

1. Mix, prepare, and store painting and finishing materials in accordance with manufacturer's directions.

**1.10 APPLICATION:**

1. Apply painting and finishing materials in accordance with manufacturer's directions. Use applicators, and techniques best suited for materials and surfaces to which applied, but in no case will spray application be used unless approved by Architect.
2. Apply additional coats when undercoats, stains, or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance.
3. Paint surfaces behind movable equipment same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment with prime coat only before equipment is installed.
4. Finish exterior doors on tops, bottoms and edges same as exterior faces, unless otherwise indicated. Do not paint door UL Labels.
5. Sand lightly between succeeding enamel, urethane or varnish coats.

6. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise specified.
7. Apply prime coat to material which is required to be painted or finished, and which has not been prime coated by others.
8. Apply each material at not less than the manufacturer's recommended spreading rate, to provide a total dry film to thickness of not less than 4.0 mils for entire coating system of prime and finish coats for (3) coat work.
9. Provide a total dry film thickness of not less than 2.5 mils for entire coating system of prime and finish coat for two (2) coat work.

**1.11 COMPLETED WORK:**

1. Match approved samples for color, texture and coverage. Remove, finish or repaint work not in compliance with specified requirements.

**1.12 TOUCHING UP AND CLEANING:**

1. Upon completion, all touching up as required shall be done and paint removed from all surfaces which are not specified to receive paint.

**1.13 PAINT, GENERAL:**

1. Material Compatibility:
  - a. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - b. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

**1.14 PAINTING SCHEDULE**

The following paints specified shall be manufactured by one of the following manufacturer's or an approved, comparable product:

Benjamin Moore Paints  
Sherwin Williams Paints  
Porter Paints  
Devoe Paints  
MAB Paints  
ICI Paints

Armourcoat, USA

NOTE: Color selections to be by the Owner, the Architect, and/or the Interior Designer. See Finishes Schedule on the plans for location of paint. When more than five (5) colors are selected for interior or for exteriors, a painting upcharge shall be negotiated prior to application of paints.

- A. Exterior wood Trim, Wood Siding, Wood Fascias & Soffits, Etc.: One (1) coat sealer primer on all faces and edges  
Two (2) coats Benjamin Moore Exterior Acrylic Latex paint on exposed surfaces.
- B. Interior Drywall: Two (2) coats Benjamin Moore Regal AquaVelvet Eggshell (319) over base sealer coat. Specialty finishes may apply also.
- C. Galvanized Metal: One (1) coat Benjamin Moore Galvanized Iron Primer. Two (2) coats Benjamin Moore Meta-lastic Paint.
- D. Metal Surfaces: Structural Steel Beams & Columns, Wall girts, Roof purlins, Fire Sprinkler Riser Assemblies, Steel Trusses, Steel Tanks:

**Exterior Exposed** – Two (2) coats Benjamin Moore Retard-X Rust Inhibitive Latex Primer 162 over the shop delivered primer, welds and bolts. Allow a minimum of 4 hours between coats. Finish with two (2) coats Benjamin Moore Eggshell alkyd house paint 108.

**Interior Exposed** – Same applications but one (1) coat only of latex Primer 162.

NOTE: All galvanized metal to be washed with mineral spirits to remove any oil.

- E. Exterior Stucco and Cementitious Wall Panels: finish. One (1) coat Benjamin Moore Masonry sealer. Two (2) coats Benjamin Moore Latex, or Acrylic Latex paint.
- F. Steel Doors & Frames: Spot prime any scratches in factory primer with Benjamin Moore Iron Clad Rust Inhibiter Red Oxide. Finish with (2) coats Benjamin Moore oil based or water based enamel, (semi-gloss).
- G. Wood Doors and Trim (Interior): (When Finish Schedule calls for Painted): One (1) coat sealer primer. Two (2) coats Benjamin Moore oil based enamel, (semi-gloss).
- H. Wood Doors and Trim (Interior): (When Finish Schedule calls for Sealed): Three coats of Satin Finish clear urethane, lightly sanded between coats.
- I. Interior Aluminum or Steel Handrails: One coat metal primer and two coats shop applied industrial enamel, or factory powder coating, (both gloss finish).

- J. Exposed finish Grade Concrete Block: One coat block filler and sealer primer. Specialty Paint, two (2) coats acrylic latex, over primer in accordance with the Manufacturers Specifications.
- K. Exterior Aluminum Tubing, Handrails, Guardrails, Caps, Cast Trim and Frames: Powder coated after completed fabrication and assembly and prior to installation. Powder Coat RAL standard color as specified on Architectural Details.
- L. Exterior Architectural Masonry Units (such as decorative split faced, split ribbed, and smooth faced colored block, and any manufactured stone such as Herpel), including the mortar used to set the units, shall be sealed with a water repellent-anti graffiti coating after installation and cleaning of all block faces.  
**EXCEPTION:** If the block manufacturer supplies an integral water repellent admixture in their block and a water repellent is added to the grout (mortar) during installation, then no exterior sealer is required.
- M. Toilet Room Walls: Apply water base epoxy coating full height on the wall materials scheduled in toilet rooms/bathrooms, to achieve an impervious finish.

**NOTE: DO NOT APPLY EPOXY PAINTS TO ANY INTERIOR FACES OF BARE BLOCK AT MASONRY EXTERIOR WALLS. UTILIZE LATEX PAINTS WITH BREATHABILITY OF 1 PERM OR GREATER.**

- 1. **ON INTERIOR MASONRY** - Semigloss Finish using Sherwin Williams Paints.
  - a. **1<sup>st</sup> coat:** S-W KEM CATI-COAT EPOXY FILLER/SEALER B42 WA8/B42 WA9 (87-108 sq. ft./gal @ 8-10 mild dry).
  - b. **2<sup>nd</sup> coat:** S-W Water Based Catalyzed Epoxy B70/B60 V25.
  - c. **3<sup>rd</sup> coat:** S-W Water Based Catalyzed Epoxy B70/B60 V25, (8mils wet, 3 mils wet per coat).
- 2. **ON DRYWALL** - Semi-Gloss Finish using Sherwin Williams Paints.
  - a. **1<sup>st</sup> coat:** S-W PrepRite 200 Latex Primer, B28W200, (4 mils wet, 1.2 mils dry).
  - b. **2<sup>nd</sup> coat:** S-W Heavy Duty Epoxy, B67 Series/B60 V3. (3 mils dry per coat)
  - c. **3<sup>rd</sup> coat:** S-W Heavy Duty Epoxy, B67 Series/ B60 V3. (3 mils dry per coat)

- N. Stained Concrete Floors when called for on Finish Schedule: Two coats solid color stain material as per Specification Section 09940. Apply over a clean, cured, dry, dirt and dust free, lightly broomed finished concrete slab. Color as selected by the Architect. Make a special effort to never apply concrete sealers to any surface to receive concrete stains.
  
- O. Specialty Coatings, when scheduled on the Interior Finish Schedule, shall be placed in accordance with manufacturer's specification for application and protected until the project is occupied by the end user.
  
- P. Specialty coatings approved, when scheduled on the interiors include:
  - a. Amourcoat
  - b. Polymix

**\*\*\* END OF THIS SECTION\*\*\***

## SECTION 10260 - CORNER GUARDS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - Specification sections, apply to work of this section.

#### 1.02 DESCRIPTION OF WORK

Furnish and install, as detailed, as located on the Drawings, at all exterior doors with drywall corners, and at corridor interior corners C/S Acrovyn Surface Mounted Corner Guard 90 degree Models SM20, SSM-20 and the 135-degree Model SM-20M. All as manufactured by Construction Specialties, Inc. or an approved equal. Complete details, locations and samples of selected models and colors, including end caps, and mounting hardware shall be submitted to the Architect for approval.

#### 1.03 APPROVED MANUFACTURER'S OR EQUAL

Construction Specialties, Inc., Acrovyn  
Arden Architectural  
Balco Metalines, Inc.  
IPC/InPro Corp.  
Korogard, RJF International Inc.  
Pawling Corporation, Pro Tek

#### 1.04 MATERIAL

Corner guards shall be manufactured from .078" thick nominal high impact vinyl/acrylic extrusions, designed to absorb and resist abrasions under impact. The extrusion shall include a matte finish pebblette grain surface, and be supplied in a **color to be selected by Owner & Architect**. Continuous retainers shall be a minimum .063" thickness. End caps and mounting hardware shall be furnished to complete the assembly.

#### 1.05 DESIGN

Corner guards shall be securely locked in place yet provide for free-floating action to absorb heavy impact without damage to guard, retainer or adjacent wall. Corner guard shall be straight and true over full length.



## 1.06 PERFORMANCE

Vinyl/acrylic extrusions shall be U.L. tested, Classified and Labeled reflection a Class I Fire Rating in accordance with UL=723 (ASTM-E84-91a) (CAN 4S102-2-M83 in Canada) test procedures. Chemical and stain resistance shall be per CSAV-280 standards, established by manufacturer.

Color shall be integral with components matched in accordance with SAE J-1545-(Delta E) with color difference no greater than 1.0 units using the Hunter (Lab) scale. Impact tested in accordance with applicable provisions of ASTM-F476-76.

**\*\*\*END OF THIS SECTION\*\*\***

## **SECTION 12290 - MANUFACTURED CASEWORK: LIGHT COMMERCIAL**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

The Bidding and Contract Documents, General Requirements and Addenda, as may be issued during the bid process, shall govern the work under this Section.

##### **A. References**

1. AWI - Architectural Woodwork Institute: Applicable Quality Standards.
2. FS MM-L-736 - Lumber, Hardwood.
3. FS MMM-A-130 - Adhesive, Contact.
4. NEMA LD3 - High Pressure Decorative Laminates.
5. ANSI A156.9 - American National Standard for Cabinet Hardware.
6. PS 1 - Construction and Industrial Hardwood.
7. PS 20 - American Softwood Lumber Standard.
8. PS 51 - Hardwood and Decorative Plywood.
9. ASTM E84 - Test Method for Surface Burning Characteristics of Materials
10. BHMA A156.9 - Cabinet Hardware

#### **1.02 SCOPE OF THE WORK**

- A. Provide all labor, materials, necessary equipment and service to complete the casework and related work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NOT IN CONTRACT" (NIC).
- B. Including, but not necessarily limited to the following:
  1. Fabrication of Casework.
  2. Installation.
  3. Accessories.
  4. Hardware.
  5. Filler Panels.

#### **1.03 WORK OF OTHER SECTIONS**

- A. Rough Carpentry, Section 06100, and Finish Carpentry Section 06200. Provide blocking within wall, floor, or ceiling, required to give adequate support for casework.
- B. Mechanical Division 15000: Stainless steel sinks and fittings which are integral with casework, including all work for plumbing rough-in, supply waste and vent, including shut-off valves at floor or wall. All heating and ventilating ductwork and grilles in cabinets where required including connections, flashings, caps or



hoods.

- C. Electrical Division 16000: Electrical rough-in and connections from rough-in to cabinet or equipment fixtures and devices requiring same, whatever type and kind.

#### 1.04 BIDDING

Do not bid sections of casework separately. Any item required to make the casework a complete and workable unit will be by the casework Subcontractor, including installation.

#### 1.05 QUALITY ASSURANCE

- A. The "Quality Assurance" of the Architectural Woodwork Institute shall apply and by reference are made part of this specification. Perform work in compliance with AWI standards. All work shall conform to section 400B - Laminate Clad Cabinets as defined in the latest edition of the AWI "Quality Standards" unless detailed as a higher grade.
- B. Design Type: Reveal overlay design in accordance with AWI Architectural Casework - General Details, except as otherwise specified herein or detailed on the drawings.
- C. Competence: The approved casework manufacturer must have a reputation for doing satisfactory work on time and shall have completed comparable work.
- D. The Woodwork Manufacturer and the Contractor shall be jointly responsible to make certain that casework is not delivered until the building and storage areas are sufficiently dry so that the casework will not be damaged by excessive changes in moisture content.
- E. Fire Hazard Classification: Comply with required NFPA, ANSI and UL surface burning characteristics for plastic laminates, lumber and plywood.

#### 1.06 LIST OF SAMPLES, CERTIFICATES AND SHOP DRAWINGS

- A. This list shall consist of samples, certificates and shop drawings which require review by the Contractor prior to submission to the Architect for approval.
- B. Any omission of items which require the Contractor's compliance under the contract documents does not relieve said Contractor from such responsibility.
- C. Submit samples, product data, certificates and shop drawings as required or requested by the Architect, whether included in this list or not.

#### 1.07 SUBMITTALS

- A. Submit complete shop drawings on all items showing details, materials, location in building and installation requirements prior to starting work.
- B. Submit sample cabinet built to specification, prior to starting of work, for approval of all materials.
- C. The casework manufacturer is responsible for details and dimensions not controlled by job conditions and shall show on his shop drawings all required field measurements beyond his control. The General Contractor and the casework manufacturer shall cooperate to establish and maintain these field dimensions prior to final fabrication.
- D. Submit samples of laminated plastic for color selection by Architect.
- E. Submit manufacturer's descriptive literature of all items not manufactured by the casework contractor, as requested by the Architect, including, MSD (manufacturer's safety data) sheets, for composite wood and agrifiber products, MDF (medium density fiberboard), plywood (Columbia Forest Products Purebond Plywood or equal), panel substrates and door covers to demonstrate these products do not contain any added urea-formaldehyde resins. In addition, laminating adhesives used to fabricate on-site and shop-applied composite and wood and agrifiber assemblies must not contain added urea-formaldehyde resins.
- F. The Contractor is solely responsible for reviewing MSD sheets, signed attestations or other official literature from the manufacturer prior to submittal to the Architect, to insure compliance for projects pursuing a Sustainable (Green Building) rating.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver woodwork until painting, wet work, grinding or similar operations which could damage, soil or deteriorate the woodwork, have been completed in the installation areas. If, due to unforeseen circumstances, woodwork must be stored in other than installation areas, store only in areas meeting the requirements specified for the installation area.

1.09 ENVIRONMENTAL REQUIREMENTS AND PROTECTION

- A. Conditioning: Woodwork manufacturer and installer shall advise the Contractor of temperature and humidity requirements for the woodwork installation and storage areas.

- B. Maintain temperature and humidity in installation areas as required to maintain moisture content of installed woodwork within a 1.0% tolerance of optimum moisture content, from date of installation to through remainder of construction period. Require woodwork manufacturer to establish optimum moisture content and required temperature and humidity conditions.
- C. Protect all work from damage until final acceptance.

## **PART 2 - PRODUCTS**

### **2.01 CABINET MATERIALS**

- A. Softwood Lumber for stiles and rails: PS 20; graded in accordance with AWI; moisture content of 6 to 11 percent; 8 to 13 percent for damp locations (as defined by AWI).
- B. All lumber in contact with concrete floor shall be pressure treated. See plan details for base rail requirements.
- C. Softwood Plywood for box construction to be 3/4" 9-ply closed grain luan or hardwood plywood with melamine finish for bottoms, tops and sides of wall cabinets, ends and sides of base cabinets, and all upper and base unit shelving. Backs shall be 1/4" luan plywood on wall cabinets and 1/2" luan plywood on base cabinets; both with heat fused melamine finish, color white. All base and upper shelving adjustable, recessed K & V metal standards with metals shelf support clips. Adjustable shelving on open-front book storage cabinets shall be 3/4" BC plywood with a maximum span of 30" with plastic laminate on sides and back and edge trim slotter black vinyl bumper moulding on the horizontal face edge. Fixed vertical and horizontal rails on open-front book storage cabinets shall be laminate covered.
- D. Countertops all 3/4" BC plywood construction with 3/4" buildup, and all exposed faces plastic laminate covered.
- E. Doors shall be 3/4" MDF or 3/4" BC plywood covered with plastic laminate and with thermally fused melamine backs. Door edges on base cabinets in high use conditions will be allowed .018 PVC edge banding machine applied with waterproof hot melt adhesive in lieu of laminate to prevent spalling of the laminate edges.
- F. Drawer faces shall be 3/4" MDF or 3/4" BC plywood covered with plastic laminate and with thermally fused melamine backs. Drawer sides shall be 5/8" plywood with heat fused melamine faces and interiors. Door bottoms shall be 1/4" plywood with heat fused melamine surface.

Note: Particleboard, hardboard and flake-board are not acceptable products.

## 2.02 LAMINATED PLASTIC

All laminated plastic shall meet NEMA LD-3 Standards and application of various types shall be as follows:

- A. 0.050" Nominal thickness, matte finish, standard quality: located at counter tops, back-splashes and counter top edges and faces.
- B. 0.042" Nominal thickness, mate finish, vertical surface grade: located on door fronts and edges, drawer fronts and edges, cabinet facings, ends and bottom of uppers, shelving faces and edges, and edges of other exposed vertical and postformed surfaces.
- C. BK 20 for concealed facings over plywood, .020" thick, matte finish, vertical grade, white unless otherwise: located on interior faces of cabinets and cabinet base interior faces. Use in lieu of melamine.
- D. Acceptable Laminate Manufacturers:
  - 1. Nevamar
  - 2. Wilsonart
  - 3. Pionite
  - 4. Formica
  - 5. Substitutions: Only allowed with prior written approval from the Architect.

## 2.03 ACCESSORIES

- A. Adhesive: FS MMM-A-130 or Type II, CS 35 type recommended by laminate manufacturer to suit application. NOTE: Laminating adhesives utilized on Sustainable (Green Building) projects for field and shop-applied assemblies, must not contain any added urea-formaldehyde resins. Utilize water based low VOC, non-toxic, PVA adhesives or equal products.
- B. Fasteners: Size and type to suit application. All base and wall cabinets shall be screwed together. Dowels are not acceptable.
- C. Bolts, Nuts, Washers, Lags, Pins and Screws: Of size and type to suit application; galvanized finish in concealed locations and stainless steel finish in exposed locations.

## 2.04 HARDWARE

- A. TYPES AND MANUFACTURERS
  - 1. Doors Hinges: Stanley, Grant, Hettich America or approved equal.
  - 2. Drawer and Door Pulls: Stanley, Grant, Hettich America or approved

- equal.
3. Cabinet Locks: CCL or approved equal. (Provide only if called for on cabinet drawings).
  4. Robe Hooks: Ives or Stanley.
  5. Drawer Glides: Accuride, Keil, Blum, NSF, K&V, Sugatsune or approved equal.

B. HINGES

1. 1 pair, heavy-duty institutional, self-closing for doors up to 48" in height, Stanley HT1592, US28, anodized dull aluminum.
2. 2 pair, heavy duty institutional, self-closing for doors over 48" in height, Stanley HT1592, US28, anodized dull aluminum.

C. PULLS

1. 3" drill centers, wire pulls, brushed aluminum finish, Stanley 4483, US28, anodized dull aluminum.

D. DRAWER GLIDES

1. Drawer glides all metal zinc coated, rated for 75 lbs. to 100 lbs., 3/4 extension, ball bearing, by K & V model 8400 or equal.
2. Utilize 150# full extension, ball bearing drawer glides at file drawers.

E. SILENCERS

1. Neoprene type with self-adhesive at all upper and lower cabinet doors.

F. GLAZING

1. Provide clear, tempered glass for glazed doors in cabinetwork, 1/4" thick unless otherwise indicated or approved.

G. TRIM FOR TOP DROP AND HORIZONTAL CORD CHASES

1. Provide PVC round 1½" to 2" diameter trim rings for electrical or low voltage cord chases. Color: black. Manufacturer of fabricators choice.

2.05 ANCHORS

- A. Select material, type, size and finish required by each substrate for secure anchorage. Provide non-ferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion-resistances. Provide toothed steel or lead expansion bolt shields for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or

masonry work for subsequent woodwork anchorage.

## 2.06 CASEWORK FABRICATION

Detail shall conform to AWI (flush overlay design) and or as shown on drawings.

- A. Wood moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.
- B. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings. Condition to average prevailing humidity conditions prior to installation.
- C. Measurements: Before proceeding with fabrication of casework required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit. Where sequence of measuring substrates before fabrication would delay the project, proceed with fabrication (without field measurements) and provide ample borders and edges to allow for subsequent scribing and trimming of casework for accurate fit.
- D. Complete fabrication, assembly, finishing, hardware application and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation.
- E. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Make joints hairline. Ease edges of laminate as required to eliminate sharp edges.
- F. Fully bed back-splashes and end-splashes to top and each other with Dow Corning, or equal, low VOC mildew resistant silicone sealant.
- G. Pre-Cut Openings: Fabricate architectural casework with pre-cut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or rough-in diagrams for proper size and shape. Treat all cutouts in plywood with a water resistant coating.

## **PART 3 - EXECUTION**

### 3.01 COORDINATION

- A. Casework manufacturer is responsible for coordinating his work with work of other trades, such as structural, plumbing, electrical and air conditioning. In so far as possible, dimensional adjustments are to be determined before fabrication, and reflected on the Shop Drawings to minimize changes required by field conditions.



### 3.02 INSPECTION

- A. Prior to installation of casework, examine shop fabricated work for completion and complete work as required, including back priming and removal of packing.
- B. Condition casework to average prevailing humidity conditions in the installation areas prior to installing.

### 3.03 INSTALLATION:

- A. Pre-Installation Meeting: Set up a meeting at the project site with the general contractor prior to delivery of casework and review coordination and environmental controls required for proper installation and ambient conditioning in areas to receive work. Proceed with casework installation only when everyone concerned agrees that required ambient conditions can be properly maintained.
- B. Install casework plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/16" in 10' - 0" for plumb and level (including tops); and with no variations in flushness of adjoining surfaces.
- C. Anchor casework to anchors or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.
- D. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated.
- E. Tops: Anchor securely to base units and other support systems as indicated and secure cabinet and counter bases to the floor using appropriate angles and anchorages.
- F. Use threaded steel concealed joint fasteners to align and secure adjoining cabinet units and countertops.
- G. Carefully scribe and cut casework to fit adjoining casework or other building materials, leaving gaps of 1/32" maximum. Do not use additional overlay trim for this purpose but refinish the cut surface.
- H. Fasten tops to bases with screws driven through base cabinet top frame into bottom of countertop.
- I. Do not install cabinetry or millwork closer than 24" to ceilings in fully sprinklered

buildings or such that installation obstructs any fire sprinkler head.

3.04 ADJUSTMENT, CLEANING, FINISHING AND PROTECTION

- A. Repair damaged and defective casework where possible to eliminate defects functionally and visually; where not possible to repair the casework, replace it. Adjust joinery for uniform appearance. Adjust doors, drawers, hardware, fixtures and other moving or operating parts to function smoothly and correctly.
- B. Clean casework on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.
- C. Complete the finishing work specified as work of this section to whatever extent not completed at the shop or prior to installation of casework.
- D. Provide final protection and maintain conditions, in manner acceptable to Fabricator and Installer, which ensures architectural casework being without damage or deterioration at time of substantial completion.
- E. Caulk top of backsplash at walls with paintable sealant by GE or equal. If wall varies over 1/8" at back splash, the gypsum wall is to be refinished to correct waves.
- F. All casework to receive finished base, by other trades, at the portion that touches the floor as scheduled on the drawings.

**\*\*\*END OF SECTION\*\*\***



## SECTION 230100 - GENERAL MECHANICAL PROVISIONS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

#### 1.2 SCOPE OF DIVISION

- A. Work shall include all materials, equipment and labor necessary for a complete and properly functioning mechanical installation in accordance with all applicable codes, and contract drawings and specifications. Work shall include all work specified in Division-22, Plumbing and Division-23, HVAC.
- B. Pay for all required licenses, fees, inspections and permits.

#### 1.3 RELATION TO OTHER WORK

- A. Work Not in Divisions 22 and 23: Related work not included in this division consists of requirements given in the following as may be included in the contract documents:
  - 1. Other divisions which may include work (such as concrete, steel, painting, ceiling systems, structure and other work) related to the work of Divisions 22 and 23.
- B. Work of Divisions 22 and 23: Any or all sections of Divisions 22 and 23 may include a paragraph or paragraphs under the heading, "Relation to other Work". Where such a paragraph is indicated and work directly related to the section is listed or described, such work shall be considered as relating directly to the indicated section. Any related work (directly related or otherwise) which may be omitted by reference from the "Relation to Other Work" paragraph of such section(s), shall be provided as necessary and required whether or not such work is included by reference. Such listing or description of related work within a section is given only as a convenience to the Contractor; omission of other related sections or described work does not in any way exclude the provision of such work.

#### 1.4 CODES

- A. Install all work in accordance with the latest edition of all applicable regulations and governing codes, including the regulations of the utility companies serving the project.
- B. Where a conflict in code requirements occurs the more stringent requirement shall govern.

#### 1.5 STANDARDS

- A. All equipment and devices shall bear U.L. label, the label of an industry recognized approved testing agency or A.G.A. certification for said item of equipment or device.

- B. All electrical devices must be U.L. approved.

#### 1.6 DRAWINGS

- A. Architectural and structural drawings take precedence over mechanical drawings with reference to the building construction. Mechanical drawings are diagrammatic and indicate the general arrangement and extent of work. Architectural drawings indicate more exactly the desired relationship between diffusers, registers, lighting fixtures, equipment, electric panels and devices, plumbing fixtures, and other items which remain exposed in the completed building. Exact locations and arrangement of materials and equipment shall be determined, with the acceptance of the Architect/Engineer, as work progresses to conform in the best possible manner with the surroundings and with the adjoining work of other trades. Where locations of equipment, devices or fixtures are controlled by architectural features, establish such locations by referring to dimensions on Architectural drawings and not by scaling drawings.

#### 1.7 DISCREPANCIES

- A. In case of differences between drawings and specifications, or where drawings and specifications are not clear or definite, the subject shall be referred to Architect/Engineer for clarification and instructions.

#### 1.8 ELECTRICAL PROVISIONS

- A. Work of Divisions 22 and 23 shall include the electrical requirements which are indicated to be integral with mechanical work and which can be summarized to include (but not necessarily be limited to) the following:
  - 1. Motors.
  - 2. Motor starters.
  - 3. Wiring from mechanical equipment to electrical work termination (junction box or disconnect switch).
  - 4. Control switch, pilot lights, interlocks and similar devices.
  - 5. Electrical heating coils and similar elements in mechanical equipment.
  - 6. Electrical work specified in Division-23 for the HVAC control system.
  - 7. Drip pans to protect electrical work.
- B. Motors, Starters, Switches: Provide with all motorized mechanical equipment unless otherwise indicated.
- C. Drip Pans: Where possible, do not run mechanical piping directly above electrical (or electronic) equipment which is sensitive to moisture; otherwise provide drip pans under mechanical piping. Locate pan below piping, and extend 6" on each side of piping and lengthwise 18" beyond equipment. Fabricate pans 2" deep, of reinforced sheet metal with rolled edges and soldered or welded seams; 20 gage copper, or 16 gage steel with 2 oz. zinc finish hot dipped after fabrication. Provide 3/4" copper drainage piping, properly discharged.
- D. Motors: Unless specifically specified otherwise in the section covering the driven equipment (or the equipment drives), motors shall comply with the following:

1. Three Phase: NEMA design B, three-phase, squirrel cage induction type designed for 1800 rpm synchronous speed for operation in 40°C ambient at 1.15 service factor at constant speed on the scheduled voltage. Motors shall be insulated with Class B insulation material and shall be cast iron, drip proof, horizontal foot mounted type with ball bearings. Two speed motors shall be provided as scheduled and shall be two winding type.
  2. Single Phase: Squirrel cage induction type designed for 1800 rpm synchronous speed for operation in 40°C ambient at 1.15 service factor at constant speed on the scheduled voltage. Motors shall be insulated with Class B insulation materials and shall be two winding capacitor start type with steel enclosure, drip proof, horizontal foot mount and ball bearings.
  3. Electric motors which are designated to be high efficiency type shall also comply with the section describing high efficiency motors.
- E. Scheduled Horsepower: The horsepowers scheduled or specified are those nominal sizes estimated to be required by the equipment when operating at specified duties and efficiencies. In the case of pumps, these horsepowers are non-overloading and may also include provisions for future planned impeller changes. If the actual horsepower for the equipment furnished differs from that specified or shown on the drawings, it shall be the Contractor's responsibility to insure that proper size feeders, breakers, starters, etc. are provided at no change in contract price.
- F. Any TEFC motors shall have Class F insulation.
- G. Drip proof protected motors shall have Class B insulation.
- H. Manufacturer: Electric motors, complying with the requirements of this Section and the installation and performance requirements of the plans, by the following manufacturers are acceptable:
1. Reliance Electric
  2. Gould Electric
  3. General Electric
  4. Westinghouse

## 1.9 ELECTRICAL/MECHANICAL WORK

- A. Definitions: Definitions for the purpose of mechanical/electrical control and power coordination are as follows: (Note: The use of the words, "Provide", "furnish" and "install" are intended only for use in describing the coordination indicated by this paragraph and do not necessarily have the same definitions when used outside of the context of this paragraph.) Any items which do not fall within the scope of this paragraph shall be coordinated as individually specified.
1. "Furnish" means to procure an item and to deliver it to the project for installation.
  2. "Install" means to determine (in coordination with others as necessary) the appropriate intended location of an item and to set and connect it in place.
  3. "Provide" means to both furnish and install.
  4. Power Circuit: Circuit which carries main electric power to apparatus to which the power circuit is connected.

5. Control Circuit: Circuit which carries electrical signals directing the performance of a controller but which does not carry the main electric power. (See NEC, Section 430-71.) Such circuits shall also include those which serve a dual control and power function (e.g., a line voltage thermostat circuit which both activates and powers a small fan motor).
6. Controller: A device, or group of devices, which serves to govern, in some predetermined manner, electric power delivered to apparatus to which the controller is connected and includes any switch or device normally used to start and stop a motor. (See NEC, Article 100, Definitions, "Controller", and Section 430-81(a).)
7. Control Device: A device which reacts to an operating condition (pressure, temperature, flow, humidity, etc.) and which initiates transmission of an electrical control signal which causes operation of a controller or which causes operation of pressure switches, etc.
8. Auxiliary Control Device: A device (such as a low voltage control transformer, electric relay, etc.) which is located in a control circuit and which carries or responds to (but does not initiate) an electrical control signal initiated by a control device.

B. Work of Division-23 includes (but is not necessarily limited to):

1. Provide:
  - a. All controllers which are generally manufactured or shipped as integral with Division-23 equipment (such as starters packaged with air cooled chillers, etc.).
  - b. All electric motors and other electrical power consuming equipment (such as electric air heating coils, electric boilers, electric hot water heaters, etc.) which are specified in Division 22 or 23.
  - c. All control circuits (including conduit and boxes) from the Division-26 panels to point of use including the necessary circuit breakers.
  - d. All other control circuits, including conduit and boxes.
  - e. All control connections to equipment.
  - f. All control connections to controllers, switches, motors and other mechanical systems electrical power consuming equipment (such as electric air heating coils, electric boilers, electric hot water heaters, etc.).
  - g. Auxiliary control devices.
  - h. All control devices (thermostats, pressure switches, flow switches, humidistats, etc.) and make control circuit connections thereto.
  - i. Any and all pneumatic and electronic and electric control devices and electric or pneumatic connections thereto.
2. Furnish:
  - a. All controllers which are generally manufactured and/or shipped as separate but companion items to Division-23 equipment (such as centrifugal chiller starters which are matched with the chillers but are not physically an integral part of the chiller assembly.)

C. Work of Division-26 includes (but is not necessarily limited to):

1. Provide:

- a. All power circuits, including conduit and boxes.
- b. All power connections to controllers, switches, motors and other mechanical systems electrical power consuming equipment (such as electric air heating coils, electric boilers, electric hot water heaters, etc.).
- c. All remote motor disconnects (remote from the related controller) at all locations required by NEC and connections thereto except those disconnects which are specified in Division-23 to be provided as part of the equipment itself.
- d. All controllers (except those which are generally manufactured or shipped as separate but companion items to Division-23 equipment such as centrifugal chiller starters).

2. Install:

- a. All controllers which are generally manufactured and/or shipped as separate but companion items to Division-23 equipment (e.g., chiller starters).

1.10 AUXILIARIES AND ACCESSORIES

- A. Include all auxiliaries and accessories for complete and properly operating systems.

1.11 INVESTIGATION OF SITE

- A. Check site and existing conditions thoroughly before bidding. Advise Architect/Engineer of discrepancies or questions noted before bidding.

1.12 ASBESTOS

- A. Should asbestos, or any other hazardous waste material, be encountered during the execution of the work, or should the presence of asbestos or any other hazardous material be suspected, immediately notify the Owner and suspend all work in the affected area. The Owner will activate an assessment study to determine the presence of asbestos, or other hazardous material, and evaluate what condition it is in. Removal of asbestos, or other hazardous material, if required, will be conducted by a qualified Contractor, and will be done under separate contract.

1.13 COORDINATION

- A. Provide all required coordination and supervision where work of this division connects to or is affected by work of others.

1.14 PROVISIONS FOR OPENINGS

- A. Provide all openings required for work performed under Division-23. Provide sleeves or other approved methods to allow passage of items installed under any Section of Division-23.

#### 1.15 INTERRUPTION OF EXISTING SERVICES

- A. Any interruption of existing services shall be coordinated in advance with the Owner's Representative. Shutdown time and duration of critical services shall be decided by the Owner. Contractor shall provide shutoff valves at point of tie-in to minimize downtime.

#### 1.16 CLEANING AND PROTECTION

- A. Ductwork: Keep the interior of the duct system free from dirt and rubbish and other foreign matter. All fan motors, switches, and other items, shall also be protected from dirt, rubbish and other foreign matter during building construction. Thoroughly clean all components of the ductwork and remove all dirt, scale, oil and other foreign substances which may have accumulated during the installation process.
- B. Equipment: All mechanical equipment provided shall be thoroughly cleaned of all dirt, oil, concrete, etc. Any dents, scratches or other visible blemishes shall be corrected and the appearance of the equipment made "like new" and to the satisfaction of the Architect/Engineer.
- C. Upon completion, and before final acceptance of the work, all debris, rubbish, leftover materials, tools and equipment shall be removed from the site.
- D. Protection of Work Until Final Acceptance: Protect all materials and equipment from damage, entrance of dirt and construction debris from the time of installation until final acceptance. Any materials and equipment which are damaged shall be repaired to "as new" condition or replaced at the direction of the Architect/Engineer. Where factory finishes occur and damage is minor, finishes may be touched up. If, in the opinion of the Architect/Engineer the damage is excessive, factory finish shall be replaced to "new" condition.

#### 1.17 SHOP DRAWINGS

- A. Submit shop drawings for all items, services and systems included in the project.
- B. Shop drawings shall clearly show the following:
  - 1. Technical and descriptive data in detail equal to or greater than the data given in the item specification. Indicate all characteristics, special modifications and features. Where performance and characteristic data is shown on the drawings or specified, submitted data shall be provided in a degree which is both quantitatively and qualitatively equal to that specified and shown so that comparison can be made. Present data in detail equal to or greater than that given in item specification and include all weights, deflections, speeds, velocities, pressure drops, operating temperatures, operating curves, temperature ranges, sound ratings, dimensions, sizes, manufacturers' names, model numbers, types of material used, operating pressures, full load amperages, starting amperages, fouling factors, capacities, set points, chemical compositions, certifications and endorsements, operating voltages, thicknesses, gauges and all other related information as applicable to particular item.



2. Exceptions to or deviations from the contract documents. Should Architect/Engineer accept any items having such deviations which are not clearly brought to Architect/Engineer's attention, in writing, on item submittal, then Contractor is responsible for correction of such deviations regardless of when such deviations are discovered.
- C. Additional Requirements: See specific sections of the Specifications for any additional requirements.

#### 1.18 SHOP DRAWINGS TECHNICAL INFORMATION BROCHURE

- A. Submit within thirty days after Notice to Proceed. Each brochure shall consist of an adequately sized, hard-cover, 3-ring binder for 8-1/2" x 11" sheets. Provide correct designation on outside cover and on spine of binder, i.e., mechanical. All shop drawings shall be submitted at one time; partial submittals will not be accepted.
- B. First sheet in the brochure shall be a photocopy of the "Division-23 Index" for these specifications. Second sheet shall be prepared by the Contractor and shall list Project addresses for this Project for Contractor and all major subcontractors and suppliers.
- C. Provide reinforced separation sheets tabbed with the appropriate specifications section reference number and typed index for each section.
- D. Shop drawing technical and descriptive data shall be inserted in the brochure in proper order on all items. Mark the appropriate specification section or drawing reference number in the right hand corner of each item. Provide complete information, including, but not limited to, wiring and control diagrams, scale drawings showing that proposed substitute equipment will fit into allotted space (indicate all service access, connections, etc.), test data, and other data required to determine if equipment complies fully with the specifications. All typewritten pages shall be on contractor or equipment manufacturer printed letterhead.
- E. At the end of the brochure, provide and insert a copy of the specifications for Division-23 and all addenda applicable to this Division.
- F. Submit not less than six brochures. Provide separate tag marking on an individual copy for the Owner, Architect, Engineer, Contractor, Subcontractor (two copies).
- G. Contractor shall review the brochure before submitting. Submittal information on each item in each brochure shall bear the Contractor's stamp of approval, initials of checker and date checked by him. No request for payment of or substitutions will be considered until brochure has been reviewed by the Contractor and submitted for checking.

#### 1.19 SHOP DRAWINGS FOR PIPING SYSTEMS AND DUCT SYSTEMS

- A. Shop drawings for piping systems and duct systems shall be done on reproducible transparencies and shall be of sufficient scale to verify clearances and equipment locations. Shop drawings shall show all required maintenance and operational clearances required. Cost of shop drawing preparation and reproduction shall be

borne by the Contractor. Title drawings shall include identification of project and names of Architect, Engineer, Contractor, subcontractor and/or supplier, date, be numbered sequentially and shall indicate the following:

1. Architectural and structural (as required) backgrounds with room names and numbers, etc., including but not limited to plans, sections, elevations, details, etc.
  - a. Fabrication and Erection dimensions.
  - b. Arrangements and sectional views.
  - c. Necessary details, including complete information for making connections with other work.
  - d. Kinds of materials and finishes.
  - e. Descriptive names of equipment.
  - f. Modifications and options to standard equipment required by the contract.
  - g. Leave blank area, size approximately 4 by 2-1/2 inches, near title block (for Engineer's shop drawing stamp imprint).
- B. In order to facilitate review of drawings, insofar as practicable, they shall be noted, indicating by cross reference the contract drawings, note, and/or specification paragraph numbers where item(s) occur in the contract documents.
- C. Also provide shop drawings, using sepias of the architectural reflected ceiling plans, which indicate locations of the following (to be verified by Contractor): Air distribution devices, sprinkler heads, lights and access panels.
- D. See specific sections of specifications for further requirements.

#### 1.20 AIR HANDLING UNIT AND DUCTWORK CONFIGURATION SHOP DRAWINGS

- A. Contractor shall submit a shop drawing for each air handling unit. Such shop drawings shall meet the following requirements:
  1. Be drawn at not less than a scale of 1/4" = 1'-0". Contractor may elect to use a larger scale if he desires (i.e., if drawing of unit is at 1/4" = 1'-0", 1/2" = 1'-0" may be used.).
  2. Clearly show all proposed ductwork configuration changes (sizes, routing, and similar differences) which are different in any respect from the Drawings. Extent of shop drawings shall show all ductwork to and from each unit beginning with and terminating at those points where ductwork is intended to remain unchanged as shown on Drawings.
  3. Where proposed changes affect any other work such as structure, housekeeping pads, piping, equipment, electrical work or any other work, shop drawings shall clearly show those proposed changes.
  4. Proposed changes shall be at no additional change in contract price.
  5. Where Drawings show units in plan only, shop drawings shall show proposed units in plan and also in elevation.
  6. Shop drawings shall also show exact locations of related work (such as bar joists, columns, beams, sound attenuators, and like items) which affect the proposed ductwork routing and unit location and configuration.
  7. Each section of each air handling unit shall be clearly identified (i.e., coil section, fan section, filter section, mixing box section, etc.).



- B. Failure to submit these shop drawings together at the same time with the air handling unit shop drawings will result in total disapproval of the proposed air handling units. Time delays or other reasons will not be considered.

#### 1.21 ELECTRONIC FILES

- A. CADD files will be available on a limited basis to qualified firms at the Architects prerogative. Recipients are cautioned that these files may not accurately show actual conditions as constructed. Users are responsible to verify actual field conditions. These files are not intended to be used as shop drawings.

#### 1.22 OPERATING INSTRUCTIONS

- A. Submit for checking a specific set of written operating instructions on each item which requires instructions to operate. After acceptance, insert information in each Technical Information Brochure. Refer also to other sections which may describe operating instructions.

#### 1.23 MAINTENANCE INFORMATION

- A. Submit for acceptance Maintenance Information consisting of manufacturer's printed instruction and parts lists for each major item of equipment. After acceptance, insert information in each Technical Information Brochure. Refer also to other sections which may describe maintenance.

#### 1.24 MANUFACTURER'S CHECK-OUT

- A. Check out by Manufacturer's Representative (for major items of equipment): At completion of construction and after performance verification information as above-mentioned has been gathered, submitted and accepted, provide one copy of this information to the manufacturer's representative. Work required under this section shall include having the representative examine the performance verification information, check the equipment in the field while it is operating, and sign a Check-Out Memo for record. Submit a copy of the memo on each major item of equipment for each brochure. Accepted memos shall be inserted on each brochure with the performance verification information and submittal data. Memos shall be submitted and accepted before Instruction in Operation to Owner or a request for final inspection.

#### 1.25 SYSTEM GUARANTEE

- A. The work required under Division-23 shall include a one year guarantee. This guarantee shall be by the Contractor to the Owner to replace for the Owner any defective workmanship, equipment, or material which has been furnished under this Contract at no cost to the Owner for a period of one year from the date of acceptance of the System. This guarantee shall also include reasonable adjustments of the system required for proper operation during the guarantee period. Explain the provisions of guarantee to Owner at the "Instruction in Operation Conference".

## 1.26 INSTRUCTION TO OWNER

- A. Submit all required items for checking one week before final inspection of the building is scheduled. When all items are accepted and placed in the proper brochures, the Contractor shall give notice in writing that he is ready to give the Owner an "Instruction in Operation Conference". After the above mentioned request is received the Contractor will be notified of the time the conference can be held with the Owner. At the conference, the Contractor shall review with the Owner all appropriate information. At the end of the conference, seven copies of a memo certifying Instruction in Operation and Completed Demonstration shall be signed by the Contractor, Subcontractor and Owner and one copy inserted in each brochure.

## 1.27 MATERIALS AND EQUIPMENT

- A. Each bidder represents that his bid is based upon the materials and equipment described in this division of the specifications.
  - 1. Submittal shall include the name of the material or equipment for which it is to be substituted, substituted equipment model numbers, drawings, cuts, performance and test data and any other data or information necessary for the Architect/Engineer to determine that the equipment meets all specification and requirements. If the Architect/Engineer accepts any proposed substitutions, such acceptance will be set forth in writing.
  - 2. Substituted equipment with all accessories installed or optional equipment where permitted and accepted, must conform to space requirements. Any substituted equipment that cannot meet space requirements, whether accepted or not, shall be replaced at the Contractor's expense. Any modifications of related systems of this or other trades as a result of substitutions shall be made at the Contractor's expense, and Contractor shall so state in his written request for substitution.

## 1.28 ACCEPTABLE MANUFACTURERS

- A. Acceptable Manufacturers: Materials and Equipment specified in these contract documents are accepted only in regards to general performance and quality. It shall be the Contractor's responsibility to insure that acceptable materials and equipment meet or exceed the efficiencies, capacities, electrical characteristics, performance and quality of the equipment herein specified. Acceptable equipment must also generally conform, without extensive modification of related systems to the accessories, weights, space and maintenance requirements, etc., of the specified equipment. Any modification to related systems of this or other trades shall be made at the Contractor's expense and the Contractor shall be responsible for coordination between trades. Any difference in capacity, efficiency, electrical characteristics, weights or quality of product, etc., between specified materials and equipment and acceptable alternates shall be submitted to the Architect/Engineer for acceptance within 30 days of Notice to Proceed.

## PART 2 - PRODUCTS

- 2.1 Section part not applicable.

PART 3 - EXECUTION

3.1 Section part not applicable.

END OF SECTION

## SECTION 230500 - BASIC MECHANICAL MATERIALS AND METHODS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section, in addition to the following:

#### 1.2 SCOPE

- A. Materials listed herein are general mechanical materials to be used under the Division 22 and 23 sections of the specifications unless specifically noted otherwise in the particular section or on the drawings.

#### 1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division 22 and 23 and to all other applicable portions of the Drawings and Specifications. This section relates to all sections of Division 23 as may be applicable to the work of each section.

#### 1.4 STANDARDS

- A. Quality and weight of materials shall comply with requirements and specifications of the appropriate standards of the American Society of Testing and Materials.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS AND EQUIPMENT, GENERAL

- A. All materials and equipment shall be new and without blemish or defect.
- B. Equipment and materials shall be products which will meet with the acceptance of the agency inspecting the work. Where acceptance is contingent upon having the products examined, tested and certified by Underwriters Laboratory or other recognized testing laboratory, the product shall be so examined, tested and certified.
- C. Where no specific indication as to the type or quality of material or equipment is indicated, a standard item or system shall be furnished with all options, features and capabilities to meet the project requirements.
- D. Performance and Capacity:
  - 1. Performance as delineated in schedules and in the specifications shall be interpreted as minimum performance. In some cases equipment may be sized to allow for future requirements or for other reasons which may not be stated on the Drawings or in the Specifications; provide equipment and systems with the

capacities, capabilities and features indicated to provide the maximum or minimum (as appropriate) conditions.

E. Operating conditions and capacities must be as follows:

1. No overloading.
2. No operation at conditions outside of maximum and minimum limits recommended by the manufacturer and accepted by the Architect/Engineer.
3. Compatible with all systems.

F. Unless otherwise specified, all equipment and materials furnished must be as follows:

1. Recommended by the manufacturer for the application.
2. Installed in accordance with the manufacturer's recommendations for the application except where specifications and drawings clearly indicate otherwise.

## 2.2 ACCESS DOORS AND PANELS

A. Locations: Provide access doors and panels (access units) as necessary for access to items which are concealed and which may require service or maintenance or other reason for accessibility. Examples of such items include, but are not limited to, the following: valves, cleanouts, pipe unions, expansion joints and connectors, dampers, coils, junction boxes, duct heaters, terminal units, HVAC control system devices and similar types of items.

B. Access units: Shall be manufactured by the Milcor Division of Inland-Ryerson, Boico, Nystrom or Ventfabrics. Types are as follows (Milcor style designations are used for example only):

<u>Location</u>	<u>Door/Panel Type</u>
Drywall	Style "DW"
Masonry or tile	Style "M-stainless"
Acoustical tile	Style "AT"
Plaster	Style "K"
Fire-rated walls	Style "Fire Rated"***

(\*\*or as indicated below)

C. Fire Rated Units:

1. Frame and panel assembly shall bear a U.L. label reading, "frame and door assembly, rating 1-1/2-hour (B), temperature rise 30 minutes 250°F maximum".
2. Have an automatic closing device and mechanism to release the latch bolt from the inside.
3. Acceptable Manufacturers: Boico Style F, Inryco/Milcor Style VA, Nystrom Style APFR.

D. Non-fire Rated Units:

1. Steel panels and frames.

2. Locks and latches shall be as appropriate for the location and shall be cam-lock type latches, flush screw driver operated locks or cylindrical locks.
3. Provide two keys for all doors. All doors shall be keyed the same.

E. Other Requirements:

1. Doors and panels installed in glazed or ceramic tiled surfaces, in toilet rooms or in kitchens shall be stainless steel.
2. Unless otherwise indicated, finish shall be rust inhibitive prime coat.

F. Sizes:

1. Minimum size: 8" x 8".
2. Sizes of each unit shall be individually selected to allow the recommended and required service and maintenance and accessibility functions to be accomplished. These functions shall generally include, for example, valve removal, damper linkage resetting, control adjustment, lubrication, repair, replacement and similar tasks as may be necessary and recommended for the concealed item.
3. Sizes shall be of the following increments (unless otherwise approved) to allow the accessibility function to be accomplished: 8" x 8", 8" x 12", 12" x 12", 12" x 16", 16" x 16", 16" x 24", 24" x 24", 24" x 36", 30" x 30", 36" x 36" or 36" x 48".
4. No size smaller than 16" x 24" shall be allowed when a person must pass through the access opening in order to accomplish the desired accessibility function.
5. Every attic or furred space in which mechanical equipment is installed shall be accessible by an opening and passageway as large as the largest piece of the equipment and in no case less than 22 x 36 inches continuous from the opening to the equipment and its controls. The opening to the passageway shall be located not more than 20 feet from the equipment measured along the center line of such passageway.

## 2.3 PAINTING AND MARKING

- A. All paint and materials used for painting shall be manufacturer's "first quality" product. For additional paint material requirements, refer to Section 099101, Painting.
- B. Marking: Refer also to sections describing identification of mechanical systems.

## 2.4 PIPE HANGERS AND SUPPORTING DEVICES

- A. General: Refer to other sections of Division 23 for any requirements which may be additional to this section. Comply with the more stringent requirement if more than one method is specified or shown.
- B. Pipe supporting devices specified herein shall apply to all Division 22 and 23 piping unless modified in subsequent sections of Division 22 and 23 (i.e., vibration isolation) or detailed on the drawings.

1. Pipe hangers for copper pipe shall be copper or copperplated and for steel pipe shall be zinc-plated, clevis type hangers.
  2. Hangers for pressure piping shall be clevis type or accepted as equivalent. Pipe hangers shall be capable of vertical adjustment after erection of the piping. Piping shall not be hung from fire and/or smoke walls.
  3. Vertical piping supports shall be constructed of carbon steel with rounded ears and two or four holes for clamping bolts. Steel, galvanized and cast iron piping riser clamps shall have galvanized finish. Copper and brass piping riser clamps shall have electro-plated copper or PVC coating finish.
  4. Acceptable Manufacturers are Grinnell, PHD Manufacturing Inc., Fee and Mason, Michigan and Elcen.
- C. Beam clamps may be used when supporting piping from steel structures.
- D. Concrete inserts shall be placed in forms as work of Division 22 and 23 prior to the time that concrete is poured.
- E. Lead tamp-ins may be used when installed in a concrete or masonry wall or other like vertical surface to support a vertical hanger. Lead tamp-ins will not be permitted to support hangers to the underside of a concrete slab.
- F. For parallel runs of above ground suspended piping, an acceptable trapeze-type hanger may be used. Provide permanent, non-conductive type wrapping between copper pipe and steel trapeze hangers.
- G. Powder set type fasteners or inserts shall not be used.

## 2.5 FLOOR, WALL OR CEILING PLATES OR ESCUTCHEONS IN EXPOSED AREAS

- A. Shall be chrome-plated. Escutcheons for extended sleeves shall be of the type designed for that purpose. Split ring escutcheons will not be allowed.
- B. Escutcheons to be as manufactured by Guarantee Specialty Mfg. Co., Cleveland, Ohio; American Sanitary Mfg. Co., Abingdon, Ill., or Beaton Cadwell.
- C. Provide escutcheons or fabricated plates or collars at each location where pipe or duct passes through a finished surface. Escutcheons for flush sleeves shall be equivalent to Benton & Caldwell No. 3A chromium plated brass; for sleeves extending above floor shall be equivalent to Benton & Caldwell No. 36 chrome plated brass. Collars or plates for ducts and large diameter insulated pipe shall be fabricated of 18 gage galvanized copper bearing sheet steel, secured to structure and neatly fitted around duct or pipe.

## 2.6 SLEEVES

- A. General: Lay out work and set sleeves in new or existing construction so that minimum cutting, drilling and patching is required. Seal all sleeves not used during construction period with grout. Seal unused penetrations and sleeves through fire rated barriers to prevent passage of smoke and heat using an Underwriters' Laboratories approved method; sealing method must be rated at least equivalent to



the barrier being penetrated. Submit proposed method to show proof of UL approval.

B. Pipe Sleeves, Special Considerations: The following conditions require pipe sleeves as indicated:

1. Where subject to hydrostatic pressure: Sleeves installed in walls and floors subject to hydrostatic (water) pressures shall be "Link Seal" (Thunderline Corp) Type WS or accepted as equivalent.
2. Where piping is existing: When fire rated walls are to be erected where there is existing piping, provide Proset fire rated split wall system pipe sleeves, or accepted equivalent.
3. Where penetration is part of air duct or plenum system: Do not use plastic pipe for sleeves where floor being penetrated is part of an air plenum so that no fire or smoke hazard is introduced by use of plastic.
4. Where penetration is through fire rated barriers: Provide mild steel sleeves for penetrations of fire rated barriers.

C. Pipe Sleeves in Walls and Partitions:

1. Sleeves Above Grade: Use schedule 40 mild steel pipe or schedule 80 CPVC pipe. Provide sleeves built into wall, partition or beam of size to allow penetration by carrier pipe and insulation covering with not less than 1/4 inch minimum clear space between outer surface of carrier pipe covering (or carrier pipe surface if no covering is provided) and inner surface of sleeve.
2. Sleeves Below Grade in Exterior Walls: Schedule 40 steel hot dipped galvanized after fabrication or cast iron sleeve with not less than 1/4-inch x 3-inch center flange (water stop) around the exterior face of the wall.
3. Penetrations of fire rated barriers shall have only mild steel sleeves; plastic is not allowed.

D. Pipe Sleeves in Floors Above Grade: Use schedule 40 mild steel pipe or schedule 80 CPVC pipe. Provide sleeves built into wall, partition or beam of size to allow penetration by carrier pipe and insulation covering with not less than 1/4 inch minimum clear space between outer surface of carrier pipe covering (or carrier pipe surface if no covering is provided) and inner surface of sleeve. Set sleeves before floor is poured; extend not less than 1/2-inch above finished floor.

E. Pipe Sleeves in Floors on Grade: Sleeves shall be Schedule 40 steel or Schedule 80 CPVC plastic. Set sleeves before floor is poured. Size sleeves to allow penetration by carrier pipe and insulation covering with not less than 1/4 inch minimum clear space between outer surface of carrier pipe covering (or carrier pipe surface if no covering is provided) and inner surface of sleeve. Extend sleeve not less than 1/2 inch above finished floor.

F. Duct Sleeves: Sleeves or openings sized to pass mechanical ducts and covering shall be of framed steel construction in roof, wall, and partitions.



G. Sealing of Sleeves:

1. Pipe Sleeves Below Grade and On Grade: Caulk annular space between pipe and sleeve using approved caulking material to a minimum one inch deep. Result shall be a water tight and vermin proof penetration.
2. Pipe and Duct Sleeves Above Grade: Openings around pipes, ducts and other conduit passing through sleeves shall be made draft free and vermin-proof by solidly packing with mineral wool or fiberglass or by other such approved method.
3. Pipe and Duct Sleeves Through Fire Rated Barriers: All penetrations through fire rated barriers (both walls and floors) shall comply with Division-07 or be as specified in this Division.

2.7 FIRE/SMOKE RATED FLOOR, PARTITION OR WALL PENETRATION SEALANT

- A. Seal shall be composed of fire barrier product, putty, or caulking materials used either in combination or singularly. Acceptable Manufacturers are 3M Corporation or Dow Corning.

2.8 EXCAVATION AND BACKFILL

- A. Provide as necessary to accomplish work specified. Perform in accordance with applicable State and Local codes and accepted good practice and in accordance with other applicable sections or divisions.

2.9 BELT DRIVES

- A. General: Equip each motor driven machine not direct connected with V-belt drive. Belts shall be of correct cross section to fit properly in sheave grooves and shall be carefully matched for each drive. Sheaves shall be cast iron or steel, bored to fit properly on shafts and secured with keys of proper size. The rating of each drive shall be as recommended by manufacturer for service but shall be at least 1.5 times nameplate rating of motor.
- B. Speed Adjustment: Adjust fan speed by change(s) in sheave size as necessary to obtain proper design air flow with fan in its installed location. Fans may be first fitted with variable pitch drives until proper speed adjustment is made and then fitted with proper fixed pitch drive size, or alternate sizes of fixed pitch drives may be used until proper fan needed to deliver necessary air quantity.
- C. Vibration of Air Handling Equipment and Fan Units: For air handling equipment and fans driven by motors 5-hp or greater, field vibration levels will not be acceptable if the maximum vibration velocity or displacement measurement exceeds the following values (when measurements are taken at the bearing supports using a vibration analyzer with the filter set at the operating fan speed):

<u>Fan Speed (RPM)</u>	<u>Maximum Vibration Level</u>
800 or Less	5 Mils (0.127 mm) max. displacement
801 and Greater	0.20 in/sec. (5 mm/s) max. velocity

- D. Belt and Coupling Guards: Each belt drive shall be equipped with an OSHA approved guard. Guards shall be constructed of #12 U.S. standard gage 3/4-inch diamond mesh wire screen, or equivalent, welded to one inch steel angle frames, and shall enclose all belts and sheaves. Tops and bottoms of guards shall be of substantial sheet metal or not less than #18 U.S. standard gage. Braces or supports must not "bridge" sound and vibration isolators. Guards shall be designed with adequate provision for movement of motor required to adjust belt tension. Means shall also be provided to permit oiling, use of speed counters, and other maintenance and testing operations with guard in place. All direct drive equipment shall have coupling guards in accordance with Florida Department of Business Regulation safety regulations and OSHA.

## 2.10 BEARINGS

- A. All bearings shall be 200,000-hour rated unless otherwise specified.

## PART 3 - EXECUTION

### 3.1 EQUIPMENT ACCESS

#### A. Access Doors and Panels:

1. Locations: Provide access unit at the following locations.
  - a. Where additionally specified in other sections of this Divisions 22 and 23 and where specifically indicated on the drawings.
  - b. Where not specifically indicated on the drawings but where the work to be provided will require accessibility for purposes as described or as recommended by the manufacturer of the concealed item.
  - c. At all locations where concealed equipment, fixtures, devices and similar items require accessibility for service, inspection, maintenance, repair, replacement and where such concealed item would not otherwise be accessible for such functions without the provision of an appropriately sized access unit.

#### B. Installation:

1. Definitions: For the purpose of coordination of responsibility, the following words are defined to describe the intended coordination.
  - a. "Furnish" means to procure an item and deliver it to the project for installation.
  - b. "Install" means to determine (in coordination with others as necessary) the intended appropriate location of an item and to set, connect and otherwise fix in place in a manner to allow intended operation and use.
  - c. "Provide" means to both furnish and install fully and completely in all aspects.
2. Furnishing Access Units: Access units shall be furnished as work of the Division which governs the item which is intended to be made accessible by the access unit.

3. Installing Access Units: Access units shall be installed as work of the Division which governs the surface, barrier, partition or other building component in and on which the access unit is to be placed.
4. Determination of Locations:
  - a. Where the work of Divisions 22 or 23 requires that the access unit be provided (i.e., both furnished and installed), then the responsibility for determination of the location at which the access unit is to be placed is also work of Divisions 22 and 23.
  - b. Where the work of Divisions 22 or 23 requires that access unit be furnished for installation as work of another Division, then the responsibility for determination of the location at which the access unit is to be installed shall be work of Divisions 22 and 23. Conversely, where the work of one Division requires that an access unit be only installed, then the responsibility for determination of the location of which the access unit is to be installed shall be work of Divisions 22 or 23 which furnishes the access unit.
5. Determination of Sizes:
  - a. Unless an access unit size is indicated on the drawings or otherwise specified, the size of each access unit shall be determined as work of the Division which either provides or furnishes the access unit.
  - b. Sizes for access units which are provided or furnished as work of this Division shall be in compliance with sizing criteria of this Division.

### 3.2 PAINTING

- A. Paint all exposed piping, insulation, equipment, structural bases, racks, in equipment rooms and on roof, furnished under Divisions 22 and 23 of these specifications. All exposed metal surfaces shall be given one prime coat and two finish coats. All insulated surfaces shall be given one sizing coat of glue sizing (omit this step if factory applied finish is suitable to receive prime coat), one prime coat and one finish coat. Factory painted or finished items do not require field painting but shall require "touch-up" with matching paint or finish where scratched.
- B. Pipe hangers, saddles, supports, riser clamps and accessories shall be painted to match their piping.
- C. Equipment not completely accessible for painting when set in place shall be thoroughly cleaned and painted before installation and suitably protected.
- D. Piping concealed need not be painted.

### 3.3 HANGERS AND INSERTS

- A. Refer also to other sections which may describe additional requirements for hanging and supporting. Comply with the more stringent requirement if more than one method is specified or shown.
- B. Provide and properly locate hangers to adequately support piping and equipment. Arrange hangers to permit expansion and contraction.

- C. The size of hanger for non-insulated pipes shall be suitable for pipe size to be supported. For insulated piping, the size of the hanger shall be suitable for the pipe size, plus the insulation and a 16-gauge half-circle galvanized sheet metal insulation saddle.
- D. Isolation of copper pipe from steel hangers to consist of wrapping pipe at, and 1" each side of contact surface with not less than two layers of adhesive type plastic electrical insulating tape.
- E. Pipe supports for piping 2" diameter and below may be supported directly from Epicure steel decking using Epicure standard hangers (200 lb. max. load). Piping above 2" shall be supported from steel beams.
- F. Locate pipe supports as follows unless noted in other sections of these specifications or on the drawings:
  - 1. Horizontal cast iron pipe inside building - supported on each length of pipe.
  - 2. Vertical cast iron pipe inside building - supported at each floor level and at the base.
  - 3. Horizontal steel piping and copper tubing 1" diameter and under - support on 6' centers.
  - 4. Horizontal steel piping and copper tubing above 1" through 1-1/2" diameter - support on 8' centers.
  - 5. Horizontal steel piping and copper tubing larger than 1-1/2" diameter -support on 10' centers, except 24" diameter piping shall be supported by main roof beams (20' O.C. maximum).
  - 6. Support vertical cast iron, steel and copper piping at each floor penetration not to exceed 20 foot intervals.

### 3.4 ANCHORS

- A. Install a suitable anchor on piping to prevent movement from expansion and contraction by welding or clamping securely to pipe at fitting or coupling. Approval of the Architect/Engineer of method of anchorage must be obtained before installation of work. Properly anchor piping to remove strains on equipment which would be caused by expansion and contraction. Adequately insulate anchors on piping, with operating fluid temperatures below 75°F, to prevent moisture condensation problems.

### 3.5 EXPANSION AND CONTRACTION PROVISIONS

- A. Piping is designed with offsets and loops to provide for expansion and contraction. At such points, piping shall be cold sprung to equalize expansion when at operating temperatures. Install piping to maintain grade at all operating temperatures.

### 3.6 FLASHING

- A. Flashing shall be done as work of other divisions.

### 3.7 SLEEVES FOR PIPING

- A. Provide sleeves for all piping where pipe penetrations in walls, floors or other building structure are required. Sleeves in poured concrete shall have water tight seams and joints.
- B. Extend sleeves through walls, partitions and ceilings to finished surface. Extend sleeves through finished floors to not less than 1/4 inch above finished surface. Extend sleeves in concrete floors in chases to not less than 1 inch above floor top surface. Sleeves installed above finished ceilings as part of fire/smoke rated wall assemblies shall extend not less than 1" beyond both wall faces.
- C. Provide sleeves of adequate size to permit clearance for pipe movement and proper grading and sloping of pipes. Provide sleeves for insulated pipe of adequate size to clear insulation.
- D. Caulk space between sleeve's inner surface and pipe's outer surface (including insulation surface if pipe is insulated) with approved with fire rated safig material. Provide flexible fire retardant sealant if pipe is subject to expansion or contraction. Final result shall be an approved fire and smoke stop at pipe and sleeve assembly.
- E. Sleeves in walls and slabs subject to hydrostatic pressures shall be water tight at twice the hydrostatic pressure expected to be encountered at the location of the penetration.

### 3.8 SLEEVES FOR DUCTWORK

- A. Ductwork sleeves shall be provided in accord with current SMACNA recommendations or as otherwise detailed on Drawings. Refer also section describing duct systems.

### 3.9 ESCUTCHEONS

- A. Provide chrome plated brass escutcheons (for 1/4 or 1 inch projecting sleeves as required) at each point where an uninsulated pipe passes thru a finished surface.

### 3.10 CONCRETE BASES AND STRUCTURAL STEEL

- A. Concrete bases and structural steel to support equipment and piping installed under each specification section or division and not specifically shown on the structural or architectural plans shall be furnished for this work.

### 3.11 SEALANT

- A. Fire/smoke sealant shall be installed in strict compliance with the manufacturer's installation instructions.

END OF SECTION

## SECTION 230594 - PERFORMANCE VERIFICATION, FINAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

#### 1.2 SCOPE

- A. Provide the services of an independent test and balance agency to verify the performance of the complete heating, ventilating and air conditioning systems as described by Division 23. Performance verification shall be accomplished by established testing and balancing procedures as described in this section.

#### 1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division 23 and to all other applicable portions of the Drawings and Specifications.

#### 1.4 TEST AND BALANCE AGENCY

- A. All performance verification shall be performed by an independent test and balance agency (herein referred to as the "T & B Agency") which is fully certified by and a current member of the Associated Air Balance Council (AABC).

#### 1.5 CONTRACTUAL RELATIONSHIP

- A. Performance verification shall be performed as a service of the T & B Agency directly to the Contractor with no other subcontractors as part of the agreement.
- B. Performance verification is specified in this Division 23 only because it relates predominantly to Division 23 work. However, the inclusion in this Division 23 of this section covering performance verification shall not preclude the contractual agreement of the T & B Agency from contracting directly to the Contractor with no other subcontractors as part of such agreement.

#### 1.6 AGENCY APPROVAL

- A. Submit the name and qualifications of the proposed T & B Agency to the Architect/Engineer for approval within thirty (30) days of Notice to Proceed.
- B. Include AABC National Project Certification Performance Guaranty.



## 1.7 WORK INCLUDED

- A. The T & B Agency shall provide all labor, supervision, professional services, tools, test equipment and instruments (except as otherwise specified) to perform the following work and all other work of this section:
1. Review the automatic temperature control and air terminal unit specifications for their respective and combined effects on the testing and balancing procedures for the air and hydronic systems.
  2. Where in the opinion of the T & B Agency conditions may exist in the system design or construction that may have the potential of adversely affecting system performance, then the T & B Agency shall identify the condition and submit in writing recommended correctives for consideration by the Architect/Engineer.
  3. During construction, review those shop drawings which have relevance to performance verification to confirm that the required piping, ductwork and equipment, and their respective specialties and accessories such as gauges, valves, dampers, access doors, etc., are properly selected, sized and located to permit proper and complete testing and balancing to be accomplished.
  4. Perform site inspections to verify compliance with documents, and observe pressure tests on ductwork.
  5. Perform a complete air and hydronic test and balance of all heating, ventilating, air conditioning and exhaust air systems and all water systems shown and described on the Construction Documents and as further described herein.
  6. Submit Equipment Test and Systems Balance Report.
  7. Furnish specifications to Contractor for properly sized fixed sheaves on fan systems after proper RPM has been established.

## 1.8 GUARANTY

- A. The T & B Agency shall include a warranty period of ninety (90) days after completion and acceptance of test and balance work. During the warranty period, the Architect/Engineer may request a re-check or re-setting of any system component requiring testing and balancing. The T & B Agency shall provide technicians, instruments, and tools to assist the Architect/Engineer in conducting any test that he may require during this time. The foregoing shall be in addition to the A.A.B.C. National Project Certification Performance Guaranty which shall also be provided.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. The tangible product of this section shall include the reports and documentation necessary to verify the systems' performance.

### 2.2 REPORT

- A. The T & B Agency shall in the course of his work record the information herein specified. Recorded test data shall be at the final balanced condition for each system. Recorded data shall be arranged by system using the appropriate

designation as established on the Construction Documents. Four (4) copies of the final report signed, bound and indexed shall be submitted to the Architect/Engineer for his approval or comments.

- B. Where actual measurements recorded for the final balance show deviations of more than 10% from the design, the T & B Agency shall note same in the report and submit recommendations for corrective action to the Architect/Engineer for his consideration.
- C. In those cases where recorded data can be reasonably interpreted to be inaccurate, inconsistent and/or erroneous, the Architect/Engineer may request additional testing and balancing. The T & B Agency shall at no additional cost perform such retesting and rebalancing as directed by and in the presence of the Architect/Engineer.
- D. Where, in the opinion of the T & B Agency, there is excessive vibration, movement or noise from any piece of equipment, ductwork, pipes, etc., the T & B Agency shall note same in the report and submit recommendations for action to the Architect/Engineer.
- E. The T & B Agency shall verify that each thermostat and the devices it is controlling, such as control valves, motorized dampers, VAV boxes, etc., operate in the exact sequence required.
- F. Test Data: Include the following data in the Systems Test and Balance Report:

1. Motors:

- Manufacturer
- Model and serial number
- Rated amperage and voltage
- Rated horsepower
- Rated RPM
- Corrected full load amperage
- Measured amperage and voltage
- Calculated BHP
- Measured RPM
- Sheave size, type and manufacturer

2. Fans:

- Manufacturer
- Model or Serial number, BI or Air Foil - number of blades
- Rated CFM, measured CFM
- Rated RPM, measured RPM
- Measured pressures - Inlet and Outlet Static Pressure
- Pulley size, type and manufacturer
- Belt size and quantity
- Rated TSP
- Operating TSP & operating ESP (at discharge side of Supply Fan or suction side of Exhaust/Return Fan)



3. Pumps:

Manufacturer  
Model or Serial number, impeller size  
Rated RPM, measured RPM  
Rated head, measured head  
Rated pressures  
Measured discharge pressure (full flow and no flow)  
Measured suction pressure (full flow and no flow)  
Measured GPM  
Operating head  
Operating RPM

4. Air Systems (including inlets and outlets):

Provide single line diagrammatic plan locating each air inlet and outlet and its reference number.  
Grille or diffuser reference number and manufacturer.  
Grille or diffuser location.  
Design velocity.  
Design CFM.  
Effective area factor and size.  
Measured velocity.  
Measured CFM  
Terminal Unit CFM

G. Other Report Requirements: Where any systems have equipment or components which are not covered by the above, then the Final Test and Balance Report shall include the following data as applicable to such equipment or systems to confirm actual operation:

1. All inlet and outlet areas.
2. All applicable duct, pipe and coil sizes.
3. Outside, inside, mixed and supply air conditions.
4. All fluid velocities, flow rates, temperatures and pressures at appropriate locations.
5. All speeds.
6. All voltage and ampere ranges.
7. Descriptions of each test method used.

2.3 INSTRUMENTATION

A. All test and balance equipment and instruments to be furnished by the T & B Agency shall have been calibrated within six (6) months of use on this work. A list of equipment and instruments to be used shall be submitted to the Architect/Engineer prior to commencing test and balancing operations and shall include equipment and/or instruments, name, manufacturer, serial number and certification of last calibration date. Instruments without calibration adjustment capability shall be accompanied with manufacturer's certification of accuracy. Test and balance equipment and instruments furnished by the Contractor to the T & B Agency shall be accompanied with certification as required above. The T & B Agency shall be

responsible for the protection from damage due to accident, abuse or misuse, all equipment and instruments provided by the Contractor, and shall return same in good working condition at the completion of the test and balance work to the Contractor. The T & B Agency shall repair at his expense to original condition and accuracy or replace with like equipment and instruments damaged in the work.

## 2.4 DIAGRAMS

- A. Provide a schematic diagram (i.e., one-line) of duct system(s) tested. Indicate on the diagram the relative location of all air distribution devices, VAV boxes, heating/cooling coils, points of data measurements (i.e., pitot traverse, temperature, static pressure) fans, air handling units, and similar equipment included in the system. Diagram shall identify each component tested. Said identification shall utilize the conventions shown on the drawings (i.e., AHU-1 or SF-6) and correlate with the data sheets provided in the Test and Balance Report.

## 2.5 LOGS AND FORMS

- A. Logs and forms shall clearly indicate following:
1. All inlet and outlet areas.
  2. All applicable duct, pipe and coil sizes.
  3. Outside, inside, mixed and supply air conditions.
  4. All fluid velocities, flow rates, temperatures and pressures at significant locations (e.g., fluid pressures before and after each pump and fan, temperatures and pressures at supply and return headers and at chiller and boiler inlets and outlets, etc.).
  5. All fan speeds.
  6. All motor ampere ranges.
  7. Descriptions of each test method used.
- B. Associated Air Balance Council log and data forms.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Sheaves: The Contractor shall provide applicable fans with V-belt drives and fixed pitch sheaves. In order to provide the properly sized fixed pitch sheave, the Contractor shall initially provide fans with V-belt drives, variable pitch sheaves. The Contractor, upon completion of system balancing by the T & B Agency, will replace these adjustable pitch sheaves with fixed sheaves of the size and type specified by the T & B Agency. The Contractor shall tag the adjustable sheaves, transmit same to Owner, and receive written receipt by Owner of acceptance of these sheaves.
- B. Load Conditions: All testing and balancing of systems shall be undertaken with maximum attainable load. Testing and balancing of all air handling systems shall be accomplished with ceiling tile in place and enclosing partitions and doors erected.

- C. Observe all equipment and exposed piping for noise, movement or vibrations under normal operating conditions and report excesses to the Architect and Owner.
- D. Where patented measuring stations are installed, each of these is to be read and recorded. In the hydronic systems, the permanent devices, such as flow tubes with mercury manometers, annular ring systems, venturi tubes with portable meters, etc. must be used for final measurements after they are completed, calibrated and in satisfactory condition.

### 3.2 PERFORMANCE VERIFICATION, PRELIMINARY

- A. The Contractor, prior to commencement of the balancing by the T & B Agency, shall verify in writing:
  - 1. That strainers have been removed and cleaned.
  - 2. That all air filters have been installed and are in clean condition.
  - 3. That expansion tanks have been inspected and that the system is not air bound and is completely filled with water.
  - 4. That all air vents at coils and high points of the piping systems have been inspected and are installed and operating freely.
  - 5. That all automatic valves, hand valves, and balancing valves have been left or fixed in the open position for full flow through all devices.
  - 6. That all linkages between valves or dampers and their actuators are secure.
  - 7. That all pumps and fans are operating at the specified RPM.
- B. The Contractor shall confirm in writing that the systems as scheduled for balancing, are operational and complete and that all piping and ductwork have been pressure tested and accepted and all affected piping systems have been cleaned, flushed and refilled with prescribed treated water and vented.

### 3.3 PROTECTION OF WORK

- A. The Contractor shall protect all mechanical devices during the testing and balancing period. The activities of the T & B Agency will include but not be limited to the adjustments of designated balancing devices including; adjustment of balancing dampers, adjustment of inlet vane dampers, adjustment of air extractors, air splitters, or manual dampers, the adjustment of adjustable sheaves for fan speed, the adjustment of balancing valves, or similar devices. The existence of the T & B Agency shall not relieve the Contractor of his responsibility for the complete operation of the mechanical systems in conformance with the contract documents.

### 3.4 CORRECTION OF WORK

- A. The Contractor shall at no additional cost to the Owner rectify discrepancies between the actual installation and contract documents when in the opinion of the T & B Agency the discrepancy will significantly affect system balance and performance.

### 3.5 COORDINATION AND ASSISTANCE

- A. The Contractor shall assist the T & B Agency by providing all labor, equipment, tools and material required to operate all of the equipment and systems necessary for the

testing and balancing of the systems and for the adjustment, calibration or repair of all electric or pneumatic or automated control devices and components. These services shall be available on each working day during the period of final testing and balancing. The Contractor shall assist the T & B Agency by arranging to have all ceilings, partitions, windows, and doors installed prior to the scheduled commencement of balancing within each specified area.

- B. The Contractor shall provide to the approved T & B Agency a complete set of plans and specifications and an approved copy of all heating, ventilating and air conditioning equipment shop drawings. The Contractor shall include the cost of all pulley, belt, and drive changes, as well as balancing dampers required to achieve proper system balance recommended by the T & B Agency.

### 3.6 AIR SYSTEMS

- A. The testing and balancing shall include, but is not limited to, the following requirements:
  - 1. Adjust fan speeds to deliver the required cfm and static pressure, and record rpm and full load amperes.
  - 2. Make pitot tube traverse of main supply ducts to verify design cfm. Seal duct access holes with rubber or metal snap-in plugs.
  - 3. For each supply air system, verify the quantity of outside air and return air when the system is operating in the maximum cooling and full heating modes.
  - 4. Test and adjust each diffuser, grille and register to within 10% of design requirements, and also adjust so as to minimize drafts in all areas.
  - 5. Observe all equipment and exposed ductwork for noise, movement or vibration under normal operating conditions and report excesses to the Architect/Engineer.
- B. After all air distribution devices have been balanced to distribute calculated design indicated air quantities and if temperature in any area (where such area does not have the particular zone temperature control thermostat located therein) of any zone is not maintained within 2 degrees plus or minus of the zone areas which does have the zone temperature control thermostat, then notify Architect/Engineer of such conditions and obtain approval to rebalance devices to obtain air quantities other than those indicated so that air temperature in entire zone will be as even as possible regardless of calculated design air quantities. After obtaining approval to rebalance, perform such necessary rebalancing.

END OF SECTION

## SECTION 230700 - INSULATION, HVAC

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

#### 1.2 SCOPE

- A. Provide all work necessary to insulate all equipment, piping, ducts and other items related to the piping and duct systems.

#### 1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division-23 and to all other applicable portions of the Drawings and Specifications.
- B. This section directly relates in particular to sections (which may or may not be included in this division) which describe the following:
  - 1. Piping systems.
  - 2. Duct systems.
  - 3. Cooling equipment.
- C. Vessels, tanks, stacks, and other items which contain or convey fluids which are at such temperatures as to create condensation or surface temperatures which are hazardous or where heat loss or gain prohibits proper system operation.

#### 1.4 SHOP DRAWINGS

- A. General: Refer to the Section entitled "General Mechanical Provisions". Shop drawings shall contain complete descriptive and engineering data, including flame spread and smoke developed ratings (ASTM E84 test method) on all materials and adhesives. Where finishes, covers, or jackets are specified, provide complete data on same. Shop drawings shall contain specified information on: densities, conductivities, conductances, or resistances as required to establish conformance with the specified values or materials.
- B. Industry Standards: Where compliance with an industry, society or association standard is specified or indicated, certification of such compliance shall be submitted with shop drawings.
- C. Commencement of Work: Submit shop drawings before any work is commenced.

## 1.5 STORAGE OF MATERIALS

- A. Do not store fiberglass insulation within the building until it has been "dried in". If no other dry space is available and this insulation must be installed or stored before the building is "dried in" and completely enclosed, provide polyethylene film cover for protection.

## 1.6 COMPLIANCE WITH CODES AND STANDARDS

- A. Applicable Codes: The total insulation system including insulation, sealant, finishes, etc., shall comply with or exceed all code requirements.
- B. NFPA: All materials and adhesives used shall conform to the requirements of NFPA 90A as to flame spread and smoke developed ratings.

## 1.7 DEFINITIONS AND TERMINOLOGY

- A. Terminology: Throughout this section, insulation products may be described as regards the location, surface or other point at which they are to be applied. Except in special cases (where a detailed indication or description will be given), the majority of conditions can be defined in whole or in part by use of (but not necessarily limited to) any or all of the following words:
  - 1. "Internal" or "External".
  - 2. "Interior" or "Exterior".
  - 3. "Concealed" or "Exposed".
  - 4. "Protected" or "Unprotected".
- B. Definitions: Wordage used to describe locations, surfaces or other points or conditions shall be defined as follows as related to this section. Where the ascertainment or determination of locations, surfaces and other conditions is obvious from the intent of use of the item (e.g., roof-mounted ductwork, underground piping, etc.) or from other information, then the following words may not be required. If any ambiguity should occur, provide bid based on the most severe condition; however, obtain clarification from Architect/Engineer prior to installation:
  - 1. "Internal" and "External": Relates to an item or its surface which is to be insulated or uninsulated. Does not relate to the confines of the building, structure or other entity in which the item is located. (Examples: internal/external surfaces of ductwork, pipe, air handling units or other such items.)
  - 2. "Interior": Relates to the location of an item as to whether the item is within a heated, ventilated, air conditioned or otherwise controlled environment of the building, structure or other entity in which the item is located. "Interior" is always "Protected". (Examples(s): Interior ductwork, interior piping, interior air handling units.)
  - 3. "Exterior": Relates to the location of an item as to whether the item is outside (i.e., exterior to) a heated, ventilated, air conditioned or otherwise controlled environment of the building, structure, facility or other entity which the item serves or relates. "Exterior" generally means that the item is surrounded by the ambient outside environment. "Exterior" is considered "Unprotected" unless



otherwise described. (Examples(s): exterior rooftop air handling units, exterior ductwork, exterior cooling tower.)

4. "Concealed" and "Exposed": Relates to the visibility of an item. "Concealed" implies out-of-sight from normal view by an occupant, user or employee of the facility when such person is performing their normal function. "Exposed" implies that the item is readily visible by such a person when that person is performing a normal function. (Examples(s): "Concealed interior ductwork" would be out-of-sight in a ceiling plenum, whereas "exposed interior ductwork" would be readily visible in a mechanical equipment room or in a room which intentionally had no ceiling system.)
5. "Protected" and "Unprotected": Relates to an exterior item which may or may not be sheltered from the outside elements but which exists in contiguous contact with the ambient environment without benefit of any direct heating, ventilating or air conditioning. (Example(s): Piping or ducts located in an open crawl space beneath a building would be "protected/concealed"; in an open parking garage such piping or ducts would be "protected/exposed". Piping or ducts on a rooftop would be "unprotected" and usually "exposed".)

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. Materials: Materials listed are those used as basis of design; equivalent products of acceptable manufacturers will be accepted. Materials must be approved and recommended by the insulation product manufacturer for the particular application(s).
- B. Flame and Smoke Ratings: Application of insulation materials may require, in many cases, that the final insulation system comply with NFPA 90A with regard to maintaining a flame spread rating of 25 or less and a smoke developed/fuel contributed value of 50 or less. In such cases, verify that the materials comply with the indicated flame spread and smoke developed ratings.
- C. Applicability: Products and manufacturers listed may not all be applicable. Use only those products and manufacturers which are indicated as being applicable to a specific insulation condition.
- D. Acceptable Manufacturers: Manufacturers which are listed are those manufacturers who may make one or more of the insulation products required. Listing of a manufacturer does not necessarily mean the manufacturer is approved for all applicable insulation conditions. Each listed manufacturer must still comply with the specific requirements of each insulation condition to be acceptable for the particular application. Acceptable manufacturers of insulation-related products include (but are not necessarily limited to) the following: Armstrong; CertainTeed; Childers Products Co.; Knauf; Manville; Owens-Corning; Pittsburg Corning; Rubatex; Upjohn Co.; Duracote Corporation; Ferro Corporation; Dow Corning Corporation; Duro Dyne Corporation; Goodloe E. Moore, Inc.; 3M Co.; United McGill Corporation, Vimasco Corporation; Foster; Gustin-Bacon; Nomaco Inc.; Insulcoustic; Molded Acoustical Products; Lion Nokorode and other manufacturers as may be listed for a specific application.

## 2.2 BASIC MATERIALS

- A. Cellular Glass Insulation: Preformed or block type as indicated or as applicable. Fire, water and vermin retardant; closed cell glass composition; density of 8.5-pcf. Comply with the following: ASTM C 552, "Specification for Cellular Glass Thermal Insulation"; Military Specification MIL-I-24244B. Flame spread rating of "5" and a smoke developed rating of "0" as per ASTM E 84. Recommended temperature applications from -450°F to 1200°F when installed in accord with manufacturer's recommendations. Pittsburg-Corning Foamglas.
- B. Elastomeric Insulation: Preformed (tube), roll or sheet as indicated or as applicable. Nitrile, rubber based, closed cell structure. K factor of 0.28 at 75°F. In tube, roll or sheet form of 3/4-inch thickness or less, ASTM E 84 flame spread rating of "25" or less and smoke developed rating of "50" or less. Recommended temperature applications from -40°F to 220°F when installed in accord with manufacturer's recommendations. Do not install in return air plenums unless flame spread rating and smoke developed rating are within constraints of applicable codes. Manufacturers and/or series: Armstrong "Armaflex"; Manville "Aerotube"; "Rubatex"; Gustin-Bacon "Ultra-Foam".
- C. Fiberglass Insulation: Inorganic fibrous glass. Flame spread of "25" or less and smoke developed rating of "50" or less per ASTM E 84.
1. Board: Rigid or semi-rigid form, faced or unfaced as indicated. Stiffness of 475 EI, 800 EI or 1400 EI as indicated.
  2. Blanket: Flexible form; faced, unfaced or coated as indicated.
  3. Preformed: Jacketed or unjacketed as indicated.
- D. Calcium Silicate Insulation: Preformed or block type as indicated or as applicable. Asbestos free. Rigid hydrous calcium silicate. K factor of 0.42 at 200°F. Density: 14-pcf. Flame spread rating of "0" and smoke developed rating of "0" as per ASTM E 84. Recommended temperature applications up to 1200 °F. Use where indicated only on equipment and surfaces which generate heat; do not use as a cold-surface insulation.

## 2.3 INSULATION PRODUCTS, BASIC

- A. Type PI-1: Pipe insulation, preformed cellular glass. Pittsburg-Corning "Foamglas" or equivalent.
- B. Type PI-2: Pipe insulation, preformed jacketed fiberglass. Jacketed with factory-applied kraft reinforced foil vapor barrier jacket. Jacket closure system of double pressure-sensitive adhesive on longitudinal joints; self-sealing butt strips at circumferential joints; provide positive vapor barrier seal. Thermal conductivity (K) of 0.24 at 100°F. Owens-Corning Fiberglas ASJ/SSL-II; Manville Micro-Lok with AP-T Plus jacket; CertainTeed 500 Snap-On; or equivalent.
- C. Type PI-3: Pipe insulation, preformed unjacketed fiberglass. Suitable for field-jacketing. Thermal conductivity (K) of 0.23 at 100°F. Owens-Corning Fiberglas No-Wrap, Manville Micro-Lok, or equivalent.



- D. Type PI-4: Pipe insulation, preformed segmental rigid calcium silicate. Thickness as indicated; provide single layer where nominal pipe size allows; provide "factory nested" double layer when nominal pipe size so requires for the thickness indicated. Owens-Corning Kaylo; Manville Thermo-12; or equivalent.
- E. Type PI-5: Pipe insulation, preformed elastomeric. Rubatex, Armaflex II or equivalent.
- F. Type I-1: Cellular glass block insulation. Field formed, fitted and finished as required for the application. Pittsburg-Corning Foamglas or equivalent.
- G. Type I-2: Calcium silicate block insulation. Field formed, fitted and finished as required for the application. Owens-Corning Kaylo; Manville Thermo-12; or equivalent.
- H. Type I-3: Elastomeric insulation. Field formed, fitted and finished as required for the application. Armaflex, Rubatex or equivalent.
- I. Type I-4: Fiberglass flexible blanket insulation. Unfinished, non-combustible, wool-like; composed of long glass fibers bonded with a thermosetting resin. Thermal conductivity (K) of 0.23 at 100°F. Applicable where indicated for boilers, vessels, breaching and stacks operating at up to 1000°F. Finished or held in place by wire ties, metal lath, lagging or as indicated. Owens-Corning Thermal Insulating Wool TIW Type II or equivalent.
- J. Type DI-1: Duct insulation, fiberglass flexible blanket wrap. Composed of flexible blanket of glass fiber factory laminated to a reinforced foil kraft (FRK) vapor barrier with a minimum 2-inch taping and stapling flange on one edge. Suitable for operation at temperatures from 40°F to 250°F. Thermal conductivity of 0.31 at 75°F. Minimum density of three-quarter (3/4) pound per cubic foot. Provide in thickness of (2.2) inches unless otherwise specified as 2-1/2 or 3-inch thickness. Owens-Corning All Service Faced Duct Wrap; Manville R-Series Microlite; CertainTeed Standard Duct Wrap; or equivalent.
- K. Type DI-2: Duct insulation, fiberglass semi-rigid board. Composed of resin bonded glass fibers faced with a foil scrim-kraft (FSK) reinforced laminate of aluminum foil and kraft bonded to provide a metallic surface finish vapor barrier; alternate vapor barrier facing (if specifically indicated) is an all service jacket (ASJ) of high intensity white bleached, chemically treated kraft paper reinforced with fiberglass yarn mesh and laminated to aluminum foil with fire-retardant adhesive to impart a clean, white appearance. Conductivity (K) of not greater than 0.23 at 75°F. Provide in thickness of one (1) inch unless otherwise indicated. Provide with minimum density of 3-pcf unless 6-pcf is specifically indicated. CertainTeed Industrial Insulation Board Type IB-300 (or IB-600); Manville 800 Series Spin-Glas Type 814 (or 817); Owens-Corning 700 Series Industrial Insulation Board Type 703 (or Type 705); or equivalent.

## 2.4 INSULATION ADHESIVES, MASTICS, SEALANTS

- A. Adhesive (Type A-E1): For joints and seams in elastomeric insulation (Type I-3) not requiring weather protection. Rubatex R-373 Insulation Adhesive; Armstrong 520 Adhesive or equivalent.
- B. Joint Sealant (Type JS-CG1): Non-hardening vapor barrier sealant specifically designed for use with cellular glass insulation (Types PI-1, I-1): Foster's 35-40 Foamseal Sealant, Pittsburg-Corning Pittseal 111 Sealant or equivalent.
- C. Adhesive (Type A-F1): For adhering fiberglass blanket and board insulations (Types DI-1, DI-2) to metal substrate such as ductwork. Insulcoustic I-C 201, Foster 85-20 or equivalent.
- D. Mastic, General Purpose (Type M-GP1): Non hardening vapor barrier general purpose mastic. For use where indicated or otherwise applicable. Foster GPM 35-00 or equivalent.

## 2.5 INSULATION FINISHES, JACKETS AND COVERS

- A. Finishing Coating (Type FC-E1): For weather protection of elastomeric insulations (Types I-3, PI-5). Rubatex 374 coating; Armstrong Armaflex Finish or equivalent.
- B. Finish Mastic (Type FM-CG1): For cellular glass insulations (Types PI-1, I-1). Waterproof, weather, acid and alkali resistant asphalt mastic coating for use in the range of -40°F to 200°F (installation must be done when in the 50°F to 120°F range). Pittsburg-Corning Pittcote 300 Vapor and Weather Barrier Finish or equivalent.
- C. Finish Fabric (Type FF-CG1): For cellular glass insulations (Types PI-1, I-1). 6 x 6 meshes per inch polyester fabric for reinforcing the finish mastic. Pittsburg-Corning PC Fabric 79 or equivalent.
- D. Finish Fabric, General Purpose (Type FF-GP1): Nylon membrane. For use generally with fiberglass duct insulations (Types DI-1, DI-2) at joints or seams or as may be indicated. Apply using Foster GPM 35-00 or equivalent.
- E. Jacket, Underground Pipe (Type JP-CG-1): For cellular glass pipe insulations (Type PI-1, I-1) where indicated. Prefabricated laminate containing a 20 x 10 mesh asphalt impregnated glass fabric and a 1-mil thick aluminum foil sandwiched between three layers of a bituminous mastic. External jacket surface coated with a protective plastic film and internal surface with a special release paper. Apply around cellular glass pipe insulation in a cigarette type wrap with the overlap heat sealed. Seal butt joints in the same manner using a 4-inch wide seal strip of the jacketing. Irregular surfaces of the pipe system shall have the jacket's plastic film burned away prior to application of a 20 x 10 asphalt impregnated mesh which shall be sandwiched between two glove coats of finish mastic (Type FM-CG1).
- F. Jacket, Pipe, PVC (Type JP-PVC): All purpose, UL-rated, white vinyl jacket, with or without self-sealing feature. Pittsburg-Corning "UNI-JAC" or equivalent.

- G. Jacket, Pipe, Aluminum (Type JP-A1): Aluminum jacketing, 0.016 inches thick, type 3003 alloy, H-14 temper, circumferentially corrugated, with a continuously laminated moisture barrier of one mil polyethylene film and a protective layer of 40 lb. virgin kraft paper. Childers Products Co. "Corolon"; General Aluminum Supply Co. (Gasco); Insulcoustic "Alcorjac" or equivalent.
- H. Pipe Fitting Covers, PVC (Type PFC-PVC): Insulated polyvinyl-chloride fitting covers in shapes as required; with fiberglass insulation insert. Suitable for temperature range of 0°F to 450°F. Flame spread rating of 25 or less and smoke developed rating of 50 or less when kept below 150°F. Acid, alkali and chemical resistant. Suitable for painting if required. Manville Zeston 25/50 PVC Insulated Fitting Covers or equivalent.
- I. Pipe Fitting Covers, Aluminum (Type PFC-A1): Aluminum fitting covers, 0.020 inches minimum thickness, type 3003 alloy, H-14 temper prefabricated fitting covers with baked epoxy moisture barrier for pipe sizes through 24". Field fabricate fitting covers for pipe sizes larger than 24" using 0.020 inches thick aluminum roll jacketing with laminated polyethylene/kraft moisture barrier. Childers Products "Ell-Jacs", "Gore Ell-Jacs", "Tee-Jack", "End-Caps", and "Flange Jacs" or equivalent.

## 2.6 RELATED PRODUCTS

- A. Wire (Type W-1): Dead soft, 16-gauge, stainless steel.
- B. Straps (Type ST-1): Stainless steel T-304 (18-8) soft annealed with deburred edge with stainless steel wing seals. Childers Products "Febstraps" or equivalent.
- C. Tape (Type T-1): High tensile strength rope stock flat back paper pressure sensitive tape. Pittsburg-Corning "PC Tape No. 25" or equivalent.
- D. Screws (Type S-1): Aluminum pan head type "A" slotted #8 by 1/2-inch.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Field Forming, Fitting and Finishing: Where preformed insulation products are indicated as being acceptable for a particular application, provide field formed, fitted and finished insulation systems if such application is more practical (such as due to size, configuration or dimensions which may be outside of the availability ranges for size, dimension and/or thickness of preformed products).
- B. Pre-installation:
  - 1. Do not apply insulation adhesives, materials or finishes until the item to be insulated has been completely installed and tested and proved tight and suitable for insulation.
  - 2. Prepare surfaces to be clean and dry before attempting to apply insulation.

- C. Insulation Shields: Provide hanger or pipe support shields of 16 gage (minimum) galvanized steel over or embedded in the insulation. Shield shall extend halfway up the pipe insulation cover and at least 6" on each side of the hanger. Securely fasten shield with pipe straps at each end.
- D. Valves, Cocks and Specialties: Insulate as for the related piping system in which they are located unless otherwise indicated.
- E. Factory Pre-Insulated Components: Where equipment and other system components are specified in other sections to have factory installed insulation, then no additional insulation is required as work of this section unless additional non-factory-installed insulation is specifically described. Examples of such equipment and components which may not require additional insulation include, but are not necessarily limited to, boiler vessels, chiller evaporators, air handling units, airside terminal units, and similar items.
- F. Minimum Thicknesses: Insulation thicknesses which are indicated are minimum thicknesses. Contractor may provide the same insulation material in greater thickness as an aid to installation and handling procedures or due to material availability and procurement considerations.
- G. Branch Runouts: Branch runouts are considered to be individual supply/return pipes to individual terminal heating or cooling units (duct mounted coils, airside terminal units with heating coils, fan coil units, humidifiers, and similar small equipment). The supply/return pipe to such units is not considered to be a branch runout if the length of the supply or return pipe exceeds 12'-0" in length to the coil/unit connection.
- H. Insulation for Plumbing Systems: See other sections describing insulation for plumbing systems.

### 3.2 INSULATION THICKNESS FOR PIPING SYSTEMS

#### A. General:

1. Basis: Insulation thicknesses for piping are given for insulation installed in the locations indicated. Thicknesses are based on the various conditions of temperature, usage and environment which are typically encountered.
2. Applicable Thicknesses: All thicknesses as applicable to all conditions may not be given in this section article. Where an insulation thickness for a particular application is specified to be of other thickness than may be listed in this section article, "INSULATION THICKNESSES FOR PIPING SYSTEMS", then provide the insulation in the thickness indicated in other portion of this section which specifically describes the particular insulation application and its required insulation thickness. Thicknesses for other than piping insulation are given in the specific description of the particular application or description of the particular material used.
3. Ambient Conditions: Unless otherwise indicated, ambient conditions for the purpose of describing insulation thicknesses are related to cold applications to prevent condensation or excessive heat gain (e.g., chilled water pipe, cold vessels) and are related to hot applications to prevent harm to personnel or to

prevent objectionable heat loss to the environment (e.g., hot water pipe, hot vessels, hot stacks).

a. These conditions are generally:

Interior: 80°F and 80% RH.  
Exterior: 90°F and 80% RH.

4. Thickness Requirements: Thicknesses are given below based on the following information:

- a. General type of fluid or process involved (e.g., chilled water, hot water, steam, refrigerant).
- b. General location and, if necessary, conditions related to temperature (either or both internal or external to the insulation barrier) and ambient environment of the insulated item.
- c. Pipe size range.

### 3.3 DUCT SYSTEMS

A. General:

1. Locations and extent of both internal and external insulation for duct systems are described in section entitled "Ductwork" and/or by the "Duct Type and Location Schedule" on the Drawings.
2. Internal Insulation: Ductwork which is required to be insulated internally (acoustically/thermally lined) shall be insulated as work of the section entitled "Ductwork".
3. External Insulation: Ductwork which is required to be insulated externally shall be insulated as work of this section.
4. Factory Insulation: Ductwork which is factory manufactured with internal or external insulation is not to be additionally insulated as work of this section unless specifically stated. Such factory insulated ductwork generally consists of flexible externally insulated ductwork and double walled acoustically thermally lined ductwork.

B. Interior, Concealed (e.g., ceiling plenums): Where external insulation is required, insulate externally with 2.2 inch thick fiberglass blanket wrap (Type DI-1). Adhere duct insulation using adhesive (Type A-F1) applied in accordance with the manufacturer's recommendations. Where duct width exceeds twenty-four inches (24"), the insulation shall be additionally secured to the bottom of the duct using mechanical fasteners spaced one foot (1') on center. Insulation shall be applied with edges tightly butted, and all joints and breaks in the vapor barrier sealed using glass fabric and mastic applied in conformance with manufacturer's recommendations.

C. Interior, Exposed, (e.g., air handling unit rooms): Where external insulation is required, insulate with 1-inch thick semi-rigid fiberglass board (Type DI-2). Adhere to ductwork with adhesive (Type A-F1). Finish joints and seams with finish fabric (Type FF-GP1).



### 3.4 DUCT SYSTEMS EQUIPMENT

- A. General: Insulate as follows unless detailed to a greater extent on the Drawings.
- B. Fire damper and Fire/Smoke Damper External Surfaces:
  - 1. Externally Insulated Duct Locations: Extend duct insulation up face of fire damper to damper sleeve. Seal insulation edges with 4-inch minimum width duct tape.
  - 2. Internally Insulated Duct Locations: Provide additional external insulation from a point on the duct 12 inches from the fire damper to the fire damper and on the face of the fire damper to the fire damper sleeve. Seal insulation edges with 4-inch minimum width duct tape.
- C. Air Distribution Devices: Insulate the backs of all ceiling diffusers and other air outlet devices installed in other than return air plenums as specified for interior concealed ducts.

### 3.5 EMERGENCY GENERATOR MUFFLER AND EXHAUST PIPING

- A. Shall be insulated with two 1-1/2" layers of calcium silicate block insulation. All joints shall be staggered and the blocks shall be installed with corrosive resistance stainless steel tie wires. The insulation shall be finished with a skim coat of Johns-Manville hydraulic setting insulation cement and covered with a layer of Underwriters grade cloth. The cloth shall be sized with Foster's 30-36 fire retardant coating or equal.

### 3.6 COLD EQUIPMENT AND RELATED COMPONENTS

- A. Condensate Drain Piping from Cooling Equipment:
  - 1. Interior, and Exterior, Protected: Insulate with preformed elastomeric pipe insulation (Type PI-5) secured with adhesive (Type A-E1) and finished with white finish coating (FCC-E1). Thickness 3/4-inch. Provide 25/50 flame/smoke rating.
  - 2. Exterior, Unprotected: None applicable.
- B. Flexible Pipe Connectors for Vibration Isolation: Insulate with elastomeric insulation (Type 1-3). Secure the insulation with adhesive (Type A-E1) applied to a clean surface and finish with white finish coating (FC-E1). Insulation thickness shall be one and one-half inches (1-1/2").

END OF SECTION

## SECTION 233100 - DUCTWORK

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

#### 1.2 SCOPE

- A. Provide complete duct systems as indicated. Systems shall include, but not be limited to, the following: outside air, exhaust air, and air conditioning supply and return air duct systems as shown on drawings. Drawing scales prohibit the indication of all offsets, fittings, and like items; however, these items shall be installed as required for the actual project conditions at no change in contract price.
- B. Items Included: This section generally includes, but is not limited to, the following major items:
  - 1. Low pressure sheet metal ductwork.
  - 2. Acoustical thermal duct liner.
  - 3. Low pressure flexible ducts.
  - 4. High pressure flexible ducts.

#### 1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions" for related requirements. Refer to other sections of Division 23 and to other applicable portions of the Drawings and Specifications.
- B. This section is directly related in particular to sections (which may or may not be included in this division) which describe the following:
  - 1. Sections describing air handling equipment and fans.
  - 2. Air distribution devices.
  - 3. Terminal units.
  - 4. Duct system accessories.
  - 5. Insulation.
- C. Coordinate shop drawings, ordering, delivery, and placement of all items affecting the duct systems including, but not limited to, the following items: air handling units, exhaust fans, supply fans, sound attenuators, duct mounted coils, access panels, air distribution devices, fire dampers, outside air louvers, hoods, filters, roof curbs, structural framing, roof construction, roofing, and the work of all trades to insure an orderly and timely progression of the work. Refer to the requirements of Section entitled "General Mechanical Provisions".
- D. Refer to other sections which may describe additional sound attenuation measures which may relate to this section.

#### 1.4 SHOP DRAWINGS

- A. Refer to Section entitled "General Mechanical Provisions". Include complete data as applicable to this project on: all prefabricated duct and fittings; duct liner including mechanical fasteners and adhesives; duct sealing materials; duct joining and seaming methods; and all other items. If required by Architect, prepare and submit for approval completely detailed shop drawings of supply and return ductwork from any or each air handling unit through its transitions, bends and elbows until such ducts are extended beyond the air handling unit equipment area and/or congested areas; these shop drawings will not be required unless specifically called for elsewhere or unless significant deviation from the Drawings is necessitated by the equipment provided.

#### 1.5 OTHER REQUIREMENTS

- A. Provide all ductwork and components thereof in accord with manufacturer's recommendations. All ductwork dimensions indicated are nominal free clearance internal dimensions which do not include insulation thickness.

#### 1.6 DEFINITIONS

- A. "SMACNA" means "Sheet Metal and Air Conditioning Contractors National Association, Inc."
- B. Low Pressure Ductwork: Any and all ductwork conveying air or other gases at velocities less than 2500 fpm and static pressure less than 2.0 inches wg. This ductwork may also be referred to in these specifications as "Low Velocity Ductwork". SMACNA "HVAC Duct Construction Standards, Metal and Flexible", Second Edition, 1995, shall govern construction of this ductwork unless otherwise specified.
- C. High Pressure Ductwork: Any and all ductwork conveying air or other gases at velocities equal to or greater than 2500 fpm or static pressure equal to or greater than 2.0 inches wg. This ductwork may also be referred to in these specifications as "High Velocity Ductwork" or "Medium Pressure Ductwork", but shall be considered, in either terminology, to fall within pressure/velocity class (PV/C designation) 3 to 10. SMACNA "HVAC Duct Construction Standards, Metal and Flexible", Second Edition, 1995, shall govern construction of this ductwork unless otherwise specified.

#### 1.7 PRESSURE/VELOCITY CLASSIFICATIONS

- A. Pressure and velocity classifications (hereinafter called "PVC") for ducts are defined as follows:



<u>P/VC Desig.</u>	<u>SMACNA Pressure Class</u>	<u>Static Pressure Rating</u>	<u>Positive or Negative Pressure</u>	<u>SMACNA Seal Class</u>	<u>Maximum Velocity (fpm)</u>
10	High	10"	+	A	2000 up
6	Medium	6"	+	A	2000 up
4	Medium	4"	+	A	4000 dn
3	Medium	3"	+ or -	B	4000 dn
2	Low	2"	+ or -	C	2500 dn
1	Low	1"	+ or -	C	2500 dn
½	Low	1/2"	+ or -	C	2000 dn

B. See Part 3, EXECUTION, of this section for duct sealing requirements.

## PART 2 - PRODUCTS

### 2.1 GENERAL

A. Materials shall comply with current SMACNA standards.

B. ASTM: Unless otherwise specified, ASTM material specifications applicable are:

<u>Material</u>	<u>Type</u>	<u>ASTM Number</u>
Galvanized steel	G90	A525
Stainless steel	304,316	A240
Cold rolled steel	20-28 ga.	A366
Cold rolled steel	18 ga.	A619
Aluminum	3003 H-14	B609

C. Special Materials, Gauges and Construction:

1. Special Materials: Where special duct material other than galvanized steel is required, such duct material (e.g., fiberglass, stainless steel, plastic such as polyvinylchloride, etc.) shall be specifically indicated.
2. Gauges: Gauges indicated in this section are for galvanized steel. Where greater or lesser gauges are specifically indicated for a sheet metal material other than galvanized steel, provide the indicated gauge. Comply with the SMACNA construction standard covering the required material if no gauge is given.
3. Construction: Comply with indicated special requirements (i.e., such as welding, soldering, etc.) where application requires.

### 2.2 LOW PRESSURE SHEET METAL DUCTWORK

A. Material: Prime quality forty-eight inch wide resquare tight coat galvanized steel conforming to the requirements of ASTM A-525 and/or A-527 as applicable to the intended use.

B. Construction:

1. Construct to comply with the pressure/velocity classification(s) indicated.
2. Use rectangular or round as indicated on drawings.
3. Reinforcing, Cross Breaking, Seams, Joints: Be in accord with latest SMACNA construction standard for low pressure sheet metal duct.
4. Gauge: As required by SMACNA for the dimensions and pressure/velocity classification involved.

C. Insulation:

1. Rectangular rigid sheet metal ductwork: shall be internally lined with acoustical thermal duct liner if so designated.
2. Round rigid sheet metal ductwork: Where low pressure round ductwork is designated to have internal acoustical/thermal liner, provide factory fabricated double wall ductwork as specified for high pressure round acoustically lined sound attenuating duct (i.e., factory fabricated double wall duct with perforated inner wall).

### 2.3 ACOUSTICAL THERMAL DUCT LINER

- A. Line ductwork where indicated. Dimensions indicated are net inside dimensions. Liner shall be one inch thick, three pound density fiberglass duct liner with the surface in contact with moving air stream stabilized with black pigmented neoprene. Duct liner shall comply with requirements of NFPA 90A as to flame spread and smoke developed ratings. Duct liner shall be factory treated with antimicrobial/antibacterial treatment to prevent formation & growth of bacteria.
- B. Acceptable Manufacturers: Johns-Manville, Microtex; PPG Industries, Tetrafine; or Certain-Teed/Saint Gobain, Coated Ultralite.
- C. Attachment: Attach to the interior of sheet metal ducts using a full coverage coat of Foster's 85-20 adhesive and mechanical fasteners applied as follows:
1. Horizontal Ducts: Install mechanical fasteners on underside of the tops of ducts over twelve inches in width and on the insides of ducts over sixteen inches in height.
  2. Vertical Ducts: Install mechanical fasteners on all duct surfaces exceeding twelve inches.
  3. Fastener Spacing: Install fasteners within two inches of the leading edge of each duct section and within three inches of the leading edge of cross joints in insulation within any given duct section. Pins shall thereafter be spaced at not more than fifteen inches on centers. Pins shall be installed in strict accordance with manufacturer's instructions.
- D. Edge Stabilization: All exposed edges and the leading edge of all cross joints of liner shall be coated with Foster's 30-36.

### 2.4 HIGH PRESSURE DUCTWORK, ROUND AND FLAT-OVAL

A. General:

1. Comply with current SMACNA standards.
  2. Factory fabricated portions shall be made by United McGill, Semco or equal.
- B. Straight Conduit: Galvanized steel unless otherwise indicated for a specific application.
1. Seam construction: Spiral lock-seam (SMACNA Type RL-1) allowed for all pressure/velocity classifications. Longitudinal grooved seam (SMACNA Type RL-5) allowed only up to pressure/velocity classification P/V-C-3.
- C. Fittings:
1. Material: Same as connecting duct system.
  2. Configuration: Standard design as manufactured by United McGill, Semco or equal.
  3. Elbows:
    - a. General: All mitered elbows must be vaned.
    - b. Round: 5-inch diameter and larger shall be five-section construction; less than 5-inches diameter shall be die-formed.
    - c. Flat-oval: Five-section construction.
    - d. Hard turn oval elbows shall have vanes as follows:

<u>Equivalent diameters</u>	<u>Number of Vanes</u>
10" through 14"	3
15" through 19"	4
20" through 60"	5
Over 60"	12" spacing

4. Vanes: Be minimum 20 gauge and limited to 24 inches of unsupported length. The leading edge of all vanes in duct exceeding 20 inch size will be hemmed with a 1/2 inch fold back.
5. Divided Flow Fittings: All divided flow configurations are to be furnished as separate fittings. Tap covers welded into spiral duct sections are not acceptable. All tees, crosses and laterals up to an including 12" diameter tap size, will have a minimum 3/8" radius rounded entrance into the tap, produced by machining, press forming, or hand grinding to a smooth entrance. The entrance will be free of projections, weld buildups, burrs or irregularities. All fittings will have continuous welds along all seams.
6. Tees and Crosses: All tees and crosses shall be the spun conical type with branch entrances through 12" size, to be rounded laminar flow as noted above.
7. Connections: Connections of conduit to fittings shall be made with a synthetic rubber sealing compound conforming to NFPA 90A as to flame spread and smoke developed ratings and mechanically fastened with drive or twist screws, and all joints tested in accordance with test procedure described hereinafter. Raychem TDB duct sealing bands may be used in lieu of the sealing compound. Connection between conduit and terminals shall be made with a maximum of 48" of flexible duct. Runout connections shall be assembled in same manner as conduit and fittings.

D. Gauge: Minimum gauge as follows (gauges are for round and flat-oval duct with spiral lock-seam construction unless otherwise indicated):

1. Round duct (galvanized steel):

<u>Diameter</u> <u>(Inches)</u>	<u>Gauge</u>	<u>Alternate</u> <u>Gauge(2)</u>
3 thru 8	26	24
9 thru 14	26	24
15 thru 26	24	22
27 thru 36	22	20
37 thru 50	20	20
51 thru 60	18	18
61 thru 84	18(1)	16

(1) Must be 16 ga. when static pressure is negative.

(2) Alternate gauges are allowable for longitudinal grooved seam (SMACNA Seam Type RL-1) and only for pressure/velocity class up to PVC-3.

2. Flat-oval duct (galvanized steel):

<u>Major</u> <u>Dimension</u> <u>(Inches)</u>	<u>Gauge</u>
0 thru 24	24
25 thru 36	22
37 thru 48	22
49 thru 60	20
61 thru 70	20
71 and up	18

E. Fittings:

1. Round duct: Same as duct unless otherwise recommended by manufacturer.
2. Flat-oval duct:

<u>Major</u> <u>Dimension</u> <u>(Inches)</u>	<u>Gauge</u>
0 to 24	20
25 to 36	20
36 to 48	18
49 to 60	18
61 to 70	16
71 and up	16

F. Acoustically Lined Sound Attenuating Round and Flat Oval Duct and Fittings: General construction is specified in paragraphs above. Flame spread and smoke developed ratings shall comply with NFPA 90A. Double walled with zinc coated solid sheet steel outer wall and zinc coated perforated sheet steel inner wall. One inch thick annular space between inner and outer walls uniformly packed with fiberglass

insulation with effective thermal conductivity of 0.27 BTUH per sq. ft. (F° per inch) separated from air stream using mylar film. Equal to United Acousti-K27.

## 2.5 HIGH PRESSURE DUCTWORK, RECTANGULAR

### A. General:

1. Airtight and structurally stable at maximum system operating pressure.
2. Any welding shall be continuous and corrosion resistant.
3. Galvanized sheet steel unless otherwise indicated for a specific application.
4. Reinforced and supported to neither cause nor convey any objectionable vibrations.
5. Be in accordance with latest SMACNA construction standard for high pressure ductwork.

B. Turning Vanes: Adequate rigidity and strength to be completely flutterproof. Airfoil, permanently fixed type constructed of galvanized steel or aluminum with sound attenuating fiberglass inner liner with open protective metal facing. Quantity in each elbow in accordance with manufacturer's recommendations. Airsan Acoustiturn as made by Air Filter Corporation, 4554 W. Woolworth Ave., Milwaukee, Wisconsin 53218 or equal.

## 2.6 HIGH PRESSURE DUCT RELIEF AND ACCESS DOORS

A. Provide suitable size for access to heaters, dampers and other equipment installed in duct, and at other points indicated on drawings. Size shall be as listed by paragraph above and compatible with duct size but not smaller than 8"x12". Doors shall be 24 US gauge galvanized steel hinged to a 24 gauge galvanized mounting frame and for insulated duct shall be double panel construction with 1/2 inch rigid insulation material between metal panels. Doors shall be United Sheet Metal Type AR or an approved equal.

## 2.7 LOW PRESSURE FLEXIBLE DUCTS

### A. General:

1. The inclusion of flexible ducts in this specification shall not be construed as approval of use on the project unless specifically shown on the Drawings.
2. Where used, provide in factory finished lengths not in excess of lengths required to make kink-free connections with minimum air pressure drop.

B. Insulated flexible ducts: Flexible duct shall be factory-fabricated preinsulated type with seamless vapor barrier. Duct shall bear UL 181 Class 1 Air Duct label and shall comply with NFPA 90A and 90B. Fiberglass insulation nominal 1" thickness with thermal conductance of 0.23 BTU/hr-ft<sup>2</sup>-°F maximum at 75°F mean temperature. Flexible duct shall have an operating range of minus 0.5" w.g. to plus 2" w.g. Core shall be continuous and consist of aluminized mylar laminated to corrosion resistant steel wire helix. Vapor barrier perm rating shall be 0.17 maximum per ASTM E96-A. Maximum working velocity shall be 4000 FPM. Flexible duct shall be Genflex SLR-25, Clevaflex Type KQ, Wire Mold type WG, Flexmaster Type 5B, or approved equal.

- C. Un-insulated flexible ducts, steel: Flexible ductwork shall be constructed of all metal one ply hot-dipped galvanized steel, closely corrugated for strength and flexibility, with seams interlocked, folded flat, and knurled to insure tightness. Duct shall be listed as #UL181 "Flexible Air Duct", Class 1, and NFPA 90A. Products shall be Flexmaster Type NI-TL, Clevaform Type GS or approved equal.
- D. Round branch take-off fittings for flexible duct:
  - 1. Round duct branch take-off fitting shall be made of galvanized sheet metal designed for twist-in installation and to assure minimum air loss at the take-off. The fittings shall be of the conical converging type to reduce the pressure drop through the fittings. Provide a raised bead on the throat of the fitting to assure a tight positive connection. Products shall be Flexmaster Model CB-DE-BO3 or approved equal.
  - 2. Provide each fitting with the following:
    - a. Lockable quadrant damper.
    - b. 45-degree extractor scoop.
    - c. Insulation guard where used with internally lined ductwork.
  - 3. Provide these "spin-in" type fittings at all connections between rigid sheet metal duct and flexible duct at the upstream end of the flexible duct.

## 2.8 HIGH PRESSURE FLEXIBLE DUCTS

- A. Meet all requirements for low pressure flexible ducts except be recommended by manufacturer for high pressure application.

## 2.9 RIGID STAINLESS STEEL EXHAUST DUCTS

- A. Food Service Equipment Exhaust Ducts: Exhaust ducts which are intended to remove air laden with grease vapor and/or water vapor from cooking ranges, fryers, ovens and similar cooking equipment shall be as follows:
  - 1. Construct ductwork and vertical exhaust duct stackheads of stainless steel ANSI type 304, mill finish, 16 gauge minimum.
  - 2. Exposed locations shall have No. 4 polished finish.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. All duct systems shall be free of noise, chatter, vibration and pulsation under all conditions of operation. Remove, replace or reinforce as directed by the Architect/Engineer if necessary to correct such conditions.
- B. If field conditions are determined to exist which would limit the guarantee of air delivery or system performance, due notice in writing shall be submitted to the Architect/Engineer of such conditions prior to starting fabrication.



- C. Properly support and align ductwork. Ducts to be free of sag and bulge. Hang ductwork below concrete floors or roof deck with hangers set prior to pouring concrete, or from self drilling screw anchors. GUN POWDER SET ANCHORS ARE NOT PERMITTED.
- D. Where it is necessary that ducts be divided due to pipes or other obstructions which must pass through these ducts, the Contractor shall, at locations as noted or directed, provide air-stream deflectors in the duct and the duct shall be increased in size to maintain equivalent area around deflectors. Such changes shall be in accord with standard SMACNA details and shall be shown on Contractor's As-Built Drawings.
- E. Interior of ductwork visible through registers, grilles, or diffusers shall be painted flat black.
- F. Do not route ductwork through transformer vaults and electrical equipment spaces and enclosures.
- G. Construct all ductwork and accessories in accord with the latest indicated editions of applicable SMACNA construction standards. Sheet Metal and Air Conditioning Contractors' National Association.
- H. Streamline all ductwork to the full extent practical and equip with proper and adequate devices to assure proper balance and quiet draftless distribution of indicated air quantities.
- I. Protect all ductwork and system accessories from damage during construction until Architect/Engineer's final acceptance of project.
- J. Prior to ductwork fabrication, verify if all ductwork as dimensioned and generally shown will satisfactorily fit allocated spaces. Take precautions to avoid space interferences with beams, columns, joists, pipes, lights, conduit, other ducts, equipment, etc. Notify Architect/Engineer if any spatial conflicts exist, and then obtain Architect/Engineer's approval of necessary routing. Make any such necessary revisions which are minor at no additional cost.
- K. Carefully correlate all duct connections to air handling units and fans to provide proper connections, elbows and bends which minimize noise and pressure drop.
- L. Provide all curved elbows with radius ratios of not less than 1.5 unless otherwise shown or approved by Architect/Engineer. Provide all mitered elbows with turning vanes.
- M. Properly suspend all ductwork so that no objectionable conditions result (such as vibration, sagging, etc.).
- N. Coordinate any and all dimensions at interfaces of dissimilar type of ductwork and at interfaces of ductwork with equipment so that proper overlaps, interfaces, etc., of insulation and continuity of vapor barriers are maintained.

- O. If necessary where ducts interface and have different types of insulation, provide transitions so that internal free-clear dimensions of duct remain unchanged.
- P. Install horizontal low pressure ductwork at a level which maximizes length of any vertical, rectangular or round rigid duct connections to rectangular diffuser necks; however, such vertical duct connections are not required to be over 24 inches in length.
- Q. Make connections from any low pressure ductwork to terminal units (fan terminal units, variable volume boxes, etc.) with appropriate lengths of flexible duct unless other type of connection is indicated.
- R. Install all flexible round duct without kinks or similar obstructions so that pressure drop is minimized. Cut and remove excess lengths as necessary.
- S. Install horizontal rigid ductwork as high as practical above suspended ceilings so that movable light fixtures may be relocated without interference to meet any future partition relocation requirements.
- T. Insulated Duct: Where ducts will be insulated, make provision for neat insulation finish around damper operating quadrants, splitter adjusting clamps, access doors, and similar operating devices. A metal collar equivalent in depth to insulation thickness and of suitable size to which insulation may be finished shall be mounted on duct.

### 3.2 LOW PRESSURE SHEET METAL DUCTS

- A. If width or height of rectangular duct exceeds 12 inches, cross break or roll a cross bead in panels to increase stiffness; otherwise, use two gages heavier steel.
- B. Provide corner closures. Longitudinal seams and transverse joints shall be flat and smooth inside. Make slip joints in direction of air flow. See governing SMACNA manual for transition requirements.
- C. Fabricate offsets, turns and elbows with centerline radius equal to 1-1/2 times diameter when possible. No mitered offsets will be allowed. Provide double thickness turning vanes to assist in smooth flow of air in square elbows or elbows with centerline radius less than duct width or diameter.

### 3.3 HIGH PRESSURE DUCTWORK

- A. In addition to other requirements, this ductwork shall be as follows:
  - 1. Any welds shall be continuous and corrosion resistant.
  - 2. Reinforced and supported to cause and/or to convey no objectionable vibrations.
  - 3. All seams and joints permanently sealed and joined in strict accordance with the manufacturer's recommendations.
- B. Conical Tees: Make all branch duct take-offs and all connections to flexible duct supplying air to terminal units with conical tees.



### 3.4 LOW PRESSURE FLEXIBLE DUCTS

- A. Flexible ducts shall not be used unless specifically indicated on drawings.
- B. If flexible duct is indicated for use on this project, it must comply with the following requirements.
  - 1. The extent of the use of flexible ductwork shall be limited to that shown on the drawings.
  - 2. Flexible duct installation shall be per SMACNA Flexible Duct Installation Standards, and manufacturers latest printed instructions, whichever is stricter. In addition the following shall apply:
    - a. Flexible duct between rigid duct and diffusers shall be a MAXIMUM of 8 feet in length and shall be fully extended with a maximum equivalent of (2) 90 degree bends (no bend shall be made with centerline radius of less than one duct diameter). No additional flexible duct shall be provided for future terminal device relocation unless otherwise specified.
    - b. Flexible duct shall be supported at ends and at each 90 degree bend. Maximum permissible sag is 1/2 inch per foot of spacing between supports.
    - c. Hanger or saddle material in contact with the flexible duct shall be of sufficient width to prevent any restriction of the internal diameter of the duct when the weight of the supported section rests on the hanger or saddle material. In no case will the material contacting the flexible duct be less than 1 inch wide. Narrower hanger material may be used in conjunction with a sheet metal saddle which meets the foregoing specifications. This saddle must be formed to cover one-half the circumference of the outside diameter of the flexible duct and must be rolled to fit neatly around the lower half of the duct's outer circumference.
    - d. Factory installed suspension systems integral to the flexible duct are an acceptable alternative hanging method when manufacturers recommended procedures are followed.
    - e. Hangers shall be adequately attached to the building structure (not pipe, conduit, etc.).
    - f. To prevent tearing of vapor barrier, do not support entire weight of flexible duct on any one hanger during installation. Avoid contact of flexible duct with sharp edges of hanger material. Damage to vapor barrier may be repaired with approved tape. If internal core is penetrated, replace flexible duct or treat as a connection.
  - 3. Terminal devices connected by flexible duct shall be supported independently of the flexible duct.

### 3.5 HIGH PRESSURE FLEXIBLE DUCTS

- A. Meet all the requirements for low pressure flexible ducts.

### 3.6 RIGID STAINLESS STEEL DUCT

- A. In addition to SMACNA recommendations and other requirements, rigid stainless steel duct systems shall comply with the following:

1. All joints and seams shall be made with continuous welds. Ductwork shall be liquid tight and gas tight.
2. Hangers and supports in finished areas shall be of same material as ductwork.
3. Joints in laboratory hood exhaust duct may be flanged and gasketed at the Contractor's option.
4. Food Service Equipment Exhaust Ductwork:
  - a. Kitchen exhaust ductwork of stainless steel shall be installed in accordance with NFPA 96 Standard for removal of smoke and grease laden vapors from commercial cooking equipment.
  - b. Install horizontal stainless steel kitchen exhaust ductwork with a minimum slope of 1-inch per foot.
  - c. Provide access panels of suitable size at 3'-0" centers minimum and at each change of direction for cleaning purposes.
  - d. Changes in Shape and Direction: Construct all changes in shape or direction in such a manner as to prevent the formation of any traps or pockets which might collect grease.
  - e. Cleanout Openings: Provide an opening in each exhaust duct at each change in direction of duct for the purposes of inspection and cleaning. Openings shall be at the sides and large enough to permit cleaning. In horizontal sections the lower edge of the opening shall be not less than one and one-half inches from bottom of the duct. Covers shall be constructed of the same material and thickness as the duct and shall be grease tight when in place.
  - f. Standards: Comply with latest SMACNA construction standard which covers this type of duct system.

### 3.7 MISCELLANEOUS DUCT SYSTEM COMPONENTS

- A. Spin-In Take-Off Fittings: Install around duct branch takeoff fittings according to manufacturer's installation instruction. Additionally seal fitting to rectangular duct with a thin bead of mastic sealant.

### 3.8 HANGERS AND SUPPORTS

- A. General: Comply with latest applicable SMACNA construction standard. Where sprayed fireproofing occurs, install hangers before application of such treatment and withhold installation of ducts until after application.
- B. Supports: Vertical risers and other duct runs where the method of support specified above is not applicable shall be supported by substantial angle brackets designed to meet field conditions and installed to allow for duct expansion.
- C. Fasteners: Secure hangers to steel beams or metal deck with beam clamps or drop through connections from the metal or concrete deck.

### 3.9 CHANGES IN SHAPE OR DIMENSION

- A. Where duct size or shape is changed to effect a change in area, the following shall apply:

1. Where the area at the end of the transformation results in an increase in area over that at the beginning, the slope of the transformation shall not exceed one inch in seven inches.
2. Where the area at the end of the transformation results in a decrease in area from that at the beginning, the slope of the transformation may be one inch in four inches, but one inch in seven inches is preferable, space permitting.
3. The angle of transformation at connections to heating coils or other equipment shall not exceed thirty degrees from a line parallel to the air flow on the entering side of the equipment, nor fifteen degrees on the leaving side. The angle of approach may be increased to suit limited space conditions when the transformation is provided with vanes approved by the Architect/Engineer.

### 3.10 CHANGES IN DIRECTION

- A. Changes in direction shall be basically as indicated on the drawings and the following shall apply:
1. Supply duct turns of ninety degrees in low pressure duct shall be made with mitered elbows fitted with closely spaced turning vanes designed for maintaining a constant velocity through the elbow.
  2. Return and exhaust duct turns of ninety degrees in low pressure duct shall be made with mitered elbows, as specified hereinbefore for supply ducts, unless radius elbows are indicated in which case they shall be constructed with a turning radius one and one-half (1-1/2) times the width (with width considered as the dimension in the plane of the turn) as measured to the duct centerline.
  3. Tees in low pressure duct shall conform to the design requirements specified hereinbefore for elbows.
  4. Branch take-offs in low pressure supply duct shall be made with extractors or splitter dampers, as indicated, in square take-offs.
  5. In high pressure duct, branch take-offs and connections to flexible duct supplying air to terminal units shall be made with conical taps.

### 3.11 IMPROPER MATERIALS OR CONFIGURATION

- A. If ductwork materials or ductwork configurations are installed which do not meet these specifications, Contractor shall remove such ductwork and replace with materials or configurations which are acceptable. Any delay in job progress will be the responsibility of the Contractor.

### 3.12 OTHER REQUIREMENTS

- A. Insulated Duct: Where ducts will be insulated, make provision for neat insulation finish around damper operating quadrants, splitter adjusting clamps, access doors, and similar operating devices. A metal collar equivalent in depth to insulation thickness and of suitable size to which insulation may be finished shall be mounted on duct.
- B. Control Devices: Properly install all control related devices which are part of the duct systems. See Section(s) describing control systems.

### 3.13 SEALING OF DUCTS

#### A. Duct seal classes are as follows:

1. Seal class "A": Seal all transverse joints, longitudinal seams and duct wall penetrations. Use for P/V-C-4 (4" w.g.) and greater unless otherwise indicated.
2. Seal class "B": Seal all transverse joints and longitudinal seams. Use for P/V-C-3 (3" w.g.) unless otherwise indicated.
3. Seal class "C": Seal all transverse joints. Use for P/V-C-2 (2" w.g.) and lower unless otherwise indicated.

#### B. Where sealing is required it shall mean the following:

1. The use of adhesives, gaskets, tape systems or combinations thereof to close openings in the surface of the ductwork and field-erected plenums and casings through which air leakage would occur; or
2. The use of continuous welds;
3. The prudent selection and application of sealing methods by fabricators and installers, giving due consideration to the designated pressure class, pressure mode (positive or negative), chemical compatibility of the closure system, potential movement of mating parts, workmanship, amount and type of handling; cleanliness of surfaces, product shelf life, curing time and manufacturer-identified exposure limitations;
4. That these provisions are applicable to duct connections to equipment and to apparatus but are not for equipment and apparatus;
5. That where distinctions between seams and joints are made herein, a seam is defined as joining of two longitudinally (in the direction of air-flow) oriented edges of duct surface material occurring between two joints. Helical (spiral) lock seams are exempt from sealant requirements. All other duct surface connections made on the perimeter are deemed to be joints. Joints are inclusive of but not limited to girth joints; branch and sub-branch intersections; so-called duct collar tap-ins; fitting subsections; louver and air terminal connections to ducts; access door and access panel frames and jambs; duct, plenum and casing abutments to building structures; that sealing requirements herein do not contain provisions to:
  - a. Resist chemical attack.
  - b. Be dielectrically isolated.
  - c. Be waterproof, weatherproof or ultraviolet ray resistant.
  - d. Withstand temperatures higher than 120°F or lower than 40°F.
  - e. Contain atomic radiation or serve in other safety-related construction.
  - f. Be electrically grounded.
  - g. Maintain leakage integrity at pressures in excess of the duct classification herein.
  - h. Be underground below the water table.
  - i. Be submerged in liquid.
  - j. Withstand continuous vibration visible to the naked eye.
  - k. Be totally leak-free within an encapsulating vapor barrier.
  - l. Create closure in portions of the building structure used as ducts, e.g., ceiling plenums, shafts, pressurized compartments.



6. The requirements to seal apply to both positive pressure and negative pressure of operation.
7. Externally insulated ducts located outside of buildings shall be sealed prior to being insulated as though they were inside. If metal surfaces of ducts located on the exterior of buildings are exposed to weather, they shall receive exterior duct sealant. An exterior duct sealant is defined as a sealant that is marketed specifically as forming a positive air and water tight seal, bonding well to the metal involved, remaining flexible with metal movement and having a service temperature range of -30°F to 175°F. If exposed to direct sunlight it shall also be ultraviolet ray and ozone resistant or shall, after curing, be painted with a compatible coating that provides such resistance. The term sealant herein is not limited to materials of adhesive or mastic nature but is inclusive of tapes and combinations of open weave fabric strips and mastics.

C. Materials and applications for sealing ducts:

1. General:

- a. Complete product data on all materials used for sealing ducts must be submitted for approval prior to any duct fabrication.
- b. All sealants must be specifically recommended by their manufacturer for the purpose of sealing ducts.

2. Liquid Sealant:

- a. Use only for slip type joints where sealant is to fill small space between overlapping pieces of metal. Do not use where metal clearances exceed 1/32-inch.
- b. Sealant must be specifically manufactured for the purpose of sealing ducts.

3. Mastics:

- a. Use in lieu of liquid sealant at Contractor's option.
- b. Use as a fillet, in grooves and between flanges.
- c. Do not use oil base caulking or glazing compounds.

4. Gaskets:

- a. Use soft elastomer butyl or neoprene rubber or extruded forms of sealants in flanged joints in addition to mastic.

5. Tape:

- a. Tape is not allowed on sheet metal ducts.

6. Combination of mastic and embedded fabric:

- a. Use mastic/mesh/mastic as a sealant where pressure/velocity classification equals and exceeds P/V-C-3 and where any spaces between metal surfaces at transverse joints or longitudinal seams or duct wall penetrations exceeds 1/16-inch.

- b. Apply glove coat of mastic, then embed a continuous or overlapping strip of not less than 4-inch wide 10 x 10 fiberglass cloth into the mastic, then apply a final glove coat of mastic over the glass cloth.

7. Surface preparation:

- a. Surfaces to receive sealant should be adequately clean (free from oil, dust, dirt, rust, moisture, ice crystals and other substances that inhibit or prevent bonding). Use solvent and/or apply a face primer if necessary to obtain adequately clean surface for adhesion.

### 3.14 LEAKAGE TESTING

A. General:

1. Test the following duct systems:

- a. All ducts which are (1) under positive or negative pressure and (2) which are directly connected to air moving device (air handling unit, exhaust fan, supply fan or similar air moving equipment) and (3) which convey 1000-cfm or greater through their largest portion.
  - b. All ducts which are (1) under positive or negative pressure and (2) which are part of a supply, return, outside and/or exhaust air system and (3) which are equal to or greater than 25 feet in length and (4) which may or may not be directly connected to an air moving device.
2. Portions of duct to be tested shall consist of all portions from the largest cross sectional area to the air distribution device connection or to the smallest inlet or outlet point, whichever is applicable.
  3. Duct systems shall be constructed so that leakage does not exceed 5.00% of the air quantity handled by the respective fan.

B. Allowable Leakage:

1. Leakage shall be measured during leakage test at a test pressure which is equal to the pressure/velocity classification of the duct system (e.g., a PVC-2 duct shall be tested at 2.0 in. w.g.s.p., a PVC-1/2 duct at 0.5 in. w.g.s.p., etc.).

C. Test Procedure:

1. Test at time of duct installation and prior to installation of any field applied insulation and prior to any concealment in chases or similar enclosures.
2. Duct openings (both entry openings and outlet openings) shall be capped or sealed by taping or banding a flexible plastic sheet over each opening prior to pressurizing duct. The plastic sheet shall be of adequate strength and thickness to withstand the test pressures. Use other method of sealing duct openings providing objective of test is obtained and if method of sealing is approved by Architect/Engineer.
3. Use a fan having a minimum capacity of 300-cfm or 5% of the particular duct system design capacity, whichever is greater and which is capable of producing a duct test pressure of 150% of the duct test pressure.

4. Test fan shall be connected to a flow measuring assembly consisting of straightening vanes and an orifice plate mounted in a straight tube with appropriately located pressure taps. Orifice assembly shall be accurately calibrated with its own calibration curve. Pressures shall be measured with U-tube manometers and corresponding flow rates obtained from the orifice performance curve.
5. Connect test fan and orifice flow measuring assembly to the duct to be tested with a section of flexible duct.
6. Test for audible leaks as follows:
  - a. Close off and seal all openings in the duct section to be tested. Connect the test apparatus to the duct by means of a section of flexible duct.
  - b. Start the blower with its control damper closed (some small blowers popularly used for testing ducts may damage the duct because they can develop pressures up to 25 inches (W.G.).
  - c. Gradually open the inlet damper until the duct pressure reaches 50% in excess of designed duct operating pressure.
  - d. Survey all joints for audible leaks. Mark each leak and repair after shutting down blower. Do not apply a retest until sealing has been repaired if and where necessary.
7. After all audible leaks have been sealed, the leakage should be measured with the orifice section of the test apparatus as follows:
  - a. Start blower and open damper until pressure in duct reaches 25% in excess of designed duct operating pressure.
  - b. Total allowable leakage shall not exceed five (5) percent of the total system design air flow rate. When partial sections (such as supply section, return section, etc.) of the duct system are tested, the summation of the leakage for all sections shall not exceed the total allowable leakage.
8. Correct any duct leaks which are detected either audibly or by touch regardless of whether leakage through duct system is less than allowable test leakage.

### 3.15 DEFINITIONS OF DUCT TYPES

- A. Refer to the "Duct Type and Location Schedule" on the Drawings for:
  1. The type of ductwork and where it is to be installed.
  2. The pressure/velocity class at each location.
  3. Indication of whether the ductwork is to be insulated externally or internally lined or not insulated.

END OF SECTION

## SECTION 233713 - AIR DISTRIBUTION DEVICES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

#### 1.2 SCOPE

- A. Provide all air distribution devices as indicated on the drawings and as specified herein for a complete and operable system.

#### 1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division 23 and to all other applicable portions of the Drawings and Specifications.
- B. Coordinate with work of the ceiling, drywall and plastering trades as required to insure an orderly progression of work and a first class finished system with respect to placement, alignment, finish, general fit and absence of conflict with lighting systems and fire protection systems.

Insulate air distribution devices to prevent condensation formation.

#### 1.4 DESIGN CONDITIONS

- A. Acoustical: Noise produced at each diffuser, register, grille or other air distribution device shall not exceed a noise criteria level of NC 35 based on sound pressure levels in db re 0.002 microbars unless otherwise indicated. Coordinate air distribution devices, sound attenuation measures and equipment actually provided to insure that this design constraint is not exceeded by the system installed.

Exceptions: Any particular rooms or areas which are normally occupied by other than maintenance staff or service staff and which may be noted on the drawings as requiring lower NC criteria.

- B. Pressure Drop: Pressure drop across any air distribution device shall not exceed 0.15 in wg static pressure unless otherwise indicated.

#### 1.5 SHOP DRAWINGS

- A. Refer to the requirements of Section entitled "General Mechanical Provisions".



## 1.6 MANUFACTURER

- A. Products listed in this Section or on the plans are based on a specific manufacturer to establish the desired style, quality and type. Equivalent products, complying with the requirements of this Section and the installation requirements of the plans, by the following manufacturers are acceptable:
  - 1. Titus
  - 2. Metalaire
  - 3. Price
- B. Manufacturers must be members of the Air Distribution Council unless otherwise indicated.

## 1.7 OTHER REQUIREMENTS

- A. All aluminum is to be extruded unless otherwise indicated.
- B. Appearance: Each air distribution device which has a portion thereof (frame, core, etc.) exposed to view in the finished area shall have a factory applied finish which matches and is compatible with the color of the surrounding surface on which the device is installed. Colors must be approved by Architect prior to device fabrication.
- C. All louvers, dampers and/or shutters shall be rated by their manufacturer in accord with AMCA Standard 500-74.
- D. Integral Components: All dampers, blank-off baffles and other companion devices which form an integral part of air distribution device shall be factory made items produced by the manufacturer of air distribution device.
- E. Louvers: Louvers may be specified in another division but for reference may also be indicated on mechanical drawings.
- F. Door Grilles: Door grilles may be specified in another division but for reference may also be indicated on mechanical drawings.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. Provide the following air distribution devices as applicable to this project. Refer to air distribution device schedule as shown on drawings.

### 2.2 OTHER REQUIREMENTS

- A. All devices must each comply with the applicable portions of the Air Diffusion Council (ADC) Equipment Test Code 1062R4 "Certification, Rating and Test Manual", the Air Movement and Control Association, Inc. (AMCA) Standard 500 "Test Method for Louvers, Dampers and Shutters" and the "National Fire Protection Association" (NFPA) Standard 90A "Installation of Air Conditioning and Ventilating Systems".

- B. Provide ceiling and/or linear diffusers with border styles that are compatible with adjacent ceiling systems, and that are specifically manufactured to fit into ceiling module with accurate fit and adequate support. Refer to general construction drawings and specifications for types of ceiling systems which will contain each type of diffuser.
- C. Diffusers, grilles and registers installed in fire rated ceiling, or floor/ceiling assemblies shall be constructed of steel.
- D. Mounting Screws: Where grilles, diffusers or registers are specified which require mounting screws visible from the face of the device these screws shall be furnished with the air distribution equipment and be finished at the factory to match the finish on the grille, diffuser or register in which they are to be used.

### PART 3 - EXECUTION

#### 3.1 GENERAL

- A. Install neatly where indicated in accord with manufacturer's recommendations and in accord with SMACNA recommendations and as otherwise indicated.
- B. Properly test, balance and adjust to produce quiet, draftless operation to best degree possible.

#### 3.2 INSTALLATION

- A. Rectangular Diffusers: Where diffusers are the lay-in type, they shall be supported by the inverted T-bar suspension system but all ducts connected thereto shall be supported independently of the ceiling as specified under Section entitled "Ductwork". Surface mounted diffusers shall be supported by the duct runouts or drops where sheet metal ducts are indicated and by separate hangers where flex runouts are indicated. All rectangular ceiling diffusers shall be installed with their lines parallel and perpendicular to the building line and properly aligned with the ceiling.
- B. Sidewall Grilles and Registers: Mount securely to the duct system flanges using finish screws and in accordance with accepted good practice.
- C. Ceiling mounted Exhaust and Return Registers/Grilles: Mount as specified hereinbefore for surface mounted ceiling diffusers except use finished screws provided and secure to duct and finished ceiling (or finished ceiling for nonducted returns) in accordance with the manufacturer's instructions. Where required to provide adequate support for nonducted registers or grilles, provide appropriate mounting frame for incorporation into the ceiling system.
- D. Install all outlets and inlets as recommended by the manufacturer; in accordance with recognized industry practices; to insure that products serve intended functions.

- E. Locate ceiling air outlets and inlets as indicated on the drawings. Unless otherwise indicated, locate units in center of acoustical ceiling modules. Install square and parallel with partitions, ceiling grid members, etc.
- F. Spare Parts: Furnish to Owner, with receipt, 3 operating keys for each type of outlet and inlet that require them.
- G. Do not install blank-offs under continuous linear diffuser distribution plenums. Distribution plenums shall cover only active portion of the diffuser.

### 3.3 PROTECTION OF WORK UNTIL FINAL ACCEPTANCE

- A. Coordinate the installation of the air distribution equipment with related work and finishing of adjacent surfaces to prevent damage to the devices or adjacent finishes. Protect the finish of all air distribution equipment until final acceptance. Replace or repair to the Architect's satisfaction any damaged equipment.

END OF SECTION

## SECTION 260100 - BASIC ELECTRICAL REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-01 Specification Sections, apply to work of this Section.
- B. Coordination of work between mechanical and electrical trades is covered in Division-23 Section "GENERAL MECHANICAL PROVISIONS".

#### 1.2 SUMMARY

- A. This Section specifies the basic requirements for electrical installations and includes requirements common to all sections of Division-26. It expands and supplements the requirements specified in sections of Division-01.

#### 1.3 CODES AND STANDARDS

- A. Install all work in accordance with the applicable requirements of the latest edition of the following:
  - 1. National Electric Code (NEC) 2008
  - 2. Local, State, County and City Codes
  - 3. National Fire Protection Association (NFPA)
  - 4. American National Standards Institute (ANSI)
  - 5. National Electrical Manufacturers Association (NEMA) Standards
  - 6. Florida Building Code 2017
- B. It is the intent of the Contract Documents to comply with the applicable codes, ordinances, regulations, and standards. Where discrepancies occur, notify the Architect in writing, and ask for interpretation. Correct any installation that fails to comply with the applicable codes and standards at no additional cost to the Owner.
- C. All materials shall be new and free of defects, and shall be U.L. listed, bear the U.L. label or be labeled or listed with an approved, nationally recognized Electrical Testing Agency. Where no labeling or listing service is available for certain types of equipment, test data shall be submitted to prove to the Engineer that equipment meets or exceeds available standards.

#### 1.4 PERMITS AND INSPECTIONS

- A. Obtain and make all payments for permits and inspections required. At the completion of the project and before final acceptance of the electrical work, provide evidence of final inspection and approval by the authorities having jurisdiction.

## 1.5 QUALITY ASSURANCE

- A. Manufacturers: Firms regularly engaged in manufacture of electrical products specified whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Installer's Qualifications: Firm with at least 5 years of successful installation experience on projects with electrical work similar to that required for this project.

## 1.6 IDENTIFICATION

- A. The following items shall be equipped with nameplates: All motors, motor starters, pushbutton stations, control panels, time switches, disconnect switches, panelboards, circuit breakers, contactors.
- B. Nameplates shall adequately describe the function of the particular equipment involved. Nameplates for panelboards and switchboards shall include the panel designation, branch (normal or emergency), voltage and phase of the supply. For example, "Panel A, Emergency Branch, 120Y/208V, 3-phase, 4-wire."
- C. Nameplates shall be laminated phenolic plastic, black front and back with white core, with 3/8" high lettering etched through the outer covering. White engraved letters on black background. Attach with plated self-tapping screws or brass bolts.
- D. All junction box covers shall be hand marked with a 1/8" wide permanent black marking pen, indicating panel and circuit numbers contained, or system contained, i.e., fire alarm, telephone, etc.

## 1.7 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected, and architectural room elevations.

## 1.8 ELECTRICAL INSTALLATIONS

- A. Coordinate electrical equipment and materials installation with other building components.
- B. Verify all dimensions by field measurements.
- C. Arrange for chases, slots, and openings in other building components to allow for electrical installations.
- D. Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed.
- E. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing-in the building.

- F. Coordinate the cutting and patching of building components to accommodate the installation of electrical equipment and materials.
- G. Coordinate connection of electrical systems with local utility services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connections for each service.

#### 1.9 CUTTING AND PATCHING

- A. This Article specifies the cutting and patching of electrical equipment, components, and materials to include removal and legal disposal of selected materials, components, and equipment.
- B. Do not endanger or damage installed Work through procedures and processes of cutting and patching.
- C. Arrange for repairs required to restore other work, because of damage caused as a result of electrical installations.
- D. No additional compensation will be authorized for cutting and patching Work that is necessitated by ill-timed, defective, or non-conforming installations.
- E. Perform cutting, fitting, and patching of electrical equipment and materials required to:
  - 1. Uncover Work to provide for installation of ill-timed work;
  - 2. Remove and replace defective Work;
  - 3. Remove and replace Work not conforming to requirements of the Contract Documents;
  - 4. Remove samples of installed Work as specified for testing;
  - 5. Upon written instructions from the Architect/Engineer, uncover and restore Work to provide for Architect/Engineer observation of concealed Work.
  - 6. Install electrical work in existing facilities.

#### 1.10 ELECTRICAL SUBMITTALS

- A. Refer to the Conditions of the Contract (General and Supplementary) and Division-01 Section: SHOP DRAWINGS, PRODUCT DATA AND SAMPLES for submittal definitions, requirements, and procedures.
- B. Submittal of shop drawings, product data, and samples will be accepted only when submitted by the Contractor. Data submitted from subcontractors and material suppliers directly to the Architect/Engineer will not be processed.

#### 1.11 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Refer to the Instructions to Bidders and the Division-01 for requirements in selecting products and requesting substitutions. Where a listing of acceptable manufacturers has been given, use one of those manufacturers given only.



#### 1.12 PRODUCT LISTING

- A. Prepare listing of major electrical equipment and materials for the project.
- B. Provide all information requested.
- C. Submit this listing as a part of the submittal requirement specified in Division-01.
- D. When two or more items of the same material or equipment are required they shall be of the same manufacturer, i.e., panelboards, motor starters, transformers, etc. Product manufacturer uniformity does not apply to raw materials, bulk materials, wire, conduit, fittings, sheet metal, steel bar stock, welding rods, solder, fasteners, motors for dissimilar equipment units, and similar items used in Work, except as otherwise indicated.
- E. Provide products which are compatible within systems and other connected items.

#### 1.13 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 identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.
- B. Store equipment and materials at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage.
- C. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

#### 1.14 RECORD DOCUMENTS

- A. Refer to the Division-01 Section: PROJECT CLOSEOUT or PROJECT RECORD DOCUMENTS for requirements. The following paragraphs supplement the requirements of Division-01.
- B. Mark Drawings to indicate revisions to conduit size and location both exterior and interior; actual equipment locations, distribution and branch electrical circuitry; fuse and circuit breaker size and arrangements; support and hanger details.
- C. Mark Specifications to indicate approved substitutions; Change Orders; actual equipment and materials used.

#### 1.15 OPERATION AND MAINTENANCE DATA

- A. Refer to the Division-01 Section; PROJECT CLOSEOUT or OPERATION AND MAINTENANCE DATA for procedures and requirements for preparation and submittal of maintenance manuals.

1.16 WARRANTIES

- A. Refer to individual equipment specifications for warranty requirements.
- B. Compile and assemble the warranties specified in Divisions-26, 27 & 28, into a separate set of vinyl covered, three ring binders, tabulated and indexed for easy reference.
- C. Provide complete warranty information for each item to include product or equipment, date of beginning of warranty or bond; duration of warranty or bond; and names, addresses, and telephone numbers and procedures for filing a claim and obtaining warranty services.

1.17 CLEANING

- A. Refer to the Division-01 Section; PROJECT CLOSEOUT or FINAL CLEANING for general requirements for final cleaning.
- B. Clean all light fixtures, lamps and lenses prior to final acceptance. Replace all inoperative lamps.

1.18 TEMPORARY POWER

- A. Provide and pay for all temporary electrical service as required for construction.
- B. Provide all temporary lighting and power distribution as required for construction. All temporary electrical work shall be in accordance with the N.E.C.

1.19 ELECTRONIC FILES

- A. CADD files will be available on a limited basis to qualified firms at the Architects prerogative. Recipients are cautioned that these files may not accurately show actual conditions as constructed. Users are responsible to verify actual field conditions. These files are not intended to be used as shop drawings.

1.20 EXISTING CONDITIONS

- A. Prior to bid, the Contractor shall visit the existing site and become familiar with existing conditions. Contractor shall include in his bid price, allowances for work to be performed.

END OF SECTION



## SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

#### 1.2 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, details, and attachments to other work.

#### 1.3 QUALITY ASSURANCE

- A. 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.
- B. Comply with NFPA 70.

### PART 2 - PRODUCTS

#### 2.1 METAL CONDUIT AND TUBING

- A. Rigid Steel Conduit: ANSI C80.1.
- B. IMC: ANSI C80.6.
- C. EMT: ANSI C80.3.
- D. FMC: Zinc-coated steel.
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
  - 1. Fittings for EMT: Steel set-screw type.

#### 2.2 NONMETALLIC CONDUIT AND TUBING

- A. ENT: NEMA TC 13.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.

- C. LFNC: UL 1660.
- D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.

### 2.3 SURFACE RACEWAYS

- A. Surface Metal Raceways: Galvanized steel with snap-on covers. Prime coating, ready for field painting.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Thomas & Betts Corporation.
    - b. The Wiremold Company
    - c. Panduit Company
- B. Surface Nonmetallic Raceways: Two-piece construction, manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Butler Manufacturing Company; Walker Division.
    - b. Enduro Systems, Inc.; Composite Products Division.
    - c. Hubbell Incorporated; Wiring Device-Kellems Division.
    - d. Lamson & Sessions; Carlon Electrical Products.
    - e. Panduit Corp.
    - f. Walker Systems, Inc.; Wiremold Company (The).
    - g. Wiremold Company (The); Electrical Sales Division.

### 2.4 BOXES, ENCLOSURES, AND CABINETS

- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, aluminum, Type FD, with gasketed cover.
- C. Nonmetallic Outlet and Device Boxes: NEMA OS 2.
- D. Metal Floor Boxes: Cast metal, fully adjustable, rectangular.
- E. Nonmetallic Floor Boxes: Nonadjustable, round.
- F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

- G. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast aluminum with gasketed cover.
- H. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
  - 2. Nonmetallic Enclosures: Plastic finished inside with radio-frequency-resistant paint.
- I. Cabinets:
  - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  - 2. Hinged door in front cover with flush latch and concealed hinge.
  - 3. Key latch to match panelboards.
  - 4. Metal barriers to separate wiring of different systems and voltage.
  - 5. Accessory feet where required for freestanding equipment.

### PART 3 - EXECUTION

#### 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
  - 1. Exposed Conduit: IMC
  - 2. Concealed Conduit, Aboveground: EMT.
  - 3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
  - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- B. Comply with the following indoor applications, unless otherwise indicated:
  - 1. Exposed, Not Subject to Physical Damage: EMT.
  - 2. Exposed, Not Subject to Severe Physical Damage: EMT.
  - 3. Exposed and Subject to Severe Physical Damage: IMC. Includes raceways in the following locations:
    - a. Corridors.
    - b. Mechanical rooms.
  - 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
  - 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
  - 6. Damp or Wet Locations: IMC.
  - 7. Raceways for Optical Fiber or Communications Cable: EMT.

8. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
  1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

### 3.2 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
- B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems."
- E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.
- H. Raceways Embedded in Slabs:
  1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
  2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
  3. Change from ENT to RNC, Type EPC-40-PVC, rigid steel conduit, or IMC before rising above the floor.
- I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.
- K. Raceways for Optical Fiber and Communications Cable: Install as follows:
  1. 3/4-Inch Trade Size and Smaller: Install raceways in maximum lengths of 50 feet.

2. 1-Inch Trade Size and Larger: Install raceways in maximum lengths of 75 feet.
  3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.
- L. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  2. Where otherwise required by NFPA 70.
- M. Expansion-Joint Fittings for RNC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F, and that has straight-run length that exceeds 25 feet.
1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:
    - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
    - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
    - c. Indoor Spaces: Connected with the Outdoors without Physical Separation: 125 deg F temperature change.
    - d. Attics: 135 deg F temperature change.
  2. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change.
  3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.
- N. Flexible Conduit Connections: Use maximum of 72 inches of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations subject to severe physical damage.
  2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- O. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.
- P. Set metal floor boxes level and flush with finished floor surface.
- Q. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

### 3.3 INSTALLATION OF UNDERGROUND CONDUIT

#### A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 31 Section "Earth Moving" for pipe less than 6 inches in nominal diameter.
2. Install backfill as specified in Division 31 Section "Earth Moving."
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 31 Section "Earth Moving."
4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
  - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
  - b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.
6. Warning Planks: Bury warning planks approximately 12 inches above direct-buried conduits, placing them 24 inches o.c. Align planks along the width and along the centerline of conduit.

### 3.4 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

END OF SECTION



## SECTION 262726 - WIRING DEVICES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
  - 2. Snap switches.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
- C. Samples: One for each type of device and wall plate specified, in each color specified.
- D. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

#### 1.3 QUALITY ASSURANCE

- A. 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.
- B. Comply with NFPA 70.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
  - 1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
  - 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
  - 3. Leviton Mfg. Company Inc. (Leviton).
  - 4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

#### 2.2 STRAIGHT BLADE RECEPTACLES

- A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.
  - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

2. Products: Subject to compliance with requirements, provide one of the following:
  - a. Cooper; 5351 (single), 5352 (duplex).
  - b. Hubbell; HBL5351 (single), CR5352 (duplex).
  - c. Leviton; 5891 (single), 5352 (duplex).
  - d. Pass & Seymour; 5381 (single), 5352 (duplex).

### 2.3 GFCI RECEPTACLES

- A. General Description: Straight blade, feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.
- B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
  1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  2. Products: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; GF20.
    - b. Pass & Seymour; 2084.

### 2.4 ROCKER SWITCHES

- A. Comply with NEMA WD 1 and UL 20.
- B. Switches, 120V, 20 A:
  1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  2. Products: Subject to compliance with requirements of the following:
    - a. Pass & Seymour; 2621W (single pole), 2622W (two pole), 2623W (three way).

### 2.5 WALL PLATES

- A. Single and combination types to match corresponding wiring devices.
  1. Plate-Securing Screws: Metal with head color to match plate finish.
  2. Material for Finished Spaces: white thermoplastic
  3. Material for Kitchen: 302 Stainless Steel
  4. Material for Unfinished Spaces: Galvanized steel.
  5. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant, die-cast aluminum with lockable cover.

### 2.6 FINISHES

- A. Color: Wiring device catalog numbers in Section Text do not designate device color.



1. Wiring Devices: White, unless otherwise indicated or required by NFPA 70 or device listing.
2. TVSS Devices: Blue.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:
  1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
  2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
  3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
  4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
  1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.
  2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
  3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
  4. Existing Conductors:
    - a. Cut back and pigtail, or replace all damaged conductors.
    - b. Straighten conductors that remain and remove corrosion and foreign matter.
    - c. Pigtailling existing conductors is permitted provided the outlet box is large enough.
- D. Device Installation:
  1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
  2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
  3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.

4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
  5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
  6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
  7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
  8. Tighten unused terminal screws on the device.
  9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.
- E. Receptacle Orientation:
1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.
- F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.
- G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

### 3.2 IDENTIFICATION

- A. Comply with Division 26 Section "Identification for Electrical Systems."
1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with white-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

### 3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
1. Test Instruments: Use instruments that comply with UL 1436.
  2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.
- B. Tests for Convenience Receptacles:
1. Line Voltage: Acceptable range is 105 to 132 V.
  2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is not acceptable.
  3. Ground Impedance: Values of up to 2 ohms are acceptable.
  4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
  5. Using the test plug, verify that the device and its outlet box are securely mounted.

6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new, and retest as specified above.

END OF SECTION

## SECTION 265100 - INTERIOR LIGHTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Interior lighting fixtures.
  - 2. Exit signs.
  - 3. Lighting fixture supports.
- B. See Division 26 Section "Wiring Devices" for manual wall-box dimmers.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes.
- B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.
- C. Product Certificates: For each type of ballast for bi-level and dimmer-controlled fixtures, signed by product manufacturer.
- D. Field quality-control test reports.

#### 1.3 QUALITY ASSURANCE

- A. 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.
- B. Comply with NFPA 70.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. In Interior Lighting Fixture Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
  - 3. Basis-of-Design Product: The design for each lighting fixture is based on the product named. Subject to compliance with requirements, provide either the

named product or a comparable product by one of the other manufacturers specified.

## 2.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

- A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.
- B. Metal Parts: Free of burrs and sharp corners and edges.
- C. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- D. 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.
- E. 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.
  - 4. Laminated Silver Metallized Film: 90 percent.

## 2.3 EXIT SIGNS

- A. Internally Lighted Signs: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.
  - 1. LED for AC Operation: LEDs, 70,000 hours minimum rated lamp life.

## 2.4 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. Twin-Stem Hangers: Two, 1/2-inch steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage.
- E. Wires for Humid Spaces: ASTM A 580/A 580M, Composition 302 or 304, annealed stainless steel, 12 gage.
- F. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

- G. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
- B. Comply with NFPA 70 for minimum fixture supports.
- C. Suspended Lighting Fixture Support:
  - 1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
  - 2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
  - 3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
- D. Adjust aimable lighting fixtures to provide required light intensities.
- E. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

#### 3.2 FIELD QUALITY CONTROL

- A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.
- B. 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.

END OF SECTION

# APPENDIX A

## PERMITS

Indian River County Building Department

IRC-2004 Permit No. 2022090187

IRC-2205 Permit No. 2022071514